


Christiane Trüe | Lydia Scholz [Eds.]

The EU Green Deal and its Implementation



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Foreword

Climate change mitigation and the EU Green Deal will be central topics for the EU to address for years to come. Recent COP meetings show clearly how important the EU's contribution to mitigating climate change is: a major historical contributor to the greenhouse gases in the atmosphere, it now has the opportunity to reverse this trend of ever more emissions, including by providing a model and the means for other parts of the world to leapfrog the carbon age.

All of this raises major issues and themes for discussion, including:

Understanding the Origins of the Green Deal Approach, first implementation measures and the multi-level framework for Green Deal implementation; Potential Legal Instruments for implementation, including technical standardisation, criminal law sanctions and market-based measures, such as tax incentives or the future extension of emission trading to consumers; Education and Awareness-Raising to influence entrepreneurial orientation; the External Dimension of the Green Deal, the Carbon Border Adjustment Mechanism; the challenge of Climate Rights Enforcement, in view of traditional restrictive interpretations of individual rights, causation and legal standing; issues arising in specific sectors, including Energy, Transport, Public Procurement, Urban Planning and Migration.

This conference volume presents a selection of valuable contributions, dealing with the above questions, presented at the first EU Green Deal Conference initiated by the City University of Applied Sciences in Bremen at the end of 2021. The hope thereby is to stimulate further discussion, with the aim of achieving the Green Deal targets in an economically and legally effective manner.

Lydia Scholz
Christiane Trüe

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Welcome and introduction by Kai Stührenberg

Secretary of State for Employment and European Affairs; Senator for Economic Affairs, Employment and European Affairs of the Free Hanseatic City of Bremen

Dear Prof. Christiane Trüe, dear Prof. Lydia Scholz,
dear speakers and participants in this conference,
dear students,

My name is Kai Stührenberg and I am secretary of state for Employment and European Affairs at the Ministry for Economic Affairs, Employment and European Affairs of the Free Hanseatic City of Bremen.

It is a pleasure to welcome you at least virtually in Bremen and to address a few words to you at the beginning of this two-day conference.

First of all, I would like to thank the Hochschule Bremen as well as the main organisers, Prof. Lydia Scholz and Prof. Christiane Trüe for putting the European Green Deal on the agenda at this appropriate time.

You have managed to bring together an impressive number of experts from very different backgrounds to look at the Green Deal from all sides. Just as the Green Deal covers many policy areas, such as investment rules, energy supply, transportation, trade, and agriculture, our agenda for the next two days is also very diverse.

And this diversity of your conference programme brings me to my first remark on the European Green Deal.

The overall aim of the European Green Deal is to achieve the European Union's climate neutrality by 2050. When the European Commission presented its concept for the European Green Deal in December 2019, the Green Deal was described as the EU's new growth strategy. I think this is very important:

The Green Deal is not at all only an environmental or climate strategy.

The Commission underlines very clearly: To deliver the Green Deal, there is a need to rethink policies for clean energy supply across the economy, industry, production and consumption, transport, food and agriculture or taxation.

The Commission's proposal on the Green Deal was just the start of a long project that will be implemented during the upcoming years. The Commission was really transparent and added a very long action plan with concrete measures to its Green Deal proposal. The action plan with an indicative timetable illustrates really well how extensive the Green Deal is

and that almost every policy area is covered. A lot of measures have been already adopted by the Commission, many more will follow.

I want to underline that the European Green Deal also covers policy areas that one does not immediately think of, for example:

Education and Training -> It is important to involve schools and universities in the green transition. A European competence framework should help to develop and assess knowledge and skills on climate change and sustainable development.

The European Bauhaus as a new initiative that connects the Green Deal with the living spaces including the policy areas of sustainable urban development, innovation and culture.

With its “Farm to Fork”-strategy the Commission aims at improving the EU’s food system. That includes among other things reducing food waste across the EU or better nutrition labelling that covers also the climate, environmental and social aspects of food products.

So a lot of these measures address citizens and consumers right away.

I think these examples underline the diversity of the EU Green Deal. We in Bremen fully support this very broad approach.

It is of course very important that we have the European Green Deal and that Council, Commission and European Parliament agreed on the target of climate neutrality by 2050 and to reduce greenhouse gas emissions by at least 55% by 2030.

But the next important step is implementation. You have put the implementation of the Green Deal at the core of your conference. I think this is the right decision.

On 14 July the Commission proposed its “Fit for 55”-package to make the EU’s policies fit for reducing greenhouse-gas emissions by at least 55% by 2030 – compared to 1990 levels.

This package includes 13 concrete measures - both new and revised proposals - to implement the Green Deal. The measures can be divided into the following areas:

Five initiatives focusing on emissions -> for example on the reduction of emissions like a revised, more ambitious Emissions Trading System as well as a new Emissions Trading System for buildings and transport.

Three initiatives focusing on energy -> with concrete measures to increase the target to produce more energy from renewable sources and a new binding target to increase energy efficiency.

Four initiatives focusing on transport -> with stronger CO₂ emissions standards for cars and vans with the aim that as of 2035 all new cars will be zero-emission.

The proposals are on the table. Now it is vital that Council and Parliament negotiate these proposals quickly so we have the binding framework and can start acting.

I already mentioned the cross sectoral approach of the Green Deal. But it is important to me to mention a specific proposal of the “Fit for 55”-package.

Although overall, the economic and employment impacts of the green transition are expected to be positive, according to the Commission the green transition could create around 1 million jobs in the EU by 2030, it is important that the transition will also be socially fair.

We all know that the planned measures might put extra pressure on vulnerable households and transport users in the short run. That’s why the Commission is suggesting a new Social Climate Fund.

This fund should provide funding to Member States to help citizens finance investments in new heating systems, energy efficiency or cleaner mobility. The Commission suggests providing around 72 billion € of funding to Member States for the period 2025-2032. So the Commission is already aiming at the next financial framework starting in 2028. Member States should add the same amount of funding so ideally the new Social Climate Fund could mobilise about 144 billion €.

Of course, we are at the beginning of the discussions and the negotiations in Parliament and Council have only just started, but I guess it is an important signal that the Commission emphasizes the importance of a socially balanced green transition.

During the second day of the conference you will also tackle the social aspects of the Green Deal and I am curious to hear the results of your views on the social dimension on the Green Deal.

For a Bundesland (region) such as Bremen, the Green Deal, the “Fit for 55”-package as well as the funding opportunities linked to the Green Deal are of course highly relevant. To give you a few examples:

- The Green Deal with its target of climate neutrality by 2050
- and the European climate law that is setting a goal of 55 % emissions reductions by 2030

are important points of reference for our regional climate ambitions. Currently a so-called Enquete Commission in our Regional Parliament is being asked to make recommendations for a regional climate action plan (Klimaschutzstrategie) as well as for a concrete emissions reduction target for Bremen until 2030. The developments and targets on the European level provide the framework for our regional efforts.

As I noted, the “Fit for 55”-package includes 13 concrete initiatives to implement the emissions reduction target for 2030. Some of these measures affect us directly.

First of all there is the proposal for a new Carbon Border Adjustment Mechanism (CBAM). Its aim is to put a carbon price on imports of a targeted selection of products to ensure that carbon-intensive production is not simply relocated outside the EU. This mechanism should also encourage industry outside the EU to make ambitious emissions reductions.

For us in Bremen with our important steel production this proposal is very important. But there is of course the discussion on how to implement this mechanism and how the Carbon Border Adjustment Mechanism is compatible with WTO rules and multilateral agreements. In Bremen we will follow the discussions around this mechanism intensively and I see that this question will be also discussed today during your conference.

Another example -> To achieve climate neutrality, a 90% reduction in transport emissions is needed by 2050. All transport modes, including maritime transport, will have to contribute to the reduction efforts. With the FuelEU Maritime Initiative the Commission wants to stimulate the uptake of sustainable maritime fuels and zero-emission technologies. The aim is setting a maximum limit on the greenhouse gas content of energy used by ships calling at European ports.

The Commission also proposes a revision of the EU Emissions Trading System (ETS). One suggestion is to include shipping emissions in the EU Emissions Trading System for the first time. For a region with important European ports in Bremerhaven and Bremen, these proposals are of course highly relevant.

For a region like Bremen with its universities, institutes and enterprises the Green Deal offers of course a lot of opportunities, especially if you look at the funding programmes. There is the Sustainable European Investment Plan, but also the so-called climate mainstreaming. That means 25% of the money across all EU programmes should be focused on climate related projects. So the Green Deal will play an important role in EU programmes like Horizon Europe, INTERREG and LIFE, but also in the structural funds ERDF and ESF during the upcoming years.

At the end of my speech, I would like to underline that my Ministry and especially the Department of European Affairs are available to support you in your initiatives and projects around the Green Deal in the upcoming years.

Please contact

- the colleagues from the Europe Direct Information Centre “EuropaPunkt-Bremen” – located in our regional Parliament – as well as
- the Bremen Representation to the European Union in Brussels.

They are your partners if you for example have a project idea or if you want to bring in your expertise to the European level.

There is also the Enterprise Europe Network (EEN) in Bremen which offers support for SMEs. The work of the EEN and its link to the Green Deal will be explained later on in detail.

The Green Deal offers plenty of opportunities for all of us. Let’s make the most of it.

I wish all speakers and all participants a successful conference and I would like to thank everyone for their contributions.

Thank you very much for your attention.

Fundamentals

Walter Frenz

Nachhaltigkeitswende durch das EU-Klimapaket „Fit for 55“ nach der Klimakonferenz von Glasgow

Das EU-Klimapaket vom 14.7.2021 enthält die Ausrichtung der Wirtschaft auf den Klimaschutz und definiert damit die ökonomische Ausrichtung praktisch neu.

I. Abgrenzung zum nationalen Klimaschutzrecht

Die Union ist unter EU-Kommissionspräsidentin von der Leyen eine wesentliche Triebfeder des Klimaschutzes geworden. Damit nimmt sie eine wichtige Vorreiterrolle ein, wie sie gerade im Gefolge der Klimakonferenz von Glasgow bedeutsam ist, um andere Staaten zu mehr Klimaschutz anzustoßen.¹ Je stärker die europäische Regulierung voranschreitet, desto mehr dominiert das Klimaeuroparecht. Das nationale Recht hat noch insoweit seinen Raum, wie es den unionsrechtlichen Rahmen eigenständig ausfüllt, sei es, dass das EU-Recht den Mitgliedstaaten Gestaltungsspielräume lässt, sei es, dass es gar nicht alle Bereiche ergreift und somit die Mitgliedstaaten noch originäre Regelungsbereiche im Klimaschutzrecht haben. Diese werden aber immer geringer werden, da die EU-Kommission im EU-Klimapaket „Fit for 55“ besonders darauf Wert legt, dass die avisierten Ziele nur durch das beschriebene Bündel von Maßnahmen erreicht werden können,² mithin in allen aufgeführten Feldern Maßnahmen ergreifen will.

Die Kommission will das Emissionshandelssystem verschärfen und erweitern, die Ausgaben für den Klimaschutz erhöhen, den Ausbau der erneuerbaren Energien bis 2030 auf 40 % steigern und die Energieeffizienzrichtlinie anspruchsvoller gestalten. Verbrennungsmotoren in Neufahrzeugen soll es nur noch bis 2035 geben. Zugleich soll dem Steuerrecht eine erhebliche Rolle zukommen sowie unter anderem durch das neue CO₂-Grenzausgleichssystem der internationale Klimaschutz gestärkt werden. Da bleibt

1 Vgl. BVerfG, Beschl. v. 24.3.2021 – 1 BvR 2656/18 u. a., ECLI:DE:BVerfG:2021:rs20210324.1bvr265618, Rn. 203.

2 Mitteilung der Kommission an das Europäische Parlament, den Rat, den Europäischen Wirtschafts- und Sozialausschuss und den Ausschuss der Regionen v. 14.7.2021, „Fit für 55“: auf dem Weg zur Klimaneutralität – Umsetzung des EU-Klimaziels für 2030, COM(2021) 550 final.

für davon unabhängigen nationalen Klimaschutz nicht mehr viel übrig, zumal auch weitere Felder wie die Kreislaufwirtschaft unionsrechtlich geprägt sind.³

II. Initialzündung Green Deal: CO₂-Neutralität bis 2050 durch Übergang zu einer umweltfreundlichen Wirtschaft

1. Entwicklung

Das EU-Klimapaket „Fit for 55“ mit dem Ziel der Klimaneutralität und dem Zwischenziel auf diesem Weg, den CO₂-Ausstoß bis 2030 um mindestens 55 % zu reduzieren, steht in der Linie des Green Deal, auf den die Kommission eigens Bezug nimmt. Der Green Deal ist die Blaupause für den grundlegenden Wandel von Wirtschaft und Gesellschaft; das EU-Klimapaket ist das Instrument für die Verwirklichung.⁴ Er bildet das am 14.1.2020 verkündete Basisdokument⁵ vom Beginn der Amtszeit der aktuellen EU-Kommission, um bis 2050 auf europäischer Ebene die Klimaneutralität herzustellen.

Der Green Deal prägt die EU-Politik immer mehr und wirkt auf die Zeit vor 2050 zurück. Die EU-Kommission wollte die Zielvorgabe für die Senkung von Treibhausgasemissionen bis 2030 bereits im Jahr 2020 auf mindestens 55 % anheben – das EU-Parlament auf 60 %⁶ – und bis Sommer 2021 sämtliche EU-Klima- und Energievorschriften überarbeiten – unter dem Leitbild „Fit für 55“.⁷ Dies ist am 14.7.2021 gelungen. Damit sind wesentliche und tiefgreifende Änderungen aufgrund des Green Deal eingeleitet worden.

³ Dazu näher *Frenz*, *AbfallR* 2021, 104 ff.

⁴ Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 1.

⁵ Mitteilung der Kommission an das Europäische Parlament, den Rat, den Europäischen Wirtschafts- und Sozialausschuss und den Ausschuss der Regionen – „Investitionsplan für ein zukunftsfähiges Europa, Investitionsplan für den europäischen Grünen Deal“ COM(2020) 21 final.

⁶ Europäisches Parlament, Pressemitteilung v. 8.10.2020: „EU-Klimagesetz: Parlament will Emissionen bis 2030 um 60 % reduzieren“, abrufbar unter <https://www.europarl.europa.eu/news/de/press-room/20201002IPR88431/eu-klimagesetz-parlament-will-emissionen-bis-2030-um-60-reduzieren> (letzter Abruf: 25.11.2021).

⁷ Kommission, Pressemitteilung v. 16.9.2020: „Präsidentin von der Leyens Rede zur Lage der Union: Europas Kurs aus der Coronavirus-Krise und in die Zukunft“, abrufbar unter https://ec.europa.eu/commission/presscorner/detail/de/ip_20_1657 (letzter Abruf: 25.11.2021).

2. Tiefgreifende Umgestaltung der Wirtschaft und Gesellschaft

Der Green Deal als Grundlage für diese kommenden Entwicklungen ist ein Fahrplan mit verschiedenen Maßnahmen, um eine effizientere Ressourcennutzung durch den Übergang zu einer sauberen und kreislaufforientierten Wirtschaft zu fördern sowie die Biodiversität wiederherzustellen und die Umweltverschmutzung zu bekämpfen. Damit reicht er weiter als der reine Klimaschutz. Letztlich geht es um den Übergang zu einer umweltfreundlichen Wirtschaft. Zu diesem Zweck müssen zahlreiche Investitionen erfolgen. Der Green Deal zeigt auf, wie diese finanziert werden können und wie ein gerechter und inklusiver Übergang gelingen kann.

III. EU-Klimagesetz

Das EU-Klimagesetz wurde in dem Vorschlag für eine Verordnung des Europäischen Parlaments und des Rates zur Schaffung des Rahmens für die Verwirklichung der Klimaneutralität und zur Änderung der VO 2018/1999 vom 4.3.2020⁸ auf den Weg gebracht und im Juni 2021 verabschiedet – kurz vor der Bekanntgabe des EU-Klimapakets „Fit for 55“, welches das im EU-Klimagesetz festgelegte neue CO₂-Reduktionsziel bis 2030 realisieren soll. Dadurch wird ein Rahmen für die unumkehrbare, schrittweise Senkung der Treibhausgasemissionen und Steigerung des Abbaus von Treibhausgasen durch natürliche oder andere Senken der Union geschaffen (Art. 1 EU-Klimagesetz).

Es wird das verbindliche Ziel vorgegeben, bis zum Jahr 2050 in der Union Klimaneutralität zu erreichen, um das in Art. 2 des Übereinkommens von Paris festgelegte langfristige Temperaturziel zu verwirklichen. Erfasst werden die anthropogenen Emissionen der in Anhang 5 Teil 2 der VO 2018/1999 aufgeführten Treibhausgase und deren Abbau durch natürliche oder andere Senken.

Als Zwischenziel wird eine Reduktion der CO₂-Emissionen bis 2030 um mindestens 55 % gegenüber 1990 festgeschrieben. Art. 4 Abs. 1 EU-Klimagesetz hebt dabei auf die Nettotreibhausgasemissionen ab, also die Emissionen nach Abzug des Abbaus (durch Senken). Damit wird der Pfad zur Klimaneutralität 2050 vorgezeichnet. Dieses Ziel soll in erster Linie durch eine

8 Vorschlag für eine Verordnung des Europäischen Parlaments und des Rates zur Schaffung des Rahmens für die Verwirklichung der Klimaneutralität und zur Änderung der Verordnung (EU) Nr. 2018/1999 (Europäisches Klimagesetz), COM(2020) 80 final. Die Stellungnahme des Bundesrates fiel positiv aus, Beschl. v. 5.6.2020, BR-Drs. 116/20.

Senkung der Emissionen und weniger durch deren Abbau erreicht werden: Insofern wurde ein Grenzwert von 225 Mio. Tonnen CO₂-Äquivalent gesetzt (Art. 4 Abs. 1 UAbs. 3 EU-Klimagesetz). Zudem soll die Union nach der politischen Einigung vom 21.4.2021 das Nettovolumen der Kohlenstoffsenken bis 2030 steigern.⁹ Art. 4 Abs. 1 UAbs. 3 Satz 2 EU-Klimagesetz schreibt dies fest. Im EU-Klimapaket findet sich dazu ein Vorschlag der Kommission. Für 2040 soll ebenfalls ein Zwischenziel festgelegt werden, und zwar spätestens sechs Monate nach der ersten weltweiten Bestandsaufnahme im Rahmen des Übereinkommens von Paris.

IV. Grundlagen des EU-Klimapakets

1. Realisierung der Ziele des EU-Klimagesetzes

Das EU-Klimagesetz enthält damit die zentrale CO₂-Reduktionszielsetzung, die aber durch weitere Maßnahmen unterfüttert und dadurch erst realisiert werden muss. Dem dient das EU-Paket vom 14.7.2021 „Fit for 55“, welches die EU in die Lage versetzen soll, das Reduktionsziel von mindestens 55 % bis 2030 zu erreichen. Dazu wird eine Vielzahl von Instrumenten aufgeführt, welche gemeinsam das angestrebte Ziel erreichen sollen. Es handelt sich um „die Rechtsinstrumente für die Verwirklichung der im Europäischen Klimagesetz vereinbarten Ziele“ und zudem um „die grundlegende Neuausrichtung unserer Wirtschaft und Gesellschaft für eine gerechte, grüne und florierende Zukunft“.¹⁰ Für diesen Wandel ist der Green Deal die konzeptionelle Grundlage und das EU-Klimapaket baut darauf auf.¹¹

9 Europäischer Rat, Pressemitteilung v. 5.5.2021, Europäisches Klimagesetz: Rat und Parlament erzielen vorläufige Einigung, abrufbar unter <https://www.consilium.europa.eu/de/press/press-releases/2021/05/05/european-climate-law-council-and-parliament-reach-provisional-agreement> (letzter Abruf: 25.11.2021). Zu den Inhalten dieser Einigung näher Frenz, Grundzüge des Klimaschutzrechts, 2. Aufl. 2022, Rn. 112 ff.

10 Europäische Kommission, Pressemitteilung v. 14.7.2021, Europäischer Grüner Deal: Kommission schlägt Neuausrichtung von Wirtschaft und Gesellschaft in der EU vor, um Klimaziele zu erreichen, abrufbar unter https://ec.europa.eu/germany/news/20210714-eu-green-deal_de (letzter Abruf: 25.11.2021), S. 1.

11 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 2.

2. Abgleich mit BVerfG-Klimabeschluss

Dieser angepeilte umfassende Umbau erinnert an die Aussage im BVerfG-Klimabeschluss, wonach eine bald erhebliche Umgestaltung der Produkte, Dienstleistungen, Infrastruktur-, Verwaltungs- und Kultureinrichtungen, Konsumgewohnheiten und sonstigen heute noch CO₂-relevanten Strukturen ansteht, was allerdings der Gesetzgeber näher festzulegen hat, und zwar möglichst bald.¹² Genau diese Festlegungen zeichnet das EU-Klimapaket „Fit for 55“ für die EU vor und präsentiert Bausteine für wegweisende Strategien namentlich für die Bereiche biologische Vielfalt, Kreislaufwirtschaft, Schadstofffreiheit, nachhaltige und intelligente Mobilität, Renovierungswelle, nachhaltige Lebensmittel, Wasserstoff, Batterien, erneuerbare Offshore-Energie und andere.¹³

Damit denkt die EU-Kommission von den zu erreichenden Umgestaltungen her und visiert teilweise die Zielzustände an, so nachhaltige intelligente Mobilität, die Renovierungswelle im Gebäudebereich, nachhaltige Lebensmittel sowie Wasserstoff, während das BVerfG die problematischen Bereiche benennt und an die vorhandenen CO₂-relevanten Strukturen namentlich bei Produkten, Dienstleistungen, Infrastruktureinrichtungen sowie Konsumgewohnheiten anknüpft. Pointiert ausgedrückt: Das BVerfG benennt die Probleme, die EU-Kommission die Lösungen. Im Ergebnis werden allerdings weitestgehend übereinstimmende Felder benannt.

So bedarf es nachhaltiger Lebensmittel zur Änderung der Konsumgewohnheiten sowie der nachhaltigen und intelligenten Mobilität zum Aufbrechen CO₂-relevanter Strukturen im Verkehrsbereich, welche das BVerfG in diesem Zusammenhang ebenfalls nennt.¹⁴ Produkte und Dienstleistungen müssen schadstofffrei sein sowie mit erneuerbaren Energien bzw. Wasserstoff produziert werden, um den CO₂-Ausstoß zu vermeiden bzw. mindestens abzusenken, so im Stahlbereich. Die von der Kommission benannte Kreislaufwirtschaft dient dazu, dass die Produkte eher auf der Basis von Sekundärrohstoffen hergestellt werden bzw. langlebiger werden und damit die Stoffkreisläufe erhalten bleiben. Im EU-Klimapaket hinzugenommen wird die biologische Vielfalt, für die gleichfalls der enge Zusammenhang

12 BVerfG, Beschl. v. 24.3.2021 – 1 BvR 2656/18 u. a., ECLI:DE:BVerfG:2021:rs20210324.1b-vr265618, Rn. 249. Näher u. krit. zu dieser Entscheidung *Beckmann*, UPR 2021, 241 ff.; *Frenz*, DVBl 2021, 810 ff.; *Ruttloff/Freiboff*, NVwZ 2021, 917 ff.; positiv *Schlacke*, NVwZ 2021, 912 ff.

13 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 2.

14 BVerfG, Beschl. v. 24.3.2021 – 1 BvR 2656/18 u. a., ECLI:DE:BVerfG:2021:rs20210324.1b-vr265618, Rn. 249

mit dem Klimaschutz herausgearbeitet wird, und zwar im Kontext der Notwendigkeit von CO₂-Senken.¹⁵

3. „Paket zusammenhängender Vorschläge“

Die EU-Kommission trifft aber in dem EU-Klimapaket noch keine abschließenden Festlegungen. Vielmehr bestehen Vorschläge der Kommission, die den Weg zur Erreichung des CO₂-Reduktionsziel von 55 % bis 2030 weisen. Es handelt sich um „ein umfassendes Paket zusammenhängender Vorschläge“, welche „das erforderliche Tempo bei der Verringerung der Treibhausgasemissionen in den nächsten zehn Jahren möglich machen.“¹⁶ Dabei werden die bisherigen Maßnahmen teilweise verschärft und neue hinzugenommen. Es entsteht so eine Gesamtheit von Maßnahmen, welche in ihrem Zusammenwirken eine erhebliche Reduktion der CO₂-Emissionen bewirken und zudem die Wirtschaftsweise sowie das Gesellschaftsleben erheblich umgestalten werden. Daher sind für einen wirksamen Klimaschutz die aufgeführten Maßnahmen in ihrer Gesamtheit notwendig. Das Herausbrechen einzelner Bestandteile kann die Wirksamkeit empfindlich gefährden.

Es handelt sich dabei um das umfangreichste Paket von Vorschlägen der Kommission im Bereich Klima und Energie als Grundlage für neue Arbeitsplätze sowie eine resiliente nachhaltige europäische Wirtschaft der Zukunft, um die rechtlichen Voraussetzungen für eine gerechte, kosteneffiziente und wettbewerbsorientierte Realisierung der gesetzten Klimaziele zu schaffen.¹⁷

4. Tragfähige Wirtschaft durch Klimaschutz

a) Grundlagenfunktion des Klimaschutzes

Damit betont die Kommission einerseits den Klimaschutz, aber zugleich dessen Grundlagenfunktion für neue Arbeitsplätze und eine tragfähige europäische Wirtschaft. Das erinnert an die Konzeption des EU-Emissionshandels, für welchen das EuG betonte, dass die Realisierung der Klimaziele unter Wahrung der Bedürfnisse der Wirtschaft sowie der Arbeitsplätze zu

15 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 12.

16 Europäische Kommission, Pressemitteilung v. 14.7.2021, Europäischer Grüner Deal: Kommission schlägt Neuausrichtung von Wirtschaft und Gesellschaft in der EU vor, um Klimaziele zu erreichen, abrufbar unter https://ec.europa.eu/germany/news/20210714-eu-green-deal_de (letzter Abruf: 25.11.2021), S. 1.

17 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 2.

erfolgen hat.¹⁸ Dies korrespondiert mit der Festlegung der Eckpunkte der Gerechtigkeit, Kosteneffizienz und Wettbewerbsorientiertheit, um die Klimaziele zu verwirklichen.

Es geht daher nicht um die Durchsetzung von Klimaschutz um jeden Preis, sondern um dessen möglichst wirksame und wettbewerbsbezogene Umsetzung. Dieser erhält aber eine Grundlagenfunktion für die Wirtschaft und bildet so deren notwendigen Bestandteil, nicht den Gegenpol.

Dadurch sollen nicht die Grundpfeiler des EU-Wirtschaftssystems beseitigt werden, sondern in den Dienst des Klimaschutzes gestellt und auf diese Weise langfristig erhalten werden. Wirtschaft kann nur durch Klimaschutz bestehen. Zugleich wird aber die Fortexistenz und Fortentwicklung der Wirtschaft betont. Auf diese Weise wird die Nachhaltigkeit durch Klimaschutz mit dem dreiseitigen Zieldreieck Ökonomie, Ökologie und Soziales verwirklicht und so eine tragfähige europäische Wirtschaft der Zukunft geschaffen, welche im Wettbewerb bestehen kann und Arbeitsplätze weiterhin zur Verfügung stellt, die allerdings vielfach einen neuen Zuschnitt haben, nämlich in Folge der Maßnahmen für den Klimaschutz, so durch Renovierungen im Gebäudebereich, den Bau von Elektroautos statt von Autos mit konventionellen Antrieben etc.

b) Ausgleich von Ökologie, Ökonomie und Sozialem

Damit werden im Ansatz die Bedürfnisse von Ökologie, Ökonomie und Sozialem versöhnt, wie es dem internationalen Ansatz der nachhaltigen Entwicklung entspricht,¹⁹ der auch in Art. 3 Abs. 3 EUV niedergelegt ist. Demgegenüber betont das BVerfG in seinem Klimabeschluss fast nur den Klimaschutz und propagiert, dass sich darauf bezogene Maßnahmen gegenüber den Freiheitsgrundrechten regelmäßig durchsetzen werden.²⁰ Damit weicht das BVerfG vom dreiseitigen Zieldreieck der Nachhaltigkeit ab.²¹

c) Neuausrichtung der Wirtschaft

Demgegenüber betont die Kommission den notwendigen Ausgleich, der aber nur gelingen kann, wenn sich die Wirtschaft klimafreundlich fortent-

18 EuG, Urt. v. 23.11.2005 – T-178/05, ECLI:EU:T:2005:412, Rn. 60 – Vereinigtes Königreich/Kommission.

19 Näher *Frenz*, in: ders./Müggenborg/Cosack/Henning/Schomerus (Hrsg.), EEG, 5. Aufl. 2018, § 1 Rn. 25 ff.

20 BVerfG, Beschl. v. 24.3.2021 – 1 BvR 2656/18 u. a., ECLI:DE:BVerfG:2021:rs20210324.1b-vr265618, Rn. 198.

21 Ausführlich *Frenz*, Grundzüge des Klimaschutzrechts, 2. Aufl. 2022, Rn. 1 ff.

wickelt und sich damit in den Dienst des Klimaschutzes stellt, indem sie eine effektive Kreislaufwirtschaft verwirklicht, Schadstofffreiheit sicherstellt sowie nachhaltige und intelligente Mobilität etc. schafft. Die Wirtschaft muss damit die von der EU-Kommission präsentierte Strategie verfolgen, um überlebensfähig zu sein, und zwar auch im internationalen Wettbewerb, welcher immer stärker auf den Klimaschutz fokussiert werden muss. Die EU soll hier eine weltweite Führungsrolle als Akteur und Vorbild einnehmen.²²

Dadurch erfindet sich die konventionelle Wirtschaft praktisch neu. Damit schafft die Kommission ein Modell der Nachhaltigkeit für die Zukunft, in der zwar weiterhin ökologische, ökonomische und soziale Belange gleichermaßen verfolgt werden können. Die ökonomische Seite wird aber durch den Klimaschutz wesentlich bestimmt. Dieser ist notwendiger prägender Faktor; ohne ihn ist wirtschaftliche Entwicklung nicht mehr möglich.

d) Klimaschutz als integraler Bestandteil

Dadurch ist Klimaschutz integraler Bestandteil der ökonomischen Entwicklung und damit kein Gegensatz zu ihr, sondern in sie implementiert. Auf diese Weise wird der Nachhaltigkeitsgedanke den Gegebenheiten des Klimawandels angepasst und zukunftsfähig gemacht. Das Zieldreieck ist dadurch gekennzeichnet, dass der Klimaschutz nicht nur die ökologische Seite prägt, sondern auch die ökonomische sowie ebenfalls die soziale, so wenn es um die Erhaltung von Arbeitsplätzen geht, die nur durch Klimaschutz möglich ist, sowie um die Vermeidung sozialer Schieflagen zulasten der Verlierer des Klimawandels.

5. Nachhaltiger Sozialstaat

a) Soziale Sicherung

Gerade der soziale Aspekt wird im Klimapaket „Fit for 55“ sehr stark betont, und zwar einmal durch den Verweis auf die Schaffung von Grundlagen für neue Arbeitsplätze, aber auch durch das notwendige Auffangen von Auswirkungen des Umbaus von Wirtschaft und Gesellschaft auf sozial schwache Haushalte, etwa über den Klima-Sozialfonds. Damit werden durch das EU-Klimapaket sowohl die Grundlagen für den künftigen Sozialstaat geschaffen, dass nämlich die Wirtschaft weiterhin funktioniert - und so die finanziellen Ressourcen zur Verfügung stehen - sowie Arbeitsplätze

22 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 2.

anbietet. Zudem werden negative Entwicklungen für viele Haushalte durch Steigerungen etwa des Energiepreises und Renovierungsverpflichtungen in Gebäuden aufgefangen, die Einzelne nicht zu schultern vermögen.

b) Zukunftsfähige, solidarische Nachhaltigkeit

Im EU-Klimapaket spiegelt sich damit die Nachhaltigkeit in Form des Dreiecks Ökologie, Ökonomie und Soziales umfassend wider. Diese Konzeption, wie sie aus Art. 3 Abs. 3 EUV folgt, wird so gesichert und zukunftsfit gemacht. Indem so auch künftige Generationen die Grundlagen für die Nachhaltigkeit weiterhin zur Verfügung gestellt bekommen, wird zugleich die intergenerationelle Komponente der Nachhaltigkeit verwirklicht. Das EU-Klimapaket baut auf umfassende Solidarität sowohl zwischen den Generationen als auch zwischen den Mitgliedstaaten und verschiedenen Teilen der Gesellschaft.²³ Damit wird aufgegriffen, dass die Solidarität ein wesentlicher Grundsatz des Green Deal ist.²⁴

Demgegenüber berücksichtigt der BVerfG-Klimabeschluss sowohl die ökonomische Seite als auch die soziale Dimension des Klimaschutzes kaum. Damit ist das EU-Klimapaket wesentlich umfassender und zugleich nachhaltiger, indem es sowohl ökonomisch als auch sozial deutlich austarierter ist als die Konzeption des BVerfG, das den Sozialstaat und die ökonomische Seite des Grundgesetzes nahezu völlig außen vor lässt.²⁵ Erst das EU-Klimapaket betont die notwendige Verbindung von Wirtschaft und Klimaschutz.

6. Beibehaltung des Marktes

Die Ausrichtung der EU-Kommission auf die Nachhaltigkeit und damit auch auf die Bedürfnisse der Wirtschaft zeigt sich in den verschiedenen Einzelmaßnahmen, trotz bzw. wegen der notwendigen Anpassung der Wirtschaft, gerade weil diese sehr stark auf den Klimaschutz ausgerichtet sind. Es geht dann immer wieder auch um Kosteneffizienz und Wettbewerbsfähigkeit der Wirtschaft sowie die Bekämpfung von Energiearmut, so durch den Klima-Sozialfonds.

Dementsprechend liegt der Schwerpunkt der EU-Maßnahmen weiterhin im EU-Emissionshandel, welcher als kosteneffizientes Instrument ange-

23 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 5.

24 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 5.

25 S. demgegenüber die Ableitung der Nachhaltigkeit aus Art. 20a GG, dem Sozialstaatsprinzip und den Wirtschaftsgrundrechten bei *Frenz*, Sustainable Development durch Raumplanung, 2000, S. 56 ff.

sehen wird, das auch bisher schon erfolgreich funktioniert hat. „Die Erfahrungen der letzten 16 Jahre haben gezeigt, dass der Emissionshandel ein äußerst wirksames Instrument ist, um Emissionen auf kosteneffiziente Weise zu verringern, während die so erzielten Einnahmen dazu verwendet werden können, den Übergang zu einer saubereren Produktion zu unterstützen und Innovationen zu fördern.“²⁶ Damit wird weiterhin auf Markt gesetzt, aber zugleich werden die daraus generierten Einnahmen für einen bestimmten Zweck verwendet. Zudem werden klare Ziele hinzugenommen, derer es neben einem CO₂-Preissignal bedarf.²⁷

7. Planung und Einbeziehung aller

Neben den Markt tritt daher stärker das planende Element. Dem dienen klare Ziele, wie sie in der zu novellierenden Lastenteilungsverordnung zu Lasten der Mitgliedstaaten vorgegeben sind.²⁸ Zudem geht es darum, alle mitzunehmen. Dies erfolgt einerseits durch das Auffangen von sozialen Verwerfungen und Problemen, aber auch durch das Anreizen der Änderung von Konsum- und Mobilitätsmustern, wozu vor allem jüngere Menschen bereit sind, „wenn sie entsprechend informiert werden, sodass sie ihren CO₂-Fußabdruck begrenzen und in einer ökologischeren und gesünderen Umwelt leben können.“²⁹

Es geht also um nichts weniger als die Änderung unserer Lebensweise im Interesse des Klimaschutzes, und dies in einer Weise, die sowohl kosteneffizient und damit wirtschaftsorientiert als auch sozial ist sowie die ganze Gesellschaft einbezieht und mitnimmt.

8. Maßnahmenübersicht

Zunächst wird an das Instrument des Emissionshandels angeknüpft, welches erheblich verschärft sowie auf neue Sektoren erstreckt werden soll. Erneuerbare Energien sollen verstärkt genutzt werden, was sich an die noch gar nicht lange novellierte Erneuerbare Energien-RL³⁰ anschließt.³¹ Weiter

26 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 7.

27 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 7.

28 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 7.

29 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 5.

30 Richtlinie (EU) 2018/2001 des Europäischen Parlaments und des Rates vom 11.12.2018 zur Förderung der Nutzung von Energie aus erneuerbaren Quellen, ABl. L 328 2018, S. 82 ff.

31 S. Frenz, Grundzüge des Klimaschutzrechts, 2. Aufl. 2022, Rn. 162 ff.

soll die Energieeffizienz gesteigert werden, ebenfalls in Fortführung der gleichermaßen noch gar nicht lange novellierten Energieeffizienz-RL.³²

Zudem sollen emissionsarme Verkehrsträger schneller eingeführt und mit der entsprechenden Infrastruktur sowie den dazugehörigen Kraftstoffen ausgestattet werden. Die Steuerpolitik soll an die Ziele des europäischen Green Deal angeglichen werden. Damit wird das Feld der Steuerpolitik immer mehr zum Gegenstand der EU-Gesetzgebung, obwohl es im Ausgangspunkt national geregelt ist, allerdings schon im Zuge des EU-Corona-Konjunkturpakets ins Blickfeld geriet. Weiter geht es um Maßnahmen, um die Verlagerung von CO₂-Emissionen zu vermeiden, schließlich werden Instrumente vorgestellt, um die natürlichen CO₂-Senken zu erhalten und zu vergrößern.³³

V. Ausweitung und Verschärfung des Emissionshandels sowie Begleitmaßnahmen

1. Reform des EU-Emissionshandels

Bislang bildet das EU-Emissionshandelssystem mit seiner Bepreisung des CO₂-Ausstoßes durch die Notwendigkeit, dafür Zertifikate zu kaufen, das zentrale Instrument im europäischen Klimaeuroparecht. Dadurch konnten die Emissionen aus der Stromerzeugung und aus energieintensiven Industriezweigen in den letzten Jahren um 42,8 % reduziert werden.³⁴ Damit wurde ein erheblicher Erfolg sichergestellt.

Schon bislang wurden die Obergrenzen für die Emissionen, die europaweit zulässig sind, jedes Jahr gesenkt. Dies soll nun noch stärker erfolgen; ebenso soll die jährliche Kürzung erhöht werden.³⁵ Damit wird das Budget der zur Verfügung stehenden Emissionshandelszertifikate gedeckelt und

32 Richtlinie 2012/27/EU des Europäischen Parlaments und des Rates vom 25.10.2012 zur Energieeffizienz, ABl. L 315 2012, S. 1 ff. zul. geändert durch ABl. 2019 L 158, S. 125; S. Frenz, Grundzüge des Klimaschutzrechts, 2. Aufl. 2022, Rn. 196 ff.

33 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final.

34 Europäische Kommission, Pressemitteilung v. 14.7.2021, Europäischer Grüner Deal: Kommission schlägt Neuausrichtung von Wirtschaft und Gesellschaft in der EU vor, um Klimaziele zu erreichen, abrufbar unter https://ec.europa.eu/germany/news/20210714-eu-green-deal_de (letzter Abruf: 25.11.2021), S. 1; Frenz, UPR 2021, 338 ff. auch für das Folgende.

35 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 8 sowie Proposal for a directive of the European Parliament and of the Council amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union, Decision (EU) 2015/1814 concerning the establishment and operation of a market stabili-

auf diese Weise zugleich eine Höchstgrenze für Emissionen geschaffen und weiter verringert, weil jeweils Zertifikate für den Ausstoß von Emissionen notwendig sind.

Zudem soll das EU-Emissionshandelssystem ausgeweitet werden. Erstmals sollen Schifffahrtsemissionen einbezogen werden. Zudem zielt die Kommission nunmehr auf eine Abschaffung der kostenlosen Emissionszertifikate für den Luftverkehr und auf die Gleichziehung mit dem internationalen System zur Verrechnung und Reduzierung von Kohlenstoffdioxid für die internationale Luftfahrt (CORSA).³⁶

2. Separater Emissionshandel für Straßenverkehr und Gebäude

Gänzlich unerfasst auf europäischer Ebene sind bisher der Straßenverkehr und der Gebäudesektor. Hier zielt die Kommission auf ein separates neues Emissionshandelssystem für die Treib- bzw. Brennstoffversorgung in diesen Sektoren.³⁷ Damit würde auf europäischer Ebene verwirklicht, was im BEHG für Deutschland eingeführt ist. Bereits bei der Herausbildung dieses nationalen Emissionshandelssystems war diskutiert worden, ob es gegebenenfalls ein gesamteuropäisches System geben werde und wie dieses auszugestalten sei, ob nämlich nach dem Downstream-Ansatz wie der Emissionshandel auf EU-Ebene oder nach dem Upstream-Ansatz, welcher an das Inverkehrbringen von Brennstoffen und damit an die vorgelagerte Ebene zum Ausstoß von Emissionen anknüpft.³⁸

Zudem ging es in Deutschland auch um die Einbeziehung von Abfällen.³⁹ Dadurch, dass die Kommission nur den Straßenverkehr und Gebäude einbeziehen will, bleibt der Abfallbereich weiterhin außen vor.

Dass die Kommission ein separates neues Emissionshandelssystem für die Treib- bzw. Brennstoffversorgung in den Sektoren Straßenverkehr und Gebäude einführen will, beinhaltet eine eigene Konzeption und damit ein Emissionshandelssystem, wie es für Deutschland seit 1.1.2021 nach dem

ty reserve for the Union greenhouse gas emission trading scheme and Regulation (EU) 2015/757, COM(2021) 551 final.

36 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 8 sowie Proposal for a directive of the European Parliament and of the Council amending Directive 2003/87/EC as regards aviation's contribution to the Union's economy-wide emission reduction target and appropriately implementing a global market-based measure, COM(2021) 552 final.

37 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 9.

38 Etwa *Schink*, in: Frenz (Hrsg.), *Gesamtkommentar Klimaschutzrecht*, 2. Aufl. 2022, § 2 BEHG Rn. 29.

39 Näher u. abl. *Frenz/Schink/Ley*, in: Frenz (Hrsg.), *Gesamtkommentar Klimaschutzrecht*, 2. Aufl. 2022, BEHG Ausblick, Rn. 1 ff.

BEHG greift. Für einen raschen Übergang zu emissionsfreier Mobilität bedarf es aber neben dem CO₂-Preis weiterer Maßnahmen, so einer hinreichenden Ladeinfrastruktur.⁴⁰

3. Flankierende Finanzierungen

a) Gestärkter Innovations- und Modernisierungsfonds

Hinzu kommt der Vorschlag der Kommission für eine Aufstockung des Innovationsfonds und des Modernisierungsfonds. Diese betreffen Fördermöglichkeiten auf europäischer Ebene. Der Innovationsfonds unterstützt Investitionen von großen Unternehmen und KMU für saubere Energien und soll mehr Mittel für innovative Projekte sowie Infrastrukturen zur Dekarbonisierung der Industrie erhalten – mit besonderem Augenmerk auf den Sektoren des CO₂-Grenzausgleichssystems.⁴¹

Der erweiterte Modernisierungsfonds soll in seiner Mittelausstattung vom CO₂-Preis abhängen, ist mithin auf den EU-Emissionshandel bezogen. Er soll zudem durch 192,5 Mio. Zertifikate aufgestockt werden und Mitgliedstaaten zugutekommen, welche einen höheren Anteil fossiler Brennstoffe an ihrem Energiemix, höhere Treibhausgasemissionen, höhere Energieintensität und ein niedrigeres Pro-Kopf-Bruttoinlandsprodukt haben.⁴² Damit können die Mittel auf Staaten wie Polen fokussiert werden, in welchen durch eine stark ausgeprägte Kohleverstromung ein besonderes Minderungspotenzial für CO₂-Emissionen besteht und die zugleich nicht die höchste Wirtschaftskraft in der EU haben, sodass sie den tiefgreifenden Wandel schwerlich allein, sondern besser mit zusätzlicher Unterstützung stemmen können.

b) Klima-Sozialfonds

Unionsweit gilt es diejenigen Personen aufzufangen, welche unter Preissteigerungen bei fossilen Brennstoffen in Folge des darauf bezogenen Emissionshandels besonders leiden. Die Energiearmut stellt aktuell schon für bis zu 34 Mio. Menschen in der EU ein Problem dar.⁴³ Daher plant die Kommission, aufbauend auf bestehenden Solidaritätsmechanismen wie den Kohäsionsfonds für einen gerechten Übergang und den Europäischen Sozialfonds Plus sowie diese ergänzend, einen Klima-Sozialfonds, welcher für

40 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 8.

41 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 8.

42 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 6.

43 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 6.

2025 bis 2032 mit EU-Haushaltsmitteln durch Einnahmen aus dem neuen Emissionshandelssystem in Höhe von 72,2 Mrd. € ausgestattet werden soll und den Mitgliedstaaten eröffnet wird, verletzlichere Haushalte mit niedrigeren und mittleren Einkommen, Verkehrsnutzer und Kleinstunternehmer zu unterstützen, die von den Auswirkungen der Ausweitung des Emissionshandels auf Gebäude und Verkehr betroffen sind.

Weiter sollen Investitionen in die Steigerung der Energieeffizienz und die Modernisierung von Gebäuden gefördert werden, ebenso eine saubere Wärme- und Kälteversorgung und die Integration erneuerbarer Energien, damit eine nachhaltige Senkung sowohl der CO₂-Emissionen als auch der Energiekosten vulnerabler Haushalte und Kleinstunternehmen ermöglicht werden.⁴⁴ Auch der Zugang zu emissionsfreier und emissionsarmer Mobilität ist finanzierbar. Dies kann bis zu einer direkten Einkommensstützung aus dem Fonds gehen, während grüne Investitionen neben dem Fonds auch aus anderen Quellen wie der Aufbau- und Resilienzfähigkeit und dem Europäischen Fonds für regionale Entwicklung finanziert werden.⁴⁵

25 % der zu erwartenden Einnahmen aus dem neuen Emissionshandel für den Gebäude- und Straßenverkehrssektor sollen in diesen Klima-Sozialfonds fließen, nachdem schon ein Jahr vor Beginn dieses Handels dem Fonds Geld zur Verfügung gestellt wurde. Die nationalen Beiträge sollen mindestens 50 % der Kosten des Fonds ausmachen.

Die Kommission wird den Klima-Sozialfonds durch eine Änderung des Eigenmittelbeschlusses und des Mehrjährigen Finanzrahmens 2021 bis 2027 einbeziehen und weitere Leitlinien für die Mitgliedstaaten vorschlagen, um aufzuzeigen, wie die sozialen und arbeitsrechtlichen Aspekte der Klimawende am besten angegangen werden können.⁴⁶ 2028 soll die Funktionsweise des Klima-Sozialfonds bewertet werden; dabei sollen die angestrebten Anforderungen der zu überarbeitenden Lastenteilungsverordnung und der Anwendung des Emissionshandels auf die neuen Sektoren einbezogen werden.⁴⁷

c) Erhebliche EU-Klimaausgaben

Daraus ergeben sich erhebliche Klimaausgaben des EU-Haushalts. Daneben resultieren erhebliche Finanzierungen aus dem EU-Coronakonjunkturpaket

44 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 6.

45 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 6.

46 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 6.

47 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 6.

in Höhe von 750 Mrd. €, welche als Kredite aufgenommen wurden⁴⁸ und zu einem Großteil in Klimaschutzprojekten verwendet werden sollen. Der Green Deal seinerseits sieht vor, das erhebliche Teile des EU-Haushalts für die grundlegende Neuausrichtung unserer Wirtschaft und Gesellschaft im Interesse des Klimaschutzes verwendet werden sollen.

d) Ergänzung durch die Mitgliedstaaten

Hier greift nun die EU-Kommission ein und schlägt eine Ergänzung vor, in welcher die Mitgliedstaaten die Gesamtheit ihrer Einnahmen aus dem Emissionshandel für klima- und energiebezogene Projekte bereitstellen sollen. Dabei legt die Kommission als inhaltliche Komponente darauf Wert, dass ein bestimmter Teil der Einnahmen aus dem neuen Emissionshandelssystem für den Straßenverkehr und den Gebäudesektor vorgesehen werden sollte, um etwaige soziale Auswirkungen auf sozialschwächere Privathaushalte, Kleinstunternehmen und Verkehrsteilnehmer abzufedern.⁴⁹ Dies ist die konsequente und zugleich notwendige Fortsetzung der Ausweitung des Emissionshandels auf diese Bereiche.

Denn gerade im Straßenverkehr und im Gebäudesektor werden nicht wie nach dem EU-Emissionshandelssystem große Unternehmen belastet, sondern eben Privathaushalte, Kleinstunternehmen und Verkehrsteilnehmer. Dadurch entstehen leicht soziale Härten, zumal wenn die Zertifikatpreise für das Inverkehrbringen von Treib- bzw. Brennstoffen steigen, wie dies notwendig ist, um Reduktionserfolge zu erzielen und bereits im § 10 BEHG vorgesehen ist. Insoweit wurde erst im Juni eine starke Anhebung der Zertifikatpreise bis zu einem Mindestniveau von 100 € bis 2030 vom Präsidenten des Umweltbundesamtes in den Raum gestellt.⁵⁰

VI. Lastenteilungsverordnung für die Mitgliedstaaten

Das EU-Emissionshandelssystem hat unionsweite Reduktionsziele. Hingegen greift die EU Kommission die einzelnen Beiträge der Mitgliedstaaten auf. Ihnen sollen in der zu überarbeitenden Lastenteilungsverordnung⁵¹

48 S.o. II. 2.

49 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 5.

50 Umweltbundesamt zu Klimaschutz "Der CO₂-Preis wird steigen müssen", abrufbar unter <https://www.tagesschau.de/inland/umweltbundesamt-co2-preis-103.html> (letzter Abruf: 25.11.2021).

51 European Commission, Proposal for a regulation of the European Parliament and of the Council amending Regulation (EU) 2018/842 on binding annual greenhouse gas emission

neue strengere Emissionssenkungsziele für Gebäude, Verkehr, Landwirtschaft, Abfallwirtschaft und kleine Unternehmen zugewiesen werden. Damit wird der Klimaschutz in zahlreiche Sektoren verbindlich hineingetragen und die Mitgliedstaaten werden verstärkt in die Pflicht genommen — mit einer gewissen Flexibilität, die Anstrengungen zwischen der Lastenteilungsverordnung und dem LULUCF Sektoren aufzuteilen.⁵² Dies erfolgt allerdings nicht pauschal, sondern die Kommission verweist darauf, dass den unterschiedlichen Ausgangssituationen und Kapazitäten in den einzelnen Mitgliedstaaten Rechnung getragen und das jeweilige Pro-Kopf-Bruttoinlandsprodukt zugrunde gelegt sowie Anpassungen aus Gründen der Kosteneffizienz vorgenommen werden.⁵³ Darin zeigt sich die Berücksichtigung von Solidarität und Fairness nach Art. 2 Abs. 2 EU-Klimagesetz.

VII. Landnutzung

1. *Gemeinsame Verantwortlichkeit der Mitgliedstaaten für den CO₂-Abbau durch Senken*

Klima- und Biodiversitätskrise sind gemeinsam zu betrachten. Die Regeneration der empfindlichen Land- und Meeresökosysteme kann sie zum Verbündeten bei der Bekämpfung des Klimawandels machen; für die Absorption und Speicherung von mehr Kohlenstoff gilt es die Natur wiederherzustellen und die biologische Vielfalt wiederzubeleben.⁵⁴

Für die Entfernung von CO₂ aus der Atmosphäre will die Kommission in der Verordnung für Landnutzung, Forstwirtschaft und Landwirtschaft (LULUCF)⁵⁵ ein EU-Gesamtziel für den CO₂-Abbau durch natürliche Senken im Umfang von 310 Mio. Tonnen CO₂-Emissionen bis 2030 festlegen.⁵⁶ Nationale Zielvorgaben macht die Kommission insoweit nicht verbindlich,

reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement, COM(2021) 555 final.

52 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 13.

53 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 7.

54 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 12.

55 European Commission, Proposal for a regulation of the European Parliament and of the Council amending Regulations (EU) 2018/841 as regards the scope, simplifying the compliance rules, setting out the targets of the Member States for 2030 and committing to the collective achievement of climate neutrality by 2035 in the land use, forestry and agriculture sector, and (EU) 2018/1999 as regards improvement in monitoring, reporting, tracking of progress and review, COM(2021) 554 final.

56 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 13.

verweist aber darauf, dass sie die Pflege und die Vergrößerung der Senken durch die Mitgliedstaaten gewährleisten, damit das Gesamtziel erreicht wird.

Die EU zielt dabei bis 2035 auf Klimaneutralität in den Sektoren Landnutzung, Forstwirtschaft und Landwirtschaft, und zwar auch bei den landwirtschaftlichen Nicht-CO₂-Emissionen, so aus dem Einsatz von Düngemitteln oder der Viehhaltung.⁵⁷ Deutschland ging mit dem neuen § 3a KSG und seinen Negativemissionen darüber deutlich hinaus.⁵⁸

2. EU-Waldstrategie

Weiter zielt die Kommission auf die Verbesserung der Quantität, Qualität und Resilienz der Wälder durch die EU-Waldstrategie; sie will Forstwirtschaftsbetriebe und die forstbasierte Bioökonomie unterstützen und dabei für Nachhaltigkeit bei Holzeinschlag und Nutzung von Biomasse sowie den Erhalt der biologischen Vielfalt sorgen. Die EU-Waldstrategie beinhaltet einen Plan, 3 Mrd. Bäume in ganz Europa bis 2030 zu pflanzen.⁵⁹

VIII. Energiesektor

1. Mehr erneuerbare Energien

Aus der Erzeugung und dem Verbrauch von Energie resultieren 75 % der CO₂-Emissionen. Daher ist ein schnellerer Übergang zu einem umweltfreundlicheren Energiesystem von grundlegender Bedeutung.⁶⁰ Deshalb erhöht die Kommission die Zielvorgabe für die Erzeugung von Energie aus erneuerbaren Quellen bis 2030 in der Richtlinie über erneuerbare Energien von 32 % (so bisher Art. 3 EU-Klimagesetz) auf 40 %. Dazu sollen alle Mitgliedstaaten beitragen, ohne dass allerdings Ausbauziele für die jeweiligen EU-Staaten festgelegt werden. Deutschland strebt nach dem neuen Koalitionsvertrag 80 % Ökostromausbau bis 2030 an.⁶¹

57 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 13.

58 *Frenz*, Grundzüge des Klimaschutzrechts, 2. Aufl. 2022, Rn. 704 ff.

59 Europäische Kommission, Pressemitteilung v. 14.7.2021, Europäischer Grüner Deal: Kommission schlägt Neuausrichtung von Wirtschaft und Gesellschaft in der EU vor, um Klimaziele zu erreichen, abrufbar unter https://ec.europa.eu/germany/news/20210714-eu-green-deal_de (letzter Abruf: 25.11.2021), S. 2.

60 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 11.

61 Koalitionsvertrag zwischen SPD, Bündnis 90/Die Grünen und FDP vom 24.11.2021, S. 56.

Die Kommission will sachbezogene spezifische nationale Richtwerte vorschlagen, nämlich für die Nutzung erneuerbarer Energien in den Sektoren Verkehr, Heizung und Kühlung, Gebäude und Industrie.⁶² Die Mitgliedstaaten sollen so unterstützt werden, sektorenübergreifende Ziele und Maßnahmen zu kombinieren und ihr Potenzial für kosteneffiziente erneuerbare Energien in allen Branchen zu nutzen; sie sollen auf dieser Basis die Elektrifizierung vorantreiben oder in Sektoren wie der Industrie und dem Verkehr, wo dies schwieriger ist, die Verbreitung erneuerbarer Kraftstoffe (etwa sauberer Wasserstoff) fördern.⁶³

Spezifisch für die Bioenergie sollen die Nachhaltigkeitskriterien für ihre Nutzung verstärkt werden: der Anwendungsbereich ist zu erweitern, ebenso die Gebiete, die nicht für die Gewinnung von Bioenergie genutzt werden sollen.⁶⁴ Die Mitgliedstaaten müssen die Förderregeln so ausgestalten, dass die Wahrung des Grundsatzes der Kaskadennutzung für Holzbiomasse gewährleistet ist, nämlich die Bevorzugung der Holznutzung mit dem höchsten Mehrwert; zudem sind schädliche Auswirkungen auf die biologische Vielfalt zu vermeiden.⁶⁵

2. Weniger Energieverbrauch

Sodann wendet sich die Kommission der Senkung des Energieverbrauchs insgesamt zu, sodass Emissionen erst gar nicht entstehen und sogleich Energiearmut bekämpft wird, die als soziale Armut im Gefolge hoher Energiepreise verstanden wird. Dem soll vor allem der Klima-Sozialfonds⁶⁶ gegensteuern.

Nach der zu novellierenden Energieeffizienz-RL⁶⁷ soll sich der Energieverbrauch bis 2030 um 9 % gegenüber den Basisprojektionen verringern.⁶⁸ Die nationalen Beiträge sollen nach einer neuen Formel berechnet werden.⁶⁹ Durch sie wird die jährliche Energieeinsparverpflichtung der Mitgliedstaaten auf fast das Doppelte erhöht.⁷⁰ Gebäuderenovierungen zur bes-

62 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 11.

63 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 11 f.

64 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 19.

65 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 13.

66 S.o. V. 3. b).

67 European Commission, Proposal for a directive of the European Parliament and of the Council on energy efficiency, COM(2021) 558 final.

68 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 12.

69 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 12.

70 Europäische Kommission, Pressemitteilung v. 14.7.2021, Europäischer Grüner Deal: Kommission schlägt Neuausrichtung von Wirtschaft und Gesellschaft in der EU vor, um Klima-

seren Energieeffizienz und Ökostromnutzung sollen schneller durchgeführt werden.⁷¹ Dem öffentlichen Sektor wird eine Verpflichtung zur Renovierung seines Gebäudebestands in Höhe von 3 % jährlich auferlegt, sodass die Renovierungswelle voranschreitet, Arbeitsplätze entstehen sowie der Energieverbrauch ebenso wie die Kosten für den Steuerzahler heruntergehen.⁷²

3. Klimafreundliche Energiebesteuerung

Die EU zielt weiter auf ein umfassendes Besteuerungssystem für Energieerzeugnisse, welches den Binnenmarkt schützt und verbessert sowie den grünen Wandel fördert.⁷³ Die Überarbeitung der Energiebesteuerung wird bei der CO₂-Reduktion im Rahmen der Luftfahrt eigens angesprochen.⁷⁴

Die Kommission verweist auf den Vorschlag für eine überarbeitete Energiebesteuerungsrichtlinie⁷⁵, wodurch die Besteuerung von Energieerzeugnissen auf die Energie- und Klimapolitik der EU, aber auch mit den sozialen Auswirkungen abgestimmt wird.⁷⁶ Sie benennt die Förderung sauberer Technologien sowie die Abschaffung überholter Steuerbefreiungen und ermäßigter Steuersätze, welche immer noch die Nutzung fossiler Brennstoffe fördern.⁷⁷ Die neuen Regeln sollen im Gegensatz dazu die schädlichen Auswirkungen des Energiesteuerwettbewerbs reduzieren; die Mitgliedstaaten sollen so zu Einnahmen aus Ökosteuern kommen.⁷⁸ Damit erlangen sie die Mittel, die sie zur Förderung klimafreundlicher Maßnahmen im Gebäudebereich benötigen, die sich finanziell schwache Private nicht leisten können. Dafür sollen sie schon zumindest einen Teil der Einnahmen aus dem neuen

ziele zu erreichen, abrufbar unter https://ec.europa.eu/germany/news/20210714-eu-green-eal_de (letzter Abruf: 25.11.2021), S. 2.

71 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 12.

72 Europäische Kommission, Pressemitteilung v. 14.7.2021, Europäischer Grüner Deal: Kommission schlägt Neuausrichtung von Wirtschaft und Gesellschaft in der EU vor, um Klimaziele zu erreichen, abrufbar unter https://ec.europa.eu/germany/news/20210714-eu-green-eal_de (letzter Abruf: 25.11.2021), S. 2.

73 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 12.

74 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 11.

75 European Commission, Proposal for a council directive restructuring the Union framework for the taxation of energy products and electricity, COM(2021) 563 final.

76 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 12.

77 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 12.

78 Europäische Kommission, Pressemitteilung v. 14.7.2021, Europäischer Grüner Deal: Kommission schlägt Neuausrichtung von Wirtschaft und Gesellschaft in der EU vor, um Klimaziele zu erreichen, abrufbar unter https://ec.europa.eu/germany/news/20210714-eu-green-eal_de (letzter Abruf: 25.11.2021), S. 2.

Emissionshandelssystem für den Straßenverkehr und den Gebäudesektor verwenden.⁷⁹

IX. Verkehrsträger

1. Straßenverkehr

Im Verkehrsbereich geht es zunächst um die Reduktion der zunehmenden Emissionen aus dem Straßenverkehr, welche durch eine Kombination von Maßnahmen in Ergänzung zum auch für diesen Bereich vorgesehenen Emissionshandel⁸⁰ gefordert wird. Die Kommission will den Übergang zur emissionsfreien Mobilität beschleunigen und daher strengere CO₂-Emissionsnormen für Pkw und leichte Nutzfahrzeuge festlegen.⁸¹ Die durchschnittlichen jährlichen Emissionen neuer Fahrzeuge sollen ab 2030 55 % und ab 2035 100 % niedriger sein als 2021, sodass letztlich alle ab 2035 zugelassenen Neuwagen emissionsfrei sind.⁸² Dies entspricht der Verpflichtung von 24 Staaten auf der Klimakonferenz von Glasgow, nur noch bis 2040 und auf einigen wichtigen Märkten nur noch bis 2035 Verbrennerfahrzeuge zuzulassen.⁸³ Deutschland will nach dem neuen Koalitionsvertrag bis 2030 15 Millionen Elektrofahrzeuge auf der Straße haben und die Mobilitätswende voranbringen; für die Frage des Endes der Zulassung von Verbrennermotoren wird auf die europäische Regelung verwiesen.⁸⁴ Schließlich müssen die verkehrsbedingten Gesamtemissionen bis 2050 um 90 % gesenkt werden, um Klimaneutralität zu erreichen.⁸⁵

Für diesen großen Umbau bedarf eines verlässlichen EU-weiten Netzes, in dem diese Fahrzeuge aufgeladen oder aufgetankt werden können. Dementsprechend soll die überarbeitete Verordnung über Infrastruktur für alter-

79 S.o. V. 2.

80 S.o. V. 2.

81 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 10.

82 Europäische Kommission, Pressemitteilung v. 14.7.2021, Europäischer Grüner Deal: Kommission schlägt Neuausrichtung von Wirtschaft und Gesellschaft in der EU vor, um Klimaziele zu erreichen, abrufbar unter https://ec.europa.eu/germany/news/20210714-eu-green-deal_de (letzter Abruf: 25.11.2021), S. 2.

83 F.A.Z. v. 10.11.2021, 24 Staaten und sechs Autobauer wollen Ende des Verbrenners abschließen, abrufbar unter <https://www.faz.net/aktuell/wirtschaft/klima-nachhaltigkeit/glasgow-ende-des-verbrennungsmotors-bei-pkw-bis-2040-17626912.html> (letzter Abruf: 25.11.2021).

84 Koalitionsvertrag zwischen SPD, Bündnis 90/Die Grünen und FDP vom 24.11.2021, S. 51.

85 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 10.

native Kraftstoffe⁸⁶ den Ausbau der Ladekapazität in den Mitgliedstaaten nach Maßgabe der Absatzmengen emissionsfreier Fahrzeuge festzuschreiben; elektrische Fahrzeuge sollen alle 60 km aufgeladen werden können, eine Betankung mit Wasserstoff soll alle 150 km möglich sein.⁸⁷

2. Flug- und Schiffsverkehr

Auch für Flug- und Schifftreibstoffe reicht der Emissionshandel allein⁸⁸ nicht aus. Flugzeuge und Schiffe müssen entsprechend der Verordnung Infrastruktur für alternative Kraftstoffe in großen Häfen und Flughäfen über Zugang zu sauberem Strom verfügen. Kraftstoffanbieter werden im Rahmen der Initiative „ReFuelEU Aviation“ zur Beimischung von mehr nachhaltigen Flugkraftstoffen zu dem an Flughäfen in der EU angebotenen Turbinenkraftstoff verpflichtet. Dazu gehören auch synthetische CO₂-arme Kraftstoffe, die sogenannten E-Fuels.⁸⁹ Die Aufnahme für neue Luftfahrzeugkonfigurationen wie Wasserstoff und Strom soll die entstehende Allianz für emissionsfreie Luftfahrt sicherstellen.⁹⁰

Bei diesem Umbau sollen die Automobilindustrie und ihre Lieferkette durch Finanzmittel etwa an dem Innovationsfonds sowie durch Investitionsmöglichkeiten im Rahmen der Beihilfavorschriften für neue Geschäftschancen unterstützt werden.⁹¹ Die konsequente Fortsetzung ist die wettbewerbsrechtliche Zulässigkeit von Unternehmenskooperationen zur Entwicklung neuer Produkte und Produktbestandteile im Rahmen der E-Mobilität und alternativer Kraftstoffe.⁹² Weitere finanzielle Ansatzpunkte sind der Europäische Sozialfonds Plus (ESF+), der InvestEU und andere Finanzierungsprogramme der EU, um Umschulungen und Weiterbildungen zu unterstützen.⁹³

86 European Commission, Proposal for a regulation of the European Parliament and of the Council on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU of the European Parliament and of the Council, COM(2021) 559 final.

87 Europäische Kommission, Pressemitteilung v. 14.7.2021, Europäischer Grüner Deal: Kommission schlägt Neuausrichtung von Wirtschaft und Gesellschaft in der EU vor, um Klimaziele zu erreichen, abrufbar unter https://ec.europa.eu/germany/news/20210714-eu-green-deal_de (letzter Abruf: 25.11.2021), S. 2.

88 S.o. V. 1.

89 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 11.

90 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 11.

91 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 10.

92 Allgemein Frenz, in: Frenz (Hrsg.), Gesamtkommentar Klimaschutzrecht, 2. Aufl. 2022, Einf. F: Klimaschutz und Wettbewerbsregeln, Rn. 1 ff.

93 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 10.

Zugleich soll es eine Obergrenze für den Treibhausgasgehalt des Energieverbrauchs von Schiffen geben, die europäische Häfen anlaufen, um über die Initiative „FuelEU Maritime“ die Nutzung nachhaltiger Schiffskraftstoffe und emissionsfreier Technologien zu unterstützen.⁹⁴

X. Internationale Ausrichtung

1. CO₂-Grenzausgleichssystem

Durch den neuen Carbon Border Adjustment Mechanismus (CBAM) soll schrittweise für wenige ausgewählte Produkte aus der EU wie für solche von außerhalb der gleiche CO₂-Preis gezahlt werden. Damit ist das System nichtdiskriminierend und mit den WTO-Regeln vereinbar.⁹⁵ So soll sichergestellt werden, dass die europäischen Emissionssenkungen zu einem weltweiten Emissionsrückgang führen und die CO₂-Emissionen nicht außerhalb Europas verlagert werden, und zwar ohne weiterhin kostenlose Zertifikate auszugeben und um damit die Anreize zu klimafreundlichen Investitionen zu stärken. Zugleich sollen Industrieunternehmen in Drittländern und internationale Partner eine Motivation erhalten, Schritte in dieselbe Richtung zu unternehmen.⁹⁶

Der CBAM soll schrittweise hochgefahren werden, sodass die bisher zugeteilten kostenlosen Zertifikate allmählich auslaufen können, wodurch die Anreize für Innovationen verstärkt werden, und zwar sowohl für die Industrie in der EU als auch in Drittländern: Diese müssen dann ebenfalls einen CO₂-Preis bezahlen. Weiter können Letztere vom CBAM dadurch profitieren, dass ihre Produktionszyklen einen geringeren Kohlenstoffgehalt aufweisen als die in der EU oder dass sie schon durch ein ähnliches System der CO₂-Bepreisung belastet und damit bei dem neuen EU-Mechanismus entlastet werden können. Dies ist praktisch eine Aufforderung an die internationalen Partner, gemeinsam mit der EU mehr für den Klimaschutz zu tun.⁹⁷

94 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 11.

95 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 15.

96 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 15 f.

97 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 16.

2. Nachhaltige Unternehmensführung

Darin liegt zugleich der Nukleus für eine geopolitische Natur der Abkehr von fossilen Brennstoffen. Die EU muss daher auch außerhalb ihrer Grenzen einen stabilen Übergang gewährleisten, wozu die EU-Kommission alsbald neue Rechtsvorschriften zur Minimierung des Anteils der EU an der weltweiten Entwaldung und Waldschädigung vorlegen will; zudem will sie eine nachhaltige Unternehmensführung in den Unternehmensstrategien verankern.⁹⁸ Dadurch werden auch die Unternehmen in die Pflicht genommen – parallel zu dem Urteil des Gerichtshofs von Den Haag, welcher Shell zu einer Reduktion seiner CO₂-Emissionen bis 2030 gegenüber 2020 um 45% verpflichtete.⁹⁹ Hier geht es allerdings um nicht um konkrete Reduktionsverpflichtungen der Unternehmen, sondern um die Umgestaltung der Unternehmenspolitik hin zu mehr Klimafreundlichkeit. Diese bewirkt aber dann innerhalb der Unternehmen, dass CO₂-Emissionen reduziert werden. Andernfalls ist nämlich die Unternehmensführung nicht nachhaltig.

3. Kooperation mit anderen Staaten

In erster Linie hat aber die EU-Kommission die Zusammenarbeit mit anderen Staaten und internationalen Organisationen im Visier. Sie will die Klimaschutzdiplomatie der EU stärken, um die Verpflichtungen aus dem Übereinkommen von Paris weltweit zu verwirklichen. Diese Verpflichtungen wurden in der Klimakonferenz in Glasgow spezifiziert, die eigens die Stärkung von Partnerschaften zwischen Industrie- und Entwicklungsländern betont (Ziff. 72). Dafür will sie die ganze Breite der außenpolitischen Instrumente der EU einsetzen, um die Zusammenarbeit mit den internationalen Partnern zu verbessern und den globalen Übergang zu einer klimaneutralen Wirtschaft zu erleichtern.¹⁰⁰ Sie will sowohl in bilateralen Partnerschaften als auch in multilateralen Organisationen die Partner konsultieren, ihnen den Standpunkt der EU erläutern, sie unterstützen und möglichst auf ihre Belange eingehen, ohne aber von den Hauptzielen des Pariser Klimaabkommens abzurücken.¹⁰¹

Damit geht es vor allem um die Wahrung der groben Linien und damit der CO₂-Neutralität jedenfalls in der zweiten Hälfte des 21. Jahrhunderts,

98 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 16.

99 Gerichtshof Den Haag, Uitspraak op 26.5.2021 – C/09/571932 / HA ZA 19-379, ECLI:NL:RBDHA:2021:5337.

100 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 16.

101 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 16.

um das Ziel der Begrenzung der Erderwärmung auf deutlich unter 2 Grad Celsius und auf möglichst 1,5 Grad Celsius einzuhalten. Soweit diese Linien gewahrt sind, nimmt die Kommission damit auch in Kauf, von Unterzielen des Klimaabkommens von Paris abzurücken, wenn dadurch eine größere internationale Anstrengung erreicht werden kann, um die Klimaziele zu erreichen.

4. Klimaschutzfinanzierung

Schließlich will die Kommission die Klimaschutzfinanzierung unterstützen, damit gefährdeten Ländern geholfen werden kann, sich an den Klimawandel anzupassen und die Treibhausgasemissionen durch Investitionen zu verringern. Darauf geht auch die Klimakonferenz von Glasgow ausführlich ein und ruft hier zu verstärktem Engagement auf (Ziff. 63 ff.). Die Kommission verweist darauf, dass die EU und ihre Mitgliedstaaten schon bisher die größten Geldgeber von öffentlichen Mitteln für die Klimaschutzfinanzierung in Ländern mit niedrigem und mittlerem Einkommen waren. Das soll fortgesetzt werden – mit besonderem Augenmerk auf die Erfordernisse der am wenigsten entwickelten Länder.¹⁰²

XI. Fazit

Die Kommission hat mit ihrem Klimapaket „Fit for 55“ vom 14.7.2021 ein ausdifferenziertes Maßnahmenpaket präsentiert, um das EU-CO₂-Reduktionsziel von mindestens 55 % bis 2030 zu erreichen. Aus ihm wird zugleich deutlich, welche vielfältigen Bereiche betroffen sind, die mehr und mehr unionsrechtlich geprägt sein werden, sodass insoweit die EU-Grundrechte greifen. Daraus ergibt sich aber im Ergebnis kein geringerer Klimaschutz als nach dem BVerfG-Klimabeschluss. Zwar ist die Ökonomie gleichgewichtig mit Ökologie und Sozialem abzuwägen, indes nach der Kommission durch den Klimaschutz geprägt. Darin liegt die Nachhaltigkeitswende nach dem EU-Klimapaket „Fit for 55“. Sie ist eine gute Vorlage, um den durch die Klimakonferenz von Glasgow verstärkten weltweiten Prozess des Klimawandels voranzubringen. Wir dürfen auf die weitere Entwicklung gespannt sein.

102 Mitteilung der Kommission (Fn. 2), COM(2021) 550 final, S. 16.

Instruments

Trygve Ben Holland, Sarah Holland-Kunkel, André Röhl

On the Criminal Law Dimension of the Green Deal

Abstract

With regard to the Green Deal, it has been reasonably found that “while there is a welcome focus on the rule of law and enforcement, accountability will have to be operationalised within key sustainability processes at national level!”¹ On the other hand, the Area of Freedom, Security and Justice within the EU (Art. 4(2)(j) in conjunction with Art. 67 et seq. TFEU) foresees common and aligned measures to address environmental crimes, i.e. the EU shall further cooperation among the Member States’ law enforcement and judicial authorities (Art. 82, 87 TFEU).

The Green Deal is, to-date, a political agenda that needs to be brought into action, also with a view to law enforcement and judicial measures.

On the Criminal Law Dimension of the Green Deal

In 2016, INTERPOL found: “Environmental crime contributes to destroying the ecosystem, as criminals damage environmental quality, hasten biodiversity loss, and deplete natural resources. However, environmental crime also impacts our society, as it constitutes a direct threat to development, peace, and security” [...] “there is clear evidence that environmental crime has connections with other illegal activities, with criminal networks engaged in many other crimes. In other words, there is a host of other illegalities which accompany, facilitate, or result from environmental crime” [...] therefore “environmental crime can no longer be seen purely as a conservation issue, as its adverse impacts are also threatening sustainable development, good governance, rule of law, and national security”²

Investigations in this field are usually based on the underlying assumption that a significant part of the extraction and use of natural resources as

1 IEEP, Analysis of the Political Guidelines of the President-elect of the European Commission, 2019, p. 4.

2 INTERPOL and UNEP, Strategic Report: Environment, Peace and Security, 2016, pp. 56 and 58.

well as illicit use of protected flora and fauna are operated by organised crime and terrorist groups (or: there is at least a great deal of influence there).³ The roughly estimated annual turnover of illegal activities in the area of environmental crime ranges from USD 100-260 billion.⁴ According to a report done by the UN and Interpol in 2016, environmental crime is now the fourth largest criminal global activity (after drug smuggling, counterfeiting and human trafficking); the EU is directly affected by environmental crime as origin (e.g. waste trafficking) or destination market (e.g. illegal logging) or as a transit point between two regions of the globe (e.g. between Africa and Asia for wildlife products).⁵

Hence, illegal extraction (exploitation) of natural resources and illicit use of protected flora and fauna is an enormously important economic sector for criminal networks.

The effects, such as massive human rights violations, corruption, money-laundering, environmental crimes up to the destruction of entire economic cycles in some parts of the world result in a vicious circle in which the Criminal Networks create a vacuum that they then fill again to strengthen their power, influence and range of activities. These Environmental Crimes, such as the massive and uncontrolled (illegal) extraction of natural resources (ecocide) as well as the illicit use of protected flora and fauna enables to a remarkable extent the existence of Organised Crime and Terrorism through generating first and foremost money, but also social, political and economic influence.

These illegally acquired resources are forming part of the global economic system: wood, coal, oil, sand, stone, gravel, water, protected plants and animal species, rare earths, and many more. This makes the international community at large – the customer side of the value chain – responsible for supporting Organised Crime and Terrorism. In other words: In order to combat the phenomenon of Organised Crime and Terrorism sustainably, it has to be thought about how and through which measures implemented in the international community the illegal extraction and use of natural resources as an existential basis for criminal networks and terrorist groups can be tackled and involved parties can be held accountable.

The criminal law objective of the Green Deal is to contribute to preventing illicit activities of organised criminal groups and terrorist groupings

3 Cf. esp. Kevin Bales, *Blood and Earth*, Penguin Random House, 2016.

4 Cf. Gerstetter, Christiane et al., *Status Quo und Weiterentwicklung des Umweltstrafrechts und Sanktionen: Instrumente zur Verbesserung der Befolgung von Umweltrecht (Compliance)*, in: Umweltbundesamt, 2019, p. 30.

5 Cf. INTERPOL-UN, *Environment, Peace and Security*, 2016.

(for the reasons of readability, these two terms are referred to in the following as ‘Criminal Networks’) with the aim to defeat or at least mitigate consequences thereof for the purpose of realising the objective set out in Article 67(3) TFEU – “ensure a high level of security within an area of freedom, security and justice” – in line with the Agenda of the Security Union and with the “need to ensure full compliance with fundamental rights. Security and respect for fundamental rights are not conflicting aims, but consistent and complementary policy objectives”⁶ as proclaimed in Article 2 TEU: “The Union is founded on the values of respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of persons belonging to minorities.” This objective is not limited to the EU Member States, as Article 3(5) TEU specifies: “In its relations with the wider world, the Union shall uphold and promote its values and interests and contribute to the protection of its citizens. It shall contribute to peace, security, the sustainable development of the Earth, solidarity and mutual respect among peoples, free and fair trade, eradication of poverty and the protection of human rights, in particular the rights of the child, as well as to the strict observance and the development of international law, including respect for the principles of the United Nations Charter”.

The UN Sustainable Development Goals (SDGs) No. 13 and 17 provide an intergovernmental framework for concerted actions against the furthering of climate change in form of environmental damages caused by organised criminal groups. The Commission has stated that “the sustainability agenda, with the 17 Sustainable Development Goals (SDGs) at its core, is about making people’s lives better. The EU and the United Nations are determined to protect the planet from degradation, so that it can support the needs of the present and future generations. We will pursue this goal through sustainable consumption and production, sustainably managing its natural resources, ensuring just transition and economic viability, and taking urgent action on climate change”⁷.

Whereas SDG 13 proclaims justiciability of such activities, SDG 17 foresees the strengthening of responsible institutions with a multi-stakeholder and this inter- and cross-agency approach, specifically aimed to “encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships”.

Without prejudice to the causes for given and future scenarios and situations relevant from the Security Union’s perspective, the Green Deal measures and activities should understand environmental (and specifically:

6 European Commission, *The European Agenda on Security*, p. 3.

7 European Commission, *Sustainable Development Goals*, 2019.

criminal) laws, ultimately, as a tool to implement and put into effect Human and Fundamental Rights.

To boost the effectiveness of the Security Union, the Green Deal responds to the specific objectives related to ensuring the efficient and effective functioning of the Area of Freedom, Security and Justice (AFSJ) with respect for Human and Fundamental Rights and the different legal systems and traditions of the Member States (Article 67(1) TFEU). This comprises, on the one hand, the absence of internal border controls for persons (Article 67(2) TFEU) and thus the individual transnational mobility inside the Internal Market as set out in Article 26(2) TFEU in conjunction with Articles 45 et seq., 56 et seq. TFEU (and, to a certain extent, regarding Associated States); on the other hand, this freedom is subject to restrictions deriving from the need to ensure security and justice. Hence, the law enforcement and justice authorities in the different (legal) systems of the Member States and the overarching harmonised EU approach (as set out in Annex I of the Europol Regulation No. 2016/794) face the challenge of countering criminal activities utilising the area of freedom.

The Green Deal of 2019 cannot be seen as a stand-alone project. Apparently, the EU considers countering environmental crime as one of its priorities and has stepped up its activities in this field:

- The EU Agenda on Security (2015)⁸ highlighted the link between environmental crime and organised crime, as well as the link between environmental crime and money-laundering and terrorist financing. It provided for the Commission to “review existing policy and legislation on environmental crime”;⁹
- In 2016, the Council in its Conclusions invited the Commission to monitor the effectiveness of EU legislation in the field of countering environmental crime;¹⁰ in the same year, the Council chose environmental crime as the subject for the 8th Mutual Evaluation round;¹¹

8 Cf. European Commission, The European Agenda on Security, Strasbourg, 28.4.2015 COM(2015) 185 final.

9 Page 18 of the Agenda on Security (footnote 4): “The Commission will consider the need to strengthen compliance monitoring and enforcement, for instance by increasing training for enforcement staff, support for relevant networks of professionals, and by further approximating criminal sanctions throughout the EU”.

10 Cf. Doc. 15412/16: The Council Conclusions on Countering Environmental Crime of December 2016.

11 Ibid.

- In 2016, an EU Action Plan to combat wildlife trafficking¹² set out the need to review the EU policy and legislative framework on environmental crime, in line with the European Agenda on Security – in particular by reviewing the effectiveness of the Environmental Crime Directive including the criminal sanctions applicable to wildlife trafficking throughout the EU;
- In 2017, the Council in its Conclusions recognised the need to address environmental crime, and especially illegal waste exports and wildlife trafficking, as a priority of the EU policy against organised crime for the period 2018-2021;¹³
- In 2018, the Commission published an EU Action Plan to improve environmental compliance and governance, including in the area of combating environmental crime.¹⁴ One of the actions relates to preparation of a good practice guidance document on strategies for combating environmental crimes and other related breaches, with a particular focus on waste and wildlife offences.

Already in 2015, the EU Commission found: “Of course, legal implementation of EU instruments at national level is not enough. The tools of the EU security framework will only take full effect when national law enforcement agencies feel confident in existing instruments and share information readily. The proposal for a new legal basis for Europol,¹⁵ currently before the co-legislators, seeks to enhance Europol's analytical capabilities, trigger operational action on the part of Member States, and reinforce the agency's data protection regime. Member States should use Europol as their channel of first choice for law enforcement information sharing across the EU”.¹⁶

The current Europol mandate does not reflect the urgent need to have stronger inter-, cross- and multi-agency alignment at transnational cooperation level inside the EU and with a view to Third States, though it has been demanded that, as environmental crime “is a cross-cutting crime type that often converges with fraud, corruption, tax evasion, customs breaches, money-laundering, and/or other financial crimes, multi-agency cooperation

12 EU-action plan against wildlife trafficking, 2016.

13 Council Conclusions on setting the EU-Priorities for the fight against organized and serious international crime between 2018 and 2021.

14 EU-action to improve environmental compliance and government.

15 Now: Regulation (EU) 2016/794.

16 European Commission, *The European Agenda on Security*, p. 8.

is an essential approach to enable an effective response to wildlife crimes at the domestic level, and should be a common practice”¹⁷

Specific measures under the political Green Deal agenda need to include activities to better understand the interrelated phenomena of intrinsic and extrinsic drivers of challenges that create gaps in the democracy, the rule of law, society and economy where organised criminal actors step in to make use of a changing situation. The scope of the Green Deal should hence focus on crimes that cause damage to humankind as a whole, i.e. crimes within the categories ‘illicit trafficking in endangered animal species, illicit trafficking in endangered plant species and varieties, environmental crimes’ (cf. mandate of Europol in Annex I of Reg. 2016/794). The term ‘environmental crimes’ is neither defined in the Europol Regulation, nor in the authoritative Directive 2008/99/EC on the protection of the environment through criminal law, nor in the relevant multi-agency UN Resolution of 2016.

However, all documents referred to proclaim contextualisation with organised crime and terrorism, most notably and recently the UN Resolution of 2016: “All relevant United Nations resolutions recognise that cooperation between the United Nations and international organizations such as INTERPOL can contribute to tackling terrorism, including preventing foreign terrorist fighter travel, and combating transnational crime, in particular transnational organized crime, including smuggling of migrants, trafficking in persons, drug trafficking, intentional and unlawful destruction of cultural heritage and trafficking in cultural property, piracy, illicit trade in small arms and light weapons, illicit trafficking in nuclear, biological, chemical and radiological materials, cybercrime, corruption and money-laundering and crimes that affect the environment, such as illicit trafficking in wildlife”

Already in 2000, the United Nations Interregional Crime and Justice Research Institute (UNCRI) found in relation to environmental crimes, “organised crime and transnational criminal networks [...] need deeper analysis and research”; specifically, UNCRI sets out what is needed:

- Deeper understanding of dynamics behind particular crime types;
- Strategic and tactical intelligence about organized crime, transnational criminal networks;
- Assessment of capacity and gaps in global enforcement networks;

17 UNODC, *Enhancing the Detection, Investigation and Disruption of Illicit Financial Flows from Wildlife Crime*, 2017, p. 24.

- Development of performance indicators/metrics;
- Ongoing assessment and evaluation.¹⁸

In the last two decades, few steps have been taken at domestic and international level in this direction. This leaves gaps in legislation and perceptions of the (organised) civil society and public authorities as to understanding the interlinked character of crimes. The development of comprehensive policies is impeded – thus substantiating the need for the directly or indirectly affected target group members to address the present situation. To illustrate the thematic focus, the following examples shall be referred to:

No.	Commodity	Main Illicit Activity	Main Impacts	Secondary Illicit Activity
1 ¹⁹	Sand, stone (esp. gravel)	mining		Eviction, forced labour, slavery, human trafficking, fraud, smuggling, corruption, bribery; cross-financing of other illicit activities
2 ²⁰	Wood (timber)	logging	Eco-system failure. Erosion. Tax evasion. Money-laundering.	Eviction, fraud, smuggling, corruption, bribery; cross-financing of other illicit activities
3 ²¹	Fishes	fishing	Deaths by killing.	Marine pollution, slavery, human trafficking, corruption, bribery; cross-financing of other illicit activities
4 ²²	Wildlife	extraction	Extinction.	Trafficking, corruption, bribery; cross-financing of other illicit activities
5 ²³	Flora	extraction	Drought.	Trafficking, corruption, bribery; cross-financing of other illicit activities
6 ²⁴	water	theft		Smuggling, corruption, bribery; cross-financing of other illicit activities

18 UNCRIC, *Organized Crime, Transnational Criminal Networks and Environmental Crime*, 2002, p. 21 et seq.
 19 Paul Salopek, *Inside the deadly world of India’s sand mining mafia*, 2019.
 20 <https://eia-international.org/forests/illegal-logging-and-timber-trafficking/>.
 21 Cf. <https://ejfoundation.org/news-media/ghanas-fisheries-minister-calls-for-end-of-damaging-saiko-fishing>.
 22 EU Commission, *Environmental Compliance and Combatting Environmental Crime*, July 2016.
 23 Cf. www.interpol.int/en/Crimes/Environmental-crime/Wildlife-crime.
 24 Cf. www.brookings.edu/research/water-theft-and-water-smuggling/.

The table below shows the main applicable international instruments and the main legislative measures in the EU related to the commodities 1-6:

No.	Main International Instruments	Main EU Measures in the same Area
1	None	none
2	None specific; indirectly: UNFCCC ²⁵	Reg 1024/2008 ²⁶ ; Reg 995/2010 ²⁷
3	PSMA ²⁸	Reg 1005/2008 ²⁹
4	CITES ³⁰	Reg 338/97 ³¹
5	CITES	Reg 338/97
6	None specific; partially: PUTWIL ³²	none

A reason for the limited availability of international instruments at intergovernmental level may be found in the United Nations' General Assembly Resolution 1803 (XVII) of 14 December 1962 on "Permanent Sovereignty over Natural Resources" which proclaims in No. 1: "The right of peoples and nations to permanent sovereignty over their natural wealth and resources must be exercised in the interest of their national development and of the well-being of the people of the State concerned."³³ That Resolution refers neither to environmental protection nor to the public good or illicit activities of Criminal Networks.

EU measures to counter criminal activities in the scope of Nos. 1-6 presented in the table above have repeatedly been criticised because they are deemed ineffective due to Member States' failure to adequately comply, including their LEAs and judiciary.³⁴

These examples – Nos. 1-6 above – allow initial categorisation of environmental crimes as (in)directly addressed by the Green Deal and differentiation from the understanding of environmental crimes as listed in Article 3 (a)-I and (i) of Dir. 2008/99/EC on the protection of the environment through criminal law (that are not primarily, be it directly or indirectly, envisaged by the Green Deal). Against the background of the table above,

25 United Nations, Framework Convention on Climate Change, 1992.

26 Commission Regulation (EC) No 1024/2008.

27 Regulation (EU) No 995/2010.

28 United Nations, Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, 200.

29 Council Regulation (EC) No 1005/2008.

30 Convention on International Trade in Endangered Species of Wild Fauna and Flora.

31 Council Regulation (EC) No 338/97.

32 United Nations, Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

33 www.ohchr.org/Documents/ProfessionalInterest/resources.pdf.

34 Cf. e.g. The Guardian, 'No evidence' that EU's illegal timber policy is working, 2016.

this leaves solely Article 3 (f)-(h) of that Directive within the EU's regulatory scope, with its prohibition on:

- killing, destruction, possession or taking of specimens of protected wild fauna or flora species, except for cases where the conduct concerns a negligible quantity of such specimens and has a negligible impact on the conservation status of the species;
- trading in specimens of protected wild fauna or flora species or parts or derivatives thereof, except for cases where the conduct concerns a negligible quantity of such specimens and has a negligible impact on the conservation status of the species;
- any conduct which causes significant deterioration of a habitat within a protected site.

The EU Environmental Crime Directive³⁵ has the objective to contribute to a more effective protection of the environment and full application of the existing EU environmental legislation through criminal law, to ensure a level playing field in the Member States by approximating the criminal offenses, and to ensure deterrent sanctions and overall effective sanctioning systems in all Member States. To achieve this objective, the Directive:

- establishes a common set of offenses that Member States must criminalise;
- approximates the scope of liable perpetrators, esp. by requiring that legal persons incur liability;
- requires Member States to extend criminal liability to inciting, aiding and abetting such offenses;
- approximates criminal sanctions (and seeks stricter criminal sanctions) by requiring all Member States to ensure effective, proportionate and dissuasive criminal penalties for environmental crimes. However, the sanctions for legal persons, while required to be effective, proportionate and dissuasive, need not be criminal sanctions.

The Environmental Crime Directive criminalises certain violations of more than 60 legal instruments in the environmental field that are listed in two annexes to the Directives.

Since the objective of Directive 2008/99 is “to ensure a more effective protection of the environment”³⁶ – which does not encompass measures in the context of Criminal Networks’ activities as such and hence does not relate *sui generis* to organised crime (despite of the Directive’s title), terrorist

35 Directive 2008/99/EC.

36 Cf. Recital 14 Directive 2008/99/EC on protection of environment through criminal law.

groups or any related crimes – and there are 60 or more EU legislative measures to analyse,³⁷ it becomes apparent that the current status quo of the EU's regulatory framework is insufficient to address the threats caused by activities of Criminal Networks. To this end, the preparation of Green Deal agenda measures can easily be based on prior experiences of relevant public authorities and, even more, of Civil Society Organisations with a view to the fact that also the legislative acts of the EU addressing organised crime and terrorist groups do not take into account the environmental law dimension.

However, the EU Security Agenda 2015 implicitly acknowledged the failure (inter alia) of the Directive to sufficiently address organised crime: “[...], serious and organised cross-border crime is finding new avenues to operate, and new ways to escape detection. There are huge human, social and economic costs – from crimes such as trafficking in human beings, trade in firearms, drug smuggling, and financial, economic and environmental crime. Organised crime groups [...] exploit the vulnerabilities of people seeking protection or better economic opportunities and are responsible for the loss of lives in the name of profit. Organised crime also feeds terrorism [...]”³⁸

The Green Deal's implementing measures should be designed in the form of responses to the cases outlined above, to the shortcomings of the EU legislation, to the addressed aspects referred to by the EU, and the needs firstly formulated by UNCRIC.

Implementing measures of the Green Deal should understand prevention in a comprehensive manner: Where court competence and *de facto* admissibility – *ratione temporis*, *ratione materiae*, *ratione personae*, *ratione territoriae* – of a case is provided for inside the EU at domestic and EU Courts' level, prevention would become manifest in the – from the Criminal Networks' perspective – dissuasive fact that courts' competence is legally established by EU laws. Courts' competence means jurisdiction, thus, Green Deal legislative measures should serve to shape the instrument to establish judicial jurisdiction regarding criminal proceedings.

As a consequence of the right to free movement within the EU, the tendency by Member States to extend their jurisdiction and the advancements in technology which have taken place in the last decades, there is a growing

37 Ibid., Annex A.

38 European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Agenda on Security, Strasbourg, 28.4.2015 COM(2015) 185 final, p. 12.

number of situations where several Member States have jurisdiction to investigate and conduct criminal proceedings regarding the same facts.³⁹

If Member States were not obliged to inform each other of cases which could give rise to a conflict of jurisdiction or to consult each other in order to settle a conflict of jurisdiction, this could lead to proceedings being conducted in a Member State which is not best suited for this (e.g. when the relevant evidence and witnesses are located in another Member State) or to parallel proceedings being conducted in different Member States.

To mitigate these risks, the Decision 2009/948/JHA on prevention and settlement of conflicts of exercise of jurisdiction in criminal proceedings⁴⁰ has been adopted. The objective of this instrument is to promote closer cooperation between Member States conducting criminal proceedings, in order to:

- agree on a solution to avoid negative consequences arising from parallel criminal proceedings;
- prevent situations where the same person is subject to parallel criminal proceedings in different Member States in respect of the same facts.

That Framework Decision establishes a mandatory consultation procedure in cases where parallel criminal proceedings are conducted in different Member States. If the consultation procedure does not result in a consensus being reached, the Member States involved shall refer the case to Eurojust. Apart from that Decision, which applies to criminal proceedings in general, there are a numerous EU instruments with special rules on preventing and settling conflicts of jurisdiction, such as:

- Framework Decision on the European Arrest Warrant (Article 16 FD 2002/584/JHA);
- Framework Decision on combating terrorism (Article 9 FD 2002/475/JHA);
- Framework Decision on attacks against information systems (Article 10 FD 2005/222/JHA);
- Framework Decision on the fight against organised crime (Article 7 FD 2008/841/JHA);

39 Cf. e.g. Thorhauer, Nathalie Isabelle, *Conflicts of Jurisdiction in Cross-Border Criminal Cases in the Area of Freedom, Security, and Justice: Risks and Opportunities from an Individual Rights-Oriented Perspective*, *New Journal of European Criminal Law*, Sage Publications, 2015.

40 Council Framework Decision 2009/948/JHA.

- Council Regulation implementing enhanced cooperation on the establishment of the European Public Prosecutor's Office ('the EPPO') (Article 26 Reg 2017/1939).

When it comes to crimes committed by Criminal Networks which have (in)direct effect on or within the Internal Market and/or adversely on the AFSJ, there are still significant and immanent jurisdictional shortcomings in the Member States⁴¹ in the absence of a *functioning* common EU-wide approach.⁴²

Unlike in cases of crimes against humanity as taken-up by Europol,⁴³ where jurisdiction has been declared universal,⁴⁴ no such competence is foreseen in crimes addressed by the Green Deal explicitly or implicitly or any other international legislative instrument at inter- or supranational level.

From a holistic perspective, also the role of European Public Prosecutor's Office has to be analysed: Regulation 2017/1939 implements enhanced cooperation as to the EPPO.⁴⁵ Currently, enhanced cooperation is based on Art. 20 TEU in conjunction with Art. 326 et seq. The TFEU is applied in the fields of divorce, patents, property regimes, and the European Public Prosecutor's Office EPPO (furthermore, it is approved for the field of a financial transaction tax)⁴⁶. With regard to the EPPO, there has been a specific mechanism applied which qualifies as enhanced cooperation in consequence, but is based on Art. 86 TFEU. This specific norm allows motions of Member States in order to counter crimes affecting the financial interests of the EU and bypass the Council's unanimity requirement.

In the absence of a common inter- or supranational definition of the term 'environmental crimes' as such, the Green Deal faces the opportunity to apply a broad interpretation of illicit activities; such interpretation is limited by the focus on organised groups committing crimes.

At international level, the term 'organised criminal group' is understood in the meaning of Article 2(a) of the UN Convention on Transnational Organised Crime as "a structured group of three or more persons, existing for a period of time and acting in concert with the aim of committing one or more serious crimes or offences established in accordance with this

41 Cf. www.business-humanrights.org/en/kik-lawsuit-re-pakistan.

42 Cf. Guardian, No evidence that EU's illegal timber policy is working, 2016.

43 Cf. last indent of Annex I Regulation (EU) 2016/794 on Europol, OJ L 135, 24.5.2016, p. 53-114.

44 Cf. Art. 5 Statute International Criminal Court.

45 Council Regulation (EU) 2017/1939.

46 Cf. Council of the EU, <https://data.consilium.europa.eu/doc/document/ST-10097-2019-INIT/en/pdf>.

Convention, in order to obtain, directly or indirectly, a financial or other material benefit”⁴⁷

The EU follows this definition of organised crime groups,⁴⁸ similarly, ‘terrorist groups’ are defined as structured groups of more than two persons, established for a period of time and acting in concert to commit terrorist offences (whereas ‘structured group’ means a group that is not randomly formed for the immediate commission of an offence and that does not need to have formally defined roles for its members, continuity of its membership or a developed structure).⁴⁹ There is no universal definition of the term ‘terrorism,’ neither at EU nor at intergovernmental level. Instead, Art. 3(1) and (2) of Dir 2017/541 on terrorism lists offences considered of terrorist character; most of them are similar to those of organised crime groups’ activities, esp. Art. 3(1)(a)-(c): attacks on persons’ life, attacks upon the physical integrity of a person, kidnapping or hostage-taking.

As there are intersections between the crimes committed by either of the groups, definitional accuracy is blurred. Hence, Green Deal measures and activities should apply a differentiation according to the groups’ motives: While terrorist groups need financial resources to conduct other illicit activities, organised crime groups have a purely commercial interest as the sole end in itself. Acknowledging that crimes must be understood in the broadest sense and include activities of terrorist groups, the AFSJ faces threats from both categories of groups, though they may have different aims but use similar (and sometimes the same) methods.

Related to the questions who the relevant criminal actors are and where they are active, Green Deal activities should better analyse legislative acts at intergovernmental, supranational and Member States’ levels concerning Criminal Networks and environmental impacts. Insofar, the criminal offences defined in Article 3 Dir 2008/99/EC on environmental crimes and in Article 3(d)(f)(g)(h)(j) of Dir 2017/541 on combating terrorism have to be interrelated to allow measurement of negative impacts and detriment.

The character of criminal activities related to the Green Deal typically results in adverse effects that are neither limited to a specific group of victims per se nor to a specific geographic region *sui generis*. Whereas the direct damage resulting from such activities may be confined to places and attributed to specific or (specifiable) individuals in a certain region, the indirect negative consequences have to be understood in a contextualised manner related to transnational if not global outcomes.

47 Available at www.unodc.org/pdf/crime/a_res_55/res5525e.pdf.

48 Cf. Article 1(1) of Council Framework Decision 2008/841/JHA.

49 Cf. Article 2 No. 3 of Directive (EU) 2017/541.

The Green Deal should therefore follow a comprehensive approach in regard to understanding harms done to the environment – holistically: to the climate – by Criminal Networks. By means of categorising the types of crimes, the Green Deal could at least illustrate the interlinkages between criminal acts, environmental damage and negative impacts on the functioning of societies, state institutions and the rule of law in democratic regulatory regimes.

Whether it be extrinsic – such as climate change effects – or intrinsic factors that facilitate environmental crimes, both have adverse effects on the access to natural resources of humans and their livelihood. To that end, climate change law addresses the causes and the consequences: whereas the causes are subject to climate policies; here, the Green Deal’s law enforcement dimension should address the consequences of environmental crimes and related aspects in forms caused solely by Criminal Networks. Otherwise, structures of organised criminal activities may serve to undermine state regimes (institutions of democracy) or the stability of the enforcement and justice (rule of law) in any given country, and become *de facto* alternatives for the affected individuals to make a living in the absence of attractive options.

Sources

Bales, Kevin, *Blood and Earth*, Penguin Random House, 2016

European Commission, *Environmental Compliance and Combatting Environmental Crime*, July 2016; https://ec.europa.eu/environment/integration/research/newsalert/pdf/wildlife_la_w_enforcement_the_vital_role_of_NGOs_56si13_en.pdf

European Commission, *Sustainable Development Goals*, 2019; https://ec.europa.eu/info/strategy/international-strategies/sustainable-development-goals_en

European Commission, *The European Agenda on Security*, Strasbourg, 28.4.2015 COM(2015) 185 final; https://ec.europa.eu/home-affairs/sites/homeaffairs/files/e-library/documents/basic-documents/docs/eu_agenda_on_security_en.pdf

European Commission, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Agenda on Security*, Strasbourg, 28.4.2015 COM(2015) 185 final; https://ec.europa.eu/home-affairs/sites/homeaffairs/files/e-library/documents/basic-documents/docs/eu_agenda_on_security_en.pdf

European Commission, *The European Agenda on Security*, Strasbourg, 28.4.2015 COM(2015) 185 final; https://ec.europa.eu/home-affairs/sites/homeaffairs/files/e-library/documents/basic-documents/docs/eu_agenda_on_security_en.pdf

- Gerstetter, Christiane et al., Status Quo und Weiterentwicklung des Umweltstrafrechts und Sanktionen: Instrumente zur Verbesserung der Befolgung von Umweltrecht (Compliance), in: Umweltbundesamt, 2019; www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2019-11-07_texte_135-2019_umweltstrafrecht_0.pdf
- Guardian, No evidence that EU's illegal timber policy is working, 2016; www.theguardian.com/environment/2016/feb/10/no-evidence-that-eus-illegal-timber-policy-is-working
- Holland, Trygve Ben and Sarah Holland-Kunkel, André Röhl, Carina Zachau, European Security Union – On the Dichotomy of Liberty and Security in the Area of Freedom, Security and Justice, Verlag für Polizeiwissenschaften, 2022
- IEEP, Analysis of the Political Guidelines of the President-elect of the European Commission, 19 July 2019; <https://ieep.eu/uploads/articles/attachments/e4a4cddf-03c2-4e53-9c6e-a302512ee85d/IEEP%20analysis%20of%20political%20guidelines.pdf?v=63730756931>
- INTERPOL and UNEP, Strategic Report: Environment, Peace and Security – A Convergence of Threats, 2016; www.interpol.int and www.unep.org
- Salopek, Paul, Inside the deadly world of India's sand mining mafia, 2019 www.nationalgeographic.com/environment/2019/06/inside-india-sand-mining-mafia/
- Thorhauer, Nathalie Isabelle, Conflicts of Jurisdiction in Cross-Border Criminal Cases in the Area of Freedom, Security, and Justice: Risks and Opportunities from an Individual Rights-Oriented Perspective, New Journal of European Criminal Law, Sage Publications, 2015
- UNEP, Sand, rarer than one thinks, 2014 https://na.unep.net/geas/archive/pdfs/GEAS_Mar2014_Sand_Mining.pdf
- UNCRIC, Organized Crime, Transnational Criminal Networks and Environmental Crime, 2002, p. 21 et seq.; www.unicri.it/topics/environmental/conference/Expert_Group_II_-_Edmund_McGarrell.pdf

Legislative Acts / International Agreements

- Council Framework Decision 2008/841/JHA, OJ L 300, 11.11.2008, p. 42
- Council Framework Decision 2009/948/JHA, OJ L 328, 15.12.2009, p. 42-47
- Directive 2008/99/EC on protection of environment through criminal law, OJ L 328, 6.12.2008, p. 28
- Directive (EU) 2017/541 on combating terrorism, OJ L 88, 31.3.2017, p. 6-21
- Regulation (EC) No 1024/2008 of 17 October 2008 laying down detailed measures on the establishment of a FLEGT licensing scheme for imports of timber, OJ L 277, 18.10.2008, p. 23-29
- Regulation (EU) No 995/2010 laying down the obligations of operators who place timber and timber products on the market, OJ L 295, 12.11.2010, p. 23-34
- Regulation (EC) No 1005/2008 of 29 September 2008 establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing, OJ L 286, 29.10.2008, p. 1

- Regulation (EC) No 338/97 of 9 December 1996 on the protection of species of wild fauna and flora by regulating trade therein, OJ L 61, 3.3.1997, p. 1-69
- Regulation (EU) 2016/794 of the European Parliament and of the Council of 11 May 2016 on the European Union Agency for Law Enforcement Cooperation (Europol) and replacing and repealing Council Decisions 2009/371/JHA, 2009/934/JHA, 2009/935/JHA, 2009/936/JHA and 2009/968/JHA, OJ L 135, 24.5.2016, p. 53-114
- United Nations Convention on International Trade in Endangered Species of Wild Fauna and Flora; <https://www.cites.org/sites/default/files/eng/disc/CITES-Convention-EN.pdf>
- United Nations, Convention on the Protection and Use of Transboundary Watercourses and International Lakes; www.unece.org/fileadmin/DAM/env/water/publications/WAT_Text/ECE_MP.WAT_41.pdf
- United Nations, Framework Convention on Climate Change, 1992; https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf
- United Nations, Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, 2007; www.fao.org/3/i5469t/i5469T.pdf
- UNODC, Enhancing the Detection, Investigation and Disruption of Illicit Financial Flows from Wildlife Crime, 2017

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Augmenting the Green Deal – The Case for Introducing Personal Carbon Trading in the EU

Abstract

The Green Deal, launched in December 2019, and added to with further concrete proposals in July 2021, contains many positive ideas for meeting Europe's commitment to carbon neutrality by 2050. Even so, serious doubts must remain as to whether it will be sufficient. One problem is that whatever progress the EU may succeed in making will likely be offset by increased carbon emissions in other parts of the world, whose economies are seeking to catch up with the level of industrial development and economic well-being presently enjoyed in Europe.

Against this background, this paper sketches a more radical response, focusing upon an actor in the economy, hitherto largely avoided by the EU policy-maker, by placing central responsibility upon the European consumer. It would work by extending a market-based approach, similar to that found in the ETS, to individual households by creating a market in tradable personal carbon allowances. The idea would be to require European consumers, when purchasing goods of a non-carbon-friendly nature to hand over – on top of the nominal purchase price – an amount of carbon permits reflecting the product's carbon-impact. Such permits would, mirroring the existing ETS, be pre-allocated to each EU household, with the option for surplus permits to be traded by them on a specially created market.

At first sight, such a scheme may appear vulnerable to various objections. However, it will be argued that, if well-designed, it has significant advantages that outweigh the downsides: it could empower consumers, underwrite green responses by producers and, not least, serve as a morally sound approach to climate mitigation beyond Europe for the world at large.

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A. Introduction

The European Green Deal contains a number of inventive measures designed to achieve the reduction in carbon dioxide and other GHGs¹ to enable the EU to meet its 2015 Paris Treaty Commitments. In the process, the EU remains committed to a continued policy of economic growth, believing that this can be ‘decoupled’ from environmental protection measures, so as to allow both to be pursued simultaneously. In support, the Commission cites statistics recording 62% growth in the EU since 1990 at the same time as a 24% drop in carbon emissions.² The Green Deal, by ramping up existing carbon-cutting measures, and adding further refinements, appears on course to achieve the targeted 55% reduction by 2030, and ‘net zero’ by 2050.

Considered thus in isolation, the Green Deal seems to offer a narrative of progress and potential. The problem is that climate change due to carbon emissions is a global issue. In this regard any success in reductions achieved by the EU as a world region must be assessed by how far it contributes to and reinforces world reductions. Here, unfortunately, it is a very different story: estimates following the Glasgow COP26 in November 2021, are that there is little or no chance of meeting the required reduction targets by 2050 to keep global temperature rises around the 1.5 mark regarded as ‘safe.’³ Indeed, it appears that in many parts of the world, as developing economies grow and produce more wealth and products for their consumers, carbon emissions will grow significantly. From this perspective, whether or not the EU succeeds in meeting its own targets through the ‘Green Deal’ may almost be seen as an irrelevance: the EU overall presently contributes some 8% to the annual amount of carbon emitted into the world atmosphere⁴ – if that falls to 0% by 2050, it will have little effect in reducing climate change if the rest of the world’s emissions are unabated or (as seems more likely) rise.

In the light of the EU’s relative wealth and power, as well as its historic responsibility as a region for much of the carbon now in the global atmosphere, there is an onus on Europeans and the EU to do more. In fairness, the EU acknowledges this extra responsibility: it seeks to provide a leading voice at COP negotiations in support of emission targets, as well as providing aid and technology to third countries help them to cut

1 Hereafter “carbon” is used in this paper as shorthand for CO₂ plus other key GHGs.

2 *European Commission*, 2021, p 2.

3 *IPPC*.

4 *European Commission* 2021, p. 12.

their emissions.⁵ Nonetheless, there is another aspect to increasing global carbon emissions, where European responsibility is direct and ongoing: this is that many of the consumer goods that Europeans rely upon are produced and transported from developing economies in carbon-intensive ways. Under COP carbon accounting methods, such emissions are assigned to the country of production, but they might just as plausibly be assigned to the country of consumption: the relevant goods would not otherwise have been produced.⁶

Against this background, this paper presents the case for augmenting the Green Deal with a more radical approach to reducing carbon emissions within the EU, but with the potential to bring down emissions outside the EU as well. The approach would operate alongside, while building upon, proven existing policies: in particular, it would deploy the same kind of market-based regulatory approach as the ETS, but extend it to the EU consumer. Accordingly, Part B. below first looks further at the logic of the ETS approach, before some previous (academic and governmental) proposals to apply it to consumers as well, in the form of ‘personal carbon trading’ (PCT), are reviewed in Part C.

The PCT scheme put forward in the present paper is novel to some degree, in that its key focus would be ‘indirect’ carbon emissions arising from consumption of goods, rather than the ‘direct’ consumer emissions targeted by earlier schemes. This difference is explained further in Part D., which also provides an illustrative account of how the proposed scheme might operate. Part E. then proceeds to consider various objections to PCT schemes, based on their alleged difficulty or unfairness for consumers. Part F. goes on to consider further implications of the proposed scheme, including its potential to influence carbon emissions beyond the EU, before Part G. concludes the paper.

B. The ETS and market-based approaches to reducing carbon emissions

Among the key measures credited with helping to bring about reductions in carbon emissions within the EU since 1990 is its Emissions Trading Scheme (ETS), which has operated since 2005.⁷ There, the EU has shown itself open

5 *European Commission* 2021, p. 13. The Carbon Adjustment Border Mechanism announced there may also incentivize some carbon reduction outside the EU; the proposal in this paper would add to this.

6 *Druckman/Jackson* in: Clift/Druckman, p. 181, 183.

7 *European Commission* 2015, p. 4.

to the use of market-based regulatory measures that promote carbon emissions reduction: such measures differ from the more traditional ‘command and control’ approach of setting uniform emission limits for a given activity from above (and imposing penalties for excess emissions), by leaving it to the actors themselves to determine the most efficient way to manage their emissions consistently with pursuing the relevant activity.⁸ This approach has been sometimes criticized on the grounds that the ‘right to pollute’ is not something that should be tradeable in this way. However, it recognizes that carbon emissions are a byproduct or cost of activities otherwise regarded as valuable by individuals and society.

In such a scheme an overall cap is set on permitted emissions in a given carbon-emitting industry, and emission permits then allocated to individual actors in the industry in line with their historic emissions. The overall cap is subsequently reduced periodically over time, with the number of permits granted to individual actors at the start of each successive period, decreasing pro rata. At the same time, the actors are provided with an incentive to reduce their individual emissions, where they can reasonably do so, through allowing them to sell left-over permits (out of their initial grant) to other actors who are less successful in achieving reductions.⁹

In the case of the EU ETS, the relevant actors initially allowed to trade permits in this way were large-scale manufacturers and energy-suppliers, with the aviation industry partially added from 2012.¹⁰ The scheme experienced a number of teething problems, requiring legislative adjustment, in particular to achieve stricter control and oversight over the distribution of permits to actors at member state level;¹¹ however, it is now considered to be operating well. Indeed, it has established itself as the EU’s ‘flagship’ approach to reducing carbon emissions, and hence tackling climate change. Accordingly, under the Green Deal, it is set to be extended to further key sectors that produce GHG emissions, notably transport and buildings.¹²

By contrast, so far off the EU’s political agenda has been the idea of extending such an approach ‘downstream’ so as to cover not only industrial producers of carbon, but the end-consumer of goods, whose production and transportation entails the emission of carbon. This idea, so-called ‘personal carbon trading’ (PCT), has been dismissed as overly radical – both too complex to administer and politically infeasible (unable to win enough

8 Kingston/Heyvaert/Cavoski, p. 139.

9 Kingston/Heyvaert/Cavoski, p. 139.

10 European Commission 2015, p. 20.

11 Kingston/Heyvaert/Cavoski, p. 291.

12 European Commission 2021, p. 6-7.

public support).¹³ However, given the present situation noted in Part A., an approach of this kind arguably deserves urgent reconsideration.

C. Personal Carbon Trading

In the original Commission 2000 Green Paper that prefigured the establishing of the ETS, the authors alluded to PCT as a possible policy option, but dismissed it for the time-being:

“Allocating allowances, monitoring emissions and enforcing compliance of small mobile emitters, such as private cars, raise complex technical and administrative issues. Consequently, if the Community wishes to follow a prudent step-by-step approach in the development of emissions trading, it should initially confine itself to large fixed-point sources of carbon dioxide, where monitoring and supervision of the system is more feasible.”¹⁴

Some years later, there was political interest in such an approach at (former) member state level, namely in the United Kingdom. This culminated in a UK Government pre-feasibility study published in 2008 by the Department of Environment, Food, and Rural Affairs (DEFRA), which included the following helpful explanation:

“What is Personal Carbon Trading?”

Personal carbon trading requires individuals to manage their own CO₂ emissions; a national emissions cap would be set, and emissions rights (in the form of carbon credits) would be allocated across the population as a whole. Individuals would surrender their carbon credits upon the purchase of, for example, electricity, gas or transport fuel. Those who need or want to emit more than their allowance would have to buy allowances from those who emit less. Over time, the overall emissions cap (and hence individual allocations) could be reduced in line with international or nationally adopted agreements.”¹⁵

In the event, though, the DEFRA study decided against the UK Government pursuing such a scheme. As it concluded:

“The Government maintains its view that personal carbon trading is an interesting idea, but considers that the concept is currently ahead of its time.”¹⁶

13 *Parag/Fawcett*, Energy and Emission Control Techniques 2014, p. 23, 30.

14 *European Commission* 2015, p. 10-11.

15 *DEFRA*, p. 1.

16 *DEFRA*, p. 4.

Key disadvantages were seen as administrative costs, technical complexity, and low public acceptability. Similar to the 2000 Commission Green Paper, the authors instead suggested a focus on carbon emissions ‘upstream’, by targeting the manufacturers and service-suppliers who generate GHGs. This decision was ‘regretted’ by the Environmental Audit Committee (EAC) of the House of Commons, which, in a Report published shortly afterwards, commented:

“Opposition to personal carbon trading could be reduced if the public could be convinced of three things. First, that it is absolutely essential to reduce emissions; second, that this can only be achieved if individuals take personal responsibility for reducing their own emissions; and third, that personal carbon trading is a fairer and more effective way of reducing personal emissions than alternatives such as higher taxes.”¹⁷

Since then, PCT schemes have not returned to the political agenda. However, there remains ongoing academic interest, mainly in the UK, but also in other countries.¹⁸ Thus, it has been observed that the objections levelled against such schemes in terms of administrative cost and complexity have diminished in force since 2008. For example, thanks to developments in information technology, managing the administrative aspects of such schemes would now be a relatively straightforward matter. Importantly, too, as regards objections based on the alleged lack of political acceptability of such schemes, there are reasons to think that public attitudes have shifted towards recognizing the inevitability of constraints upon individual carbon consumption, if climate catastrophe is to be averted.¹⁹

D. An ‘indirect emissions’ PCT scheme for the EU?

To date, most of the proposals and research done in relation to PCT schemes have sought to address ‘direct’ carbon emissions on the part of consumers, in the form of use of fuel consumption for household heating and energy, or for personal transport.²⁰ However, a second highly significant form in which individuals generate carbon emissions is ‘indirectly’, through the consumption of food and other consumable goods, where carbon is ‘embedded’ (mea-

17 *House of Commons EAC*, p. 19-20.

18 *Nerini/Fawcett/Parag/Ekins*, *Nature Sustainability* 2021; *Woerdman/Bolderdijk*, *Eur J Law Econ* 2017, p. 553.

19 *Nerini/Fawcett/Parag/Ekins*, *Nature Sustainability* 2021.

20 *Nerini/Fawcett/Parag/Ekins*, *Nature Sustainability* 2021, with full references; an exception in part is *Carbon Trust/Coca Cola*, 2012.

ning it was emitted in the course of creating and transporting the relevant goods).²¹ Estimates in the literature vary as to the respective proportions of an average individual's carbon footprint attributable to indirect, as opposed to direct emissions, but a figure in the region of 50%, or half of their total emissions, appears plausible.²²

There are two key reasons why, from the perspective of the EU-policy maker, it would make sense to begin with a scheme that targets carbon emissions embedded in consumer goods. Most obviously, the setting of quality-control standards and further conditions for goods to be allowed to move freely around the EU single-market is a core EU-competence, whereas the supply to and use by individuals of fuel and energy (associated with direct emissions) remains primarily within the control of member states.²³ It follows that, for the successful implementation of the scheme, including the need to make derogations for special circumstances, e.g. to ameliorate potential hardship to individual consumers or groups, the EU would have a much freer hand for action in the former case. In the second place, it would address the point, noted in Part A., that the EU's present success in reducing carbon emissions is due in no small part to having 'exported' the problem to elsewhere in the world: this is returned to in Part E.

What, then, might such a scheme look like in practice? The starting point, similar to PCT schemes focused on direct energy consumption, is for each citizen or household to receive a monthly allowance of carbon permits that they would need to pay out (in parallel to the purchase price) when they buy specified goods of a carbon-intensive kind; the allowance would be based on the average expenditure of households in the relevant territory on such goods. So far as a household exhausts its allotted allowance it would, if it wishes to purchase more of the relevant good, need to buy excess permits from other households, which have purchased less than the average and hence have permits left over.

In the context of the EU, and so as to manage the scheme in an incremental way, the relevant territory for administering such a scheme initially could be the member state where the household is situated, i.e. 27 internal schemes would operate for each member state. In each case, a cap would be set on overall purchases of carbon-intensive goods in that state, which would, however, be tightened more rapidly in the wealthier than in the poorer member states, to encourage convergence in the degree of consumption of the relevant goods across the EU. Eventually, the scheme could then be

21 *Druckman/Jackson* in: Clift/Druckman, p. 181, 185.

22 *Druckman/Jackson* in: Clift/Druckman, p. 181, 189; *Hot or Cool Institute*, p. 6.

23 Under Art. 194(2) TFEU, member states retain significant sovereignty in the energy field.

centralized, so that allocations of carbon permits would be based on the EU average household consumption; at that point too, the market for trading in permits would be opened up, so that households wishing to purchase further such goods (beyond its initial allowance) could acquire the requisite permits from anywhere in the EU.²⁴

For example, suppose that initially, the scheme applies to a specified bundle of higher-end ‘carbon-heavy’ goods, including cars, furniture, electrical appliances, some foodstuffs (e.g. red meat) and aeroplane-travel;²⁵ suppose, further, that on average, German households spend 1500 Euros per month on these goods. Here, each household would be allocated 1500 carbon allowances (for simplicity, at least to begin with the allowances would not vary in price: one unit would need to be surrendered for each Euro of price paid). Suppose next that Household A exhausts its allowance half way through the month; it could either stop consuming the specified goods, or continue to do so by obtaining the requisite excess allowances from other Households; thus, to maintain its consumption pattern it would need 1500 further permits from, say Households B, C, and D, each of which only uses 1000 of its permits that month. Household A would thereby be paying double for the goods it consumes after the half-way point of the month (the purchase price, plus as much again for the necessary permits); in the process, Households B, C, and D would each earn 500 Euros. The latter could not, though, use this extra income to buy carbon-intensive goods, as they have parted with their relevant allowances (an important point, avoiding what economists call the ‘rebound effect’²⁶); but they could use it to purchase alternative, carbon-friendly goods.

This leads us to a further critical aspect of the scheme, which is its impact upon modes of production; among the types of goods covered by the scheme, not all would be treated alike. Certain models of cars, refrigerators, types of meat, etc., would be classified as more carbon-friendly than others, with the consequence that consumers would not have to pay out as many permits when purchasing them. This aspect of the scheme exploits the

24 Proceeding incrementally this way seems more socially equitable than immediately allowing wealthier income groups in each member state to pick where in the EU they may acquire additional permits (and reduces the risk of illicit trading in low priced permits).

25 Admittedly, plane-travel is, strictly, a service rather than a good. It appears desirable, though, to include it in the scheme from the start, to mitigate potential ‘rebound effects’: see the next note.

26 This occurs when consumers redeploy income gains from reducing their carbon in one area by increasing expenditure on other carbon-intensive goods or activities: *Druckman/Jackson* in: Clift/Druckman p. 181, 193.

fact that demand for most consumer goods is price-elastic: for each type of good there are, from the consumer perspective, various relatively acceptable substitutes available. An alteration in their relative price will then stimulate a shift in purchase patterns from one good of a given type to another.

For example, one could apply, in each market of competing goods, a three-fold classification (to keep things simple) into red-, orange-, and green-category goods, where purchasing the first category requires an outlay of one carbon permit per Euro of good-price; the second, half-an allowance; and the third, none at all. Here, to avoid the risk that certain essential goods, difficult to produce without carbon, became unacceptably expensive, a relative rather than absolute approach could be adopted in determining these categories; i.e. rather than being tied to the amount of carbon emissions per se, account could be taken of a given good's carbon league-table position in its market (e.g. the most friendly 20% goods could be graded 'green,' others still in the upper-50%, 'orange,' and those in the lower-50% 'red'.

These classifications would be subject to ongoing adjustment: the grading authorities would conduct regular re-audits, and respond to applications by individual producers for regrading. In this way, the scheme would stay dynamic and, crucially, provide ongoing incentives for producers to reduce the carbon-impact of their goods. By taking steps that lead to a green or orange classification for a good previously graded orange or red, they would significantly increase the potential market for the good (i.e. among consumers with limited carbon permits remaining). Existing initiatives that seek to influence consumer demand in a green direction, through ecolabelling and similar schemes, would thereby receive very powerful reinforcement.

E. Some Potential Objections

A common objection to PCT in general, is based on their perceived burdens for consumers, which it is claimed also make such schemes politically infeasible in a democratic system. The burdens, it is alleged, may arise in three main ways: first through the direct financial impact of such schemes, particularly on lower income groups; second, their administrative impact (including the need for privacy-impacting monitoring and surveillance measures); and third by deflecting attention away from the powerful actors (industry, commercial vendors) responsible for carbon-intensive production practices, to the relatively powerless individual consumer (so-called 'consumer-scapegoating').

Looking first at the financial implications of PCT schemes, they in fact have a strongly redistributive or progressive tendency: there is a positive correlation between income level and carbon consumption, such that in most cases it will be persons on lower incomes left with surplus permits that they will be able to sell to persons on higher incomes (consuming above the national average). Admittedly, there could be exceptions; thus, the 2008 UK DEFRA Study cited earlier, noted that:

“approximately three fifths of UK households would have more credits than they would currently need under a personal carbon trading scheme based on equal per adult allocations and a cap set at current emissions. The distribution is found to be progressive with 71% of low income households identified as ‘winners’ (more than enough allowances to meet their current emissions) and 55% of high income households ‘losers’ (insufficient allowances to meet their current emissions) Of the 2.1 million households that fall into the low income ‘loser’ category a high proportion live in rural areas, many live in larger-than-average homes, and the allowance deficit is driven by their heating rather than their transport emissions.”²⁷

As noted above, the DEFRA Study’s concern was with ‘direct emission’ PCT schemes, applicable to energy use. In fact, the problem – due to people being locked-in to systemic high-carbon energy use and unable to adjust in response to higher prices (demand inelasticity) would be much less likely in an indirect-emissions PCT scheme, as proposed in this paper, applicable to goods. Here, consumers, once they exhausted their supply of permits, would be faced with a choice – to spend more money, by buying additional permits, or to switch to low-carbon products for which permits are not required.

It is true that this might still be thought unfair to consumers with a particular profile, i.e. on low incomes with a penchant for high-carbon goods. Unlike persons on high incomes, who – if they wish – may acquire permits to continue to consume high-carbon goods, they have little real option but to make do with less-appealing (to them) low-carbon substitutes. However, this merely illustrates the truism, accepted in every market economy, that people can only purchase and enjoy goods legally if they have the necessary economic means.

Arguably, such a response may seem cynical – is it not a paradigm instance of disrespect and even exploitation of the poor to hold that the rich can simply pay them to pollute? This point was considered by the 2008 UK House of Commons EAC, which in its Report offered the following riposte:

27 DEFRA, p. 12.

“Such reactions...ignore the facts that at present the poor receive no cash for their deprivation and the rich currently pollute without paying anyone. Under a [PCT scheme], at least the poor would, on average, be paid for their deprivation. And, on average, it would be the rich who would be paying the poor in order to sustain their carbon-intensive lifestyles. [...] These facts do not make such a system perfect, ...[b]ut by starting from an equitable distribution of rights to emit carbon dioxide amongst the population, it is undoubtedly socially progressive.”²⁸

Another problem that some have seen with PCT schemes relates to the ‘double-counting’ they may involve. Thus, for schemes that focus on direct consumer carbon emissions, through energy and fuel use, it has been suggested that this is unfair as it is getting consumers to pay again for carbon emissions, which have already been paid for upstream by the producer (where they are covered by the existing EU ETS).²⁹ This point was also considered by the 2008 UK House of Commons EAC Report, which however remained doubtful as to how far such an effect would be unfair.³⁰ Indeed, given that it is two discrete parties who are called on to pay, it is not immediately clear why it should be. Admittedly, the producer might seek to pass its part of the costs on to the consumer by raising the price, but only if it were confident the latter would still buy the product. In any case, there again appears less scope for this phenomenon to occur in PCT schemes directed at consumer goods, given their greater price-elasticity.³¹

The second main concern mentioned above as to the impact of such a scheme on consumers, is that they would find it too difficult and time-consuming to manage. In fact, though, as pointed out in evidence to the House of Commons EAC Report, it would be possible to design a scheme so as to minimise the administrative burden on the consumer. The trading process could be fully automated, with no need for them actively to participate:

“An individual will have a certain balance in their carbon account. When they make carbon purchases, allowances are surrendered from this account. If the individual’s carbon account is empty, allowances must still be surrendered at point of purchase. The retailer will automatically buy carbon allowances on the customer’s behalf, and surrender them immediately. The cost of the carbon allowances bought in this way will be added to the amount paid by the customer. The customer does not have to actively search for extra allowances...”³²

28 *House of Commons EAC*, p. 30, citing evidence from the UK Centre for Sustainable Energy.

29 *Woerdman/Bolderdijk*, *Eur J Law Econ* 2017, p. 553, 561.

30 *House of Commons EAC*, p. 15.

31 Compared to PCT schemes that target direct emissions from energy use, there is arguably less potential too for overlaps with upstream ETS measures.

32 *House of Commons EAC*, p. 23.

A related administrative concern, though, points up possible privacy issues: to keep track of individual carbon allowances, and how they are deployed, would there not need to be a massive surveillance apparatus, intruding into sensitive areas of people's lifestyles? Again, though, a well-designed scheme taking advantages of advanced IT security and privacy mechanisms should be able to deal with such concerns.³³ There would be no need to link identified individuals to specific purchases for any longer than the moment of transaction; all that subsequently would need to be known (and could be stored securely locally, e.g. in an app on the individual's smartphone or on a 'carbon card,' not in a central database) is the number of permits that remain on the consumer's carbon account.³⁴

The third kind of objection to PCT schemes based on the wish to protect the consumer, involves the belief that they serve to encourage 'consumer scapegoating.' Thus a criticism sometimes levelled at 'green-label' type schemes, is that, while appearing to give consumers a choice to purchase more environmentally friendly goods (and blaming them for not doing so), the 'choice' is in fact illusory: the consumer's purchasing habits are formed by deep factors, many beyond conscious control, and they are unable, given informational paucity, to assess the merits of a new choice for a given green-labelled product.³⁵ Instead, it is urged, green initiatives should focus on holding accountable the more powerful players – manufacturers, wholesalers, situated higher up in the production chain.

There are two things that can be said here. First, while it is certainly the case that at individual level, consumers are relatively powerless, so that it is not appropriate to saddle them with (individual) responsibility for the proliferation of carbon-unfriendly goods on the market, this does not hold true at the collective level. At the latter level, there is even a sense in which consumers (rather than producers) bear primary responsibility: as Adam Smith once stated, "consumption is the sole end and purpose of all production"³⁶

Second, the effect of a PCT scheme, as sketched in Part D., would be precisely to empower consumer choice at the individual level: a single straightforward EU-wide labelling scheme tied to the relative carbon-friendliness of competing goods in a given market, would provide clear information to compare one specific characteristic of the goods (contrast, the present variety of labelling-schemes for different classes of good, applied by multiple

33 *Woerdman/Bolderdijk*, Eur J Law Econ 2017, p. 553, 566.

34 *DEFRA*, p. 16.

35 *Akenji*, Journal of Cleaner Production 2014, p. 13.

36 *Smith*, Book IV, Chapter 8, 49.

bodies and focusing on diverse characteristics).³⁷ Moreover, the consumer would have the assurance that their choice for a given green-labelled product is not a futile minority gesture (nullified by the continued preferences of the majority for red or orange goods), but that, due to the dynamics of the PCT-system, including its financial incentives, they are acting in concert with millions of others to make a genuine difference to carbon emissions. In this context, the UK House of Commons EAC observed in its Report:

“One of the key strengths of a personal carbon trading scheme would be the incentive of saving (or even gaining) money by cutting personal emissions. Carbon accounts and statements, [and] receipts at point of purchase..., would show the positive results of a change in behaviour. As well as penalising those who emitted carelessly, [the] scheme would reward those who were making the effort to change.... The combination of incentive and visibility could be a potent mix for ensuring engagement in the scheme.”³⁸

E. Wider Implications of the Scheme

Arguably one of the most significant aspects of a PCT scheme of the kind proposed above is its potential to reduce carbon emissions arising from the production (and shipping) of consumer goods not only within the EU, but also beyond. This point appears most clearly when one recalls that, as noted in Part A., a significant reason for the EU's success in reducing its total carbon emissions since 1990 is by exporting the problem: the goods today consumed in ever greater numbers by the EU consumer are increasingly manufactured in countries like China or India.³⁹ On the conventional basis of carbon accounting, the emissions then show up in the balance sheet of the producing country, not in that of the EU, even though the goods were made to be consumed here.⁴⁰

In Part A., it was left open whether this allocation of responsibility is appropriate. However, ultimately there is no need to decide. Rather, what is key is the power it gives to the EU, through introducing a PCT internally within its territories, to influence production and transportation processes

37 Potential consumer responses to the carbon-labelling of goods in the context of a PCT scheme are surveyed in *Carbon Trust Advisory/Coca Cola*, p. 21.

38 *House of Commons EAC*, p. 10.

39 According to one study, reliance on Chinese imports meant UK carbon emissions for 2004 were 11% lower than if the relevant goods had been produced domestically: *Druckman/Jackson* in: Clift/Druckman, p. 181, 184.

40 *Druckman/Jackson* in: Clift/Druckman, p. 181, 184.

in a positive (carbon-reducing) direction across the globe. This is critical given that, as also noted in Part A., carbon emissions from the EU itself (on the conventional accounting basis) only make up some 8 per cent of total world emissions. The new Carbon Border Adjustment Mechanism (CBAM) announced in the Green Deal, will seek to address the carbon embedded in EU imports of key raw materials;⁴¹ complementing this with a PCT scheme that targets consumer goods has the potential to be even more effective.

In particular, as matters stand, it is likely a large proportion of consumer goods imported into the EU from third countries would receive orange or red classifications, shifting demand away from those goods. In response, importers into the EU would be incentivised to alter their supply sources towards producers in the third country who adopt lower-carbon-emitting processes. In the light of the size of the EU market, this would provide a strong impetus towards greener production there; indeed, since many of the relevant producers would at the same time be supplying goods for their own domestic markets, it could have positive knock-on effects on consumption dynamics in those markets too.

A concern at this point may nevertheless be that the economies in developing countries would be negatively impacted to a disproportionate degree: countries geographically distant from Europe would be unable to compete in terms of 'greenness' with products made close to or within the EU, not least because of the additional carbon emissions from shipping the goods. Admittedly, this might in part be offset by greater green innovation in the transport sector (a desirable outcome, given that sector's present contribution to carbon emissions across the world).⁴² But some competitive disadvantage would likely remain, with the risk of cementing current, troubling global wealth inequalities.

Fortunately, the PCT scheme sketched above has itself the potential to operate as a means of reducing these inequalities, namely by reason of its scalability. Here, it should be recalled that in Part D., when discussing how carbon permits for consumer goods should be allocated within the EU, it was suggested this should occur differentially according to member states' respective levels of consumption. Thus, in wealthier states, where consumer historically purchase higher amounts of carbon-intensive goods, the initial number of permits would be higher than in poorer states, where average past consumption levels were lower. It was proposed further that the respective caps on permits should subsequently be reduced at different speeds,

41 *European Commission* 2021, p. 12.

42 Carbon emissions from freight were estimated in 2015 to account for over 7% of total global emissions, with this figure set to increase: *OECD/International Transport Forum*, p. 3.

falling fastest in the wealthiest member states, so the level of permits per capita is ultimately the same throughout the EU. At that stage, too, the permit market would be made EU-wide, to allow trading between consumers across all member states.

Importantly, there is nothing in principle to stop the above process being continued further, so as to apply beyond the boundaries of the EU. Thus, once average per capita consumption in the EU of carbon-intensive goods were brought down to the average in the lowest-consuming EU member state, a next step could see the EU enter bilateral treaties with third countries, whose consumption of such goods remains lower still. These would allow EU consumers to acquire the carbon permits they need, if they wish to purchase goods above the EU average from citizens in those other countries. In return, and to avoid rebound effects, the treaty would require their governments to introduce the same system of grading consumer goods according to their carbon-intensiveness (and permits to acquire them) as in the EU. The approach could be successively scaled up (using a gradually reducing cap), helping to reduce both wealth inequalities and global carbon emissions.

G. Conclusions

It is suggested that a PCT scheme focusing on carbon emissions embedded in consumer goods, as proposed in this paper, has a number of strengths. Its intuitively plausible starting point is that each individual has equal rights (and responsibilities) regarding the carbon they contribute to the atmosphere. By assigning these rights, while enabling consumers to trade them, it incentivizes the purchase of goods with less carbon impacts than competing goods. At the same time, consumers are made aware of their own contribution, while being empowered by the knowledge that their choices operate within a collective framework to reduce overall emissions. For their part, producers are incentivized to innovate to reduce the carbon emissions from the goods they market. Last but not least, the scheme has significant potential to exert effects in non-EU countries, by encouraging the carbon-friendly production and transportation of goods, intended for import into the EU.

Much of the detail of how such a scheme would operate in practice naturally stands in need of elaboration. An incremental and iterative process appears essential to dovetail it effectively with other existing policies, while learning from mistakes and pitfalls that arise along the way. At the same time, past objections to PCT schemes, in particular on the basis they unfair-

ly target consumers, can be seen to be misplaced. To conclude, there is a strong case for the EU to add a PCT scheme of the kind proposed to the rest of the Green Deal.

Bibliography

Akenji, Consumer scapegoatism and the limits to green consumerism, *Journal of Cleaner Production* 2014, p. 13.

Carbon Trust Advisory/Coca Cola, Personal Carbon Allowances White paper – how to help consumers make informed choices, 2012. Available at: <https://www.carbontrust.com/resources/personal-carbon-allowances-white-paper>.

DEFRA, Synthesis report on the findings from Defra’s pre-feasibility study into personal carbon trading 2008. Available at: <https://www.teqs.net/Synthesis.pdf>.

Druckman/Jackson in: Clift/Druckman, *Taking Stock of Industrial Ecology*, Springer, 2016, p. 181.

European Commission, Fit for 55 – delivering the EU’s 2030 Climate Target on the way to climate neutrality, COM(2021) 550 final.

European Commission, EU ETS Handbook, 2015.

European Commission, Green Paper on Greenhouse Gas Emissions Trading Within the European Union, COM(2000) 87 final.

Hot or Cool Institute, 1.5-Degree Lifestyles: Towards A Fair Consumption Space for All: Summary for Policy Makers, 2021.

House of Commons EAC, Personal Carbon Trading, Fifth Report of Session 2007-8. Available at: <https://publications.parliament.uk/pa/cm200708/cmselect/cmenvaud/565/565.pdf>.

IPPC, Climate Change 2021, The Physical Science Base – Summary for Policy makers.

Kingston/Heyvaert/Cavoski, *European Environmental Law*, CUP, 2017.

Nerini/Fawcett/Parag/Ekins, Personal carbon allowances revisited, *Nature Sustainability* 2021.

OECD/International Transport Forum, The Carbon Footprint of Global Trade, 2015.

Parag/Fawcett, Personal carbon trading: a review of research evidence and real-world experience of a radical idea, *Energy and Emission Control Techniques*, 2014, p. 23.

Smith, An inquiry into the nature and causes of the wealth of nations, 1776.

Woerdman/Bolderdijk, Emissions trading for households? A behavioral law and economics perspective, *Eur J Law Econ* 2017, p. 553.

Mirko Kruse¹ and Jan Wedemeier²

The Green Deal and Mission-Oriented Innovation Policy in Europe – What about Smart Specialisation?

Abstract: The European Commission's Green Deal seeks to provide an opportunity to battle climate change, make production and consumption more sustainable and less energy-intensive, and to decouple economic growth from environmental degradation. The green transition in Europe is not only an opportunity for economic development but also to address the shortcomings of European research and innovation policy. To exploit these opportunities, reforms of different extent are required. A suitable framework to coordinate this effort considering green transition in Europe can be Smart Specialisation which is already an instrument of European innovation policy and possesses the capacity to coordinate investment in certain technologies, supporting selected sectors and to explore new niches of structural diversification. The missing link between green transition and Smart Specialisation can be the concept of mission orientations as a new frame of innovation policy. The authors argue that a combination of Smart Specialisation with green missions can be mutually beneficial.

Keywords: Green Deal, Sustainability, Smart Specialisation, EU, Mission-oriented Innovation, Regional Policy

JEL-Code: O3, O4, O52; Q5

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A. Introduction

Europe today faces challenges that are stumbling blocks for continued economic growth and are unlikely to be addressed by business-as-usual approaches. Among these challenges are low innovation intensity, the consequences of the Corona pandemic and the necessity of a green transition of the European economy.³ Thereby, a holistic approach which focuses on innovation and provides an opportunity to address multiple challenges at the same time is required.⁴ These challenges differ when it comes to their actuality. For instance, low growth constitutes a phenomenon which is experienced in several advanced economies since the aftermath of the global financial crisis starting in 2007 and following years.⁵ The intensity of innovation in Europe and in Germany has diminished in recent years. Almost 50% of German companies have failed in adapting their innovation profile to recent changes and about 11% engage in almost no innovation at all. Especially the gap between large and small-to-medium-sized enterprises (SMEs) in terms of innovation is increasing to the disadvantage of SMEs.⁶ On a broader scale, the innovation gap between the EU and the United States and Japan as main competitors remains significant and measures to address this growing gap by, for instance, increasing R&D spending to 3% of GDP, have not been achieved.⁷ Moreover, the lessons learned from the Corona pandemic call for a new kind of policy that not only restores the pre-Corona situation but sets the basis for a resilient post-pandemic economy and society.⁸

Finally, the green transition to fulfil the Paris agreement and limit global warming to 1.5°C will need to be far more ambitious and faster than the current path development implies.⁹ The fundamental and short-term nature of this transition will swipe away businesses and business models that do not manage to transform themselves to a sustainable path. On a national level, the cards get shuffled anew. An economically leading position of today is no guarantee of tomorrow's prosperity so that established mechanisms and structures are challenged. While the situation is characterised by a

3 *Lund Declaration*, 2009; 2015.

4 *Dachs et al.*, 2015.

5 *Deledi et al.*, 2019; *European Commission*, 2017.

6 *Breitinger et al.*, 2021.

7 *Barca*, 2009; *European Commission*, 2017.

8 *Gianelle et al.*, 2020a.

9 *David*, 2009; *IPCC*, 2021.

high level of uncertainty, the transformation also bears the opportunity to overcome present shortcomings.¹⁰

Such a successful transition requires a change in several areas of which innovation and structural policy is one of the most important ones. Recently, innovation is increasingly regarded not as an end in itself, but rather as a measure to contribute to societal developments.¹¹ This viewpoint requires the recognition of a target and the establishment of missions to reach future prosperity.¹² Mission-driven approaches to innovation policy are increasingly adopted in countries which are regarded as strong innovators or innovation leaders.¹³ The European Commission already expressed its ambition to focus not only on quantitative but also on qualitative growth under the premise of being smart, inclusive, and sustainable.¹⁴ One of the challenges to motivate missions is the green transition, institutionalised in the European Green Deal.¹⁵

Against this backdrop, the paper at hand will contextualise the Green Deal in the context of new approaches to innovation policy and discuss its potential integration in existing innovation policies in Europe, namely the Smart Specialisation approach.¹⁶ To do so, the paper is structured as follows: firstly, the Green Deal as a challenge and innovation as an instrument are introduced. Secondly, mission-oriented policies are discussed as a new narrative of innovation policy in reaction to grand challenges. This discussion is, thirdly, complemented by an overview of practical examples of mission orientation in the context of green transitions. Fourthly, the European understanding of innovation instruments of Smart Specialisation is introduced and discussed as a potential mechanism for implementation of the Green Deal. The paper closes with a conclusion and an outlook.

B. The Green Deal and Innovation Policy

It is increasingly recognised both publicly and politically that several grand challenges have occurred over time and need to be addressed. For instance, the first Lund Declaration in 2009 called on the EU to focus on society's

10 *Breitinger et al.*, 2021.

11 *Breitinger et al.*, 2021; *Tuffs et al.*, 2020.

12 *Mazzucato*, 2015.

13 *Angelis*, 2021.

14 *European Commission*, 2017; *Mazzucato*, 2015.

15 *European Commission*, 2021a.

16 *Gianelle et al.*, 2020a.

major challenges and move beyond rigid short-term limitations in the form of a new deal among European institutions.¹⁷ First successes have been achieved in the meantime, regarding the aspiration to align European and national strategies and instruments.¹⁸ However, it is debatable which trends really are grand challenges that motivate larger efforts. One approach would be to analyse current megatrends that shape development in Europe and beyond as listed in foresight studies and comparable documents. Among these trends are demographic change, digitalisation, security, health, work and production, or sustainability.¹⁹ Here, foresight studies are helpful to identify trends and future opportunities, but they do not deliver a complete and commonly accepted list of grand challenges.²⁰ In this regard, the Sustainable Development Goals (SDGs) formulated by the UN give more orientation by formulating global societal goals such as no poverty (SDG 1), good health and well-being (SDG 3), gender equality (SDG 6), or climate action (SDG 13). However, from a practical perspective, the SDGs are still too broad and need to be divided into clear and actionable objectives or missions.²¹

In the context of sustainability and green transition, particularly global warming, tightening supplies of energy, water and food, or public health play a major role and will most likely define the challenge of transforming Europe into an eco-efficient economy.²² The European answer to all these challenges was presented with the introduction of the European Green Deal in 2019. This Green Deal, a reference to Roosevelt's New Deal in the 1930s, announces to transform the EU into a modern, resource-efficient, and competitive economy with the goals of (1) zero net emissions of greenhouse gases by 2050, (2) economic growth decoupled from resource use, and (3) no person and no place left behind.²³ The targets align with previous strategies such as the Europe 2020 strategy which was based on the objectives of smart, sustainable, and inclusive growth.²⁴

As a reaction, the European Commission has recently formulated five guiding missions to spell out its approach to the grand challenges of our time. These missions are: (1) adaptation to climate change, (2) cancer, (3)

17 *Lund Declaration*, 2009.

18 *Lund Declaration*, 2015.

19 *Mesloh et al.*, 2021.

20 *Mazzucato & Penna*, 2018; *Dachs et al.*, 2015.

21 *Mazzucato*, 2018.

22 *Lund Declaration*, 2009.

23 *European Commission*, 2021b; *European Commission*, 2020.

24 *Doranova et al.*, 2012.

restore our ocean and waters by 2030, (4) 100 climate-neutral and smart cities by 2030, (5) a soil deal for Europe. One can already observe the high status of sustainability in these missions, of which four directly contribute to the superior challenge of green transition. Each of these missions is divided into smaller objectives such as supporting 150 European regions and communities to become climate resilient by 2030. Moreover, each mission is led by a mission manager and gets supported by a mission board of up to 15 experts.²⁵

Defining objectives is the one thing but developing a way how to get there is another discussion. Here, two of the major instruments to achieve the green transition are research and innovation.²⁶ The Green Deal not only recognises the urgency for a green transformation as formulated in the Paris Agreement, but explicitly emphasises the role of research and innovation policy in this regard.²⁷ Although it is true that not all grand challenges can be achieved by innovation, the green transition in Europe relies to a large degree on this strategy.²⁸ This is based on the notion in economic literature that innovation constitutes one of the main engines of economic growth and well-being, and research is considered the key to innovation.²⁹ Additionally, improving productivity and facilitating structural change as well as addressing social and environmental challenges are major outcomes of focused innovation.³⁰ This discussion is particularly important when it comes to catching-up processes in lagging behind regions.³¹ But research and innovation are not ends in themselves and not every kind of innovation automatically contributes to addressing the grand challenges such as a green transition. To exploit their potential, a focused policy of research and innovation is required that channels activity according to certain priorities. This means that the research process as such needs to be embedded in a new narrative that recognises a direction and an overarching contribution to transformative change.³² This is the basic idea of mission-oriented innovation policy.³³

25 *European Commission*, 2021a.

26 *Mazzucato*, 2018.

27 *Wolf et al.*, 2021.

28 *European Commission*, 2017.

29 *Solow*, 1957; *Mazzucato & Penna*, 2020.

30 *Mazzucato & Penna*, 2020.

31 *Pirvu et al.*, 2019; *European Commission*, 2020.

32 *McCann & Soete*, 2020; *European Commission*, 2020.

33 *Dachs et al.*, 2015.

C. Mission Orientation in Innovation Policy

Historically, innovation policy is divided into two frames, the first ranging from the aftermath of World War II until the 1980s and the second one from the 1980s ranging until today. Both frames are characterised by different understandings of growth processes, market functionalities, and knowledge creation and resulted in different political implications. The first frame of innovation policy focused on innovation for growth. Experience from the recent World War led to the notion that a strong governmental influence on the economy was desirable and able to achieve tremendous benefits and economic growth. Accordingly, the societal consensus generally argued in favour of a strong role of the state when it came to promoting innovation and addressing market failures.³⁴ The second framing set in in the 1980s when a new direction of economic theory became dominant, closely linked to the Reagan and Thatcher governments. This new framing added a narrative of efficiency and public saving rather than action. In the context of intensifying international competition and globalisation, the focus shifted to national systems of innovation (NIS).³⁵ The main focus of NIS understands the linkage of involved actors as aspects of shaping knowledge bases (i.a. know-what, know-who, know-why) and commercialisation.³⁶ The evolution of innovation economics came up as well as its approach on the individual firm behaviour and its dynamic within a framework of institutions.³⁷

On this basis, the understanding of innovation processes and innovation policy has changed significantly over the past 10-15 years, forming a third framing. The earlier framings stated that innovation was mainly driven by the individual genius of entrepreneurs, with the public sector at best as a facilitator, inspired by Schumpeter. Schumpeter defined innovation as a function of new combinations of scarce resources. The combinatory function is known as ‘entrepreneurial function’ (*Unternehmertum*). Schumpeter emphasised, moreover, the important aspect of innovation diffusion. In his early works Schumpeter’s entrepreneurial function is major for innovation (Schumpeter Mark I), while in later works he emphasised the innovative large firm (Schumpeter Mark II) to enable radical and disruptive innovations.³⁸ As opposed to that, Mazzucato (2015) underlines that innovation is a collective process in a system of heterogenous actors, a fundamentally

34 Schot & Steinmueller, 2018; European Commission, 2017.

35 Schot & Steinmueller, 2018; Kattel & Mazzucato, 2018.

36 Lundvall, 1992.

37 Nelson & Winter, 2002.

38 Schumpeter, 1943; Fagerberg, 2005.

uncertain process in a Knightian sense and a path-dependent, cumulative, and highly clustered process. This is following the notion that earlier understandings of innovation policy, which were focused on marginal change and market-fixing, have their strengths in identifying areas with underinvestment in research and development (R&D), but fall short when it comes to identify areas with high potential profits. The idea of mission orientation as the third framing of innovation policy distances itself from earlier approaches. While the earlier framings had their justification in their time, the fact that developing countries hardly benefited from former innovation policy and the existence of grand societal challenges, require a new approach to innovation.³⁹

Although the new framing is still evolving, its outlines become clearer with a focus on the question how R&D can contribute to meeting social needs on a more fundamental level.⁴⁰ First of all, the measurement of success takes a different perspective in the third framing of innovation policy. While the primary focus of earlier frames was to increase the quantitative rate of innovation in the system (e.g. measured by the number of patents or jobs), mission-oriented innovation policy asks the question of the qualitative direction of innovation and whether it contributes to address the grand challenges.⁴¹ This approach is also found in the idea of “unbalanced growth” formulated by, among others, Albert Hirshman who argued in favour of structural renewal by directing innovation in a desirable direction.⁴² The modern equivalent in the context of the Green Deal would be the facilitation of research and innovation for actions against climate change.⁴³ To not induce untargeted growth is already based in European policy which has formulated the ambition to achieve a particular type of economic growth – namely smart, inclusive, and sustainable growth – which admits that economic activity is not only characterised by a rate but also by alternative directions.⁴⁴ In this regard, missions are considered a tool to steer economic growth and focus research, innovation, investment, and other activities on solving the grand challenges.⁴⁵ The key idea of mission orientation is thereby to provide a target for development and establishing an environment to

39 Kattel & Mazzucato, 2018; Deledi et al., 2019; Mazzucato et al., 2019; Weber & Robracher, 2021; Jütting, 2020.

40 Schot & Steinmueller, 2018.

41 Foray, 2009; Kattel & Mazzucato, 2018; Mazzucato et al., 2019.

42 Mazzucato et al., 2019.

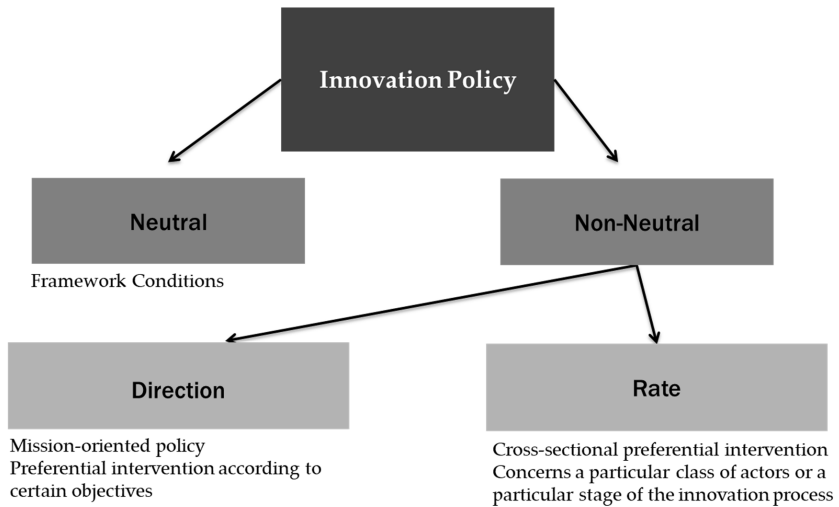
43 Foray, 2009.

44 Kattel & Mazzucato, 2018.

45 Mazzucato, 2018.

reach this target. The playing field of the market is thereby not levelled, as proclaimed in earlier framings, but intentionally tilted in favour of certain missions.⁴⁶ Figure 1 summarises this structure of innovation policy schematically using neutrality of direction as a distinguishing characteristic.

Figure 1: Schematic Summary of Innovation Policy



Source: Foray (2015; 2018).

What further differentiates the mission-oriented approach from previous framings is its emphasis on cooperation as well as the recognition of multiple drivers and heterogenous actors shaping the innovation process.⁴⁷ This is also because thematically limited approaches, such as a purely scientific or technological focus, are too narrow to address a grand challenge with its systemic extent. By contrast, the cooperation between different disciplines (“creative corporatism”, “varieties of cooperation”) and all relevant stakeholders constitutes a strength of mission orientation.⁴⁸ This cross-sectoral approach also applies to the general environment of innovation which might

46 Mazzucato et al., 2019.

47 Kattel & Mazzucato, 2018.

48 Mazzucato, 2018; Kublmann & Rip, 2018; Breitinger et al., 2021; Mazzucato et al., 2019; European Commission, 2021a.

become subject to further modifications.⁴⁹ Also, bottom-up experimentation is considered a key feature since each mission possesses its own characteristics and therefore requires different solutions.⁵⁰ Decentralisation and local decisions processes are emphasized rather than centralisation and top-down governance. The risk associated with entrepreneurial discovery, bottom-up creativity, and experimentation is thereby an inevitable component of mission-oriented innovation.⁵¹ Only by having the courage to fail, is disruptive innovation enabled and new solutions “outside the box” come up.⁵²

Such an inclusion of a wider range of stakeholders, cross-sectoral and cross-disciplinary linkages requires new governance arrangements to steer such an extensive process.⁵³ The involvement of new and larger stakeholder groups also means the involvement of civil society in early stages of missions as well as close interactions between governing institutions such as the European Commission and member states in Europe.⁵⁴ This is also related to a new and more prominent role of the state in the scope of mission-oriented policy. Here, the state is regarded as a creator of markets and provider of mission targets while also involving the aspect of financing. Strategic investments can determine a direction of growth and function as guidance for further private investment.⁵⁵

Studies on the efficiency of different public policies imply that mission-oriented spending on innovation performs well above traditional forms such as tax cuts, or investment in “shovel-ready” projects and infrastructure when it comes to economic effects. In this regard, such policies lead to permanent rather than temporary effects on the level of output and tend to positively affect other economic areas by generating a GDP multiplier effect around ten times larger than standard government spending excluding R&D, implying a “supermultiplier” effect. Also, private investment appears to get crowded-in by mission-oriented spending rather than getting crowded-out.⁵⁶

In Europe, the early steps towards mission orientation trace back to the 1990s, and the beginning of the 2000s, in the context of societal challenges

49 Kuhlmann & Rip, 2018; Ergas, 1986.

50 Kattel & Mazzucato, 2018; European Commission, 2017; Larrue, 2021.

51 European Commission, 2017.

52 Mazzucato, 2018; Breitinger et al., 2021.

53 Wittmann et al., 2020; Dachs et al., 2015.

54 European Commission, 2017; Mazzucato & Penna, 2020; Larrue, 2021; Mazzucato et al., 2019.

55 Mazzucato et al., 2019.

56 Deledi et al., 2019.

such as global warming.⁵⁷ The “Maastricht Memorandum” from 1993 already called for a new mission for science and technology policy.⁵⁸ However, mission orientation needed several further years to gather pace in Europe. In 2006, the Aho Group demanded actions to provide a suitable environment for research investment, followed by the ERA Rationales Group in 2007 that proposed structuring programmes along grand challenges. This proposal was the basis for an expert group proposing a stage-based process to design research and innovation policies for such challenges in 2009.⁵⁹ The ongoing discussion came hand in hand with an attention shift after the targets of the Lisbon Strategy 2000-2010 had been missed and a debate to reform the European research system set in.⁶⁰ One of the most prominent results on research and mission orientation was an adaptation of the European Horizon 2020 funding programme structure.⁶¹

Horizon 2020, the European framework programme funding research, technological development, and innovation, introduced seven societal challenges and innovation partnerships as a new approach of governing and steering innovation and research.⁶² The first attempts failed to achieve a transformative impact on the European economy and social goals. Therefore, it was proposed in 2017 to introduce a mission-oriented approach to address the global challenges which were already recognised in the previous programming period 2014-2020.⁶³ A perspective on the representation of sustainability-related research in the Horizon 2020 programme is presented in Table 1. Here, sustainability-related projects were identified based on the calls and their relation to green transition, including, among others, blue growth, renewable energy, circular economy, green vehicles, energy efficiency, or biotechnology. The comparison with the total number of projects funded under Horizon 2020 reveals that, although the number of sustainability-related projects was relatively high particularly between 2015 and 2018, the funding they received was lower than their proportion would have suggested. It is open to the fact that partial aspects of sustainability-related projects can also be included in the other projects and thus enable a cross-sectoral approach to innovation transfer and development. Accordingly, the next programming period of the framework programme, called Horizon

57 Wittmann *et al.*, 2020.

58 Larrue, 2021.

59 European Commission, 2017.

60 McCann & Soete, 2020.

61 European Commission, 2021a.

62 Mazzucato, 2018.

63 European Commission, 2017.

Europe, will take up the call for large-scale research and innovation missions rather than individual calls.⁶⁴ At almost the same time, the European Commission put the transition to a healthy planet, the digital economy, and a sustainable development, which all refer to grand challenges, at the core of its long-term policy agenda.⁶⁵

Table 1: Sustainability-related Research Projects in Horizon 2020

Year	All Projects		Sustainability-related Projects			
	Total	Funding (in bn EUR)	Total	% of all Projects	Funding (in bn EUR)	% of all Projects
2014	380	44.84	30	7.89	0.56	1.24
2015	4,706	27.29	468	9.94	1.80	6.58
2016	4,945	71.07	481	9.73	2.04	2.87
2017	4,975	41.74	417	8.38	1.77	4.25
2018	5,062	63.03	270	5.33	1.50	2.38
2019	5,552	69.47	154	2.77	1.08	1.55
2020	4,503	76.86	173	3.84	1.41	1.83
2021	4,085	79.66	132	3.23	0.95	1.19
2014-21	34,208	473.95	2,125	6.39	11.11	2.34

Source: Data Europe (2021).

D. Mission-Oriented Innovation Policy in National Practices

The most iconic example of mission-oriented innovation policy is probably the Apollo “man on the moon” mission announced in 1961. Characterised by a high technological complexity, an ambitious objective and countless involved stakeholders, the mission succeeded in 1969 with the first moon landing. However, the positive effects of the mission did not cease here but inspired further research in multiple sectors at later stages.⁶⁶ Still, the moon-shot mission was not the only mission-oriented policy, since basically all leading economies of that time oriented their innovation policy in a comparably designed approach.⁶⁷ Mission orientation in innovation policy inspired particularly the United States and major Western European countries, but

64 Larrue, 2021; Mazzucato, 2018.

65 McCann & Soete, 2020.

66 Mazzucato, 2018.

67 Kattel & Mazzucato, 2018.

also strategies in Canada (NCE – Networks of Centres of Excellence, GCC – Grand Challenges Canada), Japan (MITI – Ministry of International Trade and Industry) or the Soviet Union have stood out at some time.⁶⁸ Moreover, Latin America has produced a variety of examples of mission-oriented policies with different results and lessons learned. However, the focus of such policy approaches remains in developed countries although the potential in developing countries might be even higher looking at ways to overcome a resource extraction lock-in, infrastructural investments, security, or energy and the environment.⁶⁹

From a European perspective, other global players such as China or the United States appear to perform better in terms of innovation. Europe therefore needs to be creative to outperform the (arguable) disadvantage of a fragmented rather than centralised innovation system like in China or the United States.⁷⁰ When it comes to mission orientation in innovation policy, particularly the UK, France, Sweden, the Netherlands, and Germany have successfully adopted mission-oriented approaches in European contexts.⁷¹ The British example includes the British Innovation and Research Strategy for Growth calling for a more active role of the state, or the Industrial Strategy White Paper.⁷² Moreover, the UK formulated four missions, namely clean growth, artificial intelligence, ageing society, and the future of mobility that should shape innovation actions.⁷³ France also has a long and successful history of implementing mission-oriented projects while also Sweden formulated missions linked to global sustainability as a ground for cross-sectoral cooperation.⁷⁴ Comparably, Ireland has set up challenge-based funding to direct research expenditure towards societal challenges, as did the Netherlands where missions and priorities are negotiated between the relevant ministries and responsible stakeholders and guide both public strategies as well as public and private innovation activities.⁷⁵

Germany, as the largest economy in Europe, also has some tradition in mission orientation. These experiences go back to the 19th century and the “System Althoff” in Prussian higher education and research policy.⁷⁶ Re-

68 *Breitinger et al.*, 2021; *Kattel & Mazzucato*, 2018; *Dachs et al.*, 2015.

69 *Mazzucato & Penna*, 2018.

70 *Mazzucato*, 2018.

71 *Breitinger et al.*, 2021.

72 *Mazzucato et al.*, 2019; *Wittmann et al.*, 2020.

73 *Breitinger et al.*, 2021.

74 *Ergas*, 1986; *Dachs et al.*, 2015; *Angelis*, 2021.

75 *Angelis*, 2021; *Hekkert et al.*, 2020.

76 *Kattel & Mazzucato*, 2018.

cently, the idea of mission orientation has been introduced in the German Hightech-Strategy.⁷⁷ But probably the most prominent example of mission orientation as a tool for green transition is the German “Energiewende”. The goal of this initiative was to phase out nuclear power in Germany by the end of 2022 through transforming the energy system towards renewable energy and enhanced energy efficiency. Measurable targets were to generate at least 60% of final energy consumption and at least 80% of gross electricity consumption by renewable energy while reducing greenhouse gas emissions by 80-95% by 2050. The four objectives of the Energiewende were to (1) fight climate change, (2) phase out nuclear power, (3) improve energy security, and (4) guarantee industrial competitiveness and growth. A look back reveals important progress towards the goals set: renewable energy has become the most important source of energy; nuclear power is phased out as planned and there is a (moderately) positive progress towards energy efficiency. Although the emission reduction target is not likely to be met if external factors such as pandemic-related economic slowdown are not considered, the Energiewende can be attested a success when it comes to target evaluation.⁷⁸

The Energiewende was characterised by a high level of ambition, complexity, risk, and experimentation. As the success largely depended on technological innovations related to renewable energy, it constituted an important aspect to not prioritise a certain kind of technology over another but to provide a general direction and underline technology-openness. Creating an innovative environment, supported by public incentives, has released a certain level of excitement in terms of research, development and innovation that ensured not only an effective but also an efficient implementation. Accordingly, there was a mixture of top-down definition of directions and bottom-up work buy-in. Another important success factor was the legitimacy and public support gained through the engagement of citizens. Although the electricity consumers pay the bill of the transformation via feed-in tariffs, which has significantly increased the energy price, the positive public opinion was not significantly impacted negatively. Thereby, the cost-intensive aspect was complemented by creating the opportunity of private ownership in renewable energy generation to also exploit the benefits privately. Finally, the Energiewende successfully used the windows of opportunity that emerged over time, e.g., the Fukushima accident in 2011 or international climate agreements, to pass complex decisions.⁷⁹ However,

77 *Dachs et al.*, 2015.

78 *Kuittinen & Velte*, 2018.

79 *Kuittinen & Velte*, 2018; *Mazzucato*, 2018; *European Commission*, 2017.

the recent stagnation in German climate politics shows how changing regulating environments can disrupt functioning environments.⁸⁰

On a European level, the experience from German Energiewende, as well as from other mission-oriented approaches in different countries, can be used as lessons learned when it comes to formulating research and innovation missions for the green transition. Particularly the selection process with a political steering, topics of societal relevance, and the mobilisation of public involvement have proved to be crucial success factors. Probable missions for Europe are thereby decreasing the burden of dementia, a plastic-free ocean, or 100 carbon-neutral cities by 2030 which show a strong relation to sustainability and green transition which have been presented as grand challenges above.⁸¹

E. Smart Specialisation for Green Transition?

The European approach to tackling the major challenge of the green transition will primarily be based on research and innovation activities. The primary instrument of innovation in Europe are the so-called Smart Specialisation Strategies (S3), which is based on the deployment of innovative capacity and the creation of new connections between stakeholders both within and beyond a region to develop competitive regional advantages.⁸² Smart Specialisation as an instrument has been conceptualised to tackle the increasing productivity gap between Europe and, particularly, the United States which implied a more structured and focused research effort in Europe.⁸³ It was found that spreading the limited public investment thinly across several technological areas, copying the example of successful regions, did not make much of a successful impact.⁸⁴ Instead, the place-based characteristics of a region should be the starting point to develop particular strategies based on regional strengths. Every region needs to find its own niche in the economy as there is no one-size-fits-all solution.⁸⁵ Smart Specialisation is not a top-down planning doctrine that defines a particular set of strategies that a region must focus on. Instead, the concept is based on the so-called

80 Kruse, 2021.

81 Mazzucato, 2018.

82 Foray et al., 2021.

83 Barca, 2009.

84 Foray et al., 2009; Midtkandal & Sörvik, 2012.

85 Gianelle et al., 2020a.

entrepreneurial discovery to explore and discover new technological and market opportunities in a region by regional actors themselves.⁸⁶

The nature of Smart Specialisation as a tool of assessing already existing economic structures and reflecting on their further development has made it an important tool for regional structural transformation processes in Europe. Since the regional approaches should not just copy successful strategies from other regions, which might fail to be replicable due to different regional characteristics, the regional entrepreneurial discovery allows to break regional lock-in situations and really focus on particular comparative advantages.⁸⁷ From an economic perspective, Smart Specialisation builds upon theories of national and regional innovation systems as well as cluster theories. It now represents a core component of EU Cohesion Policy and most regions in Europe have developed Smart Specialisation Strategies.⁸⁸ The tremendous success of Smart Specialisation in less than a decade is explained by a strong political will of implementation, particularly from the European Union.⁸⁹

Nevertheless, the short time between idea formulation and practical implementation, makes Smart Specialisation an example of “policy running ahead of theory”.⁹⁰ Accordingly, the concept is subject to continuous adjustments both motivated by academic research and pragmatic implementation.⁹¹ The ongoing adjustment of Smart Specialisation explains why results of the policy are still fragmented.⁹² Preliminary results indicate that Smart Specialisation has only been partially implemented and mechanisms circumvent the idea of selective intervention. This may be explained by lobbying, political considerations such as higher support through widespread investment, risk-averse attitudes of policy makers as well as a lack of adequate institutional and administrative capacity.⁹³ Moreover, Smart Specialisation has introduced new processes and requirements that proved to be difficult in implementation for some regions.⁹⁴ Therefore, the concept is currently under revision for the current financing period 2021-2027. It is this revision that has provoked a variety of comments and recommendations from acade-

86 Foray, 2013; Di Cataldo et al., 2020; Girejko et al., 2019.

87 Foray et al., 2011; 2021; Gianelle et al. 2020a.

88 Tuff's et al., 2020; Foray et al., 2021; Montresor & Quatraro, 2018.

89 McCann & Soete, 2020.

90 Foray et al., 2011: 1.

91 McCann & Ortega-Argilés, 2016.

92 Foray et al., 2021.

93 Gianelle et al., 2020b.

94 Kroll, 2016.

mia on the future of Smart Specialisation.⁹⁵ Some authors argue in favour of a critical evaluation to strengthen the process and ensure an effective and comparable implementation across Europe without adding additional objectives.⁹⁶ Other authors see the revision phase as a chance for European innovation policy to align with the challenges defined by the Green Deal.⁹⁷

The position of using Smart Specialisation as an instrument not only for cohesion and regional innovation but also for the green transition of Europe is currently gathering pace.⁹⁸ This is backed by research on updating regional innovation systems in the context of grand challenges. Different approaches are proposed, for instance challenge-oriented regional innovation systems (CoRIS) that go beyond competitiveness and economic growth as guiding principles for innovation,⁹⁹ Dedicated Innovation Systems,¹⁰⁰ Challenge-led innovation policies to address grand societal challenges,¹⁰¹ Mission-oriented Innovation Systems (MIS),¹⁰² or transformative innovation policy.¹⁰³

What makes Smart Specialisation a probable instrument in light of the Green Deal is its versatility in target dimensions. Smart Specialisation today is already utilised as a tool for convergence in less-developed regions.¹⁰⁴ Apart from that social aspect, Smart Specialisation is also considered a key tool for the achievement of smart and sustainable growth.¹⁰⁵ Particularly its characteristic of combining top-down directionalities with bottom-up enterprise engagement makes Smart Specialisation a tool for green transition which is a comparable kind of transformational policy as the one Smart Specialisation was developed for.¹⁰⁶ This is even more true as the transition needs to recognise place-based factors and should build upon regional specialisations.¹⁰⁷ While Smart Specialisation lacks the directionality that the Green Deal can provide, the latter is in need of a policy framework like that of Smart Specialisation to mobilise resources and stakeholders all over

95 *Hassink & Gong*, 2019; *Kruse & Wedemeier*, 2019.

96 *Benner*, 2020.

97 *Doussineau et al.*, 2021.

98 *Larosse et al.*, 2020.

99 *Tödting et al.*, 2021.

100 *Pyka*, 2017.

101 *Raven & Walrave*, 2020.

102 *Hekkert et al.*, 2020.

103 *Schot & Steinmueller*, 2018; *Weber & Rohracher*, 2021.

104 *Kruse & Wedemeier*, 2020; 2021.

105 *Kogut-Jaworska & Ociepa-Kicińska*, 2020.

106 *McCann & Soete*, 2020; *Nakicenovic et al.*, 2021.

107 *Montresor & Quatraro*, 2018.

Europe. This would combine direction and technology-open autonomy and might lead to a more unified European innovation system.¹⁰⁸

The observation of a possible combination of the Green Deal and Smart Specialisation follows a discussion to ascribe the grand challenges a more prominent role in Smart Specialisation Strategies.¹⁰⁹ This discussion has proceeded so far that a renaming of Smart Specialisation Strategies (S3) to Smart Specialisation Strategies for Sustainable and Inclusive Growth (S4+) was proposed and a concept for Smart Specialisation Strategies for Sustainability (S4) is currently under development by the EU Joint Research Centre.¹¹⁰ This new S4 concept should introduce a green dimension in Smart Specialisation to complement economic and social aspects.¹¹¹ Certain countries such as Serbia and Slovenia have already experimented with including the SDG goals into their Smart Specialisation Strategies or put an emphasis on enabling factors required for an environmental transition. Moreover, the S3 of the Swedish region of Västerbotten strongly emphasises social innovations and sustainable development which might become a role model also for other regions when it comes to updating and refining their Smart Specialisation Strategies.¹¹²

Despite the ongoing discussion of green transition in Europe, the inclusion of green transition targets or SDGs in regional Smart Specialisation Strategies is still in an early phase.¹¹³ This claim is underlined by Figure 1 which portrays the notion of sustainability-related policy objectives in regional Smart Specialisation Strategies in Europe. The S3 of European regions have been browsed for notions of sustainability-related sectors in their policy objectives¹¹⁴ using data from the Eye@RIS3 platform (Joint

108 Larosse et al., 2020; Tuffs et al., 2020; European Commission, 2020; Robinson & Mazzucato, 2019; McCann & Soete, 2020.

109 Hassink & Gong, 2019; Doranova et al., 2012; Neto et al., 2018; Larosse et al., 2020; Lund Declaration, 2015; Esparza-Masana, 2021.

110 McCann & Soete, 2020; Nakicenovic et al., 2021.

111 Landabaso, 2020.

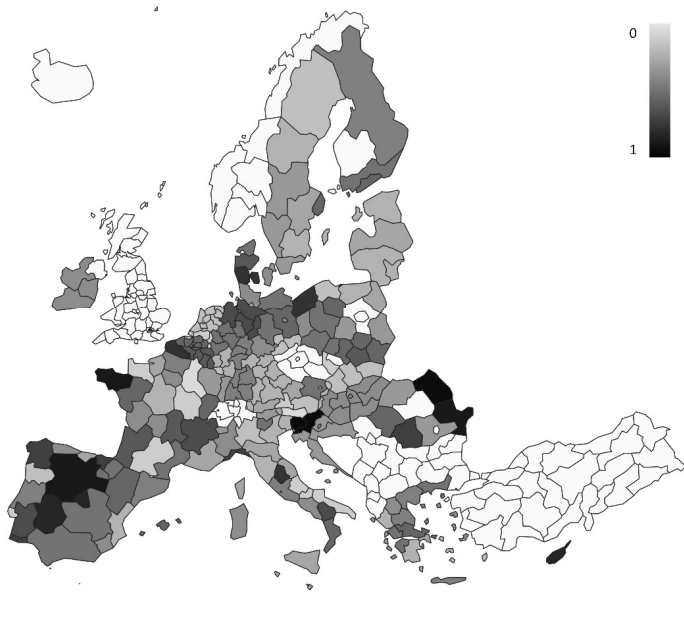
112 Nakicenovic et al., 2021.

113 Polido et al., 2019.

114 Sustainability-related sectors: B09 – Blue renewable energy, F43 – Biodiversity, F44 – Ecotourism, F45 – Nature Preservation, J61 – Bioeconomy, J62 – Climate change, J63 – Eco-innovations, J64 – High-speed rail-road transportation systems, J65 – Resource efficiency, J66 – Smart grid & integrated transport systems, J67 – Sustainable agriculture, J68 – Sustainable energy & renewables, J69 – Sustainable land and water use, J70 – Sustainable production and consumption, J71 – Waste management, D22 – Cleaner environment & efficient energy networks and low energy computing, D30 – Intelligent inter-model and sustainable urban area (e.g. smart cities).

Research Centre, 2021). The number of mentions per region is portrayed as an index between 0 (1 mention) and 1 (17 mentions). When a region did not present an own S3 but the related country did, these numbers were used (e.g. Croatia or Hungary). Missing data are illustrated in white. Figure 2 shows that sustainability has become an official policy objective in almost all European regions but to a differing degree. Although some strategies are currently being updated and will most likely reflect sustainability more prominently than the last strategy, mainstreaming sustainability in regional innovation in Europe is still developing.

Figure 2: Sustainability in Policy Objectives of Smart Specialisation Strategies



Source: Joint Research Centre (2021).

In order to really use Smart Specialisation as a channel and mechanism for the governance in the implementation of the green deal, adjustments of the existing mechanism are required that go beyond mere formalities.¹¹⁵

¹¹⁵ Montresor & Quatraro, 2018; Larosse et al., 2020.

Naturally, a grand challenge, such as the green transformation of the European economy, will not be achieved by isolated efforts of some regions but only via a major effort of the European research and innovation system and other related systems. Therefore, a mutual mission as a focus point of regional Smart Specialisation would allow for interregional cooperation and learning from other regions with similar challenges and provoke a level of excitement within Europe that can kindle the aspired green transformation.¹¹⁶ Changing the relatively new process of developing a Smart Specialisation Strategy again in favour of green transition and sustainability topics might provoke a certain level of confusion. Nevertheless, the green transition mission might be just the topic that Smart Specialisation has been missing so far to give a real meaning to the process apart from empowering regional competitive advantages.

F. Conclusion

It can be concluded that green growth and sustainable transition are societal goals and fulfil the requirements as grand challenges.¹¹⁷ The Green Deal, introduced by the European Commission in 2019, seeks to provide an opportunity to fight climate change, make production and consumption more sustainable and less energy-intensive, and to decouple economy growth from environmental degradation. Moreover, the green transition in Europe is an opportunity for economic development, to become a global role model, and to address the shortcomings of European research and innovation policy.¹¹⁸ Although the EU spends a higher relative amount on research and development (R&D) than competitors such as China, Japan, or the United States, the productivity gap between Europe and its competitors remains large – to the disadvantage of the EU.¹¹⁹ Particularly the fragmented nature of European research, the persistence of national policy cultures, and insufficient cooperation are problems that may be addressed by an overarching mission-oriented structure.¹²⁰ Comparable approaches to innovation policy have already been successfully introduced historically and in different geographical backgrounds. For Europe, the aspiration of an excellent science based, world-class research infrastructure, and a new generation of research

116 McCann & Soete, 2020; European Commission, 2017.

117 Gianelle et al., 2020a.

118 Tuffs et al., 2020.

119 European Commission, 2017; Larosse et al., 2020.

120 European Commission, 2017; Kattel & Mazzucato, 2018.

chers are both a prerequisite of a successful transformation and a result of pursuing a mission-oriented approach that could, at the same time, address shortcomings of the European innovation system.¹²¹

To exploit these opportunities, several reforms of different extent are required. First, a clear and manageable challenge is to be defined in a participatory process to guide research, innovation, investment, and cooperation. This challenge, for instance the green transition of Europe, then needs to be complemented by practical missions. The state in this regard is assigned to organise the process of demand articulation and develop the public capacity to support the process. Another culture towards failure and experimentation, combined with the establishment of institutional spaces for socio-technical experiments would allow for a technology-open search process for the best solutions. A decentralised innovation policy with a strong perspective of cities and regions, under a common challenge and regulation, would correspond to this new kind of innovation environment.¹²²

A suitable framework to coordinate this effort in light of a green transition in Europe can be Smart Specialisation which is already an instrument of European innovation policy and possesses the capacity to coordinate investment in certain technologies, supporting selected sectors and to explore new niches of structural diversification.¹²³ This is in line with an increasing discussion to introduce missions as a guiding principle to Smart Specialisation which is, as yet, missing. Smart Specialisation, on the other hand, combines the required factors for a successful implementation of the Green Deal, such as mobilising resources and investment, building upon place-based characteristics and combining top-down directionality with bottom-up entrepreneurial activity. Examples such as the Energiewende in Germany have shown how a well implemented mission-oriented policy can enable green innovation at a large scale. These examples should be a starting point when it comes to reforming European innovation policy.

G. Sources

Angelis, J. (2021): Mission-oriented innovation policies: driving communities forward, EFIS Centre, [online], available at: <https://www.efiscentre.eu/mission-oriented-innovation-policies-driving-communities-forward/> [accessed October 21st, 2021].

121 *Lund Declaration*, 2015.

122 *Frenken*, 2017; *Mazzucato*, 2015; *Kattel & Mazzucato*, 2018.

123 *Gianelle et al.*, 2020a.

- Barca, F.* (2009): An agenda for a reformed cohesion policy – A place-based approach to meeting European Union challenges and expectations, Independent Report prepared at the request of Danuta Hübner, Commissioner for Regional Policy.
- Benner, M.* (2020): Six additional questions about smart specialization: implications for regional innovation policy, *European Planning Studies*, 28(8), pp. 1667-1684.
- Breitinger, J.C.; Edler, K.; Jackwerth-Rice, T.; Lindner, R.; Schraad-Tischler, D.* (2021): Good practices in mission-oriented innovation strategies and their implementation, *Innovation for Transformation – Fostering innovation to address societal challenges*, Results Paper 1, Bertelsmann Stiftung, Gütersloh.
- Dachs, B.; Dinges, M.; Weber, M.; Zahradnik, G.; Warnke, P.; Teufel, B.* (2015): Herausforderungen und Perspektiven missionsorientierter Forschungs- und Innovationspolitik, *Studien zum deutschen Innovationssystem, 12-2015*, Expertenkommission Forschung und Innovation (EFI), Berlin.
- Data Europe* (2021): *CORDIS – EU research projects under Horizon 2020 (2014-2020)*, [online], available at: <https://data.europa.eu/data/datasets/cordish2020projects?locale=de> [accessed July 9th, 2021]
- David, P.A.* (2009): Preparing for the Next, Very Long Crisis: Towards a 'Cool' Science and Technology Policy Agenda – For a Globally Warming Economy, Selected papers from Research Commissioner Janez Potocnik's Expert Groups, *Knowledge for Growth, Prospects for science, technology and innovation*, pp. 54-61.
- Deledi, M.; Mazzucato, M.; Agnolucci, P.; de Lipsis, V.; Ryan-Collins, J.* (2019): The macroeconomic impact of government innovation policies: A quantitative assessment, *IIPP Policy Report, WP 2019-06*, London.
- Di Cataldo, M.; Monastiriotis, V.; Rodríguez-Pose, A.* (2020): How 'smart' are Smart Specialisation strategies?, *Papers in Economic Geography and Spatial Economics*, 18(2020).
- Doranova, A.; Grinieci, E.; Miedzinski, M.; Reid, A.* (2012): *Connecting Smart Sustainable Growth through Smart Specialisation: A practical guide for ERDF managing authorities, S3 Platform*, Luxembourg.
- Doussineau, M.; Saublens, C.; Harrap, N.* (2021): An intervention-logic approach for the design and implementation of S3 strategies – from place-based assets to expected impacts, *JRC for Science Report*, Luxembourg: Publications Office of the European Union.
- Fagerberg, J.* (2005): *Innovation: A Guide to the Literature*, in: Fagerberg, J.; Mowery, D. C.; Nelson, R. (2005): *The Oxford Handbook of Innovation*, London.
- Ergas, H.* (1986): *Does Technology Policy Matter?*, Centre for European Policy Studies, Brussels.
- Esparza-Masana, R.* (2021): Towards Smart Specialisation 2.0. Main Challenges When Updating Strategies, *Journal of the Knowledge Economy*, doi.org/10.1007/s13132-021-00766-1.
- European Commission* (2017): *Towards a Mission-Oriented Research and Innovation Policy in the European Union – An ESIR Memorandum: Executive Summary*, Brussels.
- European Commission* (2020): *Delivering on Europe's recovery through research and innovation, R&I Paper Series*, Luxembourg.

- European Commission* (2021a): Missions in Horizon Europe, [online], available at: https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/missions-horizon-europe_en [accessed October 21st, 2021].
- European Commission* (2021b): A European Green Deal – Striving to be the first climate-neutral continent, [online], available at: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en [accessed November 9th, 2021].
- Foray, D.* (2009): Structuring a policy response to a 'Grand Challenge', Selected papers from Research Commissioner Janez Potocnik's Expert Groups, Knowledge for Growth, Prospects for science, technology and innovation, pp. 62-71.
- Foray, D.; David, P.A.; Hall, B.* (2009): Smart Specialisation – The Concept, Knowledge Economists Policy Brief, 9, June 2009.
- Foray, D.; David, P.A.; Hall, B.H.* (2011): Smart specialization: From academic idea to political instrument, the surprising career of a concept and the difficulties involved in its implementation, MTEI Working Paper, 01/2011.
- Foray, D.* (2013): The economic fundamentals of smart specialisation, *Ekonomia*, 83(2), pp.55-82.
- Foray, D.* (2015): Smart Specialization, Opportunities and Challenges for Regional Innovation Policy, London/New York.
- Foray, D.* (2018): Smart specialization strategies as a case of mission-oriented policy – a case study on the emergence of new policy practices, *Industrial and Corporate Change*, 27(5), pp. 817-832.
- Foray, D.; Eichler, M.; Keller, M.* (2021): Smart specialization strategies – insights gained from a unique European policy experiment on innovation and industrial policy design, *Review of Evolutionary Political Economy*, 2, pp. 83-103.
- Frenken, K.* (2017): A Complexity-Theoretic Perspective on Innovation Policy, Complexity, Governance & Networkd, Special Issue, 2017, pp. 35-47.
- Gianelle, C.; Kyriakou, D.; McCann, P.; Morgan, K.* (2020a): Smart Specialisation on the move: reflections on six years of implementation and prospects for the future, *Regional Studies*, 54(10), pp. 1323-1327.
- Gianelle, C.; Guzzo, F.; Mieszkowski, K.* (2020b): Smart Specialisation: what gets lost in translation from concept to practice?, *Regional Studies*, 54(10), pp. 1377-1388.
- Girejko, R.; Kruse, M.; Urban, W.; Wedemeier, J.* (2019): Methodology for Transnational Smart Specialisation Strategy, GoSmart Policy Paper, Vidzeme.
- Hassink, R.; Gong, H.* (2019): Six critical questions about smart specialization, *European Planning Studies*.
- Hekkert, M.P.; Janssen, M.J.; Wesseling, J.H.; Negro, S.O.* (2020): Mission-oriented innovation systems, *Environmental Innovation and Societal Transitions*, 34, pp. 76-79.
- Intergovernmental Panel on Climate Change (IPCC)* (2021): Climate Change 2021 – The Physical Science Basis, Cambridge: Cambridge University Press.
- Joint Research Centre* (2021): Eye@RIS3, [online], available at: <https://s3platform-legacy.jrc.ec.europa.eu/map> [accessed March 5th, 2021].

- Jütting, M. (2020): Exploring Mission-Oriented Innovation Ecosystems for Sustainability: Towards a Literature-Based Typology, *Sustainability*, 12, 6677, doi: 10.3390/su12166677.
- Kattel, R.; Mazzucato, M. (2018): Mission-oriented innovation policy and dynamic capabilities in the public sector, *Industrial and Corporate Change*, 2018, pp. 1-15.
- Kogut-Jaworska, M.; Ociepa-Kicinska, E. (2020): Smart Specialisation as a Strategy for Implementing the Regional Innovation Development Policy – Poland Case Study, *Sustainability*, 12, 7986.
- Kroll, H. (2016): The policy challenge in smart specialisation – A common approach meets European diversity, in: Bachtler, J.; Berkowitz, P.; Hardy, S.; Muravska, T. (Eds.): *EU Cohesion Policy – Reassessing performance and direction*, London: Routledge, pp. 115-126.
- Kruse, M.; Wedemeier, J. (2019): Grenzen intelligenter Spezialisierungsstrategien, *Wirtschaftsdienst*, 99(11), pp. 795-797.
- Kruse, M.; Wedemeier, J. (2020): Mehr Konvergenz durch regionale Spezialisierung, *Makronom*, [online], available at: <https://makronom.de/ris3-macht-die-strukturpolitik-der-regionalen-spezialisierung-europa-gleicher-35069> [accessed November 11th, 2021].
- Kruse, M. (2021): Windenergie: Den Anschluss nicht verlieren, *Wirtschaftsdienst*, 101(2), p. 73.
- Kruse, M.; Wedemeier, J. (2021): Smart Specialisation strategies in North Africa: a catching-up strategy for less-developed countries – the case of Tunisia, *The Journal of North African Studies*, doi: 10.1080/13629387.2021.1958680.
- Kublmann, S.; Rip, A. (2018): Next-Generation Innovation Policy and Grand Challenges, *Science and Public Policy*, 45(4), pp. 448-454.
- Kuittinen, H.; Velte, D. (2018): Case Study Report – Energiewende, Mission-oriented R&I policies: In-Depts case studies, European Commission, Brussels.
- Landabaso, M. (2020): From S3 to S4: towards sustainable smart specialisation strategies, [online], available at: <https://ec.europa.eu/newsroom/jrcseville/items/670313/en> [accessed December 23rd, 2021].
- Larosse, J.; Corpakis, D.; Tuffis, R. (2020): The Green Deal and Smart Specialisation, *Friends of Smart Specialisation*, European Future Innovation System Centre, Brussels.
- Larrue, P. (2021): The design and implementation of mission-oriented innovation policies: A new systemic policy approach to address societal challenges, *OECD Science, Technology and Industry Policy Papers*, 100, Paris.
- Lund Declaration (2009): The Lund Declaration, [online], available at: <https://era.gv.at/era/societal-challenges/the-lund-declaration/> [accessed October 19th, 2021].
- Lund Declaration (2015): The Lund Declaration 2015, [online], available at: <https://www.vr.se/download/18.3d734fc616c30b114486e5/1566398569211/The+Lund+Declaration+2015%20final.pdf> [accessed October 19th, 2021].
- Lundvall, B.A. (1992): *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning*, London.
- Mazzucato, M. (2015): *Innovation Systems: From Fixing Market Failures to Creating Markets*, *Intereconomics*, 3, p. 121-126.
- Mazzucato, M. (2018): *Mission-Oriented Research & Innovation in the European Union – A problem-solving approach to fuel innovation-led growth*, European Commission, Brussels.

- Mazzucato, M.; Kattel, R.; Ryan-Collins, J. (2019): Challenge-Driven Innovation Policy: Towards a New Policy Toolkit, *Journal of Industry, Competition and Trade*, 20, pp. 421-437.
- Mazzucato, M.; Penna, C.C.R. (2020): The Age of Missions – Addressing Societal Challenges Through Mission-Oriented Innovation Policies in Latin America and the Caribbean, Inter-American Development Bank, Washington, D.C.
- McCann, P.; Ortega-Argilés, R. (2016): The early experience of smart specialization implementation in EU cohesion policy, *European Planning Studies*, 24(8), pp. 1407-1427.
- McCann, P.; Soete, L. (2020): Place-based innovation for sustainability, Joint Research Centre, Luxembourg.
- Mesloh, M.; Kruse, M.; Wedemeier, J. (2021): Technical Report – Smart Specialisation and interregional cooperation in the Baltic Sea Region: Regional specialisation, trends, and internationalisation potential, [online], available at: https://www.hwwi.org/fileadmin/hwwi/Publikationen/Studien/Smart_Specialisation_and_interregionality_GoSmart-ExcelBSR.pdf [accessed October 28th, 2021].
- Midtkandal, I.; Sörvik, J. (2012): What is Smart Specialisation?, *Nordregio News Issue 5*.
- Miedzinski, M.; Mazzucato, M.; Ekins, P. (2019): A framework for mission-oriented innovation policy roadmapping for the SDGs: The case of plastics-free oceans, UCL Institute for Innovation and Public Purpose, Working Paper, 2019-03, London.
- Montresor, S.; Quatraro, F. (2018): Green technologies and smart specialisation strategies: a European patent-based analysis of the intertwining of technological relatedness and Key-Enabling-Technologies LEI&BRICK Working Paper, 04/2018.
- Nakicenovic, N.; Zimm, C.; Matusiak, M.; Ciampi Stancova, K. (2021): Smart Specialisation, Sustainable Development Goals and environmental commons – Conceptual framework in the context of EU policy, *Science for Policy Report*, Luxembourg.
- Nelson, R.; Winter, S. (2002): Evolutionary Theorizing in Economics." *Journal of Economic Perspectives*, 16 (2), pp. 23-46.
- Neto, P.; Serrano, M.M.; Santos, A. (2018): Renewed challenges for public policies in post-2020 Cohesion policy: From RIS3 to RIS4 and a new social dimension for smart specialisation, *Public Policy Portuguese Journal*, 3(1), pp. 8-26.
- Pîrvu, R.; Dragan, C.; Axinte, G.; Dinulescu, S.; Lupanescu, M.; Gaina, A. (2019): The Impact of the Implementation of Cohesion Policy on the Sustainable Development of EU Countries, *Sustainability*, 11(2019), 4173.
- Polido, A.; Pires, S.M.; Rodrigues, C.; Teles, F. (2019): Sustainable development discourse in Smart Specialization Strategies: exploring implications from Portuguese Centro Region, *Journal of Cleaner Production*, 240, 118224.
- Pyka, A. (2017): Dedicated innovation systems to support the transformation towards sustainability: creating income opportunities and employment in the knowledge-based digital bioeconomy, *Journal of Open Innovation: Technology, Market, and Complexity*, 3(27), doi: 10.1186/s40852-017-0079-7.
- Raven, R.; Walrave, B. (2020): Overcoming transformational failures through policy mixes in the dynamics of technological innovation systems, *Technology Forecasting and Social Change*, 153, 119297.

- Robinson, D.K.R.; Mazzucato, M. (2019): The evolution of mission-oriented policies: exploring changing market creating policies in the US and European space sector, Accepted for Research Policy.
- Schot, J.; Steinmueller, W.E. (2018): Three frames for innovation policy: R&D, systems of innovation and transformative change, *Research Policy*, 47, pp. 1554-1567.
- Schumpeter, J. (1993): *Kapitalismus, Sozialismus und Demokratie*, 7. erweiterte Auflage, München.
- Semieniuk, G.; Mazzucato, M. (2018): Financing Green Growth, SOAS Department of Economics Working Paper, 210, London.
- Solow, R.M. (1957): Technical Change and the Aggregate Production Function, *The Review of Economics and Statistics*, 39(3), pp. 312-320.
- Tödtling, F.; Trippel, M.; Desch, V. (2021): New directions for RIS studies and policies in the face of grand societal challenges, *European Planning Studies*, doi: 10.1080/09654313.2021.1951177.
- Tufts, R.; Larosse, J.; Corpakis, D. (2020): Post-Covid-19 Recovery Policies: Place-based and Sustainable Strategies, *Symphony Emerging Issues in Management*, 2, pp. 55-62.
- Weber, M.; Rohrer, H. (2021): Legitimizing research, technology and innovation policies for transformative change: Combining insights from innovation systems and multi-level perspective in a comprehensive 'failures' framework, *Research Policy*, 41(6), pp. 1037-1047.
- Wittmann, F.; Hufnagl, M.; Lindner, R.; Roth, F.; Edler, J. (2020): Developing a typology for mission-oriented innovation policies, *Fraunhofer ISI Discussion Papers – Innovation Systems and Policy Analysis*, 64, Karlsruhe.
- Wolf, S.; Teitge, J.; Mielke, J.; Schütze, F.; Jaeger, C. (2021): The European Green Deal – More Than Climate Neutrality, *Intereconomics*, 56(2), pp. 99-107.

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Tax and Environment in Brazil and Germany

Summary

The relationship between the green deal and green taxes is evident. The study focuses on the countries Brazil and Germany. In both countries, environmental protection and the protection of livelihoods is enshrined in the constitution as a state task. States also commit to climate protection through international treaties.

Of particular interest are the new taxes being introduced or varied to combat climate change in many parts of the world. The so-called green taxes refer to state control of resource consumption (sanction) as well as to support of environmentally friendly behavior (incentive). For the countries of Brazil and Germany, examples of green taxes are presented within the framework of indirect and direct tax types, and ideas for further development are addressed.

Abbreviations

AO	German Fiscal Code (Abgabenordnung)
CCL	Climate Change Levy
ErbStG	Inheritance and Gift Tax Act (Erbchaft- und Schenkungsteuergesetz)
GDP Per Capita	Gross Domestic Product Per Capita
GewStG	German Trade Tax Act (Gewerbsteuergesetz)
GG	German Basic Law (Grundgesetz)
GrStG	Real Estate Tax Act (Grundsteuergesetz)
HDI	Human Development Index
ICMS	Tax on Goods Circulation Operations
IPI	Tax on industrialized products

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Abbreviations

IP TU	Property Land Tax
ISS	Tax on services
ITR	Tax on Rural Property
KStG	German Corporate Income Tax Act (Körperschaftsteuergesetz)
PIS-COFINS	Social Integration Programs- Contribution to Social Security Financing
SDG	Sustainable Development Goals
UFRRJ	Federal Rural University of Rio de Janeiro
UN	United Nations
UNDP	United Nations Development Programme
VAT	Value Added Tax

Introduction

Today, there is still a mismatch between economic success and environmentally friendly behaviour, which consequently affects global warming. Although CO₂ emissions are steadily decreasing in Brazil and Germany, we are still far from the desired climate neutrality. The impacts of economic development on the environment are increasingly intense, bringing with them growing risks to the environmental sustainability of economies and to life in society in general.

Environmental taxation is based on the premise that taxes represent an instrument for the protection of the environment. This is one of the mechanisms that the public authority can use to make its urban development plan effective by using tax instruments to generate the resources required to provide environmental public services (tax or revenue collection) or to guide the behaviour of taxpayers towards environmental protection (extra fiscal or regulatory). Therefore, environmental taxes may act as an eminently extra fiscal urban policy instrument.

Every effort should be made to make the issues of green taxes and public welfare visible in the field of social responsibility. In Germany, there has been a Green Party foreign minister since December 2021, who will put the climate issue in the spotlight, also in the international context. In Brazil, there will be new elections in 2022, which will also decide whether the new government, unlike the current one, will impose an enhanced climate policy for public welfare.

The paper presents some examples from Brazil and Germany on green taxes focused on sustainable development, and last but not least, the final considerations. The research results point to the similarities and differences of the mechanisms used by the two countries in favor of a sustainable environment, allowing a better understanding of their potential and limitations. If we manage to adjust Green Taxes by reviewing their scope and simplifying the forms of tax incentives aimed at protecting the environment by implementing a culture of commitment rather than punishment, we will be able to ponder on a taxation model that will serve as a basis for a universal system.

Experiences of Brazil and Germany

In the following section, we present examples of how both countries deal with environmental taxes.

Germany

Environmental taxes do not exist as an autonomous tax type in Germany but are rather present as the steering effect behind indirect taxes (consumption taxes) and taxes with environmental incentives in all direct taxes (income taxes, trade tax, corporate income tax).¹

Direct taxes

In German tax law, the German Fiscal Code (Abgabenordnung – AO)² contains basic principles for all individual tax laws. It is the most elementary law of German tax law and, since it contains substantive and procedural provisions applicable to all types of tax, it is also referred to as the "jacket law" or "basic tax law" or as an umbrella. The German fiscal code is part of general tax law and contains special regulations with environmental aspects. It includes a list of charitable activities to which the individual tax laws refer with their tax reductions. Of particular importance is § 52 of the German Fiscal Code, which comprises a circumscription and enumeration of "public-benefit purposes", i.e. sets out a general normative framework of

1 BVerfG, of 20.4.2004, 1 BvR 1748/99, BVerfGE 110, 274 Pt. 56 et seq. on energy and electricity tax.

2 https://www.gesetze-im-internet.de/ao_1977/; English version: https://www.gesetze-im-internet.de/englisch_ao/index.html.

objects and forms of charitable behavior enabling taxpayers to benefit from tax advantages. Here, the special tax breaks are not covered by the Fiscal Code, only the definitions.

According to § 52 section 1 AO, a corporation will serve public-benefit purposes if its activity is dedicated to the altruistic advancement of the general public in material, spiritual or moral respects. Section 1 is the starting point and center of the tax law on non-profit purposes, which are listed in section 2. All corporations that wish to claim privileged status must selflessly and exclusively and directly promote the general public (§§ 55 to 57 AO) through one of the purposes listed. The "general public" is not an indeterminate legal term here, but rather a value concept that needs to be filled in and is subject to change. The Federal Fiscal Court (Bundesfinanzhof – BFH) refers in particular to the values and views of the population and the guarantees in the German constitution, especially because environmental protection is a state responsibility under Article 20a of the German Basic Law.³

According to § 52 (2) point 8 AO, the advancement of environmental protection, nature conservation, landscape conservation, coastal and flood protection is to be recognized as promotion of the public good. The advancement of environmental protection includes all measures aimed at preserving the natural foundations of life, both for humans and for animal and plant life. The natural foundations of life are all circumstances, which are not created by humans and that determine the life of every being. Landscape protection aims at preserving certain geographical areas with their natural characteristics from changes (especially due to human intervention), maintaining their ecological diversity and natural balance.⁴

On the other hand, there are also charitable activities that contradict environmental protection, for example the advancement of sport (§ 52 section 2 point 21 AO). This also applies, for example, to all kinds of motor sports, for instance with cars, motorcycles, motor boats, motor planes, etc., which are in any case harmful to humans, animals and nature. Skiing and also

3 In this context, it is not contrary to the non-profit status that the corporation also opposes the plans of government agencies in compliance with applicable legal provisions. The acceleration of the phase-out of nuclear power aimed at by the legislator within serves as a public welfare objective the protection of life and health of the population (Art. 2 section 2 sentence 1 GG) and the task imposed on the state in Art. 20a GG to protect the natural foundations of life also in responsibility for future generations, BVErfG, 06. Dezember 2016 – 1 BvR 2821/11 –, BVerfGE 143, 246-396, ECLI:DE: BVerfG:2016:rs20161206.1b-vr282111, marginal number 283.

4 See in: Tipke/Kruse, AO/FGO, 168. No 11.2021, § 52 AO, marginal number 28.

outdoor mountain biking harm the environment too; here especially the wildlife and the ecological underground is heavily damaged and therefore these sports are not environmentally friendly. As this makes apparent, the non-profit character of the promotion of sports does not require that the promoted sport is environmentally friendly or at least not harmful to the environment.⁵ In this respect, the Federal Fiscal Court (BFH) already stated in 1997 that a sport can benefit from the non-profit privileges irrespective of its assessment as, for example, accident-prone or environmentally harmful. It is the task of the legislator to resolve conflicts of objectives within the catalogue of § 52 section 2 AO, by means of restrictions on the beneficiary purposes or by means of regulations in police, environmental and regulatory law.⁶

Non-profit activities are divided into three areas, the charitable administration, the asset management and the economic business operation. Taxpayers can operate in parallel in the three areas just mentioned. In this case, the non-profit institution may be exempt from corporate income tax and trade tax for some areas (charitable administration and asset management) but not for others (business operations). This system allows both smaller, non-profitable and large, financially successful and more profitable associations to be treated according to the same rules. Thus, only the income from charitable activity remains subject to tax-exemption, and reduced sales tax rate but not any income or any turnover of a non-profit institution at all.⁷ While the definition of non-profit status, as just stated, is a part of the fiscal code, the tax benefits are part of the individual tax laws, especially in the case of non-profit associations the Corporate Income Tax Act and the Trade Tax Act.

Income tax, corporate income tax and trade tax refer to the provisions of the Tax Code and establish various tax exemptions. Both the nonprofit organizations themselves and donations to nonprofit organizations are taken into account. This also includes environmental organizations. Donations in this sense are expenses incurred by the taxpayer to promote charitable, ecclesiastical and non-profit purposes in Germany and in other EU/EEA countries.

Non-profit organizations are exempt from Corporate Income Tax, § 5 section 1 number 9 Corporate Income Tax Act (Körperschaftsteuergesetz – KStG) and from trade tax according to § 3 number 6 Trade Tax Act (GewStG) as long as they do not run a commercial business operation and

5 BFH, 29. Oktober 1997 – I R 13/97 –, BFHE 184, 226, guidance statement 2.

6 BFH, 29. Oktober 1997 – I R 13/97 –, BFHE 184, 226, guidance statement 3.

7 Bott in: Bott/Walter, KStG, § 5 KStG, marginal number 18.

provided that the revenue including sales tax from commercial operations does not exceed 45,000 Euro [§ 64 (3) AO].

As mentioned before, there is also a reduction of the tax base by company donations made to a non-profit organization in § 9 number 5 Trade Tax Act (GewStG) and in § 9 section 1 number 2 Corporate Income Tax Act (KStG). This means that a non-charitable company can support a charitable company through donations and thereby save taxes itself. The maximum deduction is 20% of the profit from business operations or 4 per mille of the sum of total sales and wages and salaries spent in the business year.

However, the legislator would also like to give incentives for business tax subjects to make donations to tax-privileged corporations in order to relieve public budgets of the financing of activities for the common good.⁸

In addition to the tax exemption for non-profit organizations, the tax deductibility of donations made by individual citizens to such organizations are also fixed in § 10b section 1 sentence 1 Income Tax Act (EStG) within the same limits, so that donating companies regardless of their legal form and private donors are treated equally. Income tax privileges for donation to non-profit organizations amounted to 1.92 billion euro in 2022.⁹

The Inheritance and Gift Tax Act (ErbStG) provides for a tax exemption for gifts and acquisitions on account of death to charitable institutions under § 13 section 1 number 16b and number 17 ErbStG for an unlimited amount.

Last but not least: In the Real Estate Tax Act (GrStG) ecological criteria can be taken into account. According to § 3 section 1 number 3, § 7 Real Estate Tax Act (GrStG), real estate that is used directly to fulfill a charitable purpose according to § 52 AO is exempt from real estate tax.

Within the framework of income and corporate tax, there are various benefits, such as a faster depreciation for the use of electric cars.¹⁰ Energy-saving renovations (e.g. thermal insulation, new heating systems, new ventilation system) of residential buildings similarly enable a reduction in the income tax.

8 Erdbrügger in: Wendt/Suchanek/Möllmann/Heinemann, GewStG, 1. Aufl. 2019, § 9 Nr. 5 GewStG marginal number 1.

9 28. Subventionsbericht, 2019-2022 Anlage 3 number 7.

10 However, this provision is still under scrutiny of the European Commission considering the compliance of state aid guidelines. Loewens in: Brandis/Heuermann (vormals Blümich), § 7c EStG point 2.

Indirect taxes

The steering effect of tax legislation that favors environmentally friendly behavior is often present in excise duties (or consumption taxes). As a rule, it is an indirect tax that is levied on the manufacturer and is designed to be passed on to the (end) consumer (so called indirect taxes); in contrast to individual taxes, which are imposed on the generation of income, excise taxes are levied on the use of income.¹¹

Certain indirect taxes are imposed by the German federal state not only to generate revenue, but also to incentivize the protection of the environment.¹² Especially the energy, electricity, motor vehicle and aviation tax account for a large share of revenue for the federal government,¹³ while including a steering effect for the consumer.

Subsidies and other financial elements

Every two years, a subsidy report is prepared by the federal government, which aims to present and evaluate the numerous direct and indirect subsidies at the federal level. Subsidies are defined here as all direct and indirect financial support and tax concessions, including subsidies according to the EU definition. They are reviewed on a regular basis. The recent 28th Federal Subsidy Report of 18 August 2021 - published by the federal ministry of finance - covers 2019 to 2022 and contains besides tax benefits an overview of numerous grants in the area of environmental policy.¹⁴

The federal government's subsidy policy is increasingly shaped by climate and environmental policy, particularly in the area of direct funding through federal financial assistance. In 2021, 67 of the 128 grants with a total estimated financial volume of 16.2 billion euro were positively related to the environmental and to the environmental and climate protection targets set out in the German sustainability strategy. Their share of the of the total volume of financial assistance in 2021 was 66.7 percent, which equates to 38.5 percent of total subsidies (financial assistance and tax breaks). A total

11 BVerfG, of 13.4.2017 – 2 BvL 6/13, BVerfGE 145, 171, Pt. 112. Not an excise tax: nuclear fuel tax. For further information please see: BVerfG, of 13.4.2017 – 2 BvL 6/13, BVerfGE 145, 171.

12 Kirchhof, BB 2015, 278 (280): Depending on the financial burden, the steering effect may amount to a legal ban of certain actions.

13 58.15 bn. Euro per year (energy tax 40 bn. Euro, electricity tax 7 bn. Euro, motor vehicle tax 9,4 bn. Euro, aviation tax 1.75 bn. Euro; however energy and aviation tax were significantly lower in 2020 due to Covid impacts).

14 www.bundesfinanzministerium.de; Artikelnummer BMF40264.

of 42 grants were newly introduced. The most significant new grants are the Federal Grant for climate-efficient buildings (BEG), and grants for the purchase of commercial vehicles and buses with alternative climate-friendly drive systems.¹⁵

Brazil

Brazil has a National Tax Code - CTN created by Law nº 5.172 of October 25, 1966. This code is about the National Tax System and establishes general rules of tax law applicable to the Federal Government, States and Municipalities. Article 1 of Law nº. 5172 regulates, based on Constitutional Amendment nº. 18, of December 1, 1965, the national tax system and establishes, based on article 5, item XV, subparagraph b, of the Federal Constitution, the general rules of tax law applicable to the Federal Government, the States, the Federal District and the Municipalities without prejudice to the respective complementary, supplementary or regulatory legislation.

The configuration of taxes in the current legal system allows (i) the creation of taxes oriented to environmental purposes (residual competence of the Federal Government) in order to operate within the tax incidence guided by the environmental axiological matrix; or it may (ii) promote changes in any of the criteria of the tax incidence matrix rule (material, spatial, temporal, personal and quantitative) in order to comply with environmental aims. In both cases, it is certain that the requirements to meet the environmental purpose are fulfilled.

Similarly to Germany, Environmental taxes do not exist as a type of autonomous tax in Brazil, but are rather present as the steering effect behind indirect taxes (consumption taxes) and taxes with environmental incentives in direct taxes (personal income taxes, corporate income tax, property land tax, tax on rural property).

Direct taxes

The income tax regime in Brazil, a federal government tax, according to item III, article 153 of the Federal Constitution, still offers few practical examples of tax incentives aimed at protecting the environment. It is possible to deduct from Personal Income Tax and Corporate Income Tax amounts spent on reforestation. Income tax legislation allows companies to deduct some expenses with machines, materials or labor used in the implementation of devices that protect the environment, or that effect the

15 Federal ministry of finance, 28th Federal Subsidy Report (2021) p. 6.

implementation of protection policies. There is also a new program named the “Rota 2030 Program” –this is a federal program for the automotive chain with the objective of supporting technological development, competitiveness, innovation, vehicle safety, environmental protection, energy efficiency and the quality of automobiles. The program provides a reduction of up to 15.3% in the amount spent on research and development - R&D projects in the income tax of companies.

The other main direct tax is property land tax (IPTU). IPTU is a municipal tax levied on real state property, including all types of real estate - residences, commercial and industrial buildings, land, and recreational farms. Provided for in the Federal Constitution (CF), it has an extra-fiscal characteristic, as stated in item II, § 4, article 182 of CF/88. The legal provision foresees that the non-compliance with the social function of the property leads to the possibility of progressive tax rates over time. This tax is regulated by the City Statute through Law no. 10,257 of July 10, 2001.

There is a program named Green IPTU. The objective of the green IPTU is to grant discounts in the amount of the aforementioned tax charged to taxpayers who carry out improvements in their properties aimed at the sustainable use of natural resources. The Federal Constitution authorizes extra fiscal progressivity in IPTU as long as they are edited and provided for in the Municipal Master Plan. This plan is the main instrument of Brazilian Urban Policy. The first key mechanism for granting discounts are tax payment discounts starting at 5% up to total tax exemption. Those discounts may be cumulative, variable, fixed, or non-cumulative percentages.

For example, Guarulhos City (State of SP) grants discounts from 5% to 20% to properties with green areas or that adopt sustainability practices, such as selective collection, rainwater harvesting, and green roofs and 3% discount for buildings that use sustainable materials. Those discounts are different among Cities and programs.

The second main discount mechanism is the Green Credit Certificate, a credit that can be used to reduce active debt. In this context,, the City of Belo Horizonte stands out, having recently published Municipal Law no. 11.284, of January 22, 2021, establishing the Green Credit Certification, a program whose objective is to encourage the adaptation of buildings to sustainability and resilience measures by granting a green credit certificate of active debt to these properties. The certificate can be used for the total or partial extinction of tax and non-tax credits registered in the municipality's

active debt¹⁶ (except for credits of a social security nature). The alternative sustainability measures likely to generate the discount are those related to aspects such as water, energy, climate change, mobility, permeability, or waste. Activities that will qualify for the benefit include implementation of rainwater collection, rainwater use and water reuse system; solar water heating system; implementation of a solar energy system (photovoltaic); constructions with sustainable material; system for the use of wind energy; solid residue separation, garbage treatment, etc.

The Tax on Ownership of Motor Vehicles (IPVA) is a state tax according to the Federal Constitution, Article 155. In some states, IPVA has differentiated rates according to the type of fuel used in the vehicle. Each state has its own unit rules and exemptions. Currently, electrified cars do not have large tax incentives to gain space in Brazil. But more and more states have defined discounts or exemptions in the IPVA for these vehicles as a tool to stimulate technology. The IPVA rates can be graduated according to the degree of pollution that the car produces. In the State of São Paulo, the IPVA rate for gasoline-powered cars is 4%, and the rate for gas or ethanol-powered cars is 3% (Law no. 13,296, Article 9, as at November 2021). In the state of Rio de Janeiro, the tax rate is 4% for gasoline or diesel cars, 2% for ethanol-powered cars, 1.5% for natural gas-powered cars, and 0.5% for electric cars (Law no. 2.877, Article 10, as at December 2021).

Finally, the Tax on Rural Property – ITR, a federal government tax according to item VI, Article 153 of the Federal Constitution, is a valuable instrument when it comes to preserving and protecting the environment in order to achieve sustainability. Its main function in the Federal Constitution is extra fiscal. The 1988 Federal Constitution provides for state regulation of rural property, through the possibility of using progressive tax rates according to the area of the property and the degree of use for rural properties which do not fulfill their social function (unproductive latifundia); do not have rational utilization and use natural resources inappropriately; or disrespect the environment and labor standards, etc. The exemptions from the ITR fall on areas of legal preservation, permanent preservation, private reserves of environmental preservation.

As an example of a sustainable tax, we can mention the Sustainable ITR program of UFRRJ, in the city of Três Rios, implemented in 2017, given the need to reduce costs on the University Campus, due to the reduction in the transfer of resources from the Federal Government to Federal Universities.

16 Active debt refers to a debt duly ascertained by the government that was not contested by the interested party within the legal time limit after the issuing of the assessment notice or the notice of infraction.

The objective was to raise the environmental awareness of those who attended the campus about sustainability, through the creation of an ongoing extension project that would mobilize the entire academic community with the help of previously selected students. As main measures, we highlight savings in electricity, water and paper; limitation in the use of disposable cups with the adoption of mugs; and holding recycling workshops and other awareness events. The program also involved interaction with the community, through partnerships with traders at the agroecological fair, who collected used cooking oil, and with cooperatives of recyclable material collectors. According to the program coordinator, the changes have been visible since the beginning of the project's activities: recyclable and non-recyclable materials were separated for collection by the Três Rios cooperative and the use of plastic cups on campus was completely abolished. As a result, costs went down.

Indirect taxes

In Brazil, a series of tax incentives are granted aimed at the environment in the form of indirect taxes, including especially indirect consumption taxes. The latter have their source in a variety of federal government, state and municipal tax laws with different rules and environmental incentives. For example - Tax on Operations related to the Circulation of Goods and on Provision of Interstate and Intermunicipal Transport and Communication Services – ICMS, a States and the Federal District government tax according to item II, Article 155 of the Federal Constitution. This is the main tax on consumption in Brazil, as it is levied on all transactions involving the circulation of goods.

One example of tax benefit related to the environment is the ICMS Agreement n.º 99/2018 (all Federative Units). This document authorizes the exemption of ICMS levied on internal and interstate transactions with electronic products and their components, within the scope of the reverse logistics system, regarding the return of the products after their use by the consumer. Brazil also has the Ecological ICMS, allowing for the transfer to the municipalities of a small portion of the proceeds, according to environmental preservation criteria. The ecological ICMS is actually a portion of the State's revenue distribution passed on to the municipalities that meet the legal norms of environmental protection; which have conservation units; power springs; garbage collection; environmental sanitation; preservation of local historical heritage, indigenous reserves, and so on (depending on the state).

The Tax on industrialized products, IPI, a federal government tax according to item IV, article 153 of the Federal Constitution, is a value-added tax that covers only one phase of industrialization and importation. The Brazilian Constitution defines that the IPI will be selective, depending on the essential nature of the product. (Products less harmful to the environment may have lower rates.) For example, the “Rota 2030 Program” allows the reduction of up to 2% of the IPI tax rate on energy efficient vehicles. The benefit can be extended to hybrid vehicles equipped with an engine that uses, alternatively or simultaneously, gasoline and alcohol. The benefit is an exclusive benefit for car manufacturers.

PIS-COFINS - Contribution to the Social Integration Program (PIS) and Contribution to Social Security Financing (COFINS), according to Articles 195 and 239 of the Federal Constitution, are federal contributions calculated on the invoicing and revenue of companies. In this way, it makes up the Brazilian indirect taxes on the consumption of goods and services. One of the examples of tax expenditure on the environment is Cosit Solution no. 1/21 (Federal Revenue): in an interpretation by the federal government, credits regarding expenses with effluent treatment, industrial waste and wastewater will now be allowed, as they are necessary and mandatory expenses by law.

The tax on services – ISS, formally called the Service Tax of Any Nature (ISSQN), a municipality and the Federal District tax according to item III, Article 153 of the Federal Constitution, is a tax levied on the provision of services by companies and self-employed professionals. ISS admits the possibility of granting a tax benefit below the imposition of the minimum rate of 2% prescribed in Law. The objective of benefit is boosting the civil construction sector with technological innovations and activities aimed at environmental preservation, project sector, etc. There is a list of services to obtain the benefits, which include: a) projects, works and installations for the manufacture, sale and distribution of components for solar energy systems; b) installation, operation and maintenance services for solar energy systems; and, c) new buildings and building renovations that comply with environmental criteria.

Potential Improvements

The ideal background for the introduction of environmentally related tax provisions outside of excise taxes would be a broader way of thinking about the function of taxes. If the individual took responsibility, there would be no reason to achieve a steering effect through taxes. This approach stems from the idea that each and every one of us can help to save the state from

costs if we behave in a more environmentally friendly manner. In a sense, it raises the question of compensation or a bonus for social and environmental responsibility that we ourselves have assumed, which protects the state from having to incur expenses to repair environmental damage. Here, however, we already see the first major problem in justifying such a view. In some cases, the negative environmental effect is not to be found "on one's own doorstep" at all, but shows up, e.g., in the consumption of resources in other countries; in eliminating the damage there, the German or Brazilian state, for example, would not incur any expenditure, but the countries in which the effect occurs would.

We can imagine various ways to further promote the idea of sustainability in tax law by granting tax benefits for environmentally friendly behavior. The question arises as to whether tax measures should be directed at the level of companies or the level of consumers. At the business level, new regulations would have to be made in the areas of income, corporate and trade tax. At the consumer level, regulations would be possible in the areas of consumption and transfer taxes, for instance VAT and energy or electricity tax. Both levels should be considered and expanded in the future to make industrial production and individual consumption more sustainable.

Options would include, for example, the abolition of subsidies which are harmful for the climate and the environment. Thus, the new German government coalition aims to gain new budgetary means by removing environmentally harmful subsidies.¹⁷ Tax reliefs, such as the exemption of kerosene from energy tax, the lower taxation of diesel compared to petroleum or the taxation of company cars as well as the commuting allowance are technically not considered as subsidies, but may be worth a revision considering their adverse effect on climate and environment.

Value added tax can have a large effect on creating environmental incentives by lowering the price for the tax payer. It is therefore surprising that the legislature hardly uses these possibilities. There are only small application areas for environmental aspects in relation to VAT. In similar vein the legislature has made little use of the area of income taxes. Furthermore, the various policy options are not ordered and coordinated in the legal text. Some benefits are for private persons, some are for business owners. Some benefits directly lower the tax, some the earnings. So, all in all it is an uncoordinated system, which is difficult to understand. A direct link between environmental goals and tax breaks would be desirable.

17 https://www.spd.de/fileadmin/Dokumente/Koalitionsvertrag/Koalitionsvertrag_2021-2025.pdf, p. 162, last visit on 5 February 2022.

Numerous environmental aspects could be implemented in law applicable to non-profit activities, if the tax privileges were aligned with public welfare principles (ECG). This could include, for example, granting the full amount of tax privileges only if the activity is not harmful to the environment. It seems disproportionate to base the entire non-profit law on environmental considerations alone. However, it would be possible to apply different levels of tax incentives to specifically promote environmental aspects, so that, for example, non-profit climate-friendly organizations and donations to the same could be rewarded with higher tax incentives than others.

From Brazil's point of view, all taxes must be created respecting the principle of balanced environment, but most of its taxes (around 92) were created mainly in systems prior to the 1988 federal constitution. As a starting point, there is a need to simplify the existing system and create homogeneous tax incentives to be granted by the level of government. Another important aspect is to implement a methodology for monitoring and evaluating the impacts of the benefits granted. The interesting experiences that Brazilian municipalities have made with social participation programmes, and integrated into their social economic development plans, could here offer a model for other levels of government in Brazil. Thought should also be given to a unified green tax system.

As ideas to improve the current system in Brazil regarding income tax, the country could create accelerated depreciation options for fixed assets with ecological potential – notably for corporate tax. Another idea would be to create a national statute for sustainability in municipal taxation of services and urban and rural land ownership. This would help to homogenize and disseminate these benefits among Brazilian municipalities. Finally, Brazil could consider introducing tax credits for the industrial recycling chain. Together such measures would offer a starting point for simplification and for creating a unified green tax system.

In all of the above, the systematic dissemination of best practices has a crucial role to play, including by encouraging the participation of society and educational institutions in projects aimed at the environment. The participation of these actors generates commitment and helps in the inspection and monitoring of project results.

Conclusion

The UN 2030 Agenda is an opportunity for countries, civil society, academia and the private sector, to promote fundamental changes in the way they

act in relation to sustainable development and devise strategies to mobilize stakeholders to implement the commitments and goals made by the 2030 Agenda, given the need for greater integration and coordination of the actors involved in the search for coherent public policies in favour of a long-term vision of preserving the common good.

As discussed above, both Germany and Brazil presently lack a uniform tax system that systematically takes into account the sustainable economy and favors companies that consider the common good in addition to their free business activities. This is something that requires legislative attention in both countries. In the process, it will be necessary to pay attention to environmental issues where the use of natural resources, greenhouse gas emissions, pollution, energy efficiency and waste management are optimised. It will be essential to invest in projects that formulates ways to reuse material resources, to have more transparent policies and to invest in social actions in order to succeed in the new economic order that will emerge.

Bibliography

- BRAZIL. Constitution (1988). Constitution of the Federative Republic of Brazil. Brasília, DF, Senate, 1998, available at http://www.planalto.gov.br/ccivil_03/constituicao/constituicao.htm. Accessed on 15/11/2021.
- BRAZIL. Law No. 5172, of October 25, 1966, available at http://www.planalto.gov.br/ccivil_03/leis/l5172compilado.htm. Accessed on 11/11/2021.
- BRAZIL. Cosit Solution no. 1/21, available at <http://normas.receita.fazenda.gov.br/sijut2consulta/link.action?visao=anotado&idAto=114982>. Accessed on 18/11/2021.
- BARDIN, L. (2016). *Análise de conteúdo*. (3a edition, L. A. Reto & Pinheiro, Trad.). São Paulo: Edition 70. (Original work published in 1977).
- BECK Online-Kommentar, Grundgesetz, 49th edition, Stand: 15.11.2021.
- BRANDIS/HEUERMANN (vormals Blümich), EStG Kommentar, 2022 Loseblatt Kommentar.
- CNM – Orientações para a Gestão Ambiental Municipal – Núcleo de desenvolvimento territorial - Apr/2019, available at [https://www.cnm.org.br/cms/biblioteca/documentos/Orientacoes%20para%20a%20Gestao%20Ambiental%20Municipal%20\(2019\).pdf](https://www.cnm.org.br/cms/biblioteca/documentos/Orientacoes%20para%20a%20Gestao%20Ambiental%20Municipal%20(2019).pdf). Accessed on 20/11/2021.
- COSTA, Gabrieli R. A. O Imposto sobre a Propriedade Rural, available at <https://jus.com.br/artigos/55516/o-impuesto-sobre-a-propriedade-rural/4>. Accessed on 11/20/2021. 2017.
- DANTAS, J.T. - IPTU Verde e o Direito a Cidade Sustentável-2014. Revista do Programa de Pós-Graduação em Direito da Universidade Federal da Bahia nº.26/2014.
- ECOLOGICAL IPVA, available at <https://www.revistaea.org/artigo.php?idartigo=3824>. Accessed on 12/02/2022.

- ENDO, Eliane Akiko - IPTU e ISS ecológico: proposta de política pública para o Município de Curitiba - Paraná / Dissertação de Mestrado. Universidade Tecnológica Federal do Paraná, Brasil, 2020.
- GERMAN FEDERAL MINISTRY OF FINANCE, 28th Federal Subsidy Report (2021).
- JUNIOR, Onofre. A. B.; ANDRADE, A. O.; GUIMARAES, Samuel G.C. Considerações sobre o IPTU verde - CONJUR – 2021, available at <https://www.conjur.com.br/2021-fev-24/opinioao-consideracoes-iptu-verde>. Accessed on 11/15/2021.
- MARINS, James; TEODOROVICZ, Jeferson. Extrafiscalidade socioambiental. Revista Tributária e de Finanças Públicas 90 jan. / fev. 2010: 73-123.
- MONTERO, C. E. P., (2011) Extrafiscalidade e meio ambiente: O tributo como instrumento de proteção ambiental, Reflexões sobre a tributação ambiental no Brasil e na Costa Rica. 306 f. Tese de doutorado. Universidade do Estado do Rio de Janeiro. Rio de Janeiro, RJ, Brasil.
- PELEGRINI, Luciana Tomiko Fujimoto. Aplicabilidade da extrafiscalidade do imposto Territorial Rural (ITR). Revista Tributária e de Finanças Públicas, São Paulo, ano 17, n. 87, p. 188-200, Jul./Aug. 2009.
- PIMENTA, Daniel de Magalhães. Limitações à extrafiscalidade aplicáveis ao fator acidentário de prevenção: FAP. Revista Brasileira de Políticas Públicas, v. 6, n. 1., p. 77, jan./jul. 2016.
- RIBEIRO, M. de F., & FERREIRA, J. S. A. B. (2011). O papel do estado no desenvolvimento econômico sustentável: reflexões sobre a tributação ambiental como instrumento de política pública. *Hiléia: Revista do Direito Ambiental da Amazônia*, n. 17, p. 136-16.
- ROTA 2030 PROGRAM, available at <https://www.rota2030.com.br/beneficios-fiscais-rota-2030/>. Accessed on 11/02/2022.
- SPD, Mehr Fortschritt wagen, Bündnis für Freiheit, Gerechtigkeit und Nachhaltigkeit, Koalitionsvertrag 2021-2025 zwischen der Sozialdemokratischen Partei Deutschlands (SPD), Bündnis 90/Die Grünen und den Freien Demokraten (FDP), available at https://www.spd.de/fileadmin/Dokumente/Koalitionsvertrag/Koalitionsvertrag_2021-2025.pdf.

External Dimension of the Green Deal

Kirk W. Junker and Marvin Jürgens¹

Is the Carbon Border Adjustment Mechanism Illegal?

The European Commission announced the “Green Deal” plan to strengthen Europe’s efforts to mitigate climate disruption. Europe has a new goal to become climate-neutral by 2050. Part of the deal is to make the European Emissions Trading System more effective. Due to this approach, the problem of carbon accounting leakage becomes an even bigger concern. In its efforts to prevent this carbon accounting leakage, the European Commission announced that it would establish a Carbon Border Adjustment Mechanism. In July 2021, the Commission proposed a Regulation that would implement a Carbon Border Adjustment Mechanism to prevent carbon accounting leakage. This paper analyzes whether the Carbon Border Adjustment Mechanism is consistent with international law, namely that implemented by the World Trade Organization.

A. Introduction

The European Commission announced the “European Green Deal” back in December 2019. The European Green Deal is a political plan to become the world's first climate neutral continent by 2050.² When it announced the Green Deal, the European Commission included a roadmap by which to achieve that goal.³ Among other legal tools, the roadmap included the objective to propose a carbon border adjustment mechanism (CBAM) for selected sectors in 2021.

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 - 2 COM, COM(2019) 640 final, Communication from the Commission, The European Green Deal, 2.
 - 3 COM, COM(2019) 640 final Annex to the Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, 2.

To achieve climate neutrality, the European Union passed Regulation (EU) 2021/1119, the European Climate Law (hereinafter, “ECL”) that establishes a “framework for the irreversible and gradual reduction of anthropogenic greenhouse gas (GHG) emissions by sources and enhancement of removals by sinks regulated in Union law” (Article 1, ECL). The objective of climate neutrality is legally binding (Article 1, ECL) as well as the target of a net domestic reduction in GHG emissions by at least 55% compared to 1990 levels by 2030 (Article 4 ECL). To achieve the 2030 and 2050 objectives, the EU proposes new legislation as well as amendments to existing climate, energy and transport-related legislation, altogether called the “Fit for 55 package.”

As part of the Fit for 55 legislation proposal package,⁴ the Commission proposed a regulation that includes a CBAM.⁵ Some states of the world have already voiced objections to the CBAM, calling it protectionism that is in violation of international law. In order to assess whether the CBAM is a legitimate attempt to prevent carbon accounting leakage or illegal protectionism, we will first take a closer look at the European Emissions Trading System (EU ETS).

B. Contexts of Europe’s Emissions Trading System

At the beginning of the 20th century, war was considered to be a solution for the problem of war. After the outbreak of the Great War in 1914, H. G. Wells published a series of articles that became the book, “The War That Will End War.” The title evolved into common usage as “The War to End Wars.” In Europe, this understanding changed after World War II. Europe needed a new and different solution and chose instead to come together as a community, entering first in 1951 into a Treaty establishing the European Coal and Steel Community, and then in 1957, entering into both a Treaty establishing the European Economic Community (EEC) and a Treaty establishing the European Atomic Energy Community. These communities, often using economics as a means to end war, have proven themselves to be more effective solutions than yet another war. Fifty years later however,

4 COM, COM(2021) 550 final, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 'Fit for 55': delivering the EU's 2030 Climate Target on the way to climate neutrality.

5 COM, COM(2021) 564 final, Proposal for a regulation of the European parliament and of the council establishing a carbon border adjustment mechanism.

Europeans together with all humans face together not only a problem, but a crisis, and not only a crisis for Europe, but for the whole planet: climate disruption. The parties to the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol agreed to limit the rise of GHG emissions which would eventually contribute to global warming. Under Article 17 of the Kyoto Protocol, parties are permitted to participate in emissions trading as “supplemental” means to fulfill quantified emission limitation and reduction commitments under Article 3 of the Kyoto Protocol. Somehow, in the intervening years since Kyoto was signed and then ratified, it seems that many industries and states have mistakenly come to believe that a purpose of the Kyoto Protocol was to establish emissions trading, failing to note its supplemental nature and the legal requirement to limit and reduce emissions.

Enabled by the Kyoto Protocol, the EU ETS was born. The EU ETS, like the European Communities themselves, has an explicit goal. While the purpose of the Communities was to prevent war (see, for example, Art. 2 EEC, Art. 3 TFEU), the purpose of the EU ETS is to mitigate emissions, according to Art. 1 of Directive 2003/87/EC. The means to prevent war and to mitigate emissions has been economic. The means is not the end.

Although the EU’s ETS cap-and-trade system does cover combustion installations (mainly power stations), which are responsible for 60% of EU ETS emissions, the EU’s ETS only covers about 36% of the EU’s total GHG emissions. Nevertheless, as a legal measure, the EU ETS was and still is Europe’s flagship to limit GHG emissions and, consequently, limit climate disruption. To understand why and how carbon accounting leakage occurs and why the EU needs the CBAM, it is helpful to review the changes needed in the EU ETS since it began in 2005.

Its first period led to a high amount of surplus emission allowances due to a high cap. The worldwide finance crisis then caused a decrease in the global production of commodities and emissions as well as an increase of international credit use in the EU ETS.⁶ In the first two trading periods (2005-2007 and 2008-2012), each country set its own cap and the overall European cap was then the sum of the national emission caps. For all these reasons, but especially the unambitious level of the cap, the carbon price fell from 2011 to 2017.⁷ This changed with the reform of the EU ETS in 2017. A Europe-wide emissions cap totaling 15.6 billion emission allowances was

6 Umweltbundesamt, Der europäische Emissionshandel, <https://www.umweltbundesamt.de/daten/klima/der-europaeische-emissionshandel#teilnehmer-prinzip-und-umsetzung-des-europaischen-emissionshandels> [14 Feb 2022].

7 Ibid.

set for the third trading period of the EU ETS (2013-2020). These allowances were distributed over the eight years of the trading period, but not evenly. Rather, the quantity is reduced by around 38 million allowances each year. This results in a decreasing course of the cap. This surplus was gradually reduced through so-called “backloading” (withholding of emission allowances earmarked for auctioning) in 2014 to 2016 and from 2019 through the Market Stability Reserve (MSR).

In 2020, emissions from ETS installations across the EU28⁸ as well as Liechtenstein, Island, Norway fell by around 12% year-on-year to around 1.35 billion metric tons of carbon dioxide equivalents (CO₂ eq), according to the European Commission.⁹ Similar to the emissions trend in the EU, the approximately 1,817 German plants covered by emissions trading also recorded a drop in emissions. At 320 million metric tons of CO₂ eq., emissions in Germany in 2020 were approximately 12% lower than in the previous year.¹⁰ The main reason for this development was a decline in emissions from electricity generation. There was no substantial change in emissions from industrial plants as a whole.¹¹ Over a longer period of time, however, ETS emissions across Europe have declined more sharply than in Germany. While emissions from installations in Germany have fallen by approximately 38% since the start of emissions trading in 2005, ETS emissions across Europe were approximately 43% below the 2005 baseline.¹² However, the decline in emissions slowed across Europe between 2013 and 2020. In 2020, emissions were approximately 29% below the 2013 level.¹³ In Germany, emissions declined by approximately 33% over the same period.¹⁴ The emission cap for the EU ETS in 2020 has already been met or even undercut in all years since 2014.¹⁵

The current version of the EU ETS aims to deliver a 43% reduction in EU ETS emissions by 2030 compared to 2005, consistent with an EU economy-wide emissions reduction target of at least 40% by 2030 compared

8 The UK was part of the EU ETS until 31 December 2020.

9 Umweltbundesamt, Der europäische Emissionshandel, <https://www.umweltbundesamt.de/daten/klima/der-europaeische-emissionshandel#teilnehmer-prinzip-und-umsetzung-des-europaischen-emissionshandels> [14 Feb 2022].

10 Ibid.

11 Ibid.

12 Ibid.

13 Ibid.

14 Ibid.

15 Ibid.

to 1990.¹⁶ More recent analysis by the Commission services have shown that if the legislation would remain unchanged, the sectors currently covered by the EU ETS would instead achieve emission reductions of 51% in 2030 compared to 2005.¹⁷

C. Introduction of a Carbon Border Adjustment Mechanism

With the “Fit for 55” proposed legislation package, the Commission aims to revise all relevant instruments of climate legislation where necessary to deliver on the legally binding reduction targets. Part of this package amends the emissions trading system. The new 2030 target for ETS emissions is -61% (from -43%) compared to 2005. Furthermore, a larger linear reduction factor (the factor by which the overall emissions cap of the ETS is reduced yearly) of 4.2% cut to ETS emissions cap every year was proposed.¹⁸ Since 2021, the linear reduction factor reduces the cap emissions by 2.2% annually. Additionally, the proposed legislation requires the EU Member states to spend ET revenue on climate and energy projects. Moreover, under the proposed legislation, the EU ETS shall be extended to other sectors, namely maritime and road transport as well as buildings. More important, the greater mitigation goal leads to a more stringent cap on emissions, meaning that the overall number of allowances available will decline. A more stringent cap signals a higher carbon price. The EU objective of climate neutrality and the decision to further mitigate emissions by 2030 led to a broader reconsideration of existing measures against the risk of carbon accounting leakage. The CBAM is one of these measures.¹⁹

The risk of so-called “carbon leakage,” which is in fact carbon accounting leakage, not a leakage of carbon itself, occurs when companies based in

16 COM, COM(2021) 551 final, Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union, Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme and Regulation (EU) 2015/757, p. 1.

17 Ibid.

18 COM, COM(2021) 551 final, Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union, Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme and Regulation (EU) 2015/757.

19 COM, COM(2021) 564 final, Proposal for a Regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism, 1.

countries with a high carbon price could move carbon-intensive production abroad to take advantage of laxer carbon standards in other countries.²⁰ Products from countries with a high carbon price could be replaced by imported products that emitted more carbon and equivalents when made abroad. As a consequence, the same products are available on the European market, but more carbon equivalents were loaded to the atmosphere during production and shipping. Rather than reducing emissions, this phenomenon simply shifts the emissions outside of Europe and therefore seriously undermines European carbon reduction efforts. Additionally, European domestic emissions producers face costs of local emissions-reduction requirements while competing with imported products produced in countries where the manufacturers pay a minor or no price at all for emitting GHG.²¹

The European Commission made it clear in its proposal for a Regulation to the European Parliament and of the European Council, in which it establishes a CBAM, that the objective of the CBAM is to address this exact problem and to reduce the risk of carbon accounting leakage that could occur due to Europe's objective of a climate-neutral EU by 2050.²² At the moment, the risk of carbon leakage in the covered sectors is managed through the granting of free allowances and compensations for the increase in electricity costs under state aid rules. Manufacturing industries, aviation and – at least in some member states - electricity production facilities receive a share of their emission allowances for free. The Commission's proposal sets out to introduce a CBAM that continues with a planned (temporary) continuation of free allocation within the framework of the EU ETS. The Commission proposed a ten years phasing-in period starting in 2026, during which time the free allocations of allowances under the EU ETS would be gradually phased out by ten percentage points each year and the CBAM would be phased in. During this phasing-in period, the CBAM would be reduced proportionally to the amount of free allowances distributed in a given sector.

As a part of an impact assessment, the European Commission considered different options for the construction and implementation of a CBAM.²³ The Commission decided upon Option 4, which means introducing a carbon adjustment on imports for which CBAM certificates must be bought. However, this option considers also a gradual implementation

20 *Babiker*, *Journal of International Economics* 2005, p. 421, 422.

21 *Bullock*, *Washington International Law Journal* 2018, p. 609, 623.

22 COM, COM(2021) 564 final, Proposal for a Regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism, 1.

23 COM, SWD(2021) 643 final, Impact Assessment Report, 45.

period of ten years, starting in 2026, during which the free allocations of allowances under the EU ETS would be gradually phased out by ten percentage points each year and the CBAM would be phased in. During this phasing in period, the CBAM would be reduced proportionally to the amount of free allowances distributed in a given sector (Art. 1 para. 3).²⁴ During the impact assessment, this option has shown itself to be most effective to reduce carbon leakage up to 29%.²⁵ The free allocation will include new actors using low-carbon technologies.

Article 1 para. 1 and Annex 1 establish a CBAM on cement, iron and steel, aluminum, fertilizer and electricity, upon their importation into the customs territory of the Union.²⁶ In light of the fact that goods from energy-intensive, trade-exposed sectors such as cement, steel and aluminum are the most likely to be impacted by carbon accounting leakage,²⁷ the choice of sectors to be included is reasonable.

The CBAM will be introduced in two phases (Art. 36).²⁸ The first phase, the transitional phase, will start in 2023. Importers must report emissions created with the production of their goods (called “embedded” emissions) (Art. 7) without paying a financial adjustment (Art. 36 lit. 3d), until the time when the final system is put in place. This phase will finish at the end of 2025. In cases where this carbon emission information is not available as the goods are being imported, EU importers will be able to use average sectoral reference values (even once the definitive system has begun) on CO₂ emissions. These values are called “CO₂ benchmarks” for the respective product category to determine the number of certificates the importer needs to purchase. Importers will nevertheless be able to demonstrate actual emissions during a reconciliation procedure, and surrender the appropriate number of CBAM certificates accordingly.

As of 2026, EU importers of goods covered by the CBAM will be required to register with national authorities where they can also buy CBAM certificates (Art. 6). The price of the certificates will be calculated depending on the weekly average auction price of EU ETS allowances expressed in € /

24 COM, COM(2021) 564 final, Proposal for a Regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism, 9.

25 COM, Commission Staff Working Document, Impact Assessment Report, Part 1/2, SWD(2021) 643 final, 48.

26 COM, COM(2021) 564 final, Proposal for a Regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism.

27 *Monjon/Quirion*, Ecol. Econ. 2011, p. 1957, 1970.

28 COM, COM(2021) 564 final, Proposal for a Regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism.

ton of CO₂ emitted (Art. 20, 21). The EU importer must declare by May 31 each year the quantity of goods and the embedded emissions in those goods imported into the EU in the preceding year. At the same time, the importer will surrender the number of CBAM certificates that corresponds to the amount of GHG emissions embedded in the products. If importers can prove, based on verified information from third country producers, that a carbon price has already been paid during the production of the imported goods, the corresponding amount can be deducted from their final bill (Art. 9). National authorities will authorize registration of declarants in the CBAM system, as well as review and verify declarations. National authorities will also be responsible for selling CBAM certificates to importers. If an importer does not have enough CBAM certificates, the competent authority will notify the authorized declarant of the adjustment and request that the authorized declarant surrender the additional CBAM certificates within one month. As a result, the CBAM instrument should not only prevent carbon accounting leakage, but also replace the free allocation of allowances in the EU ETS.

D. The Claim of the CBAM Being Illegal

While the EU is concerned about carbon accounting leakage and therefore proposed to introduce a CBAM, some non-EU states are concerned about the CBAM. In April 2021, the 30th Ministerial Meeting on Climate Change was held by Brazil, South Africa, India and China (the ‘BASIC’ states). In a joint statement, the Ministers of the states “expressed grave concern regarding the proposal for introducing trade barriers, such as unilateral carbon border adjustment, that are discriminatory and against the principles of Equity and CBDR-RC.”²⁹

To address this allegation, the most important question is which body has the power to decide that the proposed CBAM is illegal. Among international fora, the International Court of Justice might decide if the CBAM is illegal. In Europe, the European Court of Justice could decide that the CBAM does not conform with European Law. This could be of concern for those who are affected by the CBAM, such as daughter companies from the BASIC states or European companies which trade with the BASIC states.

29 South African Government, Joint Statement issued at the conclusion of the 30th BASIC Ministerial Meeting on Climate Change hosted by India on 8th April 2021, <https://www.gov.za/nr/speeches/joint-statement-issued-conclusion-30th-basic-ministerial-meeting-climate-change-hosted> [14 Feb 2022].

Concerning the fact that a natural or legal person may bring an action for annulment of an act (Article 263 para. 4 TFEU) which is not a decision addressed to that person only if the person is not only directly concerned by such an act but also individually concerned by it (Plaumann-Formula),³⁰ this is not very likely. In this regard, an action for annulment of an act brought by a member state (Article 263 para. 2 TFEU) could be more relevant as the member states do not have to meet the strict requirements of the Plaumann-Formula. The governments of Poland,³¹ Bulgaria and Romania already have expressed concerns about the introduction of a carbon adjustment.³²

For the European Parliament as well as the European Commission, the most important question is, however, whether the CBAM is compatible with the rules of the World Trade Organization (WTO).³³ Any member state of the WTO can go to the WTO's adjudicatory forum, the Dispute Settlement Body (DSB). Consequently, the European Commission has stated that the CBAM "should prevent the risk of carbon leakage and support the EU's increased ambition on climate mitigation, *while ensuring WTO compatibility*."³⁴ Therefore, this paper focuses on the question whether the CBAM is consistent with the WTO law.

1. The WTO and its Appellate Body Process

If a WTO member state believes that a newly implemented trade measure, such as the introduction of the CBAM, is inconsistent with the WTO law,

30 ECJ, C-583/11 P, Inuit Tapiriit Kanatami et al, 03 Oct 2013, para. 75.

31 Republic of Poland, Ministry of Climate and Environment, Minister Moskwa in Katowice: work on the CBAM mechanism as an opportunity to discuss the whole ETS system, 29 Nov 2021, <https://www.gov.pl/web/climate/minister-moskwa-in-katowice-work-on-the-cbam-mechanism-as-an-opportunity-to-discuss-the-whole-ets-system> [14.02.2022]; Consistent with this position, Poland, which relies on coal for nearly eighty percent of its electricity, opted out of the initial introduction of the Green Deal, see The Guardian, European Green Deal to press ahead despite Polish targets opt-out, 13 Dec 2019, <https://www.theguardian.com/environment/2019/dec/13/european-green-deal-to-press-ahead-despite-polish-targets-opt-out> [14 Feb 2022].

32 Imeri/Barzilska, Challenges for the planned carbon border tax measures in the EU, 09 Nov 2021, <https://ihsmarkit.com/research-analysis/challenges-for-the-planned-carbon-border-tax-measures-in-the-eu.html> [14 Feb 2022].

33 COM, COM(2021) 564 final, Proposal for a Regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism, 2; European Parliament, resolution of 10 March 2021 Towards a WTO-compatible EU carbon border adjustment mechanism.

34 COM, COM(2021) 564 final, Proposal for a Regulation of the European Parliament and of the Council, establishing a carbon border adjustment mechanism, 16 (emphasis added).

it may bring the complaint to the DSB, which may decide to establish a Panel to resolve the dispute, according to Dispute Settlement Understanding (DSU),³⁵ Article 6. Before the decision is made, a member state may not establish sanctions through tariffs or duties. Only signatory states of the WTO (and not individuals) can take an action before the DSB for a settlement of disputes between Members and the DSB then makes a determination according to the rights and obligations provided in Article 1 Sec. 1, Article 2 Sec. 1 and the agreements in Appendix I of the WTO's Understanding on Rules and Procedures Governing Settlement. A dispute appears where a member government believes another member government is violating an agreement or a commitment included in Appendix I of the WTO's Understanding on Rules and Procedures governing settlement. Appeals from DSB determinations, based on points of law, may then be taken to an Appellate Body of the WTO.

The proposed CBAM option would be consistent with the provisions of the WTO Agreement if it meets the criteria set out in GATT Article II and III. The EU's proposal must be border adjustable according to the GATT provisions and must not violate the National Treatment provisions (GATT Article III) or the (prohibition on) Most Favored Nation(s) principle (GATT Article I). GATT Article I forbids the most-favored-nation treatment. Therefore, the CBAM cannot discriminate between like products imported from different countries, e.g. between aluminum from Canada versus the like aluminum from the US.³⁶

Under GATT Article II, the EU cannot exceed a maximum rate of import tariffs. For example, a carbon adjustment on imported steel, if construed as an import tariff could exceed the EU's tariff on steel.³⁷ However, GATT Article II:2(a) explicitly allows, for a "border tax adjustment," that is, an import "charge equivalent to an internal tax ... in respect of the like domestic product [here, EU steel] or ... an article [e.g. steel inputs] from which the imported product has been manufactured or produced in whole or in part."³⁸ On this ground, certain carbon levies on imports "equivalent" to a domestic carbon "tax" could be justified.³⁹

GATT Article III establishes the national treatment rule. The EU committed to non-discrimination (either *de jure* or *de facto*) against imported

35 See: https://www.wto.org/english/tratop_e/dispu_e/dsu_e.htm.

36 European Parliament, Briefing, Trade Related Aspects of a Carbon Border Adjustment Mechanism. A Legal Assessment, 6.

37 *Ibid.*

38 *Ibid.*

39 *Ibid.*

products as compared to like EU products. For example, a tariff on cement imported from China must not be construed as a tariff (on imports only) but as part of, or equivalent to, an indirect tax or regulation on both domestic and imported cement only to ensure a “level playing field.”⁴⁰ And finally, GATT Article XI could be violated if the EU CBAM was not seen as an import tariff or duty, nor as an internal tax or regulation, but rather as a border restriction that limits the quantity of imports.⁴¹

Therefore, the answer to the question of whether the CBAM is illegal would seem to be decided by determining whether the CBAM is a tax in the meaning of the GATT and whether the CBAM would result in a discrimination between like imports from different countries and whether there is an “arbitrary or unjustifiable discrimination” between countries.

1. Is the CBAM a Tax?

The Commission has proposed that importers of the goods covered by the CBAM must buy a CBAM certificate that is equal to the EU ETS certificates. As proposed, the CBAM would end the current granting of free allowances in the EU ETS. Therefore, the two instruments are very much connected and observations on legal matters related to the EU ETS affect the proposed CBAM.

To be consistent with the WTO law, the EU ETS can be adjusted on imports based exclusively on competitiveness concerns, if it can be construed either as an “internal tax or other internal charge of any kind [...] applied, directly or indirectly, to [...] [EU] products [e.g. energy used or cement produced in the EU],” or a law, regulation or requirement “affecting ... [an EU product’s, e.g. EU energy’s or cement’s] internal sale, offering for sale, purchase, transportation, distribution or use.”⁴² Neither the introduction of a CBAM nor the EU ETS could be characterized as an internal tax if they were to be seen as a toll on emitting GHG emissions. For the EU ETS, research has shown that the certificates are not a toll.⁴³ GATT Art. III states that not only indirect “taxes or other charges” but also internal regulations (sufficiently related to the sale, purchase or use of a product or input) can be adjusted on imports.⁴⁴ The goal of the EU ETS – and of the CBAM – is to reduce GHG emissions. Both instruments are achieving

40 Ibid.

41 Ibid.

42 Ibid, 8.

43 *Merkel*, ZUR 2020, p. 658, 662.

44 European Parliament, Briefing, Trade Related Aspects of a Carbon Border Adjustment Mechanism. A Legal Assessment, 9.

this goal by imposing additional costs on emitting GHG emissions. But neither instrument obliges companies within their scope to fulfill specific technical requirements. The incentive to meet certain efficiency standards, however, is not a technical regulation.⁴⁵ Companies are still free to decide on whether and how to reduce GHG emissions. This favors characterizing the CBAM as an internal tax. An internal EU carbon tax can be adjusted simply by applying it at the point of sale or consumption in the EU. An internal regulation can only be adjusted for imports by applying the same or an equivalent regulation on those imports.⁴⁶

2. Discrimination between Like Imports from Different Countries

The traditional “border tax adjustment” operates on the basis of the destination principle: domestic consumption, including imports, is taxed and exports are rebated.⁴⁷ To determine a discrimination, compare the CBAM on “Like” Domestic Products. The adjustment cannot impose a heavier burden on imports as compared to “like” domestic products. A de facto discrimination could be avoided by imposing the average carbon price levied on EU products on imports of the same products from non-EU countries. As was noted above, this is in fact the case with the proposal. EU importers of goods covered by the CBAM will buy CBAM certificates; the price of the CBAM certificates will be calculated depending on the weekly average auction price of EU ETS allowances expressed in € / ton of CO₂ emitted. Therefore, by using the EU group average, de facto group equality can be ensured. Furthermore, the proposal sets out to adjust the carbon price on imports with reference to the price already paid in the country of production. In summary, the proposed CBAM will ensure equal treatment for products made in the EU and imports from elsewhere.

3. “Arbitrary or unjustifiable discrimination” between countries

The CBAM must also be applied in a way that does not amount to ‘arbitrary or unjustifiable discrimination between countries where the same conditions prevail’.⁴⁸ For example, exempting least developed countries (LDCs) could be seen as discriminatory,⁴⁹ but could be justified on environmental

45 *Merkel*, ZUR 2020, p. 658, 662.

46 European Parliament, Briefing, Trade Related Aspects of a Carbon Border Adjustment Mechanism. A Legal Assessment, 8.

47 *Ibid*, 10.

48 *Ibid*, 11.

49 *Ibid*.

grounds, because LDCs historically have emitted far less than developed countries.⁵⁰ In its proposal, the Commission has however not suggested an exception, but instead promises that the EU stands ready to work with low and middle-income countries towards the decarbonization of their manufacturing industries.⁵¹

Even if any of the WTO rules were found to be violated, the health and environmental exceptions provided in GATT Article XX can justify such violation on condition that the import adjustment is a measure “necessary to protect human, animal or plant life or health” (GATT Article XX(b)) or “relating to the conservation of exhaustible natural resources” (and “made effective in conjunction with restrictions on domestic production or consumption”) (GATT Article XX(g)), and “not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail” or “a disguised restriction on international trade” (the so-called “chapeau” of GATT Article XX).⁵²

The Asbestos WTO case No. 135. (2001) EC⁵³ is a good example. In that case, Canada challenged France’s import ban on asbestos products. Pursuant to paragraphs (b) and (g) of Article XX, WTO members may adopt policy measures that are inconsistent with GATT disciplines, but necessary to protect human, animal or plant life or health (paragraph (b)), or relating to the conservation of exhaustible natural resources (paragraph (g)). WTO members’ autonomy to determine their own environmental objectives has been reaffirmed a number of times, such as in the case of the US regarding gasoline⁵⁴ and in the case of Brazil regarding retreaded tires.⁵⁵

In order for a trade-related environmental measure to be eligible for an exception under Article XX, paragraphs (b) and (g), a member must establish a connection between its stated environmental policy goal and the measure at issue. The measure must be either necessary for the protection of human, animal or plant life or health (paragraph (b)) or relating to the conservation of exhaustible natural resources (paragraph (g)). To determine whether a measure is “necessary” to protect human, animal or plant life or

50 The United Nations Conference on Trade and Development (UNCTAD), Smallest footprints, largest impacts: Least developed countries need a just sustainable transition, <https://unctad.org/topic/least-developed-countries/chart-october-2021>, [14 Feb 2022].

51 COM, COM (2021) 564 final, Proposal for a Regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism, 23.

52 European Parliament, Briefing, Trade Related Aspects of a Carbon Border Adjustment Mechanism. A Legal Assessment, 10.

53 WTO, WT/DS135/12, Canada v. European Communities, 11 April 2001.

54 WTO, WT/DS2/9, United States v. Brazil, 20. May 1996.

55 WTO, WT/DS332/AB/R, European Communities v. Brazil, 3 Dec 2007.

health under Article XX(b), a process of weighing and balancing a series of factors has been used by the Appellate Body.

In the WTO case no. 135 (2001), both the Panel and upon review, the Appellate Body, rejected Canada's claim and found there was no reasonably available alternative to a trade prohibition. The measure was clearly designed to achieve the level of health protection chosen by France and the value pursued by the measure was found to be "both vital and important in the highest degree."⁵⁶ The Appellate Body made the point that the more vital or important the common interests or values pursued, the easier it was to accept the measures designed to achieve those ends as being necessary.

The reports of the Intergovernmental Panel on Climate Change have shown that stopping climate disruption is one of the most important challenges of humans. The WTO's own Appellate Body has stated that "a policy to reduce the depletion of clean air was a policy to conserve a natural resource within the meaning of Article XX(g)."⁵⁷ Even if calibrating the border adjustment to the carbon cost already paid in the country of origin may involve a form of discrimination, it is arguably justified and not arbitrary since it is based on environmental grounds. Thus, even if the WTO found the proposed CBAM to be a violation of its rules, the violation could be seen as justified.

As concerns discrimination, a problem remains for the BASIC states as well as the developing countries of the Global South. Economic research has shown that the economic risk of certain sectors contracting is highest in the Global South and non-EU Eastern Europe, with the highest relative risks in both scenarios being found on the African continent.⁵⁸ The proposed CBAM does not make an exemption for developing countries. Instead, the Commission emphasizes to "support less developed countries with the necessary technical assistance in order to facilitate their adaptation to the new obligations established by this regulation."⁵⁹ Though an exception can be seen as a discrimination of like products between countries, it can be justified.⁶⁰ Against the goal of carbon neutrality, developing countries assert their right to develop.⁶¹ Given the foregoing, the EU might therefore need

56 WTO, WT/DS135/AB/R, Canada v. European Communities, 12 March 2001, 172.

57 WTO, WT/DS2/9, Venezuela et al. v. USA, 20. May 1996, p. 14.

58 Eicke/et al, Energy Research & Social Science 2021, 8.

59 COM, COM (2021) 564 final, Proposal for a Regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism, 23.

60 See D.I.3.

61 See, United Nations, Declaration on the Right to Development at 25, <https://www.un.org/en/events/righttodevelopment/background.shtml> [14 Feb 2022].

to adjust the proposal in light of the principle of Common but Differentiated Responsibilities and Respective Capabilities, included in Article 2, paragraph 2 of the Paris Agreement, by introducing exceptions or at least specific and concrete instruments to support developing countries.⁶²

II. Consequences of a violation

In the alternative, one must however also consider what would happen if the WTO dispute settlement body were to find a WTO violation. First, any remedy provided is purely prospective and second, the remedies exclude monetary compensation (Article 3 Sec. 7, DSU). Therefore, the EU could be compelled to change its mechanism with effect only after an adverse WTO ruling and a reasonable period of time to implement the remedy, which usually takes several years. The EU can also decide to keep any violation in place and instead conclude mutually agreed solutions with other countries, or accept to suffer equivalent trade retaliation.

At the time of writing, the USA is blocking the appointment of new Appellate Body members, thus making it not likely that a final decision could be expected soon, were an action to be brought to the WTO. First-level panels remain available, but adoption of their reports may now be blocked simply by filing an appeal (to a body that no longer exists and can hence not complete the appeal).

On the one hand, the potential to block adverse WTO rulings (by appealing “into the void”) could be seen as a weakening of the constraining power of the WTO, but on the other hand, the threat of a dysfunctional WTO dispute settlement system means that countries who consider the CBAM to be an illegal trade measure have no other alternative. Among other members of the WTO, the EU agreed to put in place contingency measures to replace the WTO Appellate Body for the time that it is not functional.⁶³ Additionally, it is important that the CBAM is consistent with the WTO law as the effectiveness of the CBAM – and EU’s climate legislation

62 European Institute for Asian Studies (EIAS), *Mitigating Opposition to the Carbon Border Adjustment Mechanism: Engaging BRICS and the Global South*, 21 Sept 2021, <https://eias.org/op-ed/mitigating-opposition-to-the-carbon-border-adjustment-mechanism-engaging-brics-and-the-global-south/> [14 Feb 2022].

63 Statement by Ministers, Davos, Switzerland, 24 January 2020, https://trade.ec.europa.eu/doclib/docs/2020/january/tradoc_158596.pdf [14 Feb 2022].

and ambitions in general – depend on the “robustness of the carbon price mechanism to legal and political challenges.”⁶⁴

III. Anticipated answer

From the above, it can be seen that the EU has taken considerable effort to ensure that there is no violation. Even if a violation was found, there is good reason to believe it would also be found to be justified. The former WTO appellate officer Jennifer Hillman said about carbon adjustments: “provided that policymakers carefully design a [carbon] tax, keeping in mind the basic requirements of the WTO not to discriminate in favor of domestic producers or to favor imports from certain countries over others [...] the threat of WTO challenges should not present a barrier to policymakers wishing to adopt a carbon tax system now.”⁶⁵ It appears that the proposed CBAM meets these requirements.

IV. Remaining problems

Although one may conclude that there are good reasons that the Dispute Settlement Body will not find a violation, or even if it were to find a violation, that it can be justified for environmental reasons, there still remain problems and questions with the proposed CBAM.

1. Monetizing Social Costs

The first of the remaining problems is the monetizing of social costs. The EU ETS has a justifiable purpose and the CBAM was introduced to reinforce this purpose. Both the EU ETS and the CBAM will reduce GHG emissions in a cost-effective manner and both serve to internalize external costs.⁶⁶ The economics of cost-benefit analysis had for years failed to internalize the costs of carbon, not all of which can be monetized. And even when costs can be monetized, there are other superior value issues to consider.

64 *Ismer et al.*, Border carbon adjustments and alternative measures for the EU ETS: An evaluation, 6.

65 *Hillmann*, Changing Climate for Carbon Taxes: Who's Afraid of the WTO?, p. 2.

66 COM, COM(2021) 551 final, Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union, Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme and Regulation (EU) 2015/757, 8.

For example, when the Kyoto Protocol was established, the USA calculated the costs to its economy to observe the Kyoto Protocol compared to the monetized “cost” of human loss of life and suffering due to climate disruption elsewhere and concluded it would cost the US more to follow the Kyoto Protocol, so it did not do so.⁶⁷ We can learn from this that climate answers are not found only through economics and natural science. Hence the need for law to incorporate other evaluations to achieve justice. The error of carbon markets is a failure to reach this goal. “International carbon markets are an appealing and increasingly popular tool to regulate carbon emissions. They put a price on carbon emissions and make pollution less attractive for regulated firms. However, carbon markets often produce prices which are deemed too low relative to the social cost of carbon.”⁶⁸

2. EU Cannot Fix Climate Disruption Alone

As discussed above, the CBAM serves the purpose of preventing carbon leakage and ending the free allocation of certificates within the EU ETS. The impact assessment has shown that the option for a CBAM that the Commission decided upon is the most effective for this goal.⁶⁹ It may be more effective if the EU worked together with other states. The Bertelsmann Foundation found that the higher the price of a potential carbon adjustment, the more likely that carbon leakage would occur, if the EU introduces it alone.⁷⁰ At a price of 100 USD/t CO₂, carbon leakage would rise up to nearly 15 percent. But if the EU worked together with the USA, for example, the rate of carbon leakage would be flattened to approximately 6 percent. The effect would become even stronger if the EU, the USA and China introduced a carbon adjustment together. The rate of carbon leakage could be reduced to 2 - 3 percent. And whereas a “climate club” of this three would lead to a reduction of GHG emissions at a level of 30 percent, if the EU alone introduces a carbon adjustment, it would reduce global GHG emissions only by 2,7 percent.⁷¹

67 *Brown*, American Heat, 167.

68 *Bayer/Aklin*, PNAS 2020, p. 8804, 8804.

69 COM, Commission Staff Working Document, Impact Assessment Report, Part 1/2, SWD(2021) 643 final, 48.

70 Bertelsmann Stiftung, FactSheet, CO₂-Bepreisung, p. 11, Figure 13, https://www.bertelsmann-stiftung.de/fileadmin/files/user_upload/MT_Factsheet_CO2_Bepreisung_2021_DT.pdf [14 Feb 2022].

71 Bertelsmann Stiftung, FactSheet, CO₂-Bepreisung, p. 11, Abbildung 13, https://www.bertelsmann-stiftung.de/fileadmin/files/user_upload/MT_Factsheet_CO2_Bepreisung_2021_DT.pdf [14 Feb 2022].

Additionally, a bi- or multilateral approach would have the benefit that the states included would be able to mitigate the risk of retaliation by acting as an economic bloc.⁷² The introduction of a multilateral CBAM could be linked with the bottom-up approach of the Paris Agreement and strengthen the cooperation of the Paris signatory states in their shared objective to reduce GHG emissions against recalcitrant states.⁷³

E. Conclusions

From speculative interpretation of the GATT language and from empirical observation of WTO prior Dispute Settlement decisions, one may conclude that the Dispute Settlement Body and the Appellate Body would not find the proposed CBAM to be “illegal.” Even if a violation was found, there are good reasons to believe it would be found to be justified on environmental grounds. But the most important question remains to be answered, and that is whether the CBAM will help Europe to reduce net GHG emissions to zero and keep global temperature rise below 1.5 degrees C. The European Commission promised nothing less. Their impact assessment and economic research have shown that a carbon adjustment can reduce carbon leakage. But if the EU alone introduces this instrument, it will not have a great impact on the global emissions. Thus to achieve the ultimate goal of zero net emissions, the EU and large emitting states like the US and China must work together, not individually. As it is, the CBAM might be a first step in carbon reduction, or it might just mean more emissions trading business.

Literature

Babiker, Climate Change Policy, Market Structure, and Carbon Leakage, *Journal of International Economics* 2005, pp. 421.

Bayer/Aklin, The European Union Emissions Trading System reduced CO₂ emissions despite low prices, *Proceedings of the National Academy of Science USA (PNAS)* 2020, pp. 8804.

Bertelsmann Stiftung, FactSheet, CO₂-Bepreisung, Juni 2021, available at [https://www.bertelsmann-stiftung.de/fileadmin/files/user_upload/MT_Factsheet_CO₂_Bepreisung_2021_DT.pdf](https://www.bertelsmann-stiftung.de/fileadmin/files/user_upload/MT_Factsheet_CO2_Bepreisung_2021_DT.pdf) [09.02.2022].

Brown, *American Heat: Ethical Problems with the United States' Response to Global Warming*, Rowman & Littlefield, 2002.

72 *Bullock*, *Washington International Law Journal* 2018, p. 609, 640.

73 *Bullock*, *Washington International Law Journal* 2018, p. 609, 639.

- Bullock*, Combating Climate Reclacitrance: Carbon-Related Border Tax Adjustments in a New Era of Global Climate Governanec, *Washington International Law Journal* 2018, pp. 609.
- Eicke/Weko/Apergi/Marian*, Pulling up the carbon ladder? Decarbonization, dependence, and third-country risks from the European carbon border adjustment mechanism, *Energy Research & Social Science*, 2021, Vol. 80.
- Directive 2003/87/EC, establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, [2003], OJ L 275/32
- European Institute for Asian Studies (EIAS), *Mitigating Opposition to the Carbon Border Adjustment Mechanism: Engaging BRICS and the Global South*, 21. September 2021, available at <https://eias.org/op-ed/mitigating-opposition-to-the-carbon-border-adjustment-mechanism-engaging-brics-and-the-global-south/> [14. February 2022].
- European Parliament, Briefing, *Trade Related Aspects of a Carbon Border Adjustment Mechanism. A Legal Assessment*, available at [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/603502/EXPO_BRI\(2020\)603502_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/603502/EXPO_BRI(2020)603502_EN.pdf) [09.02.2022].
- Hillmann*, *Changing Climate for Carbon Taxes: Who's Afraid of the WTO?* American Action Forum and German Marshall Fund, 2013.
- Imeri/Barzilska*, *Challenges for the planned carbon border tax measures in the EU*, 09 Nov 2021, available at <https://ihsmarkit.com/research-analysis/challenges-for-the-planned-carbon-border-tax-measures-in-the-eu.html> [14 Feb 2022].
- Ismier/Neuhoff/Pirlot*, *Border carbon adjustments and alternative measures for the EU ETS: An evaluation*, DIW Discussion Papers, No. 1855, Deutsches Institut für Wirtschaftsforschung, 2020.
- Merkel*, *Rechtliche Fragen einer Carbon Border Tax – Überlegungen zur Umsetzbarkeit im Lichte des Welthandelsrechts*, ZUR 2020, pp. 658.
- Monjon/Quirion*, *Addressing leakage in the EU ETS: Border adjustment or output-based allocation?* *Ecological Economics* 2011, pp. 1957.
- Regulation (EU) 2021/1119, establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999, [2021] OJ L 243/1.
- Republic of Poland, Ministry of Climate and Environment, Minister Moskwa in Katowice: work on the CBAM mechanism as an opportunity to discuss the whole ETS system, 29 November 2021, available at <https://www.gov.pl/web/climate/minister-moskwa-in-katowice-work-on-the-cbam-mechanism-as-an-opportunity-to-discuss-the-whole-ets-system> [14 Feb 2022].
- South African Government, *Joint Statement issued at the conclusion of the 30th BASIC Ministerial Meeting on Climate Change hosted by India on 8th April 2021*, available at <https://www.gov.za/nr/speeches/joint-statement-issued-conclusion-30th-basic-ministerial-meeting-climate-change-hosted> [09.02.2022].
- Umweltbundesamt, *Der europäische Emissionshandel*, 12. July 2021, available at <https://www.umweltbundesamt.de/daten/klima/der-europaeische-emissionshandel#teilnehmer-prinzip-und-umsetzung-des-europaischen-emissionshandels> [14 February 2022].
- United Nations, *Declaration on the Right to Development at 25*, available at <https://www.un.org/en/events/righttodevelopment/background.shtml> [14 Feb 2022].

Energy

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Germany's Energy Strategy between the EU Green Deal Targets and Economic Freedom

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Taking into consideration that the production and use of energy causes more than 75% of the EU's greenhouse gas emissions,¹ the Green Deal identified the decarbonisation of the EU's energy system as being critical to achieve carbon neutrality by 2050. In 10-year Integrated National Energy and Climate Plans, the EU Member states had to outline their strategies to contribute to this target. These strategies and legislation, at both EU and national level, have to keep a balance between an effective tackling of climate change and competition.

This paper aims to explore Germany's strategy to achieve a carbon-neutral energy market. In particular, measures adopted to increase energy efficiency and to expand the use of renewable energy sources will be discussed in light of the questions: how effectively do they incentivise players in the energy markets to behave in a climate friendly way; and to what extent is economic freedom, as a fundamental principle of competitive market structures, still guaranteed?

1. Green Deal targets and their relevance for the electricity sector

In 2019, the Green Deal was announced by the European Commission to achieve climate neutrality.² A roadmap stipulates instruments by which the Green Deal targets are to be achieved.³ Those instruments are to be found in the Regulation (EU) 2021/1119, the European Climate Law that establishes a "framework for the irreversible and gradual reduction of anthropogenic greenhouse gas emissions by sources and enhancement of removals by sinks

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1 European Commission, The European Green Deal, COM(2019) 640 final, p. 6.

2 European Commission, The European Green Deal, COM(2019) 640 final, p. 2.

3 European Commission, Annex to the Communication from the Commission, The European Green Deal, COM(2019) 640 final, p. 2.

regulated in Union law”⁴ This objective of climate neutrality is legally binding, as well as the target of a net domestic reduction in greenhouse gas emissions by at least 55 % (compared to 1990 levels) by 2030, as set out in Article 4 of the European Climate Law. To achieve the 2030 and 2050 objectives, the EU has adopted new legislation, as well as amendments to existing climate, energy and transport-related legislation, together called the “Fit for 55 package”. This legislative initiative aims to achieve 40 % of energy from renewable sources in the overall energy mix by 2030. Therefore, Member states now have to increase their national contributions set in their integrated national energy and climate plans in order to collectively achieve this target. In the building sector, the share of renewable energies should amount to at least 49% by 2030.

The energy sector, in particular electricity production, is of high relevance for the successful achievement of the Green Deal 2030 and 2050 targets. In regard to the emissions caused by the production and the use of electricity, which account for more than 75% of the EU’s greenhouse gas emissions,⁵ the Commission therefore aims to decarbonise the EU’s energy system to reach CO₂-neutrality. This will have an effect on the whole value chain of the electricity sector, which includes the production of electricity, the transmission and distribution of electricity, as well as its supply and consumption by the end-user. The primary energies used for electricity production heavily affect the greenhouse gas emissions caused by the energy system. Therefore, the achievement of the Green Deal targets requires prioritising the usage of renewable energies, such as wind, solar, geothermal energy, ambient energy, tide, ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas, and biogas⁶ over the use of fossil fuels, such as gas and coal. Furthermore, an improvement in energy efficiency will also have a positive effect on the reduction of greenhouse gas emissions. Energy efficiency is regarded as the ratio of output of performance, service, goods or energy, to input of energy⁷ and is thus relevant for all levels of the value chain. Current legislation aims to reduce end-consumption. To increase energy efficiency,

4 Art. 1 of the Regulation (EU) 2021/1119.

5 European Commission, The European Green Deal, COM(2019) 640 final, p. 6.

6 Art. 2 (1) of the Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.

7 Art. 2 (4) of the Directive (EU) 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency.

final energy consumption⁸ at EU should be decreased by 36% and by 39 % for primary energy consumption⁹ by 2030.

2. The potential dilemma between the achievement of Green Deal targets and competition

The constitutional objectives of the European Union are set out in Art. 3 of the Treaty on the European Union. These include the establishment of an internal market and “work[ing] for the sustainable development of Europe based on (...) a high level of protection and improvement of the quality of the environment”. The internal market is based on both market freedoms¹⁰ and competition.¹¹ The term “competition” has not been defined in legislation. This is supported by the idea that competition consists in a complex anthropological phenomenon, which is ultimately based on a “fundamental competition between people”.¹² Competition is of high legal value since it increases welfare.¹³ This results in price and innovation competition.¹⁴ Consumers and other market participants benefit from prices that are determined by the market mechanisms of supply and demand, as well as from innovation.¹⁵ Undistorted competition is characterised by the existence of a number of market players on both the demand and supply side, who enjoy economic freedom.¹⁶

To achieve the protection of the environment, which is an objective of the European Union under Art. 3 (3) TEU that is of equal value to the

8 Energy consumption by end-users.

9 Energy used for the production and supply of energy.

10 Art. 26 of the Treaty of the Functioning of the European Union.

11 Protocol (No 27) on the internal market and competition.

12 Dreher/Kulka, Wettbewerbs- und Kartellrecht, no. 5 and 6; Sosnitzer, in: Münchner Kommentar, Grundlagen des Lauterkeitsrechts, no. 13; Köhler, in Köhler/Bornkamm/Feddersen, UWG Einl. no. 1.6; Beater, § 1 no. 4.

13 Säcker, in: Münchner Kommentar, Grdl. no. 1 and 100; Mestmäcker/Schweitzer, Wettbewerbsrecht, § 3 no. 53.

14 Säcker, in: Münchner Kommentar, Grdl. no. 100; Mestmäcker/Schweitzer, Wettbewerbsrecht, § 3 no. 15 et seq.

15 CJEU, C-277/20, 12 May 2022, no. 45 and 46; Säcker, in: Münchner Kommentar, Grdl. no. 4.

16 Leistner, in: Gloy/Loschelder/Danckwerts, Wettbewerbsrecht, § 4 no. 1; Sosnitzer, in: Münchner Kommentar, Grundlagen des Lauterkeitsrechts, no. 16; Leistner, in: Gloy/Loschelder/Danckwerts, Wettbewerbsrecht, § 4 no. 21.

completion of the internal market,¹⁷ the legislator implements a variety of instruments, e.g. planning regulations as well as direct and indirect behavioural control instruments, which take the aforementioned principles into account. The implementation of instruments to achieve environmental protection is based on the economic concept of *homo economicus*, the person who acts exclusively economically. This is a simplified model, according to which people strive for the greatest possible benefit at the lowest possible cost.¹⁸ If the *homo economicus* is faced with the decision to undertake an environmentally protective action that entails costs or to undertake an action that is potentially harmful to the environment without incurring these costs, the decision will be to the detriment of the environment. In the past, without a corresponding legal framework, the environment was available as a free good from the perspective of *homo economicus*.¹⁹ However, as knowledge and evidence about climate change and the associated costs, including for individuals, advances, changes to the model may be forthcoming. At present, it can still be assumed that the market participants do not base their economic decisions on the foreseeable costs of climate change. The *homo economicus* is therefore unlikely to make his contribution to the achievement of climate neutrality in the EU by 2050.

The legislator thus adopts instruments to change the behaviour of the *homo economicus* for the achievement of the Green Deal targets. The instruments differ in their mode of action vis-à-vis the addressees. With the instruments of environmental planning, spatial environmental problems are dealt with in a planning manner, in which causal relationships are recorded and dangers to the environment are recognised at an early stage and prevented.²⁰ In this respect, environmental planning is characterised by the precautionary principle.²¹

Instruments of direct behavioural control are norms or measures that require a person to act.²² These take the form of prohibitions and obligations. Behaviour can also be enforced; violations are usually sanctioned. To this extent, direct instruments very effectively contribute to the achievement of the intended behaviour. The flip side of the coin, however, is that they limit

17 Scholz, Die Rechtfertigung von diskriminierenden umweltpolitischen Steuerungsinstrumenten, p. 220.

18 McKenzie/Tullock, *Homo oeconomicus*, Ökonomische Dimensionen des Alltags, 1984; Schünemann, ARSP 1986, p. 502; Zintl, *Analyse und Kritik* 11 (1989), p. 52.

19 Winter, GAIA 9 (2000) volume 3, p. 196.

20 Köck, in: Voßkuhle/Eifert/Möllers, *Grundlagen des Verwaltungsrechts*, § 37 no. 22.

21 Kloepfer, *Umweltrecht*, § 4 no. 22.

22 Kloepfer, *Umweltrecht*, § 5 no. 166.

the exercise of fundamental rights guaranteed by both European Union and German law, such as the freedom of action, freedom of occupation and freedom of property.

Instruments of indirect behavioural control²³ allow the addressee freedom of decision-making and are designed to steer his decision in the direction intended by the legislator and to motivate him to take this action. These include environmental information, warnings and recommendations. Financial incentives are set in a "positive" respect through financial subsidies; in a "negative" respect through possible payment obligations in the form of environmental levies, such as taxes, fees, contributions and special charges. A further instrument of indirect behavioural control consists of tradable certificates, such as emission allowances.²⁴ Indirect instruments leave full autonomy to the addressee and do not limit the exercise of fundamental rights on the one hand, albeit do not fully ensure the achievement of an intended behaviour, on the other. A degree of uncertainty for the achievement of goals exists.

3. Germany's energy strategy

This chapter outlines Germany's strategy to contribute to the achievement of climate neutrality of the EU by 2050 in the energy sector, in particular the aims as set out in its National Energy and Climate Plan. It explores how Germany generally incentivises participants in the energy markets to behave climate friendly and to which extent economic freedom is still guaranteed.

The Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action constitutes the legal basis for the national energy and climate plans. The final and current version of the German National Energy and Climate Plan (NECP) was adopted on 10 June 2020 in compliance with this Regulation.²⁵ According to the German NECP, at least 80

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- 23 Franzius, Die Herausbildung der Instrumente indirekter Verhaltenssteuerung im Umweltrecht der Bundesrepublik Deutschland, p. 5 et seq.
 - 24 Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a system for greenhouse gas emission allowance trading within the Union and amending Council Directive 96/61/EC, which is itself going to be amended: European Parliament, 2019-2024, Provisional Agreement resulting from interinstitutional negotiations, 8 February 2023.
 - 25 Integrierter Nationaler Energie- und Klimaplan (online: https://www.bmwk.de/Redaktion/DE/Downloads/I/integrierter-nationaler-energie-klimaplan.pdf?__blob=publicationFile&v=1). Member states have to amend adopt integrated national energy and climate plans (NECPs).

percent of the electricity consumed in Germany is to be produced from renewable energies. After the phase-out of coal, the electricity supply in Germany is going to be greenhouse gas neutral. Furthermore, by 2030 a 65 % share of electricity consumption from renewable energy sources and a 30 % reduction in gross inland consumption, compared to 2008, should be achieved. Consequently, a climate neutral energy sector requires an implementation of instruments in the Renewable Energy Law and in the Energy Efficiency Law.

a) Renewable Energy Law

The renewable energy law is based on the Directive (EU) 2018/2001 on the promotion of energy from renewable sources at EU level and the German Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz) at German level.

The Directive (EU) 2018/2001 sets out an EU-wide target of 32% for the usage of renewable energies in all sectors.²⁶ In the last two years, this target has been increased twice. First, in 2021, as part of the “Fit for 55-Package”, the Commission proposed a revision of the Directive which aimed to increase the share of renewables to 40% (up from 32%). In 2022, the Commission proposed an increase to 45% by 2030 to reduce the dependency on imports of primary energy sources and to achieve security of supply. In the end, this has led to a target for 2030 of at least 42.5%, aiming for 45%.²⁷ To achieve the EU-wide target, Member states can implement support schemes according to Art. 4 of the Directive (EU) 2018/2001:

*In order to reach or exceed the Union target (...) Member States may apply **support schemes**. Support schemes for electricity from renewable sources shall provide incentives for the integration of electricity from renewable sources in the electricity market in a **market-based and market-responsive** way, while avoiding unnecessary distortions of electricity markets as well as taking into account possible system integration costs and grid stability.*

The choice of the instruments is generally left to the Member states. Although the wording of Art. 4 gives preference to incentives, which are regarded as indirect instruments, the implementation of direct instruments is not prohibited under EU law. EU law, for instance, generally allows states to

²⁶ Art. 3 Directive (EU) 2018/2001.

²⁷ Council, Council and Parliament reach provisional deal on renewable energy directive (Press release) 30 March 2023 (online: <https://www.consilium.europa.eu/en/press/press-releases/2023/03/30/council-and-parliament-reach-provisional-deal-on-renewable-energy-directive/>).

oblige suppliers to have a certain proportion of electricity in their electricity mix which has been produced from renewable primary sources; or to oblige persons to install solar panels on the roofs of their houses or premises; or to prohibit the production of electricity from certain primary energy sources, such as coal, in compliance with primary EU law such as market freedoms and state aid rules.²⁸ In spite of the preference given to indirect instruments in Art. 4, the choice of indirect instruments has to take into account a market-based approach and it has to avoid unnecessary distortions of electricity markets. The European legislator thereby expresses the importance of the functioning of the internal market, including competition.

For the German electricity sector and its transition towards the use of renewable energy sources, the German Renewable Energy Sources Act is the governing piece of legislation. It contains statutory obligations between the operator of a plant based on renewable energies and the relevant grid operator. These include both grid-related and financial instruments. The integration of plants into the network is ensured by obliging grid operators to connect them to the grid of shortest linear distance²⁹ and to distribute and transmit the electricity fed into the grid.³⁰ From the perspective of the grid operator, this constitutes a direct instrument. However, it leaves full discretion to the plant operators as an indirect instrument.

Whereas the German Renewables Act was based on feed-in tariffs as the only financial instrument, when it came into force more than twenty years ago, it now stipulates a variety of financial instruments dependent on the installed capacity. First, the plant operator, who directly markets the electricity, receives a market premium from the relevant grid operator under section 20 of the Renewables Act. The market premium is either stipulated by the Act itself³¹ or determined in a tender procedure.³² In these auctions, potential plant operators place their bids for support contracts.³³ Projects with the lowest prices are awarded contracts.³⁴ Second, feed-in tariffs are still a financial instrument, as set out by section 21, but generally limited to

28 Scholz, *Die Rechtfertigung von diskriminierenden umweltpolitischen Steuerungsinstrumenten*, p. 100 et seq.

29 § 8 German Renewables Act (Erneuerbare-Energien-Gesetz, EEG). In detail: Scholz in: Säcker/Steffens, *Berliner Kommentar zum Energierecht*, vol. 8, § 8 EEG.

30 § 11 German Renewables Act (Erneuerbare-Energien-Gesetz, EEG). In detail: Scholz in: Säcker/Steffens, *Berliner Kommentar zum Energierecht*, § 11 EEG.

31 §§ 40 to 49 German Renewables Act (Erneuerbare-Energien-Gesetz, EEG).

32 § 22 German Renewables Act (Erneuerbare-Energien-Gesetz, EEG).

33 § 30 German Renewables Act (Erneuerbare-Energien-Gesetz, EEG).

34 § 7 Verordnung zu den gemeinsamen Ausschreibungen für Windenergieanlagen an Land und Solaranlagen (Verordnung zu den gemeinsamen Ausschreibungen - GemAV).

plants with an installed capacity of 100 kilowatts. They guarantee long-term payments to plant operators at fixed rates for the electricity they generate. Feed-in tariffs and market premiums are generally above market prices and make renewable energy investment financially attractive. The rates depend on the technology type, the installed capacity and the year of installation. They are to be paid by the grid operator for a period of twenty years and thus ensure a predictable return on investment.³⁵ Third, plant operators are entitled to receive a so-called “tenant electricity surcharge” for electricity from solar installations on, at or in a residential building, insofar as it has been supplied by the installation operator for consumption by a third party or an end consumer.³⁶

These financial instruments in the Renewables Act contribute to the achievement of renewable targets in an indirect manner. With the limitation of feed-in tariffs to small installations, and the introduction of market premiums including price determination based on auctions, competitive elements are now an integral part of the German renewables support scheme.³⁷ This ensures a certain level competition, despite the existence of financial assistance which is regarded as market intervention. The achievement of the renewable targets depends on the investment decisions of private entities. A general obligation addressed to electricity producing companies to exclusively use renewable energies, and an obligation addressed to electricity supply companies to have a certain proportion of electricity in their mix, which has been produced from renewable sources, are not in place in Germany. Direct instruments exist in form of prohibitions addressed to producers of electricity to achieve the nuclear³⁸ and the future coal phase out.³⁹ These instruments create a demand for alternative primary energies, which include renewable energies.

In a number of states in Germany new commercial and residential buildings are now required to install and operate a solar-power system. This partly also applies to the roof renovation of existing buildings. In the state of Berlin, for instance, owners of non-public buildings with more than 50 square metres have to ensure that photovoltaic systems are installed on their

35 § 25 German Renewables Act (Erneuerbare-Energien-Gesetz, EEG).

36 §§ 19 and 21 German Renewables Act (Erneuerbare-Energien-Gesetz, EEG).

37 Steffens in: Säcker/Steffens, Berliner Kommentar zum Energierecht, Einl. EEG, no. 22.

38 § 7 of the Act on the Peaceful Use of Nuclear Energy and Protection against its Hazards (Act on the Peaceful Use of Nuclear Energy and Protection against its Hazards).

39 So far in § 40 of Act on the Reduction and Termination of Coal-fired Power Generation (Gesetz zur Reduzierung und zur Beendigung der Kohleverstromung).

buildings.⁴⁰ The legal framework varies in the individual federal states. At federal level, the legislator has not yet taken action, although according to the present government's coalition agreement, all suitable roofs are going to be used for solar energy in the future.⁴¹ This is intended to become mandatory for new commercial buildings and also apply to new private buildings.

b) Energy Efficiency Law

Legislation at both EU and national level also aims to increase energy efficiency with the objective to reduce CO₂ emissions. The value chain in the energy sector is generally affected by energy efficiency law at the levels of production, supply and consumption. The current EU Energy Efficiency Law originates in the Directive 2012/27/EU (Energy Efficiency Directive). It obliges Member States to contribute to the achievement of an EU-wide target to reduce energy consumption. In 2021 and as part of the 'Fit for 55' package, the Commission proposed to increase the binding energy savings targets to 39% by 2030. Member States had to publish their national energy efficiency action plans.

At the level of production, energy efficiency legislation addresses the technologies used, such as the co-generation of electricity and heat. According to the Energy Efficiency Directive, updated in 2018, Member States are obliged to assess the potential of high-efficiency cogeneration, district heating and district cooling and to carry out a cost-benefit analysis based on climatic conditions, economic feasibility and technical suitability, and notify this to the Commission.⁴² To increase energy efficiency at the production level, Germany has a Combined Heat and Power Act in place, with instruments very similar to those under the German Renewables Act. Grid operators must immediately connect high-efficient combined heat and power installations to their grid and allow the feed-in, transmission and distribution of this electricity on a priority basis.⁴³ The plant operator has to directly market the electricity and can claim a market premium from

40 Berlin Solar Act (Solargesetz Berlin).

41 2021 Coalition Agreement between SPD, Bündnis 90/Die Grünen and FDP, p. 56.

42 Art. 14 Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC.

43 § 4 of the Act for the Preservation, Modernisation and Expansion of Combined Heat and Power (Gesetz für die Erhaltung, die Modernisierung und den Ausbau der Kraft-Wärme-Kopplung). Scholz, *Die Rechtfertigung von diskriminierenden umweltpolitischen Steuerungsinstrumenten*, p. 52 et seq.

the relevant grid operator under § 5 of the Combined Heat and Power Act. These grid-related and financial instruments do not directly influence investments co-generation.

A focus of energy efficiency law has also been upon the consumption level in the building sector. For this sector, the updated Directive (EU) 2010/31 on energy performance of buildings aims to ensure that each Member state has a highly energy efficient and decarbonised building stock by 2050.⁴⁴ In a roadmap, Member states shall include their milestones for 2030, 2040 and 2050 to achieve this target. They have to ensure that buildings must achieve specified building standards, which apply to public and private buildings, new and existing buildings, as well as for residential and non-residential buildings. Instruments are to be found in the German Building Energy Act.⁴⁵ These include, for instance, the following obligations and prohibitions: Persons who construct a building shall construct it as a low-energy building.⁴⁶ For existing buildings, exterior components must not be changed in such a way that the energy quality of the building deteriorates.⁴⁷ Under § 60 of German Building Energy Act, components that have a significant influence on the efficiency of heating, cooling, ventilation and hot water supply systems, or on other equipment, must be regularly serviced and maintained by the operator. If a central heating system is installed in a building, it is to be equipped with central automatic devices for reducing and switching off the heat supply and for switching electrical drives on and off in dependence on the outdoor temperature and the time.⁴⁸ For the installation of new heat distribution and hot water pipes, the heat emission of the pipes has to be limited.⁴⁹ Owners must no longer operate boilers charged with a liquid or gaseous fuel, which were installed before 1991, and must cease operating such boilers, where installed after 1991, after the expiry of 30 years.⁵⁰ The owner of a new building is obliged to have an energy performance certificate on the basis of the energy characteristics of the completed building.⁵¹

44 Art. 2a Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings.

45 Act on the Saving of Energy and the Use of Renewable Energies for Heating and Cooling in Buildings (Gesetz zur Einsparung von Energie und zur Nutzung erneuerbarer Energien zur Wärme- und Kälteerzeugung in Gebäuden).

46 § 10 of the German Building Energy Act.

47 § 46 of the German Building Energy Act.

48 § 61 of the German Building Energy Act.

49 § 69 of the German Building Energy Act.

50 § 72 of the German Building Energy Act.

51 § 80 of the German Building Energy Act.

These direct instruments are accompanied by numerous financial support programmes, including investments grants or the provision of low interest bank loans. In contrast to the production of energy, its consumption is therefore affected by direct instruments, which ensures the achievement of the energy efficient targets.

4. Choice of instruments in the energy sector and conclusion

To conclude, the German Renewables Act provides indirect instruments and leaves full flexibility to market participants at the production and supply levels of the value chain. Producers and suppliers are not addressed by an obligation to produce or supply electricity from renewable energies. It can thus be argued that the law, which affects the production of electricity and the choice of primary energy, reveals the German legislator's preference for indirect instruments. Obligations addressed to electricity producing companies to support the choice of renewable energies are absent. The market participants affected by German legislation still enjoy economic freedom, with the exception presented by the nuclear and coal phase-out.

In contrast to this, energy efficiency law at the level of consumption shows a preference for mainly direct instruments. Consumers of electricity, including house owners, are covered by a number of obligations. Their fundamental rights, which guarantee liberty, are limited to effectively reduce electricity consumption and to ensure the achievement of the Green Deal targets.

It has to be taken into account that most of the aforementioned obligations in Energy Efficiency Law have their legal basis in the current versions of the Directive 2012/27/EU and of the Directive (EU) 2010/31, which determine energy efficient standards to be implemented in national law. To this extent, the freedom of the German legislator was limited. The Directive (EU) 2018/2001 for the expansion of renewable energies, however, does not limit the legislative freedom of the Member states. It does not oblige Member states to implement direct instruments affecting the production, but rather respects each Member state's right to determine its choice between different energy sources and the general structure of its energy supply, as ensured by Art. 194 TFEU. Considering the degree of legislative freedom which the Directive (EU) 2018/2001 for the use of renewable energies, on the one hand, and the Directive 2012/27/EU and the Directive (EU) 2010/31 for energy efficiency, on the other, leave to the Member states, it can be argued that the German legislator still seems reluctant to implement direct instruments, if not obliged to do so under EU law. Here the legislative

freedom for the governance of the electricity sector, left to Member States by secondary EU law, is arguably not being exercised sufficiently by the German legislator to restrict the economic freedom of market participants so as to ensure the achievement of climate neutrality. A higher degree of market intervention at national level for the benefit of environmental protection seems to be required to effectively ensure the achievement of the Green Deal targets.

Bibliography

- Beater, *Unlauterer Wettbewerb*, Mohr Siebeck, 2011
- Bien/Meier-Beck/Montag/Säcker, *Münchener Kommentar zum Wettbewerbsrecht: Band 1: Europäisches Wettbewerbsrecht (Vertikal-GVO)*, 2nd ed. 2015.
- Dreher/ Kulka, *Wettbewerbs- und Kartellrecht*, C.F. Müller, 11th ed. 2021.
- European Commission, *The European Green Deal*, COM(2019) 640 final.
- Franzius, *Die Herausbildung der Instrumente indirekter Verhaltenssteuerung im Umweltrecht der Bundesrepublik Deutschland*, Duncker & Humblot, 2000.
- Gloy/Loschelder/Danckwerts, *Handbuch des Wettbewerbsrechts*, C.H. Beck, 5th ed. 2019.
- Kloepfer, *Umweltrecht*, C.H. Beck, 4th ed. 2016.
- Köhler/Bornjamm/Feddersen, *Gesetz gegen den unlauteren Wettbewerb*, C.H. Beck, 40th ed. 2022.
- Mestmäcker/Schweitzer, *Europäisches Wettbewerbsrecht*, C.H. Beck, 3rd ed. 2014.
- McKenzie/Tullock, *Homo oeconomicus, Ökonomische Dimensionen des Alltags*, Campus-Verlag, 1984.
- Säcker/Steffens, *Berliner Kommentar zum Energierecht*, volume 8, *Fachmedien Recht und Wirtschaft*, 5th ed. 2022.
- Scholz, *Die Rechtfertigung von diskriminierenden umweltpolitischen Steuerungsinstrumenten*, Peter Lang, 2012.
- Schünemann, *Der Homo Oeconomicus im Rechtsleben: Bemerkungen zur juristischen Bedeutung des Rationalprinzips*, ARSP 1986, p. 502.
- SPD, Bündnis 90/Die Grünen and FDP, *Mehr Fortschritt wagen, Coalition Agreement* (online: <https://www.bundesregierung.de/breg-de/aktuelles/koalitionsvertrag-2021-1990800>).
- Voßkuhle/Eifert/Möllers, *Grundlagen des Verwaltungsrechts*, C.H. Beck, 3rd ed. 2022.
- Zintl, *Der Homo Oeconomicus: Ausnahmeerscheinung in jeder Situation oder Jedermann in Ausnahmesituationen?*, *Analyse und Kritik* 11 (1989), p. 52.

Zeynep Şentürk*

The Energy Charter Treaty and the European Green Deal: A Critical Analysis Under EU and International Trade Law

Abstract

This article is based on the chapter of “Investment Protection Mechanism as an Impediment to the European Green Deal” in the author’s master thesis titled “The European Green Deal: A Critical Analysis Under EU and International Trade Law”.

While the European Green Deal objectives call for phasing out fossil fuel fired power plants with coal counting in the first place as the most carbon intensive fossil fuel, the investment protection mechanism set out in the Energy Charter Treaty emerges as an impediment to such phase-outs. This article explores how this investment protection mechanism relates to and hinders climate action targeted by the European Green Deal and what alternative solutions exist within this context.

1. Introduction

This article critically analyses of the European Green Deal¹ under the European Union (“EU”) and international trade law by concentrating on fossil fuel phase-out with coal phase-out at the centre of it. Fossil fuel phase-out is an indispensable initiative to be adopted in order for the EU to reach the goal of net zero greenhouse gas (“GHG”) emissions by 2050, which calls for the phase-out of coal in the first place that should be substantially realized

* The author’s master thesis was submitted on 30 September 2021 within the master programme of European and International Business, Competition, and Regulatory Law at Freie Universität Berlin. The thesis, from which this article has been derived, reflected the latest status of the developments it touched upon as valid at the time of writing.

1 Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions on the European Green Deal COM (2019) 640 final (hereinafter The European Green Deal)

by 2030. Intending to terminate the operation of the power plants which have not yet come to the end of their lifetimes, fossil fuel phase-out plans encounter reaction and resistance by the investors whose investments lose their use and benefits due to such plans.

The article focuses on the Energy Charter Treaty (“ECT”)² obligations with its related investment protection provisions, Investor-State Dispute Settlement (“ISDS”) proceedings’ nature and impact, the interaction of the EU and international law trade systems, and the EU’s efforts to bring the conditions of the Energy Charter Treaty in line with the European Green Target goals. The analysis illustrates that the investment protection mechanism of the ECT may impede the reduction of GHG emissions by making states bear costly consequences and hesitate to regulate. The article concludes that the EU’s efforts for the modernization of the ECT provisions are likely to fail to pay off in time, if they do at all, and argues that a coordinated withdrawal of the EU with its Member States from the ECT is a more effective and secure alternative solution, considerably reducing the risk of burdensome compensations and opening the way to the success of the European Green Deal.

2. An Introduction to the European Green Deal

When the European Green Deal³ first came into existence as a 24-page communication⁴ issued by the Commission, obviously it did not come out of the blue. The EU, its Member States⁵, and their environmental policy within and outside the EU has taken an evolutionary – if not revolutionary – course of development since 1957, when the first signatures were put on the Treaty of Rome, bringing a European Economic Community (“EEC”)⁶ into existence with its six members⁷ as the foundation of today’s EU. Sticking to its affirmation “to step up the EU’s efforts to ensure that current legislation and policies relevant to the Green Deal are enforced and effectively

2 The Energy Charter Treaty [1994] 2080 U.N.T.S. 95 (hereinafter ECT)

3 The European Green Deal may be referred to in various ways throughout this article, such as the EU Green Deal, the Green Deal, the Deal etc. All refer to the European Green Deal as cited in *supra* note 1.

4 The European Green Deal, *supra* note 1

5 Member States wherever written with capital initials refers to the Member States of the EU.

6 Treaty establishing the European Economic Community [1957]

7 The six members were Belgium, France, Italy, Luxembourg, West Germany and the Netherlands.

implemented”⁸ the Green Deal has given birth to the “European Climate Law” not later than 2 years after its announcement, where the targets to reduce GHG emissions by 55% by 2030 compared to 1990 levels and to achieve climate neutrality by 2050 are now enshrined.⁹ This was followed by a new legislative proposal in July 2021 named the “Fit for 55 Package”, in which the Commission presents the revisions required in all related policy instruments as well as the introduction of the new ones. For the purposes of pointing to the extent of the “Fit for 55 Package”, one can count such main components as follows:¹⁰ Amendment to Renewable Energy Directive to implement ambition of the new 2030 climate target, Revision of Energy Tax Directive, Revision of the EU Emission Trading System, Proposal for a Directive on Energy Efficiency, Revision of EU Emission Trading System for Aviation, Proposal for Amendment to Effort Sharing Regulation, Revision of the Market Stability Reserve, Social Climate Fund – and last but not the least – the Proposal for Regulation for Carbon Border Adjustment Mechanism. The Commission defines the package as a combination of various tools and applications which are “connected and complementary”.¹¹

3. Investment Protection Mechanism as an Impediment to the European Green Deal

In this chapter, the importance of fossil fuel phase-out – more specifically coal phase-out – in achieving the goals of the European Green Deal will be emphasized. This will be followed by a deep dive into the investment protection mechanism of the ECT and the characteristics manifesting themselves as an obstacle to a frictionless, cost and time-effective and efficient implementation of the Green Deal initiatives by the EU. The chapter will conclude with the implications of these obstacles on the success of the European Green Deal and the feasible solution alternatives before the EU to reduce the risk of liability for compensation of investor damages.

8 The European Green Deal, *supra* note 1, p.4

9 Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 (‘European Climate Law’) (hereinafter European Climate Law)

10 See Fit for 55 Package proposal *available at* https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en#documents

11 European Commission Press Release, European Green Deal: Commission proposes transformation of EU economy and society to meet climate ambitions (Brussels, 14 July 2021)

3.1. Decarbonizing Energy Systems: Fossil Fuel Phase-Out

The European Green Deal, aiming at ensuring that “there are no net emissions of greenhouse gases in 2050 and economic growth is decoupled from resource use,”¹² calls for related initiatives and legislation that will achieve success “in the most effective and least burdensome way,” while also ensuring that “all other EU initiatives live up to a green oath to ‘do no harm’.”¹³ Therefore, the European Green Deal recognizes the significance of supporting sustainable investments in order to “direct financial and capital flows to green investment.”¹⁴

Expectedly, the first focus area is the power generation sector, which together with both the production and use of energy “account for more than 75% of the EU’s greenhouse gas emissions.”¹⁵ As the Commission acknowledges: “A power sector must be developed that is based largely on renewable sources, complemented by the rapid phasing out of coal and decarbonising gas.”¹⁶ Within this context, fossil fuel phase-out remains in the center of the agenda for the initiatives and instruments paving the way to the achievement of the European Green Deal.

3.2. Coal: What is Special About Coal-Fired Power Plants?

The energy power sector accounts for 40% of the total GHG emissions worldwide;¹⁷ 72% of the power emissions stems from burning coal, which is the most carbon-intensive fossil fuel.¹⁸ In the light of this, it is impossible to remain indifferent to the contribution of a global coal phase-out to the fight against climate change. According to the findings of an analysis based on “IPCC Special Report on 1.5°C,”¹⁹ it is estimated that “phase-out should be completed at the global level by a median date of 2037”; the first regions

12 The European Green Deal, *supra* note 1, p.2

13 The European Green Deal, *supra* note 1, p.19

14 The European Green Deal, *supra* note 1, p.16

15 The European Green Deal, *supra* note 1, p.6

16 The European Green Deal, *supra* note 1, p.6

17 The International Energy Agency, *Global energy-related CO₂ emissions by sector* (last updated 25 March 2021) available at <https://www.iea.org/data-and-statistics/charts/global-energy-related-co2-emissions-by-sector>, last accessed 27 September 2021

18 Climate Analytics Briefing, *Coal Phase-out – global and regional perspective*, available at <https://climateanalytics.org/briefings/coal-phase-out/> last accessed 17 December 2021

19 IPCC stands for Intergovernmental Panel on Climate Change.

that should phase out being OECD,²⁰ Eastern Europe and Former Soviet Union countries by 2031.²¹ The same report underlines that “the operating coal plants would [if continued] exceed the Paris Agreement²² benchmarks by four times in 2030 and more than twenty times by 2040, highlighting the huge risk of stranded assets that the coal sector will be facing in the next decades.”²³

This being the case, the “discrepancy between government plans for fossil fuel production and global production levels consistent with 1.5°C and 2°C pathways”²⁴ is quite alarming. There is an ultimate striking awareness stemming from the finding that “governments are planning to produce about 50% more fossil fuels by 2030 than would be consistent with a 2°C pathway and 120% more than would be consistent with a 1.5°C pathway”, the largest production gap existing in the case of coal and all of this prevailing “due to minimal policy attention on curbing fossil fuel production”²⁵

The EU stands out from the rest of the world with its ambitious caring for climate action. In the proposal for amendment to the Renewable Energy Directive, “fossil phase-out schemes with milestones”²⁶ is presented as a measure to be taken for the Member States to “collectively ensure that the share of energy from renewable sources in the Union’s gross final consumption of energy in 2030 is at least 40%.”²⁷ Within this context, while fossil fuel power plants are gradually phased out in the EU, the question arises of how to respond to investors in those plants, who invoke their investment protection rights for compensation of their stranded assets and lost profits.

20 Yanguas Parra P. A. et. al., *Global and regional coal phase-out requirements of the Paris Agreement: Insights from the IPCC Special Report on 1.5°C*, Climate Analytics (September 2019) available at https://climateanalytics.org/media/report_coal_phase_out_2019.pdf

21 OECD stands for Organization for Economic Cooperation and Development. Further information available at <https://www.oecd.org/about/members-and-partners/>

22 Yanguas Parra P. A. et. al., *supra* note 20

23 The Paris Agreement [2015] 1-54113

24 Production Gap, *The Production Gap: 2019 Report — Executive Summary*, p.2 available at <http://productiongap.org/wp-content/uploads/2019/11/Production-Gap-Report-2019-Executive-Summary.pdf>

25 Production Gap, *supra* note 23, p.3

26 Proposal for a Directive of the European Parliament and of the Council amending Directive (EU) 2018/2001 of the European Parliament and of the Council, Regulation (EU) 2018/1999 of the European Parliament and of the Council and Directive 98/70/EC of the European Parliament and of the Council as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652 COM(2021) 557 final, para.12 (g)

27 European Commission, *supra* note 26, para. 2

3.3. Investment Protection and Role of Investor-State Dispute Settlement

Most Bilateral Investment Treaties (“BITs”), especially the ones signed before the wave of change from 2010 onwards, have a very strictly worded – strict in the sense that they absolutely protect investors – “Compensation in case of expropriation” articles, as in the case of German Model BIT 2008, where the said article starts with the provision of “Investments by investors of either Contracting State shall enjoy full protection and security in the territory of the other Contracting State.”²⁸ This “full protection and security” is detailed in the following paragraph from the same article:

“Investments by investors of either Contracting State may not directly or indirectly be expropriated, nationalized or subjected to any other measure the effects of which would be tantamount to expropriation or nationalization in the territory of the other Contracting State except for the public benefit and against compensation. Such compensation must be equivalent to the value of the expropriated investment immediately before the date on which the actual or threatened expropriation, nationalization or other measure became publicly known. The compensation must be paid without delay and shall carry the usual bank interest until the time of payment; it must be effectively realizable and freely transferable (...).”²⁹

According to this article, investors are definitely to be compensated immediately, irrespective of the reason for which their property has been expropriated by the host state, including where this is of public benefit. Regarding the calculation of the value of the expropriated investment, there are considerable risks due to the lack of transparency in the established rules for determination of the value for compensation both in the international investment agreements (“IIAs”) texts and ISDS rulings. This means that “the choice of an appropriate valuation technique—and the various assumptions and adjustments made in the application of any given valuation technique—is left to the discretion of arbitral tribunals.”³⁰

Even this brief examination of an example article provides sufficient insight into the problems and bottlenecks before host states when an absolute investor protection and liability of host states for compensation established under IIAs are combined with the discretionary power of ISDS tribunals.

28 German Model Treaty – 2008, available at <https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/2865/download>, Article 4(2)

29 German Model Treaty – 2008, *supra* note 28, Article 4(2)

30 Bonnitcha J., Brewin S., ‘Compensation Under Investment Treaties’ International Institute for Sustainable Development 16 (November 2020) available at <https://www.iisd.org/system/files/publications/compensation-treaties-best-practices-en.pdf>

ISDS mechanisms enable the investor to directly raise a dispute case against the host state. Going back to the example of the German Model BIT, the below wording proves how bound host states are by ISDS rulings:

”The award shall be binding and shall not be subject to any appeal or remedy other than those provided for in the Convention or arbitral rules on which the arbitral proceedings chosen by the investor are based. The award shall be enforced by the Contracting States as a final and absolute ruling under domestic law.”³¹

This illustrates that the liability for damages and amount of damages to be compensated rest absolutely with the arbitral tribunal’s interpretation, discretion and decision, which is “a final and absolute ruling”. Therefore, ISDS mechanisms are the most hotly ‘disputed’ components of IIAs – recently even more so with an increased awareness throughout the world regarding the urgent need to take action for sustainability and climate change and adopt domestic regulations and law accordingly. The fact that arbitrators do not have to take into consideration rulings in preceding cases, that proceedings can be held in private and that awards concluded by arbitrators are not subject to any amendment by domestic courts could present a great motivation for investors to sue host states even where the reasons for doing so are not that clear.³² Confirming in a way that the early developed dispute settlement mechanisms are dysfunctional and can even go so far as to limit the host state to the status quo by making it compensate the foreign investor only because it legitimately regulates, the OECD report provides some insight demonstrating that there is a diversion from “a relatively thinly defined procedural framework” to “very comprehensive rules on ISDS”. Thus it notes that the trend is so far followed by a few countries only, adding that “countries that have embarked early on an investment treaty programme have a number of treaties with provisions that would probably not be negotiated today.”³³

With the fossil fuel phase-outs initiated in the EU Member States, there are already quite a lot of cases raised either under BITs or the ECT, where the damages that have been decided to be compensated by the Member

31 German Model Treaty – 2008, *supra* note 28, Article 10(3)

32 Hallward-Driemeier, M., ‘Do bilateral investment treaties attract foreign direct investment? Only a bit - and they could bite’ World Bank Policy Research Working Paper Series. WPS 3121: 1–37 (2003) *available at* <https://openknowledge.worldbank.org/handle/10986/18118>

33 Pohl, J., K. et. al., ‘Dispute Settlement Provisions in International Investment Agreements: A Large Sample Survey’ OECD Working Papers on International Investment, 2012/02, OECD Publishing 44 (2012), *available at* https://www.oecd.org/investment/investment-policy/WP-2012_2.pdf

States correspond to billions of Euros, posing the risk of eating up most of the budget that would be needed for an EU-wide transition to a green economy. The following section further explores the challenges and dilemmas, relating to investment protection, that the EU has been facing on the path to the delivery of the European Green Deal.

3.4. Regulatory Chill: Dilemmas of the EU

In today's world there are 2,614 IIAs in force³⁴ and there are 1,104 publicly known ISDS cases³⁵ that have been so far dealt with. The findings of a case study show that “around 17% of the ISDS cases listed in the UNCTAD Investment Dispute Settlement Navigator as of January 2020 (at least 173 cases) stem from investments in or related to the fossil fuel sector”, adding that 71 cases out of 173 resulted in the liability for the compensation of damages in favor of investors, among which some were “carbon majors”.³⁶ What is striking is that “seven of the top ten largest awards in ISDS to date, all delivered since 2012, have involved fossil fuel companies or shareholders.”³⁷ In order to give an idea of how costly these awards can be for a host state, the first three are well worth noting: *Hulley Enterprises v Russia* with 40 billion USD (2014), *ConocoPhillips v Venezuela* (2019) with almost 8,5 billion USD (2014), and *Veteran Petroleum v Russia* with 8,2 billion USD.³⁸ The same case study illustrates that within the dataset analyzed, there appear “257 coal power plants that are known to involve foreign investment and present a reasonable risk of asset stranding. The findings indicate that at least 75% of these plants are protected by at least one treaty with ISDS.”³⁹

These figures have been cited to demonstrate what climate-ambitious countries should be braced for. There are at least 192 more coal plants that are covered by ISDS mechanisms, out of which at least 51 with the risk of

34 UNCTAD, Investment Policy Hub, International Investment Agreements Navigator, *available at* <https://investmentpolicy.unctad.org/international-investment-agreements>, last accessed 16 September 2021

35 UNCTAD, Investment Policy Hub, Investment Dispute Settlement Navigator, *available at* <https://investmentpolicy.unctad.org/investment-dispute-settlement>, last accessed 16 September 2021

36 Tienhaara K., Cotula L. ‘Raising the cost of climate action? Investor-state dispute settlement and compensation for stranded fossil fuel assets’ International Institute for Environment and Development, IIED Land, Investment and Rights series 15 (2020) *available at* <https://pubs.iied.org/sites/default/files/pdfs/migrate/17660IIED.pdf>

37 Tienhaara K., Cotula L, *supra* note 36, p.16

38 Tienhaara K., Cotula L, *supra* note 36, p.16

39 Tienhaara K., Cotula L, *supra* note 36, p.48

stranded asset are protected by the ECT,⁴⁰ altogether posing a risk of huge awards of billions for the host states planning a coal phase-out. In the era of the Paris Agreement, which requires the phase out of carbon-intensive fossil fuel use and production, it is clear that countries with a considerable number of coal-fired power plants planning a coal or fossil fuel phase out should be justifiably concerned. This is the point where the risk of ‘regulatory chill’ arises, that is, “governments will fail to regulate in the public interest in a timely and effective manner because of concerns about ISDS.”⁴¹ These concerns about ISDS that are in question have already been detailed in the previous section in combination with the gaps in the most BIT provisions. In short, while taking the legitimate, reasonable and necessary measures and relevant regulatory actions for the sake of fighting climate change, states are at the same time required to compensate investors with the billions awarded by the ISDS tribunal.

Within this context, there are hot debates as to whether those fossil fuel investments should be compensated when the host state takes measures in line with climate action;⁴² “some have argued that the scale and pace of the necessary transition may call for businesses to be only partially compensated, if at all.”⁴³ What is more, “even in the absence of legal proceedings, the explicit or implicit threat of recourse to ISDS can enhance the position of businesses in negotiations with states.”⁴⁴ For the purposes of addressing the issue more concretely, some ISDS cases may be briefly cited. In the case of 2009 *Vattenfall v. Germany*, Vattenfall claimed compensation for damages amounting to 1,4 billion euros for the reason that the new “climate-protection requirements that were being imposed on the power plant would entail significant additional costs for the company” with “a significant loss in the value of the facility”.⁴⁵ Vattenfall invoked the ECT for its compensation rights due to “indirect expropriation, breach of fair and equitable treatment/minimum standard of treatment, including denial of justice claims, full protection and security, or similar, arbitrary, unreasonable

40 Tienhaara K., Cotula L, *supra* note 36, p.3

41 Tienhaara K, ‘Regulatory Chill and the Threat of Arbitration: A View from Political Science’, in C. Brown & K. Miles (eds), *Evolution in Investment Treaty Law and Arbitration* (Cambridge University Press, 2011), pp. 606–28, at 615. available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2065706

42 Tienhaara K., Cotula L, *supra* note 36, p.3

43 Tienhaara K., Cotula L, *supra* note 36, p.3

44 Tienhaara K., Cotula L, *supra* note 36, p.6

45 Knauer, S., *Power Plant Battle Goes to International Arbitration*, Spiegel (15.07.2009, 18.38 Uhr) <https://www.spiegel.de/international/germany/vattenfall-vs-germany-power-plant-battle-goes-to-international-arbitration-a-636334.html>

and/or discriminatory measures.”⁴⁶ This case was settled upon Germany’s agreement to “water down the environmental standards.”⁴⁷ The words of Michael Müller summarize the arguably shocking aspect of this situation: “It’s really unprecedented how we are being pilloried just for implementing German and EU laws.”⁴⁸

A ‘threat’ case dating back to 2017 comes from France, which “softened its climate protection laws intended to restrict natural gas and oil production following a threat of legal action by Canadian company Vermilion.”⁴⁹ Regulation only against compensation brings about the questions of state sovereignty as well⁵⁰, drawing attention to the fact that the state cannot freely regulate even for very legitimate reasons such as environmental protection and climate action, which puts the state in a severe dilemma of either regulating by bearing ‘unbearable’ costs, or not regulating at all and risking the non-achievement of climate goals, whose consequences will be even more ‘unbearable’.

All these are only the beginning of an expected wave of many other ISDS cases that have been or will be raised by fossil fuel power plant investors in the EU in the face of the regulatory changes following the European Green Deal objectives. Now that the dilemma of regulatory chill for the EU has been clarified and emphasized as the region where a substantial number of coal plants are located,⁵¹ the next section examines specific aspects arising from the protective application of the Energy Charter Treaty in this field.

3.5. *Energy Charter Treaty: Energy Investments Safeguarded*

Addressing that “German energy company RWE invoked an obscure agreement called the Energy Charter Treaty (ECT) to sue the Netherlands for 1,4

46 *Vattenfall v. Germany (I)* (2009) ICSID Case No. ARB/09/6 available at <https://investmentpolicy.unctad.org/investment-dispute-settlement/cases/329/vattenfall-v-germany-i>

47 Corporate Europe Observatory, *Chapter 2: Investment treaty disputes: Big business for the arbitration industry* (27.11.2012) available at <https://corporateeurope.org/en/2012/11/chapter-2-investment-treaty-disputes-big-business-arbitration-industry>

48 Knauer, S., *supra* note 45

49 Schulz, F. *Global climate laws threatened by rise in investor-state disputes*, Euractiv (21. Okt. 2019, updated: 29. Okt. 2019) <https://www.euractiv.com/section/economy-jobs/news/global-climate-laws-threatened-by-rise-in-investor-state-disputes/>

50 Khachvani, D. ‘Non-Compensable Regulation versus Regulatory Expropriation: Are Climate Change Regulations Compensable?’ *ICSID Review Foreign Investment Law Journal* 1, 2 (2020)

51 Tienhaara K., Cotula L, *supra* note 36, p.28

billion euros (\$1.67 billion) as compensation for phasing out coal by 2030” and describing this as “the tip of a litigation iceberg” followed by another German energy company Uniper’s going to ISDS under the ECT asking for a compensation of 1 billion euros,⁵² Deutsche Welle headlined its news with “Multi-billion euro lawsuits derail climate action”. The lines following the title are equally striking: “An archaic energy treaty is being weaponized by big emitters to sue EU governments who are phasing out fossil fuels. Hundreds of billions of taxpayer funds could be redirected from climate action to corporate coffers.”⁵³ This encapsulates why the ECT has been one of the most notoriously popular international agreements of the last decade.

Although the main principles of the ECT do not deviate drastically from the protection and dispute settlement mechanisms of other IIAs as elaborated above, some characteristics of the ECT are still well-worth noting to base the further discussion on. The ECT’s investment definition reads as “every kind of asset, owned or controlled directly or indirectly by an Investor”,⁵⁴ which covers even the most climate-damaging ones, as is the case in almost all IIAs signed so far. In the case of the ECT this situation can be explained by its roots in history, which can be traced back to the objective of “integrating the energy sectors of the former Soviet Union and Eastern Europa into Western European markets at the end of the Cold War.”⁵⁵

Secondly, the ECT emphasizes the commitment to fair and equitable treatment “at all times”, accompanied with “the most constant protection and security”.⁵⁶ It is of no coincidence that statistics of ECT cases as of 3/8/2021⁵⁷ show that out of 79 publicly known cases, 24% were opened based on the alleged breach of fair and equitable treatment, making up for 36% together with the ones based on “the most constant protection and security.” The ECT adds that “each Contracting Party shall ensure that its domestic law provides effective means for the assertion of claims and

52 Braun, S., *Multi-billion euro lawsuits derail climate action*, Deutsche Welle (19.04.2021) <https://www.dw.com/en/energy-charter-treaty-ect-coal-fossil-fuels-climate-environment-uni-per-rwe/a-57221166>

53 Braun, S., *supra* note 52

54 ECT, *supra* note 2, Article 1(6)

55 Bernasconi-Osterwalder, N., *How the Energy Charter Treaty Could Have Costly Consequences for Governments and Climate Action*, International Institute for Sustainable Development (June 19, 2018) <https://www.iisd.org/articles/how-energy-charter-treaty-could-have-costly-consequences-governments-and-climate-action>

56 ECT, *supra* note 2, Article 10(1)

57 International Energy Charter, Statistics of ECT Cases as of 3/8/2021 available at <https://www.energychartertreaty.org/cases/statistics/>

the enforcement of rights,⁵⁸ stipulating that no domestic law is allowed to prohibit such assertion and enforcement. When it comes to compensation, the ECT refers to the “fair market value of the investment”,⁵⁹ where both fairness and market value aspects are controversial, not being subject to any specific technique of calculation. Market value, as opposed to the book value of an investment, refers to the amount at which the company can be traded in the market, in which selling prices will largely depend on the future profits the investment will bring in its remaining lifetime.⁶⁰ These account for the awards of billions in the power sector so far under the ECT, the record having been registered in 2014 by the Yukos cases, namely *Yukos Universal Limited v. Russian Federation*; *Hulley Enterprises Limited v. Russian Federation*; *Veteran Petroleum Limited v. Russian Federation* (18 July 2014) with an award of 50 billion USD in favor of the claimant.⁶¹

As can be anticipated, the ECT has an “umbrella clause” too, which provides that “each Contracting Party shall observe any obligations it has entered into with an Investor or an Investment of an Investor of any other contracting party”.⁶² According to an OECD working paper,⁶³ “...although there are some disparities, the ordinary meaning of ‘shall observe’ ‘any commitments/obligations’ seem to point towards an inclusive, wide interpretation which would cover all obligations assumed/entered into by the contracting States, including contracts, unless otherwise stated.” This is why “investors frequently rely on umbrella clauses as a catch-all provision where the state’s conduct may not constitute a breach of other treaty obligations.”⁶⁴ To illustrate the point, the case *Al-Babloul v. Tajikistan* (2008) was concluded with an award by the tribunal based on the rights given to the investor under this clause of the ECT upon the “claims arising out of the government’s alleged failure to ensure the issuance of licenses pursuant to several hydrocarbon

58 ECT, *supra* note 2, Article 10(12)

59 ECT, *supra* note 2, Article 13(1)

60 See for further information: <https://www.investopedia.com/terms/m/marketvalue.asp>

61 International Energy Charter, Statistics of ECT Cases as of 3/8/2021 *available at* <https://www.energychartertreaty.org/cases/statistics/>

62 ECT, *supra* note 2, Article 10(1)

63 Yannaca-Small, K. ‘Interpretation of the Umbrella Clause in Investment Agreements’ OECD Working Papers on International Investment, 2006/03, OECD Publishing (2006) *available at*: https://www.oecd.org/daf/inv/investment-policy/WP-2006_3.pdf

64 Ortiz A. L., ‘Investment arbitration under the Energy Charter Treaty’ Practical Law Arbitration 4 (2015) *available at* <https://www.mayerbrown.com/-/media/files/perspectives-events/publications/2015/03/investment-arbitration-under-the-energy-charter-tr/files/artortizlennoninvarbunderenergychartertreaty/fileattachment/artortizlennoninvarbunderenergychartertreaty.pdf>

exploration agreements concluded between Mr. Al-Bahloul and Tajikistan's State Committee for Oil and Gas for four areas (Rengan, Sargazon, Yalgyz-kak and East Soupetau) in Tajikistan.⁶⁵ In the final award the tribunal notes: "The obligation of Contracting Parties under the umbrella clause of Article 10(1) ECT to "observe any obligations entered into" implies the possibility for a tribunal in case of breach to order that Contracting Party comply with its obligations."⁶⁶

Further complicating matters for ECT contracting states, a "survival clause" – or "sunset clause" as it may also be called – prevents them from escaping liability for compensation even after withdrawing from the treaty by stipulating: "The provisions of this Treaty shall continue to apply (...) as of the date when that Contracting Party's withdrawal from the Treaty takes effect for a period of 20 years from such date."⁶⁷ This is exactly why Italy, upon the effectiveness of its withdrawal from January 2016 onwards, has faced 7 more ISDS cases as respondent since then.⁶⁸

The above may arguably justify the description of the ECT by one commentator as "the world's most dangerous investment treaty."⁶⁹ The next sections will explore further what impact and implications investment agreements, particularly the ECT, have on the success of the European Green Deal by touching on the recent and ongoing developments within the context of IIAs on the EU side as well of the ECT on the multilateral side.

65 *Al-Bahloul v. Tajikistan* (2008) SCC Case No. 064/2008 available at <https://investmentpolicy.unctad.org/investment-dispute-settlement/cases/325/al-bahloul-v-tajikistan>

66 Final Award in the Matter of the Arbitration *Mohammad Ammar Al-Bahloul v. The Republic of Tajikistan*, SCC Case No. 064/2008, para. 48 available at https://www.energychartertreaty.org/fileadmin/DocumentsMedia/Cases/20_Al-Bahloul/Fin_Aw_Al-Bahloul_v._Tajikistan.pdf

67 ECT, *supra* note 2, Article 47(3)

68 UNCTAD, Italy Cases as Respondent State, available at <https://investmentpolicy.unctad.org/investment-dispute-settlement/country/103/italy/respondent>, last accessed on 17 September 2021

69 Eberhardt, P., Olivet C., 'Silent Expansion: Will the world's most dangerous investment treaty take the global south hostage?' Corporate Europe Observatory (April 2020) available at <https://energy-charter-dirty-secrets.org/wp-content/uploads/2020/04/ECT-Silent-expansion.pdf>

3.6. Implications on the Success of the European Green Deal

3.6.1. Approaches to Intra-EU Investment Agreements and ISDS

The European Court of Justice (“ECJ”) marked the end of ISDS proceedings in the intra-EU BITs through its judgement in the case *Achmea v Slovak Republic* on 6 March 2018, where it held that:

“Articles 267 and 344 [of the Treaty on the Functioning of the European Union] must be interpreted as precluding a provision in an international agreement concluded between Member States, [...] under which an investor from one of those Member States may, in the event of a dispute concerning investments in the other Member State, bring proceedings against the latter Member State before an arbitral tribunal whose jurisdiction that Member State has undertaken to accept”⁷⁰

This brought about the signing of the “Agreement for the Termination of BITs Between the Member States of the EU” in May 2020, which did not only terminate the BITs in force, but also the application of any sunset clauses contained in these BITs as well as those in the already terminated ones.⁷¹

A question that may be rightly brought forward at this point is: “If this is the case, where do the current ISDS threats and cases come from in which both the claimant and respondent are the Member States of the EU?” The answer will not surprise: the ECT. What both the *Achmea* judgement and the agreement for termination of intra-EU BITs have in common is that they do not crystallize any ruling pertaining to the applicability of the ISDS clauses of the ECT between the EU Member States. The declaration⁷² on the legal consequences of the *Achmea* judgment addresses the topic in an obscure way, by noting that according to the interpretation of the arbitral tribunals, the ISDS clauses of the ECT apply between the EU Member States, which would render the clause incompatible with the EU law. Furthermore, the communication on the protection of intra-EU investment notes: “This provision [Article 26 of the Energy Charter Treaty], if interpreted correctly,

70 *Achmea v Slovak Republic* ECJ Case C-284/16 (2018) para.60

71 Agreement for the termination of Bilateral Investment Treaties between the Member States of the European Union [2020] L 169/1 Article 2 (hereinafter Agreement for the termination of BITs)

72 Declaration of the Representatives of the Governments of the Member States, of 15 January 2019 on the Legal Consequences of the Judgment of the Court of Justice in *Achmea* and on Investment Protection in the European Union, available at https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/190117-bilateral-investment-treaties_en.pdf

does not provide for an investor-State arbitration clause applicable between investors from a Member States of the EU and another Member States of the EU⁷³ The addressing of the issue in the agreement terminating the intra-EU BITs⁷⁴ begs even more attention: “(...) this Agreement addresses intra-EU bilateral investment treaties; it does not cover intra-EU proceedings on the basis of Article 26 of the Energy Charter Treaty. The European Union and its Member States will deal with this matter at a later stage.”

This ‘later stage’ did come quite early. The EU had to deal with this issue pressingly amidst the increasing number of the ISDS cases in which the Member States invoke the ECT against each other within the context of the climate action policies. The recent examples are from the Netherlands whose coal phase-out plan has already been challenged by German companies RWE and Uniper;⁷⁵ Belgium already pushed towards the end of 2020 for “an opinion on the compatibility of the intra-European application of the arbitration provisions of the future modernised Energy Charter Treaty with the European Treaties”⁷⁶ The wish of Belgium, though partly – since it had asked the opinion on the modernized version,⁷⁷ not on the current one – has been materialized through the judgement of the ECJ in a very recent case in the beginning of September 2021, namely the case *République de Moldavie v Société Komstroy*, where the ECJ ruled regarding the dispute settlement mechanism of the ECT that “[...]preservation of the autonomy and of the particular nature of EU law precludes the same obligations under the ECT from being imposed on Member States as between themselves.”⁷⁸

While there are many questions that beg attention within this context, the question that will be focused on for further discussion is: Are there any possible outlets to avoid spending billions both as the costs and awards of arbitral proceedings, which will enable the channeling of these billions

73 Communication from the Commission to the European Parliament and the Council on Protection of intra-EU investment COM(2018) 547 final (hereinafter Protection of intra-EU investment), p.3

74 Agreement for the termination of BITs, *supra* note 71, Preamble

75 Keating, D., *Dutch Lawmakers Under Pressure Over Coal Phase-Out*, Forbes (Dec 2, 2019,06:38am EST) <https://www.forbes.com/sites/davekeating/2019/12/02/dutch-lawmakers-under-pressure-over-coal-phase-out/?sh=5ecccb754dc8>

76 Kingdom of Belgium Foreign Affairs, Foreign Trade and Development Cooperation, *Belgium requests an opinion on the intra-European application of the arbitration provisions of the future modernised Energy Charter Treaty* (03 December 2020) available at https://diplomatie.belgium.be/en/newsroom/news/2020/belgium_requests_opinion_intra_european_applications_arbitration_provisions

77 The EU’s effort to modernize the ECT is dealt with under section 3.6.2. of this article.

78 *République de Moldavie* ECJ C-741/19 (2021) para.65

into the climate action policy objectives of the EU as set out in the European Green Deal? The next section explores the efforts of the EU to have some clauses of the ECT amended in a ‘modernized’ way to make space for environmental and climate change policies of the European Green Deal without having to compensate companies. The options of withdrawal from or termination of the ECT as solution alternatives are also discussed.

3.6.2. Energy Charter Treaty: Re-Negotiation, Withdrawal or Termination?

Now that the recent developments in the climate change regulations which are primarily targeted at fossil fuel phase out – coal being in the first place – have already started to trigger what was initially feared, that is, the looming number of ISDS cases, the regulating contracting states are desperately seeking a solution to avoid being punished for doing their best to achieve the goals of the Paris Agreement, and more specifically for the EU, the goals of the European Green Deal.

A. Re-Negotiation

Within this context, there is a pressing question: “Is there any scope for states to prevent, or significantly reduce, the potential influx of energy-related investment arbitrations?”⁷⁹ The answer of the EU to this question seems to be: ‘It is worth giving a try’, which can be inferred from the EU’s dedication to modernize the ECT to enable it to serve the purposes of today’s concerns and circumstances rather than being only an instrument of a mere absolute investor and investment protection. The inception of the modernization idea dates back to 2009⁸⁰ and started to make systematic progress from November 2017 onwards, when it was confirmed and agreed by the Energy Charter Conference that the modernization discussions would be started.⁸¹ One year after this, a further agreement took place regarding the list of topics subject to the modernization discussions of the ECT, among which are the definition of fair and equitable treatment, MFN clause, clarification

79 Vaaranmaa, O., ‘The Energy Charter Treaty, Frivolous Claims and the Looming Threat of Investor-state Dispute Settlement: Any Hope from the EU’s Modernisation Proposal?’ Vol. 8 No. 2 (2021): International Law: Open Issue, Groningen Journal of International Law 272 (2021) available at <https://ugp.rug.nl/GROJIL/article/view/37340>

80 International Energy Charter, *The Energy Charter Treaty and the Modernisation of the Energy Charter Process*, (5 May 2011) <https://www.energycharter.org/media/news/article/the-energy-charter-treaty-and-the-modernisation-of-the-energy-charter-process/>

81 International Energy Charter, *Modernisation of the Treaty*, available at <https://www.energycharter.org/modernisation-of-the-treaty/>, last accessed on 19 September 2021

of “most constant protection and security”, umbrella clause, compensation for losses, valuation of damages, frivolous claims, transparency – and most importantly – the right to regulate and sustainable development.⁸² Notably, the list of the items agreed for modernization negotiations does not include ISDS and intra-EU dispute topics due to the refusal of Japan to have the ISDS in the list.⁸³

The first round of negotiations was held on 6-9 July 2020, and the last one held so far is the sixth round on 6-9 July 2021.⁸⁴ The public communication⁸⁵ of the last round notes that “a high degree of convergence on the clarification of most constant protection and security, compensation for losses, the MFN clause and transfers related to investments was reached”, adding that the introduction of treaty language preserving the “right to regulate” continued to be considered and definition of fair and equitable treatment was agreed to be subject to further detailed discussion.

When it comes to what the EU would like to change in the ECT, the most direct reference is the text proposal⁸⁶ submitted by the EU for the purposes of modernization. The EU states that “the key objectives of the Commission’s proposal for the modernization of the ECT are to update the investment protection standards and to ensure that the ECT facilitates the EU’s climate action and energy transition in line with the European Green Deal and the Paris Agreement.”⁸⁷ The EU version of the ECT mainly proposes a new article titled “Regulatory Measures” giving the contracting states the right to regulate to “achieve legitimate policy objectives, such as the protection of the environment, including combatting climate change”; a definition of fair and equitable treatment with clarification of the meaning of “most constant protection and security” as the “obligations relating to ensure the physical security of investors and investments”; replacement

82 International Energy Charter, *supra* note 81

83 Miruplus, *Interview with Masami Nakata, Former Assistant Secretary General of the Energy Charter Treaty (ECT)* (17 Marc 2021) available at <https://plus.iru-miru.com/en/article/40842>

84 International Energy Charter, *supra* note 81

85 International Energy Charter, Public Communication on the Sixth Negotiation Round of the Modernization of the Energy Charter, available at https://www.energychartertreaty.org/fileadmin/user_upload/2021.07_ENG.pdf (hereinafter ECT Public Communication)

86 EU text proposal for the modernisation of the Energy Charter Treaty (ECT), available at https://trade.ec.europa.eu/doclib/docs/2020/may/tradoc_158754.pdf (hereinafter EU text proposal)

87 European Commission, *Energy Charter Treaty: substantial progress achieved in modernisation negotiations*, (12 July 2021) <https://trade.ec.europa.eu/doclib/press/index.cfm?id=2286>

of the umbrella clause with a clear wording banning it;⁸⁸ a sustainable development chapter with climate change and clean energy transition responsibilities of the contracting states; and - last but not least, an insertion of “the rules of a multilateral investment court to which the Contracting Party which is party to the dispute is a Party” as one of the applicable dispute resolution mechanisms,⁸⁹ in relation to which the EU adds a note in the proposal inviting the contracting states to “consider this system as an alternative to the investor-state arbitration pursuant to Article 26 of the ECT”.⁹⁰ The investment court system has been part of the recent investment agreements of the EU as a result of the reformed approach of the EU to investment, examples of which are the EU-Canada Comprehensive Economic and Trade Agreement, the EU-Singapore Investment Protection Agreement, the EU-Vietnam Investment Protection Agreement and the EU-Mexico Global Agreement.⁹¹ Apparently, the EU is trying its best to place the ISDS mechanisms on the agenda of modernization discussions.

The implementation of an amendment in the text of the ECT requires unanimity as stipulated in Article 36 (1)(a)⁹² and the opinions raised by some contracting states already hint at the great challenge before the EU as to the possibility of unanimity. Japan already aired its perspective back in 2019 noting that “it is not necessary to amend the current ECT provisions.”⁹³ Even in the event of a unanimous agreement, what will matter in the end will be the agreed new wordings of the ECT. While the negotiations will continue with the next round coming up at the end of September 2021, the debates are ongoing as to how effective the EU’s text proposal, even if accepted as it stands, will be for the EU’s successful implementation of

88 The wording is: “A breach of another provision of this Treaty, or of any other international agreement, does not constitute a breach of this paragraph.”

89 For Investment Court System description see Trade for all, *supra* note 70 p.21“...Investment Court System composed of a Tribunal of first instance and an Appeal Tribunal operating like traditional courts. There will be a clear code of conduct to avoid conflicts of interest, independent judges with high technical and legal qualifications comparable to those required for the members of permanent international courts, such as the International Court of Justice and the WTO Appellate Body.”

90 EU text proposal, *supra* note 86, p.15

91 Recommendation for a Council Decision authorising the entering into negotiations on the modernisation of the Energy Charter Treaty COM(2019) 231 final, p.2, footnote 5

92 ECT, *supra* note 2, Article 36(1)(a)

93 Energy Charter Secretariat, Decision of the Energy Charter Conference - Adoption by Correspondence – Policy Options for Modernisation of the ECT, CCDEC 2019 p.3, available at <https://www.energycharter.org/fileadmin/DocumentsMedia/CCDECS/2019/CCDEC201908.pdf>

the European Green Deal instruments and the achievement of the Paris Agreement goals. The EU's text proposal stipulates to cease the application of investment protection clauses (Part III: Investment Promotion and Protection of the ECT) to investments made before the amendment relating to fossil products and materials and electricity produced from those ten years after the amendment takes effect but not later than 31 December 2040.⁹⁴ As for any investment relating to the same after the entry into force of the amendment, they will not be protected,⁹⁵ which aims at deterring the promotion of new investments in fossil fuels. However, new investments in gas pipelines made after the amendment has entered into force will be under protection for ten years after the amendment, but not later than 31 December 2040, if they are "able to transport safe and sustainable renewable and low-carbon gases, including hydrogen"⁹⁶ which can be explained by the need for such low carbon fuels in the phase of transition to the fully clean energy with security of supply. The reason the EU has stretched the duration of possibility of protection for existing fossil fuel investments for as long as 2040 could be a sign that the EU anyway hopes to reach an agreement on its modernized text in a few years or sooner and given the ten-year period of protection after the entry into force of the amended ECT, the fossil fuel protection under the ECT will be gone around the beginning of 2030s. If this is the case, it is difficult to justify such a hopeful stance. Even if the hope materializes, that will mean allowing "foreign investors of these coal power plants based in any ECT contracting state to continue to sue ECT host states for a decision to phase out coal for well over a decade."⁹⁷

B. Withdrawal

At this point, in addition to the questions of the possibility of unanimity and well-functioning of the future modernized ECT provisions for the purposes of climate action, there is another significantly crucial question to

94 EU additional submission to its text proposal for the modernisation of the Energy Charter Treaty, available at https://trade.ec.europa.eu/doclib/docs/2021/february/tradoc_159436.pdf "This document is the European Union's (EU) additional submission to its text proposal for the modernisation of the Energy Charter Treaty (ECT), sent to the ECT Secretariat on 19 May 2020" (hereinafter Additional text proposal)

95 Additional text proposal, *supra* note 94, p.2

96 Additional text proposal, *supra* note 94, p.2

97 Schaugg, L., Di Salvatore, L., *Reform or withdrawal from the ECT: What does it mean for coal?* International Institute for Sustainable Development Investment Treaty News (September 24, 2021) <https://www.iisd.org/itn/en/2021/09/24/reform-or-withdrawal-from-the-ect-what-does-it-mean-for-coal/>

be asked: When and how much time? It has already been one year since the first negotiation round of the summer 2020. As understood from the developments in the last round,⁹⁸ the right to regulate and fair and equitable treatment clauses are yet to be further considered and discussed, which means that two of the most important clauses have not yet been agreed upon. The developments and progress recorded so far do not promise an effective conclusion of the negotiations in the near future, nor a conclusion of a text in the way EU is pushing for. The carbon budget of the atmosphere to limit the temperature increase below 1.5°C threshold does not justify the durations mentioned in the EU's modernized text proposal as pointed to above. The unfortunate truth is that “with emissions at a constant level, the budget would be expected to be used up in less than eight years from now.”⁹⁹ This being the case, “rapidly reducing coal-based power generation down to 80% below 2010 levels by 2030, and a global phase-out by 2040 at the latest is the single most important step to keep the door open for achieving the Paris Agreement.”¹⁰⁰

In light of all the developments in the sphere of ECT modernization negotiations as given above, it can obviously be concluded that the EU needs to consider other possible solutions to prevent staying stuck in the middle of an avalanche of ISDS cases and threats with huge amounts at stake. At this point, the potential withdrawal from and termination of the ECT come to the fore as possible solution alternatives.

In the scenario of withdrawal, the EU and its Member States, which are all signatories to the ECT except Italy which withdrew earlier, may decide to withdraw altogether.¹⁰¹ For such coordinated withdrawal to make sense, the survival clause stipulating obligation for compensation for the following 20 years after withdrawal¹⁰² should be banned from applying further. The EU Member States may agree not to apply this clause to the intra-EU cases – by analogy to the termination of intra-EU BITs after the *Achmea* judgement – and remain subject only to the claims coming from non-EU parties under the ECT. This scenario is promising given that “intra-EU disputes account

98 ECT Public Communication, *supra* note 85

99 Mercator Research Institute on Global Commons and Climate Change, *Remaining Carbon Budget: That's how fast the carbon clock is ticking*, <https://www.mcc-berlin.net/en/research/h/co2-budget.html>

100 See Yanguas Parra P. A. et. al., *supra* note 20, Climate Analytics

101 France and Spain already proposed withdrawal from the ECT. See *Judgment by the European Court of Justice delivers significant blow to Energy Charter Treaty* available at <https://www.epu.org/article/judgment-european-court-justice-delivers-significant-blow-energy-charter-treaty>

102 ECT, *supra* note 2, Article 47(3)

for 80 of the 135 ECT-based cases initiated to date”, which means “the possibility of an EU withdrawal combined with an *inter se* agreement neutralizing the survival clause could substantially reduce the risks posed by ECT-based arbitration to climate action.”¹⁰³ According to a recent analysis, from among the “coal power plants that are currently generating an ISDS risk under the ECT”, 45 are in the EU and owned by EU investors, while only 5 are in the EU but owned by foreign investors from states outside the EU that are contracting parties to the ECT.¹⁰⁴ It follows that a coordinated EU withdrawal, eliminating the litigation risk from investors of 45 coal plants and leaving the EU subject to the risk of ISDS claims from a minimal number of non-EU investors, could be an effective approach, reducing the risk of huge number and amounts of ISDS claims and threats against the coal phase out plants in the EU.

C. Termination

As for the scenario of termination, there is no specific provision on termination in the ECT, which makes Article 54(b)¹⁰⁵ of Vienna Convention on the Law of Treaties applicable as providing the conditions to terminate.¹⁰⁶ This stipulates that a termination can take place “at any time by consent of all the parties after consultation with the other contracting States”. This option does not sound an easy one to materialize. Japan does not even support modernization, being satisfied with the current ECT in effect today. Furthermore, in case of a unanimous consent to terminate, this termination has to also mean the termination of application of the survival clause by eliminating all its effect and impact from the date of the termination. At a time when it is that difficult to agree on modernized provisions in favor of climate action, it would likely be quite impossible to agree on such termination.

To sum up, the modernization of the ECT involves a lot of complexities and has low chances of success when the requirements for unanimity and the time it takes to conclude the negotiations are considered, as well as the risks that the amendment will not be concluded in the way the EU proposes and will not help securing achievement of the Paris Agreement and Euro-

103 Brauch, M. D., *Should the European Union Fix, Leave or Kill the Energy Charter Treaty?*, Columbia Center on Sustainable Investment (February 09, 2021) available at <https://ccsi.columbia.edu/news/should-european-union-fix-leave-or-kill-energy-charter-treaty>

104 See Schaugg, L., Di Salvatore, *supra* note 97

105 Article 54(b) of Vienna Convention on the Law of Treaties [1969] U.N.T.S. vol. 1155, p. 331

106 See Brauch, M. D., *supra* note 103

pean Green deal objectives (even if concluded with the text proposed by the EU). Therefore, the EU should think and decide carefully, considering the time and effort it has taken until now to progress into the conclusion of an amendment. This decision of the EU relates to a choice of continuing with the ECT modernization efforts at all costs or withdrawing as early as possible with all its Member States and concluding an intra-EU agreement terminating the application of the survival clause.

3.6.3. The European Green Deal Challenged

It is undeniably obvious that there is not much time to wait and waste when it comes to taking effective and ambitious climate action. A fossil fuel phase-out is indispensable for the attainment of the European Green Deal objectives, coal being in the first row of such phase-out. The EU Member States have already started to experience a wave of claims by the investors invoking the ECT for the compensation of their coal plant investments. Most of these ISDS cases are being raised by investors in one Member State against decisions taken by another. These compensations are a huge burden on the budget of the EU and Member States, which need those billions of Euros actually for green transition purposes. Having faced the reality of the outdated investment protection provisions which prevent regulation for legitimate climate purposes by making it unbearably costly, the EU has taken an active part in the negotiations for modernization of the ECT provisions by presenting its modernized text proposal. However, the chances of an early enough unanimous agreement by all the ECT contracting states on the EU proposal are quite low, endangering timely actions crucial both for the Green Deal and Paris Agreement targets. The most time and cost-effective solution alternative for the EU is a coordinated withdrawal with all its Member States, which should be followed by an *inter se* agreement between the EU Member States terminating the application of the survival clause of the ECT for the investments owned by the EU investors within the EU. This will reduce the risk of burdensome compensations to a most substantial extent as the coal power plant investments owned by non-EU investors within the EU that are covered by the ECT makes up only a few of the total coal investments in the EU covered by the ECT.

While there is a quite effective alternative outlet for the EU to avoid having to pay huge amounts due to the international investment protection mechanisms in place today, it is important that the EU chooses between staying in the modernization negotiations and withdrawal as early as possible not to be too late to achieve a substantial coal-phase out within the EU by 2030. There are still chances for the EU to meet the European Green

Deal targets, however all these political, legal, regulatory, financial, technical frictions and complexities that have to be managed within the context of protected investments may slow down the pace of the EU on the road.

4. Conclusion

This article has analysed the fossil fuel phase-out with coal phase-out in the forefront as an initiative of the European Green Deal being challenged and threatened by the investment protection mechanism under the ECT. The hurdles before such phase-out plans of states stemming from the investment protection mechanisms making host states pay billions as a consequence of regulating for legitimate climate objectives have been highlighted. Elaborating on the looming risk of huge amount of compensations with billions at stake due to the ISDS cases raised or threatened to be raised, the article has focused on the solution alternatives to eliminate these hurdles: modernization of the ECT provisions, a coordinated EU withdrawal from the ECT, and termination of the ECT.

The article concludes that the modernization of the ECT does not offer promisingly effective results for timely climate action considering the unanimity requirement as well as the timeline described in the EU's text proposal for fossil fuel investment protection, and argues that while the pace of the EU on the implementation of the Green Deal initiatives may be slowed down by the increasing litigation cases and challenging modernization efforts, a coordinated EU withdrawal with the cancellation of the survival clause of the ECT between the Member States is a solution alternative which provides the EU with a huge step forward in the path to the achievement of the European Green Deal goals.

Bibliography

EU Regulations, Directives, Communications, Proposals, Recommendations, Reports, Political Guidelines

Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions on the European Green Deal COM (2019) 640 final

Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law')

- Proposal for a Directive of the European Parliament and of the Council amending Directive (EU) 2018/2001 of the European Parliament and of the Council, Regulation (EU) 2018/1999 of the European Parliament and of the Council and Directive 98/70/EC of the European Parliament and of the Council as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652 COM(2021) 557 final
- Regulation (EU) No 1219/2012 of the European Parliament and of the Council of 12 December 2012 establishing transitional arrangements for bilateral investment agreements between Member States and third countries OJ L 351/40
- Communication from the Commission to the European Parliament and the Council on Protection of intra-EU investment COM(2018) 547 final
- Declaration of the Representatives of the Governments of the Member States, of 15 January 2019 on the Legal Consequences of the Judgment of the Court of Justice in *Achmea* and on Investment Protection in the European Union, *available at* https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/190117-bilatera-l-investment-treaties_en.pdf
- EU text proposal for the modernisation of the Energy Charter Treaty (ECT), *available at* https://trade.ec.europa.eu/doclib/docs/2020/may/tradoc_158754.pdf
- Recommendation for a Council Decision authorising the entering into negotiations on the modernisation of the Energy Charter Treaty COM(2019) 231 final
- EU additional submission to its text proposal for the modernisation of the Energy Charter Treaty, *available at* https://trade.ec.europa.eu/doclib/docs/2021/february/tradoc_159436.pdf
- Von der Leyen, U., Political Guidelines for the Next European Commission 2019-2024

EU Press Release, Speech, Questions and Answers, News

- European Commission – Speech, Press remarks by President von der Leyen on the occasion of the adoption of the European Green Deal Communication (Brussels, 11 December 2019) *available at* https://ec.europa.eu/commission/presscorner/detail/en/speech_19_6749
- European Commission Press Release, European Green Deal: Commission proposes transformation of EU economy and society to meet climate ambitions (Brussels, 14 July 2021)
- European Commission, *Energy Charter Treaty: substantial progress achieved in modernisation negotiations*, (12 July 2021) <https://trade.ec.europa.eu/doclib/press/index.cfm?id=2286>

Treaties, Agreements

- The Energy Charter Treaty [1994] 2080 U.N.T.S. 95
- Treaty establishing the European Economic Community [1957]
- The Paris Agreement [2015] I-54113
- Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community [2007] OJ C 306
- Agreement for the termination of Bilateral Investment Treaties between the Member States of the European Union [2020] L 169/1

German Model Treaty – 2008, available at <https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/2865/download>

Vienna Convention on the Law of Treaties [1969] U.N.T.S. vol. 1155, p. 331

Case Law

République de Moldavie ECJ C-741/19 (2021)

Al-Bahloul v. Tajikistan (2008) SCC Case No. 064/2008 available at <https://investmentpolicy.unctad.org/investment-dispute-settlement/cases/325/al-bahloul-v-tajikistan>

Final Award in the Matter of the Arbitration *Mohammad Ammar Al-Babloul v. The Republic of Tajikistan*, SCC Case No. 064/2008, para. 48 available at https://www.energychartertreaty.org/fileadmin/DocumentsMedia/Cases/20_Al-Bahloul/Fin_Aw_Al-Bahloul_v._Tajikistan.pdf

Achmea v Slovak Republic ECJ Case C-284/16 (2018)

Vattenfall v. Germany (I) (2009) ICSID Case No. ARB/09/6 available at <https://investmentpolicy.unctad.org/investment-dispute-settlement/cases/329/vattenfall-v-germany-i>

Articles, News, Briefings, Analyses, Reports

Climate Analytics Briefing, *Coal Phase-out – global and regional perspective*, available at <https://climateanalytics.org/briefings/coal-phase-out/>

Yanguas Parra P. A. et. al., *Global and regional coal phase-out requirements of the Paris Agreement: Insights from the IPCC Special Report on 1.5°C*, Climate Analytics (September 2019) available at https://climateanalytics.org/media/report_coal_phase_out_2019.pdf

Production Gap, *The Production Gap: 2019 Report — Executive Summary*, p.2 available at <http://productiongap.org/wp-content/uploads/2019/11/Production-Gap-Report-2019-Executive-Summary.pdf>

UNCTAD, *International Investment Agreements: Key Issues Volume I* (2004) p.93 available at https://unctad.org/system/files/official-document/iteiit200410_en.pdf

Bonnitcha J., Brewin S., ‘Compensation Under Investment Treaties’ International Institute for Sustainable Development 16 (November 2020) available at <https://www.iisd.org/system/files/publications/compensation-treaties-best-practices-en.pdf>

Hallward-Driemeier, M., ‘Do bilateral investment treaties attract foreign direct investment? Only a bit - and they could bite’ World Bank Policy Research Working Paper Series. WPS 3121: 1–37 (2003) available at <https://openknowledge.worldbank.org/handle/10986/18118>

Pohl, J., K. et. al., ‘Dispute Settlement Provisions in International Investment Agreements: A Large Sample Survey’ OECD Working Papers on International Investment, 2012/02, OECD Publishing (2012), available at https://www.oecd.org/investment/investment-policy/WP-2012_2.pdf

Tienhaara K., Cotula L. ‘Raising the cost of climate action? Investor-state dispute settlement and compensation for stranded fossil fuel assets’ International Institute for Environment and Development, IIED Land, Investment and Rights series (2020) available at <https://pubs.iied.org/sites/default/files/pdfs/migrate/17660IIED.pdf>

- Tienhaara K, 'Regulatory Chill and the Threat of Arbitration: A View from Political Science' in C. Brown & K. Miles (eds), *Evolution in Investment Treaty Law and Arbitration* (Cambridge University Press, 2011), pp. 606–28, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2065706
- Knauer, S., *Power Plant Battle Goes to International Arbitration*, Spiegel (15.07.2009, 18.38 Uhr) <https://www.spiegel.de/international/germany/vattenfall-vs-germany-power-plant-battle-go-es-to-international-arbitration-a-636334.html>
- Corporate Europe Observatory, *Chapter 2: Investment treaty disputes: Big business for the arbitration industry* (27.11.2012) available at <https://corporateeurope.org/en/2012/11/chapter-2-investment-treaty-disputes-big-business-arbitration-industry>
- Schulz, F. *Global climate laws threatened by rise in investor-state disputes*, Euractiv (21. Okt. 2019, updated: 29. Okt. 2019) <https://www.euractiv.com/section/economy-jobs/news/global-climate-laws-threatened-by-rise-in-investor-state-disputes/>
- Khachvani, D. 'Non-Compensable Regulation versus Regulatory Expropriation: Are Climate Change Regulations Compensable?' *ICSID Review Foreign Investment Law Journal* 1, 2 (2020)
- Braun, S., *Multi-billion euro lawsuits derail climate action*, Deutsche Welle (19.04.2021) <https://www.dw.com/en/energy-charter-treaty-ect-coal-fossil-fuels-climate-environment-uniper-rwe/a-57221166>
- Bernasconi-Osterwalder, N., *How the Energy Charter Treaty Could Have Costly Consequences for Governments and Climate Action*, International Institute for Sustainable Development (June 19, 2018) <https://www.iisd.org/articles/how-energy-charter-treaty-could-have-costly-consequences-governments-and-climate-action>
- Yannaca-Small, K. 'Interpretation of the Umbrella Clause in Investment Agreements' OECD Working Papers on International Investment, 2006/03, OECD Publishing (2006) https://www.oecd.org/daf/inv/investment-policy/WP-2006_3.pdf
- Ortiz A. L., 'Investment arbitration under the Energy Charter Treaty' *Practical Law Arbitration* 4 (2015) available at <https://www.mayerbrown.com/-/media/files/perspectives-events/publications/2015/03/investment-arbitration-under-the-energy-charter-tr/files/artortizlennoninvarbunderenergychartertreaty/fileattachment/artortizlennoninvarbunderenergychartertreaty.pdf>
- Eberhardt, P., Olivet C., 'Silent Expansion: Will the world's most dangerous investment treaty take the global south hostage?' *Corporate Europe Observatory* (April 2020) available at <https://energy-charter-dirty-secrets.org/wp-content/uploads/2020/04/ECT-Silent-expansion.pdf>
- Keating, D., *Dutch Lawmakers Under Pressure Over Coal Phase-Out*, Forbes (Dec 2, 2019,06:38am EST) <https://www.forbes.com/sites/davekeating/2019/12/02/dutch-lawmakers-under-pressure-over-coal-phase-out/?sh=5ecccb754dc8>
- Kingdom of Belgium Foreign Affairs, Foreign Trade and Development Cooperation, *Belgium requests an opinion on the intra-European application of the arbitration provisions of the future modernised Energy Charter Treaty* (03 December 2020) available at https://diplomatie.belgium.be/en/newsroom/news/2020/belgium_requests_opinion_intra_european_application_arbitration_provisions

- Vaaranmaa, O., 'The Energy Charter Treaty, Frivolous Claims and the Looming Threat of Investor-state Dispute Settlement: Any Hope from the EU's Modernisation Proposal?' Vol. 8 No. 2 (2021): International law: Open issue, Groningen Journal of International Law 272 (2021) available at <https://ugp.rug.nl/GROJIL/article/view/37340>
- Miruplus, *Interview with Masami Nakata, Former Assistant Secretary General of the Energy Charter Treaty (ECT)* (17 Marc 2021) available at <https://plus.iru-miru.com/en/article/40842>
- International Energy Charter, Public Communication on the Sixth Negotiation Round of the Modernization of the Energy Charter, available at https://www.energychartertreaty.org/fileadmin/user_upload/2021.07_ENG.pdf
- Energy Charter Secretariat, Decision of the Energy Charter Conference - Adoption by Correspondence – Policy Options for Modernisation of the ECT, CCDEC 2019 <https://www.energycharter.org/fileadmin/DocumentsMedia/CCDECS/2019/CCDEC201908.pdf>
- Schaugg, L., Di Salvatore, L., *Reform or withdrawal from the ECT: What does it mean for coal?* International Institute for Sustainable Development Investment Treaty News (September 24, 2021) <https://www.iisd.org/itn/en/2021/09/24/reform-or-withdrawal-from-the-ect-what-does-it-mean-for-coal/>
- Mercator Research Institute on Global Commons and Climate Change, *Remaining Carbon Budget: That's how fast the carbon clock is ticking*, <https://www.mcc-berlin.net/en/research/co2-budget.html>
- Brauch, M. D., *Should the European Union Fix, Leave or Kill the Energy Charter Treaty?*, Columbia Center on Sustainable Investment (February 09, 2021) available at <https://ccsi.columbia.edu/news/should-european-union-fix-leave-or-kill-energy-charter-treaty>

Websites

- International Energy Charter, *The Energy Charter Treaty and the Modernisation of the Energy Charter Process*, (5 May 2011) <https://www.energycharter.org/media/news/article/the-energy-charter-treaty-and-the-modernisation-of-the-energy-charter-process/>
- International Energy Charter, *Modernisation of the Treaty*, available at <https://www.energychartertreaty.org/modernisation-of-the-treaty/>
- United Nations Framework Convention on Climate Change ("UNFCCC"): <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>, United Nations Climate Change, *The Paris Agreement*, available at <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>
- UNCTAD, Italy Cases as Respondent State, available at <https://investmentpolicy.unctad.org/investment-dispute-settlement/country/103/italy/respondent>
- Investopedia: <https://www.investopedia.com/terms/m/marketvalue.asp>
- Delivering European Green Deal: available at https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en#documents
- Foreign direct investment available at https://www.oecd-ilibrary.org/finance-and-investment/foreign-direct-investment-fdi/indicator-group/english_9a523b18-en
- UNCTAD, Investment Policy Hub, International Investment Agreements Navigator, available at <https://investmentpolicy.unctad.org/international-investment-agreements>

UNCTAD, Investment Policy Hub, Investment Dispute Settlement Navigator, available at <https://investmentpolicy.unctad.org/investment-dispute-settlement>

International Energy Charter, Statistics of ECT Cases as of 3/8/2021 available at <https://www.energychartertreaty.org/cases/statistics/>

The International Energy Agency, *Global energy-related CO2 emissions by sector* (last updated 25 March 2021) available at <https://www.iea.org/data-and-statistics/charts/global-energy-related-co2-emissions-by-sector>

Education and Awareness

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Building the Road to Green Entrepreneurial Orientation in Higher Education and Research: Sharing Experience and Looking Ahead

Abstract

The Green Entrepreneurial approach is an important trend in strengthening education and research in Europe and in the world. The article examines a concept of *green entrepreneurship* and development of “skills ecosystems” as a dimension in university education and research. This methodology serves as a tool for integrating a number of main goals focused on providing high quality vocational skills to young people and contributing to regional development, innovation, smart specialisation and social inclusion. The article discusses how educational institutions must respond to the challenges in providing a high-quality research-training environment. The authors show that the establishment of *dual education and related research* at university level is an evident strategy for higher education institutions as this will give students an opportunity to acquire solid knowledge about subject matters and contribute to build a stimulating research environment. This contribution aims to offer insight into the implications in relation to the need to expand and adapt the content and the approach of Green Entrepreneurship and innovation in dual educational programmes and research in the EU and Latvia.

The development of analytical skills and specialist knowledge promoted by *dual education* is a particular asset in areas, where in-depth knowledge of the green entrepreneurial orientation approach is key to research excellence.

Keywords: green entrepreneurship, research, universities, dual education.

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Introduction

In contemporary times, multiple crises crossing geo-political security, economic, social, public health, and environmental realms have renewed the incentives for harmonised policy responses in the EU to support societal transformations for sustainability. In the context of geopolitical crises strategies and economic turmoil, decarbonizing the EU economy were debated in the European Green Deal (EGD), a ‘green growth’ strategy. Additionally, the crises of skyrocketing energy prices and insecurity of supply due to the Russian-Ukrainian war have put the energy transition at the top of EU’s priorities¹. In light of varying capacities of the EU Member States to respond to the short-term and longer-term economic and environmental difficulties, concerns for transition of educational programmes and educational research in the context of ‘green’ entrepreneurship and innovation are of prime importance.

The European Commission (EC) proposes transformation of EU economy and society to meet climate ambitions, and on 14 July 2021 the European Commission adopted a set of proposals to make the EU’s climate, energy, transport and taxation policies fit for reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels. Achieving these emission reductions in the next decade is crucial to Europe becoming the world’s first climate-neutral continent by 2050 and making the EGD a reality.² However, the ‘green growth’ debate is taking place in a generalised setting, for example, largely disregarding the innovation factor. According to EU climate chief Frans Timmermans, green development is “...going to be a long and difficult journey and COP27 deal still needs a tremendous amount of work”.³

In this article, we consider the ‘green entrepreneurial’ approach as an important trend in strengthening education and research in European higher educational institutions. The importance of education is stressed by the UN Action for Climate Empowerment (ACE), as an over-arching goal to engage in climate action, through the six ACE elements - climate change

1 REPowerEU: Joint European Action for more affordable, secure and sustainable energy (2022). European Commission, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A108%3AFIN>.

2 European Green Deal: Commission proposes transformation of EU economy and society to meet climate ambitions. European Commission. Press release. 14 July 2021. https://ec.europa.eu/commission/presscorner/detail/en/IP_21_354

3 Frans Timmermans. COP27 Climate Summit. A press conference in Sharm el Sheikh, Egypt. EU Observer 18 November 2022.

education and public awareness, training, public participation, public access to information, and international cooperation on these issues.⁴

The article examines the concept of ‘green entrepreneurship’ and development of ‘skills ecosystems’ as a dimension in university education and research. This methodology serves as a tool for integrating a number of main goals focused on providing high quality vocational skills to young people and contributing to regional development, innovation, smart specialisation, and social inclusion. The study discusses in which way higher educational institutions must respond to the challenges in providing a high-quality research-training environment. The authors have been inspired by the content of the EU 3LoE “Three-level centres of professional excellence: Qualification, entrepreneurship and innovation in the Green Economy”.⁵

The authors argue that the establishment of dual education and related research at a university level is an evident strategy for higher education institutions nowadays, as this will give students an opportunity to acquire solid knowledge about subject matters and contribute to build a stimulating research environment.

This contribution aims to offer insight into implications in relation to the need to expand and adapt the content and the approach of green entrepreneurship and innovation in dual educational programmes and research in the EU and Latvia. The development of analytical skills and specialist knowledge promoted by dual education is a particular asset in areas, where in-depth knowledge of the green entrepreneurial orientation approach is key to research excellence.

I. Understanding of the Green economy and green entrepreneurship concept

1.1. Green entrepreneurial orientation and the concept of green innovation

Increasingly, environmental issues are posing serious threats to ecology, humans and economic growth. Governments and businesses focus nowadays

4 UN Action for Climate Empowerment. <https://unfccc.int/ace>.

5 The 3LoE “Three-level Centres of Professional Excellence: Qualification, Entrepreneurship and Innovation in the Green Economy” aims at development and implementation of dual vocational training in education, training and higher education, with an intensive partnership between the places of learning (companies – education centres). European Commission. Erasmus+. Hanse-Parlament projects <https://3-loe.eu>.

on more sustainable productions and integrating sustainable processes in core of their business activities.

Studies suggest that an entrepreneurial orientation (EO) has emerged as a core concept in the field of entrepreneurship⁶. In this context, in realising environmental, economic, and social performance of businesses, a green entrepreneurial orientation (GEO) and or sustainable entrepreneurial orientation (SEO) are considered as sustainable competitive advantage⁷. For many firms GEO enhances their capabilities to initiate green ventures and improve business performances and sustainability performance.

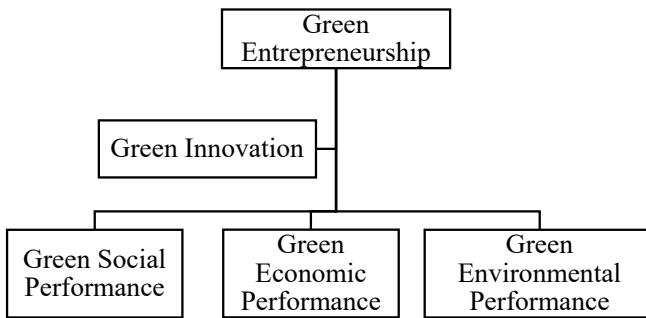
Transition to green economy is a dominant part of the EU's economic development. The European Green Deal that strives to transform the EU into a climate neutral and resource efficient economy by 2050⁸ has placed green economy in the focus of all national governments of EU member states. Implementation of the European Green Deal will provide new opportunities for innovation, investment, and jobs. Green entrepreneurs are recognized as a key driving force to foster transitions to green economy. Green entrepreneurs are implementing strategies that aim to reconcile tensions between business activities and environmental objectives in a contrast to entrepreneurs operating "business as usual"⁹. An essential starting point governing green entrepreneurs is a "green growth" paradigm. In scientific literature "green growth" is associated with climate stabilization as an accelerator for innovation, investment, economic growth and related to political activities on national and regional levels¹⁰.

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- 6 Lumpkin, G. T. Pidduck, R.J. (2021) "Global Entrepreneurial Orientation (GEO): An Updated, Multidimensional View of EO" in Corbett, A.C., Kreiser, P.M., Marino, L.D., Wales, W.J./Ed. *Entrepreneurial Orientation: Epistemological, Theoretical, and Empirical Perspectives, Advances in Entrepreneurship, Firm Emergence and Growth*, Vol. 22, Emerald Publishing Limited, Bingley, pp. 17-68.
 - 7 Afum, E., et al., (2021) The missing links of sustainable supply chain management and green radical product innovation between sustainable entrepreneurship orientation and sustainability performance. *Journal of Engineering, Design and Technology* . DOI: <https://doi.org/10.1108/JEDT-05-2021-0267>.
 - 8 Delivering the European Green Deal https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en#transforming-our-economy-and-societies.
 - 9 O'Neill, K., & Gibbs, D. (2016) Rethinking green entrepreneurship – Fluid narratives of the green economy. *Environment and Planning A: Economy and Space*, 48(9), 1727–1749. <https://doi-org.db.rsu.lv/10.1177/0308518X16650453>.
 - 10 Buch-Hansen, H., & Carstensen, M. B. (2021) Paradigms and the political economy of ecopolitical projects: Green growth and degrowth compared. *Competition & Change*, 25(3–4), 308–327. <https://doi-org.db.rsu.lv/10.1177/1024529420987528>.

The concept of ‘green innovation was first proposed by Fussler and James already in 1996¹¹, to denote improvements and innovations in product processes that enhance the environmental performance of the firms. In addition to this, Borghesi et al. (2015)¹² refer to green innovation as processes of the use of innovative resources that may reduce the cost of production and improve a company’s performance. In studies that are relevant to green innovations (Ratten, Ramirez-Pasillas, Lundberg, 2019),¹³ importance is attached to the economic, environmental, and social performance of a company, which in turn could enhance the strength and competitiveness of the organizations. Entrepreneurship has an important role in delivering more radical green innovations that challenge existing firms and business models.

Green entrepreneurship is a system that reflects a company’s strategic actions to accelerate green innovation and improve sustainable business performance (environmental, economic, and social). Green entrepreneurship leads to green innovation, which in turn gives rise to three variables, which include ‘green social performance’, ‘green economic performance’ and ‘green environmental performance’, as presented in the scheme below:

Scheme 1. A System of Green Entrepreneurship



- 11 Driving Eco-innovation:A Breakthrough Discipline for Innovation and Sustainability. Fussler, C., James, P., Pitman Publishing, 1999, p. 364.
- 12 Linking emission trading to environmental innovation: Evidence from the Italian manufacturing industry. Borgesi, S., Cainelli, G., Mazzanti, M., Elsevier, *Research Policy*, Volume 44, Issue 3, April 2015, pp. 669-683.
- 13 Athanasios Hadjimanolis. Drivers and Barriers in SMES in the Context of Small Countries in *Managing Sustainable Innovation*.Routledge,2020, pp. 60-67.

A policy needs to create the room for such new firms by enabling their entry, exit and growth, ensuring fair competition and improving access to finance, which remains a major constraint for the entry and growth of new businesses and firms. In addition, there is a strong need to facilitate transition to green growth in general and in business in particular. This aims to alleviate problems in adopting green innovations, due to weak innovation capabilities. The policy can help to enable businesses to participate in knowledge networks, strengthen the skills that can lead to innovation, and reduce the regulatory burden on firms.

1.2. Policy responses and implications: EU and Latvia

Currently the European economy and politics, and European integration in general, are confronting important challenges. The EU is facing both a major increase in energy prices, seriously impacting on its the economy as well as an immigration flow due inter alia to war in Ukraine. The EC proposes transformation of the EU economy and society and education to meet climate ambitions and new geopolitical and economic challenges.

As part of this, the EU is encouraging the education and training sector to take action to contribute to the green transition and to strengthen the sustainability competences of all learners.¹⁴ However, lack of high skilled professionals is recognized as an important constraint on the way to dynamic economic development in the EU and is one of the main concerns for politicians and academics.

14 Green Education Initiatives. European Education Area. European Commission. <https://education.ec.europa.eu/focus-topics/green-education/about>.

Box 1: European Commission' vision for a European Educational Area (EEA)

EEA is guided by several dimensions¹⁵:

- improvement of basic skills (digital competences, and transversal skills - entrepreneurship, creativity and civic engagement);
- facilitation of mobility for learners and educators and international cooperation between education institutions;
- promotion of language learning, multilingualism and support the discovery and management of cultural diversity;
- enriching education with a European perspective encouraging understanding of and critical thinking about what Europe means in regard to citizens' daily lives;
- ensure that education and training institutions are safe, inclusive, and disinformation-free.

One of the guided EC's visions for the EEA is Higher education¹⁶;

- support closer and deeper cooperation between higher education institutions, in particular international higher education alliances;
- co-create, together with Member States and stakeholders, a transformation agenda for higher education institutions
- develop a European approach to micro-credentials to help widen learning opportunities and strengthen the role of higher education and vocational education and training institutions in lifelong learning;
- promote focus on specialised education programmes on advanced digital skills related to cutting-edge technologies, such as artificial intelligence and high-performance computing.

15 Achieving a European educational area by 2025 and resetting education and training for the digital age. *Press release*. 30 September 2020, Brussels https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1743.

16 **A European Education Area by 2025**. <https://eur-lex.europa.eu/EN/legal-content/summary/a-european-education-area-by-2025.html>.

Latvia is on a good pathway towards reaching many of the Sustainable Development Goals (SDGs)¹⁷. According to the OECD Report¹⁸, Latvia has managed to decouple several environmental pressures from its sustained economic growth, although challenges remain. It has significant opportunities for accelerating the transition towards a low-carbon, greener and more inclusive economy, especially by investing in energy efficiency, renewables, sustainable forestry and sound waste and material management. To seize these opportunities, it should make better use of economic instruments, remove potentially perverse incentives, and improve the quality of its environment-related infrastructure and services.

Latvia has a well-developed and comprehensive framework for sustainable development. It is defined by law and adopts the principle of vertical (hierarchical) and horizontal co-ordination of planning documents.

The Sustainable Development Strategy of Latvia until 2030 (Latvia 2030) includes long-term priorities, goals, and action lines, and is broadly consistent with the SDGs. It is based on a capital approach to sustainable development, which primarily focuses on wealth creation within the planet's ecological limits, with an emphasis on the correlation between environmental and economic systems. Latvia 2030 has a higher political standing than the previous sustainable development strategy. It is the result of a multi-stakeholder participatory process and was adopted by the Saeima (Parliament) in 2010. The broad public participation helped the strategy gain the legitimacy of a social contract and the broad support needed for its implementation. All SDGs are being integrated into the planning system and Latvia is making progress towards achieving them. However, the country needs to harness economic, environmental, and social opportunities of moving towards a circular economy, enhancing innovation and eco-efficiency, reducing inequality and improving access to education and health.¹⁹

Several areas for action have been identified:

- increasing productivity of the economy, including through more efficient use of resources and larger investment in research and innovation
- improving labour market performance
- improving the health care and social welfare systems

17 OECD (2019), *Measuring Distance to the SDG Targets 2019: An Assessment of Where OECD Countries Stand*, OECD Publishing, Paris. <https://doi.org/10.1787/a8caf3fa-en>.

18 OECD (2019), *Economic Surveys: Latvia 2019*, OECD Publishing, Paris, <https://doi.org/10.1787/f8c2f493-en>.

19 Latvia. Cross-Sectoral Coordination Centre (2018), *Implementation of the Sustainable Development Goals*. <https://sustainabledevelopment.un.org/memberstates/latvia>.

- improving service provision to low-density areas, including road infrastructure, public transport and housing
- adapting to climate change, reducing GHG (greenhouse gases) emissions and promoting wider use of renewable energy sources.

Sustaining growth in the long term will also require more investment in education²⁰ and innovation to further diversify exports towards products and services with higher technological content and value added.

II. Green entrepreneurial approach in higher education: a key to sustainability mindset

The European Skills Agenda²¹ is a five-year plan to help individuals and businesses develop more and better skills and to put them to use, by strengthening sustainable competitiveness, as set out in the EGD ensuring social fairness, putting into practice the first principle of the European Pillar of Social Rights: access to education, training, and lifelong learning for everybody. In addition, the EU is building resilience to react to crises, based on the lessons learnt during the COVID-19 pandemic.²²

Climate change and environmental degradation are an existential threat to Europe and the world. To overcome these challenges, the EGD will transform the EU into a modern, resource-efficient, and competitive economy, ensuring: no net emissions of greenhouse gases by 2050, economic growth decoupled from resource use, and no person or place left behind. The European Green Deal also offers a lifeline out of the COVID-19 pandemic. One third of the 1.8 trillion-euro investments from the NextGenerationEU Recovery Plan, and the EU's seven-year budget will finance the EGD.²³ In this context, it is important to stress that higher education and research are facing new challenges and must respond to the new processes that strengthen the mutual ties between international communities. The interrelation and interaction of political, economic, social and other dimensions lead to

20 OECD (2019), *OECD Economic Surveys: Latvia 2019*, OECD Publishing, Paris, <https://doi.org/10.1787/f8c2f493-en>.

21 Commission Staff Working Document, Accompanying the document Proposal for a Council Recommendation on Key Competences for LifeLong Learning. Brussels, 18 January 2018.

22 European Commission. Employment, Social Affairs & Inclusion. European Skills Agenda. <https://ec.europa.eu/social/main.jsp?catId=1501>.

23 European Commission. *A European Green Deal*. <https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal>.

the interdependence of studies and a demand for integrated comparative educational settings that offer a green entrepreneurial approach to the development of generic and specific knowledge, skills and competences.

Different factors are impacting on the educational and research environment. These encompass changes in the international division of “intellectual” labour and the corresponding financial resources, as well as a number of economic growth factors, such as a period of the current economic, energy and social turmoil and its consequences on education and research. These challenges are reshaping global markets, and impacting on education systems, research, innovation, and knowledge development. Such transformation processes lead to intriguing research questions, such as: how are universities adjusting to these new market demands and, specifically, how are universities creating skills ecosystems? What are the implications of the green entrepreneurship and innovation system and the introduction of this system in the field of higher education? In recent years, a growing body of knowledge has been developed towards higher education to implement a sustainability curriculum in higher education and outreach activities, which include published studies (Weiss, Barth, 2019), (Menon, Suresh, 2020) in the *Journal of Sustainability in Higher Education*.²⁴

Universities worldwide are in the midst of a dramatic transformation of their administrative and scholarly goals. Such reforms are driven by a sense of global competition among higher education institutions, now requiring universities to set strategic plans for growth and excellence.

2.1. *The need for updates in education*

According to the research produced by the World Economic Forum (WEF), today’s education system does not meet the needs of young people. “I feel like I am learning all the theory, but not the practical skills I will need later in the field, which is a huge miss” - is a thought shared by a participant in one of the interviews conducted by the WEF researchers.²⁵ Young people in

24 Weiss, M., M. Barth. M. (2019) Global research landscape of sustainability curricula implementation in higher education, *International Journal of Sustainability in Higher Education*, Vol.20, No. 4, pp. 570-589.; Menon, S., Suresh., M. (2020) Synergising education, research, campus operations, and community engagements towards sustainability in higher education: A literature review. *Journal of Sustainability in Higher education*, Vol. 21, No.5, pp. 1015-1051.

25 We asked young people about work and skills. World Economic Forum (WEF). https://www.weforum.org/agenda/2021/07/we-asked-young-people-about-work-and-skills/?utm_source

general need to become more adept at seeing opportunities where others see problems, more willing to take risks, and more willing to accept failure.

Governments, private companies, universities, incubators, and accelerators are all increasingly looking to cultivate the next generation of entrepreneurs. Many educational programs are taking an increasingly innovative approach to developing richer “human capital” and fostering greater entrepreneurship in general and green entrepreneurship in particular.

Technological changes and demographic shifts require reskilling to meet labour market demands. However, lifelong learning opportunities, for example, modular short-cycle courses, experience on the job, and exposure to new projects are necessary to help more people gain skills that match labour market demand. Businesses need to recognise and invest in their “human capital” as an asset, rather than see it as a liability.²⁶

The programs acquaint the prospective entrepreneurs with the broader mechanisms at play at both a national and regional level that can be leveraged to support entrepreneurship and growth - and introduce these young people to tools and resources necessary to increase the scale of their ventures. Specialized education should focus in particular on skills that are in demand in the real world and address the disconnect between employer needs and available talent pools. “The business of businesses is climate-change adaptation”²⁷

More dialogue and cooperation among companies, regulators, investors, consumers, and workers will be necessary to earn and sustain public trust.

2.2. Promotion of innovation in the Green Economy in HE programmes in the EU

According to the Curriculum “Preparation and management of SMEs for work in the Green Economy” by the Satakunta University of Applied Sciences (SAMK),²⁸ concrete goals of education towards green economy are the following:

e=sfmc&utm_medium=email&utm_campaign=2752036_Agenda_weekly-6August2021-20210804_095303&utm_term=&emailType=Agenda%20Weekly.

26 Ibid.

27 The Economist. 11 January 2022. <https://www.economist.com/special-report/2022/11/01/the-business-of-businesses-is-climate-change-adaptation>.

28 Preparation and management of SMEs for work in the Green Economy. Satakunta University of Applied Sciences (SAMK), Dr. Kari Lilja, Dr. Sirpa Sandelin and Sanna Lindgren, 2020 European Commission. Erasmus+. Hanse-Parlament projects <https://www.hanse-parlament.eu/projects/>.

- “To give participants an understanding of environmental issues that will affect our societies and businesses in the near future.
- To give participants an understanding of sustainability and sustainable development and how these concepts can help to tackle the challenges caused by changing climate and other environmental and societal threats.
- To give participants a common information concerning the European and national policies concerning the environmental issues, sustainability, and green economy.
- To give participants a basic knowledge of green economy and its benefits and challenges for an enterprise and business.
- To help participants innovate new ideas how they and their companies will find the best ways to respond the challenges”²⁹

Educational programmes that support entrepreneurship and innovation in the green economy have been developed in many EU countries, for example, in Germany, Finland, Belgium and France. These experiences are given in Boxes 2-3.

29 Ibid.

Box 2: Dual educational programmes in Finland and Germany³⁰

Similar to the training-integrated programmes, the practice-integrated dual programmes include a mix of practical elements in a company and academic training.

The big difference is, however, that the practical elements do not encompass an officially recognized vocational training. Therefore, graduates of practice-integrated dual programs graduate with an academic degree, typically a bachelor's or in some cases a master's degree, some practical work experience under their belt but not official vocational training certificate in a recognized profession. In 2019, nearly 50% of study programs were offered in this form.

Students of this model are either employed as interns or as regular employees but not as apprenticeship trainees. Most often, students of this model cooperate with only one company throughout this time, however, there are also practice-integrated dual study models that allow you to change companies each semester and intern in various companies. In this latter case, it may be that you only receive a salary during the months that you work.

Students typically start this program type after high school graduation or after graduating from a bachelor program. Some students of this type also have started a career before deciding to get additional qualifications under this study model.

The practical and theoretical curricula are coordinated in practice-integrated academic programmes. Such programmes are popular with students due to combination of practical experience and often students receive salaries throughout their studies. These aspects are now being emphasized in entrepreneurial education programs, for example in educational programmes in Belgium and France are sets out the basic characteristics of the model in the Box 3.

30 Ibid.

BOX 3: Entrepreneurship and innovation

*Vlerick Business School practical training*³¹ *on particular themes below.*

Start-ups; Scale-ups; SME; Family business; Corporate innovators.

Short and focused programmes address today's most relevant business issues in a short but intense programme's format. The number of programme's days varies from 2 to 6 days, dependent on the programme.

Growth through Innovation

Ensure your competitive advantage by formulating your innovation strategy.

Product management

Launch new products and services successfully.

New Business Development

Realise sustainable growth by exploring and implementing new business opportunities.

Project Management

In line with your strategy.

Educational programmes in France, Lyon

Entrepreneurship & Innovation Management³²/Executive master's in digital Innovation and Entrepreneurial Leadership³³

The programmes are focused on management and entrepreneurship

Management combines both innovative and entrepreneurial dimensions, allowing you to carry out a wide variety of projects and acquire a more global perspective.

Students will be able to specialise in entrepreneurship and innovation and technology to acquire more knowledge about family business, social entrepreneurship, strategic management of technology, etc.

This is a new trend in the transformation of our societies in which universities are involved; this is also the situation witnessed in Latvia.

31 Public Utility Foundation, Gent, Belgium <https://www.vlerick.com/en/contact>; Entrepreneurship and innovation- <https://www.vlerick.com/en/management-expertise/entrepreneurship-and-innovation-overview>.

32 Entrepreneurship & Innovation Management. Business School, Lyon, France <https://masters.em-lyon.com/en/Specialized-Program-Entrepreneurship-Innovation-Management>.

33 Executive master's in digital Innovation and Entrepreneurial Leadership. Germany, <https://www.sayinstitute.eu/programme/master-digital-innovation-entrepreneurial-leadership-emd-iel-mba/>.

III. Latvia: maturity in relation to Green Economy and Innovation in HE programmes in Latvia

3.1. Economic and demographic context

Latvia has a small open economy, with a small industrial base, a large agriculture and forestry sector. Until the outbreak of Covid-19 pandemic, Latvia's economic growth remained stable, exceeding the EU average. From 2011-2019, GDP on average increased by 3.3% annually. In 2019, economic growth moderated. GDP increased by 2%. The slight economic slowdown was driven by both internal factors (investments from EU funds have peaked, developments in the financial sector, etc.) and external factors (review of global trade tensions, Brexit, slower growth in other EU countries). Moreover, in 2020, the increase in unemployment and the fall in income caused by the Covid-19 crisis have significantly reduced household consumption. In 2020, private consumption was 10% lower than in 2019. The government's support measures to mitigate the negative effects of Covid-19, which have been largely financed at the expense of increasing the general government deficit, have maintained positive growth in government consumption. In previous years, the increase in investment was largely due to the acquisition of EU funds. In 2020, GDP decreased by 3.6%, compared to 2019. However, following the improvement of the epidemiological situation, which was facilitated by vaccination, economic activity has gradually increased and in 2021 according to the Central Statistical Bureau (CSB) GDP as compared to 2020, grew to 4.8%.³⁴ Nevertheless, the uncertainty remains elevated according to the European Parliamentary Research Service (EPRS).³⁵ The OECD noted that the size of the Latvian population is declining fast due to ageing and emigration, and that productivity growth declined following the 2008 global crisis. The OECD stresses that policies to enhance digital transformation as well as green and digital transition are of prime importance to address the above-mentioned issues.³⁶ Furthermore, experts estimate that rapidly increased prices of natural gas and other energy

34 Central Statistical Bureau of Latvia, 2022. <https://stat.gov.lv/en/statistics-themes/economy/gross-domestic-product-quarterly-data/press-releases/8220-gross-domestic>.

35 Jerome Saulnier. Latvia's National Recovery and Resilience Plan (2022). European Parliament [https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/698887/EPRS_BRI\(2022\)698887_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/698887/EPRS_BRI(2022)698887_EN.pdf).

36 Going For Growth' Report on Latvia. (2021) OECD. <https://www.oecd.org/economy/growth/Latvia-country-note-going-for-growth-2021.pdf>.

resources in 2022³⁷ could continue to rise until the 1st quarter of 2023, so Latvian residents will have to reckon with unprecedented, record-high energy bills in the winter 2022 period. According to the data of the Central Statistical Bureau of Latvia, already in the first half of 2022, electricity prices increased almost twice compared to the price of electricity per kilowatt hour in the first half of 2021 and the price of natural gas for consumers increased almost 2.5 times.

The competitive advantages of the Latvian economy mainly rely on technological factors, improvements in production efficiency and innovations; however, to a lesser extent on low labour and resource prices. Reframing green investments should be complemented by measures that improve skills and facilitate the reallocation of labour and capital.

Considering the decline in labour demand, which was affected by the overall downturn in economic activity due to the Covid-19 crisis, in 2020, the number of employees decreased by approximately 17 thousand or 1.9%, compared to 2019, thus representing the largest decrease in the number of employees since 2010.

Along with declining employment, unemployment has also risen. Unemployment rates remained almost 1/3 higher than before the Covid-19 crisis. Overall, in 2020, the average unemployment rate increased to 8.1%, which is 1.8 percentage points higher than in 2019.³⁸

Furthermore, the level of economic activity in Latvia still varies greatly from region to region, with most jobs concentrated in Riga and the surrounding areas, while the number of jobs in other regions is much lower. At the end of 2022, the registered unemployment rate was the lowest in Riga (4.6%) and the Riga region (4.7%), while the highest rate was recorded in the Latgale region (14.8%).

The labour market is also affected by the negative demographic situation in the country for a long time, leaving an impact on both unemployment and the dynamics of the number of employees. Figures from the Central Statistical Bureau of Latvia show at the beginning of 2021 the population of Latvia amounted to 1 million 893 thousand people, which is 14.5 thousand people fewer than in 2020.³⁹ In 2020, the population decreased more rapidly - by 0.76% compared to 0.64% 2019, including a decrease of 0.59% due to negative natural growth and 0.17% due to migration. In 2020

37 Central Statistical Bureau of Latvia, 2022. https://data.stat.gov.lv/pxweb/lv/OSP_PUB/STAR_T_NOZ_EN/.

38 Ministry of Economy, The Republic of Latvia, 2020.

39 Central Statistical Bureau of Latvia <https://stat.gov.lv/en/statistics-themes/population/population-number/press-releases/6935-number-population-latvia-2020>.

the lowest birth rate in the last hundred years was registered - 17.6 thousand children were born in Latvia - some 1 234 (or 6.6%) less than in 2019, which is the lowest indicator over the last hundred years. The demographic decline not only affects the student population, but also the labour market. Further, working age people will be needed to cope with an increasing old-age dependency problem, as well as structural and technological changes in economies and businesses in the 21st century. In 2020, population in private households aged 15-74 declined by 9.5 thousand, compared to 2019. It should be noted that high long-term unemployment can lead to an increase in structural unemployment, i.e., the longer these people remain unemployed, the greater the risk of them losing their previous skills.⁴⁰

The demographic situation in Latvia is characterized by a negative natural rate of increase and by ageing. Depopulation started in the early nineties and still continues. In particular, the size of younger age cohorts has decreased. This is connected to the fact that at the beginning of the nineties of the 20th century, the birth rate fell sharply. Twenty years later the smaller youth population is about to enter the higher education system and the labour market. Demographic processes are inert compared to financial markets and the economy, so there are no quick solutions in demography.

It becomes increasingly difficult for unemployed to adapt to new labour market needs. Risks that some of the unemployed may have difficulty finding a job matching their skills in the future remain elevated.

The higher education system has to adjust to two forthcoming changes arising from demographic changes – a decrease in total enrolment volume and a change in the age structure.

In its current form the present size of higher education system is not sustainable. Clearly, there are no solutions to increase the size of cohorts as a way to rescue the higher education system, at least not in the near future.

According to experts, the supply of adequately skilled workers could significantly decrease in the future, and the importance of practice-integrated education in higher educational institutions will continue to increase.

The studies confirm that if the current structure of higher education is maintained, the workforce shortage in the higher education group will mostly affect the pool of professionals educated in engineering, natural sciences and ICT. By 2027, the shortage of adequately skilled workers may

40 Ministry of Economy of the Republic of Latvia, 2020.

exceed 14 000, mostly in areas such as architecture and civil engineering, computer sciences, physical and engineering sciences.⁴¹

Here, opening up new types and models in education could be part of the solution, for example to consider a trend of vocational education and professional educational programmes at HE institutions in the country.

3.2. *Practice-integrated academic programmes in green entrepreneurship and innovation*

Institutional Framework. The education system is administered at three levels - national, institutional and municipal.

National. The Parliament (Saeima), the Cabinet of Ministers and the Ministry of Education and Science are the main decision-making bodies at national level.

Institutional. The Ministry of Education and Science is the education policy development and implementation institution that oversees the national network of education institutions, sets educational standards, and determines teacher training content and procedures.

Operating at the institutional level are:

- the National Centre for Education- a public administration institution directly subordinated to the Minister of Education and Science;
- the Academic information centre (AIC) a non-profit institution, foundation established in 1994 by the Ministry of Education and Science and University of Latvia, Institute of Mathematics and Computer Science.

AIC implements the following functions:

- Latvian representative to the European diploma recognition networks ENIC/NARIC⁴²;
- Information institution on recognition of professional qualifications in regulated professions;
- Latvian coordination point for referencing national qualifications framework to the European Qualification Framework;
- Quality Agency for Higher Education.

41 The Ministry of Economy of the Republic of Latvia. Informative Report “On medium- and long-term labour market forecast”. 2020 https://www.em.gov.lv/sites/em/files/labour-market-forecasts-2020-full1_0.pdf.

42 The ENIC-NARIC Networks are the result of an ongoing collaboration between the national information centres on academic recognition of qualifications of in total 55 countries. The national information centres are operating under the principles of the Lisbon Recognition Convention (1997).

3.3. Practice-integrated programmes and their implementation

According to the Ministry of Education and Science of the Republic of Latvia, there are two groups of programmes that can be distinguished: academic programmes and professional programmes or practice-integrated programmes.⁴³

Academic higher education programmes are based upon fundamental and/or applied science; they usually comprise a thesis at the end of each stage and lead to a bachelor's degree or master's degree.

The Law on Higher Education Institutions and the Law on Vocational Education and Training (VET) stipulate two cycles of professional higher education – the first cycle professional higher education, also known as college education, takes 2-3 years, leading to the professional qualification Level 4 and second cycle professional higher education leading to the qualification level 5 (2-3 years following a first cycle programme, or not less than 4 years following upper secondary education).⁴⁴ The first cycle professional higher education programmes train students to gain skills and enter complicated professions (e.g. bank staff, business specialists, IT specialists, legal assistants, engineering technicians). The qualifications of the graduates correspond to professional qualification Level 4 that allows them to perform complex tasks under changing conditions, to take responsibility for the allocation of resources, to organize and manage the work of other specialists and/or workers. It also allows graduates to compete in the labour market or to continue their education in a related programme for obtaining a higher professional qualification. These programmes are considered to be "non-university" higher education programmes.

The qualifications obtained in the second cycle professional higher education programmes correspond to professional qualification level 5. (Level 5 – the highest qualification of a specialist in a given occupation). Level 5 provides the capacity for independent analysis, to take decisions, to design and/or plan, to organize, manage and control and/or to carry out scientific research activities in a given branch. Usually, a professional bachelor's degree in a certain sector of the national economy is obtained simultaneously with

43 Ministry of Education and Science of the Republic of Latvia <https://www.izm.gov.lv/en/education-system-latvia>.

44 Vocational Education Law. The Parliament of the Republic of Latvia (*Saeima*) on 10 June 1999; *Latvijas Vēstnesis*, 213/215, 30.06.1999. amended on 06.01.2017. <https://likumi.lv/ta/en/id/20244>.

ILO. Latvia. https://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=&p_isn=56400.

the qualification. These programmes are considered to be "university-type" higher education programmes.

Upon completion of a programme of professional higher education, students are awarded a professional qualification and a professional bachelor's degree that can be followed by further 1-2 years of professional master's studies. The master's degree of higher professional education is awarded if the total duration of studies is at least five years. There is growing interest in programmes that aim to combine vocational and academic learning in so-called 'dual study programmes', taking a complementary perspective of VET and higher education. Vocational education is provided at three levels:⁴⁵

- basic education (integrated primary and lower secondary);
- secondary education (upper secondary);
- higher education.

Vocational education combines education and practical training (50-65% of curricula depending on the type of programme) at school and enterprises. Vocational education at secondary level can be implemented also as an apprenticeship type scheme (nationally called "work-based learning"⁴⁶, with flexible curricula taking place alternately at school and in enterprise.⁴⁷ Vocational education institutions, depending on the founder, can be public (state, local government) and private. Institutions that provide vocational secondary education programmes and additionally act as regional methodological and continuing education centres and carry out validation of non-formal and informal learning may obtain a status of vocational education competence centre according to criteria established by the Cabinet of Ministers.

Professional higher education. Higher education programmes can be academic (lead to a degree) or professional (lead to a degree and/or professional qualification). There are Bachelor's, Master's and Doctor's degrees in both academic and professional higher education. More than two thirds of all higher education students study in professional study programmes. Professional higher education programmes allow continuous progression

45 Ministry of Education and Science in Latvia <https://www.izm.gov.lv/en/education-system-latvia>.

46 Law on Higher Education Institutions. Article 56. Adopted: 02.11.1995. <https://likumi.lv/ta/en/en/id/37967>.

47 Cabinet Regulation no. 484. Procedures by which Work-based Learning is Organized and Implemented. Latvia. Adopted: 15.07.2016. <https://likumi.lv/ta/en/en/id/283680>.

from EQF levels 5 to 8.⁴⁸ Professional education programs are developed by educational institutes in coordination with its founder. To provide development of curriculum in professional basic education, professional secondary education, professional training, and professional development education in accordance with national standards, National Centre for Education is organizing development of samples for professional education programs and advising development of programs.

Professional standards. According to regulations of the Cabinet of Ministers, The Ministry of Education and Science and the National Centre for Education in co-operation with the Tripartite Cooperation sub-council of Vocational Education and Employment perform the following tasks:

- organise the development and expert-examination of draft professional standards and vocational standards, inviting representatives of sectoral ministries and professional organisations; and
- provide organisational and methodological support for the development of the draft professional standards and vocational standards.⁴⁹

In parallel to the Bologna cycle structure, a division of professional higher education programmes is implemented at two levels:

First level professional higher education programmes (college or short cycle studies, 2-3 years) leading to a Diploma of first level professional higher education and professional qualification (EQF level 5). Applicants with secondary education are admitted. These programmes are mainly focused on acquiring professional skills for labour market, but graduates can continue their studies in second level professional higher education programmes.

3.4. Practice – integrated programme: the case of business education at Riga Stradins University (RSU)

Development of new learning and teaching environment is an important current trend at the RSU. It is important due to changes in the economic environment in the country, tendencies in the demographic situation and labour market. Furthermore, requirements for development of new knowledge and skills demand new and modern programmes. Development of entrepreneurial orientation is fundamental to a green and sustainable en-

48 National Centre for Education. The Republic of Latvia <https://www.visc.gov.lv/en/professional-standards-and-programs>.

49 Ibid.

trepreneurial orientation, which are to be reflected in practice-orientated business education.

The Entrepreneurship and innovation in Green Economy orientated educational programme could serve as an example of new and relevant tendencies in businesses and economy, as well as the latest trends in higher education, and labour market education programmes development. Such types of educational programmes represent a framework for training new skills demanded by the labour market and promote basic and specialised competencies that will allow graduates to be actively involved in the planning and management of modern international business and green entrepreneurship and innovation. The main aim, objectives and innovative approaches in organising studies are given in the Box 4.

BOX 4: The Entrepreneurship and innovation in Green Economy-EDUCATIONAL ProgramMe (EIGE)⁵⁰

Aims and objectives The programme's focus is on educating new specialists with knowledge about green economy and innovation with silks relevant to management of business entities with focus on new tendencies in the green economy and innovation context. The aim of the programme is to prepare highly qualified and creative specialists in international business and EIGE as well as in management.

Innovative approaches. Special attention is given to the provision of innovative approaches to the implementation of studies in an up-to-date learning environment, which includes:

- regular discussion of the design and study course descriptions with lecturers and external experts from both academic and industrial environment in Latvia and abroad;
- identification and updating of teaching material and technical support required for study courses, including literature and other modern-day materials (computer programs and applications, business games, video materials, interactive online tools);
- identification and inclusion of knowledge transfer and co-creation methods in the implementation of EIGE study courses;

50 Three-level Centres of Professional Excellence. Qualification, entrepreneurship and innovation in the Green Economy. European Commission Erasmus + <https://www.rsu.lv/en/project/3loe-three-level-centers-professional-excellence-qualification-entrepreneurship-and>.

- identification of interdisciplinary issues, creation of thematically relevant content, successive integration into study courses;
- organization of lecturers' experience exchange, active and wide use of e-learning and interactive online environment tools, attraction of guest lecturers, study visits to companies.

Practice-oriented cooperation with employers in the basic study process (in addition to guest lectures), solving business problems in the study process will also be organized, for example, in the development of yearly provided practice reports final theses, which allows bringing studies closer to practical business.

Green Entrepreneurship competences. The programme foresees a study process that pays attention to development of general critical competencies - communication and digital skills, teamwork, entrepreneurship, leadership development, enriched by process management and business model specifics in, for example, development of entrepreneurship in healthcare. In turn, the programme will ensure high quality of study process and study results. Furthermore, as the programme is aimed to integrate practice, it focuses on educating highly qualified specialists in the field of business management for Latvia, the EU and the entire world community and its management processes. Achieving this goal is ensured by providing students with the opportunity to receive theoretical and practical knowledge, skills, and competencies relevant to business and interdisciplinary interaction, using the results of fundamental and practical research in several disciplines, qualified lecturers from academia and business, modern study content and format.

The focus on the Green concept in entrepreneurship and innovation meets the needs and trends of society and economic development which is clearly justified by a number of labour market research⁵¹ on occupations and skills needed⁵² in the planning of the new green and innovative business development.⁵³ The objectives of the programme correspond to the needs of economic development and the integrating components of the Latvian Smart Specialization Strategy (RIS3) – including building human capital and public innovation capacity, promoting gradual modernization

51 Martinez-Fernandes. Cr., Hinojosa. C. Miranda.,G. (2010) Green jobs and skills: the local labour market implications of addressing climate change. OECD. pp.18-25.

52 Lamio.E., Sebillo.A., (2022). Profiling the new young social entrepreneur. Diesis Network, Brussels. Belgium. <https://www.diesis.coop/wp-content/uploads/2022/06/COMUN-254.pdf>.

53 Anticipating skills needs for green jobs (2015) ILO, pp. 34-47.

of the research and education sector, and developing an innovation system to drive public resources for innovation in general and in particular, to provide students with knowledge and ensure the development of practical skills and competencies in the understanding, analysis and management of economic and business processes, implementing a student-centred approach in an interesting and practical study process; to balance the knowledge of theory and modern development tendencies during studies with an analysis and solution of situations based on practical resolution of business problems and those in the work environment. Additionally, to ensure a high-quality, high-value and innovative study process, using examples of best practices in higher education in an international context, including the study process infrastructure (e-environment, library, multimedia equipment, etc.) and process organization (team teaching, cooperation in the labour market, simulation, video collections, semester projects, etc), to implement consciously modern and non-traditional methods of knowledge transfer and co-creation, as well as skills development, promoting students' interest in the study program topics and motivation to use in the international business environment. It is essential to maintain and develop extracurricular activities and cooperation of the study programme in the business, public administration, and academic context in Latvia and in the international environment (conferences, summer schools, visits, etc.) and to ensure continuous quality monitoring and updating of the study program in cooperation with entrepreneurs and representatives of professional organizations in the business sector.

The academic staff and practice-oriented trainers have to show the best example to students in the aspect of professional ethics and professional development (participation in the development of the field, formation of opinion leadership, etc.), promoting a culture of active personal and professional development and participation of students.

The main outcomes are in the education of young specialists and entrepreneurs with expert knowledge in new trends in the green and innovation in business development.

Conclusion

Green entrepreneurship is a system that reflects company's strategic actions to accelerate green innovation and improve sustainable business performances (environmental, economic, and social). Green entrepreneurship leads to green innovation, which in turn gives rise to three variables, namely Green

Social Performance, Green Economic Performance and Green Environmental Performance.

Entrepreneurship has an important role in delivering more radical green innovations that challenge existing firms and business models.

A policy needs to create the room for such new firms by enabling their entry, exit and growth, ensuring fair competition and improving access to finance, which remains a major constraint for the entry and growth of new businesses and firms. In addition, there is a strong need to facilitate transition to green growth in general and in businesses in particular. This trend experiences problems in adopting green innovations, as they often have weak innovation capabilities. The policy can enable enterprises to participate in knowledge networks, strengthen the skills that can lead to innovation, and reduce the regulatory burden on firms.

The EC proposes transformation of EU economy and society to meet climate ambitions by suggesting a set of proposals to make synergy in the EU's climate, innovation and related education policies.

The authors have discussed the case of Latvia in relation to transformation of economy and society in line with the EU policies. Attention was given to challenges facing education and research in times of urgent need to increase green innovation and apply green entrepreneurship trends in educational programmes to adjust knowledge, skills, and abilities of graduates to labour market requirements, which in turn will have a positive impact on employability in the country.

The above-indicated aspects are subject to further strong educational research and the implementation of new educational programmes with practice-integrated components. The comparative approach to absorb international experience is badly needed to improve educational programmes at HE institutions. The results could show to the policymakers what types of changes in employability are expected by the labour market.

Overall, in times of economic hardships it is important that universities, governments, and business collaborate in educational research, innovation, and development. With no clear end in sight to the current economic situation in Europe and other parts of the world, there is more need than ever for strategic partnerships and cooperation between all partners interested in green innovation, improvements in business environment and labour market.

References

- Achieving a European educational area by 2025 and resetting education and training for the digital age. *Press release. 30 September 2020*, Brussels https://ec.europa.eu/commission/press-corner/detail/en/ip_20_1743.
- Afum, E., et al., (2021) The missing links of sustainable supply chain management and green radical product innovation between sustainable entrepreneurship orientation and sustainability performance. *Journal of Engineering, Design and Technology*. DOI: <https://doi.org/10.1108/JEDT-05-2021-0267>.
- Athanasios Hadjimanolis. Drivers and Barriers in SMES in the Context of Small Countries in Managing Sustainable Innovation. Routledge, 2020, pp. 60-67.
- Anticipating skills needs for green jobs (2015), ILO, pp. 34-47.
- Buch-Hansen, H., & Carstensen, M. B. (2021). Paradigms and the political economy of ecological projects: Green growth and degrowth compared. *Competition & Change*, 25(3-4), 308-327. <https://doi-org.db.rsu.lv/10.1177/1024529420987528>.
- Cabinet Regulation no. 484. Procedures by which Work-based Learning is Organized and Implemented. Latvia. Adopted: 15.07.2016. <https://likumi.lv/ta/en/en/id/283680>.
- Central Statistical Bureau of Latvia, 2022.
- Central Statistical Bureau of Latvia, 2020.
- Commission Staff Working Document Accompanying the document Proposal for a COUNCIL RECOMMENDATION on Key Competences for LifeLong Learning. Brussels, 18 January 2018.
- Delivering the European Green Deal. https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en#transforming-our-economy-and-societies.
- Driving Eco- innovation: A Breakthrough Discipline for Innovation and Sustainability. Fussler, C., James, P., Pitman Publishing, 1999 p. 364.
- Dual educational programmes in Germany. Information and a collection of studies <https://www.mygermanuniversity.com/articles/dual-study-programs-in-germany>.
- Preparation and management of SMEs for work in the Green Economy. Satakunta University of Applied Sciences (SAMK), Hanse- Parliament Projects. Dr. Kari Lilja, Dr. Sirpa Sandelin and Sanna Lindgren, <https://www.hanse-parlament.eu/projects/>.
- REPowerEU: Joint European Action for more affordable, secure and sustainable energy (2022). European Commission, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A108%3AFIN>.
- The Economist. 11 January 2022. <https://www.economist.com/special-report/2022/11/01/the-business-of-businesses-is-climate-change-adaptation>.
- A European Education Area by 2025. <https://eur-lex.europa.eu/EN/legal-content/summary/a-european-education-area-by-2025.html>.
- Entrepreneurship & Innovation Management. Business School, Lyon, France <https://masters.em-lyon.com/en/Specialized-Program-Entrepreneurship-Innovation-Management>.

- European Commission. Employment, Social Affairs & Inclusion. *European Skills Agenda*. <https://ec.europa.eu/social/main.jsp?catId=1501>.
- European Commission. *A European Green Deal*. <https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal>.
- Executive Master in Digital Innovation and Entrepreneurial Leadership <https://www.sayinstitut.eu/programme/master-digital-innovation-entrepreneurial-leadership-emdiel-mba/>.
- Frans Timmermans. COP27 Climate Summit. A press conference in Sharm el Sheikh, Egypt. EU Observer 18 November 2022.
- Green Education Initiatives. European Education Area. European Commission. <https://education.ec.europa.eu/focus-topics/green-education/about>.
- Going For Growth' Report on Latvia. (2021) OECD. <https://www.oecd.org/economy/growth/Latvia-country-note-going-for-growth-2021.pdf>.
- ILO. Latvia. https://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=&p_isn=56400.
- Jerome Saulnier. Latvia's National Recovery and Resilience Plan (2022). European Parliament [https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/698887/EPRS_BRI\(2022\)698887EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/698887/EPRS_BRI(2022)698887EN.pdf).
- Lamio,E., Sebillio,A., (2022) Profiling the new young social entrepreneur. Diesis Network, Brussels, Belgium. <https://www.diesis.coop/wp-content/uploads/2022/06/COMUN-254.pdf>.
- Linking emission trading to environmental innovation: Evidence from the Italian manufacturing industry. Borgesi, S., Cainelli, G., Mazzanti, M., *Elsevier, Research Policy*, Volume 44, Issue 3, April 2015, pp. 669-683.
- Lumpkin, G. T. Pidduck, R.J. (2021) "Global Entrepreneurial Orientation (GEO): An Updated, Multidimensional View of EO" in Corbett, A.C., Kreiser, P.M.m Marino,L.D., Wales,W.J./Ed. *Entrepreneurial Orientation: Epistemological, Theoretical, and Empirical Perspectives, Advances in Entrepreneurship*, Firm Emergence and Growth, Vol. 22 , Emerald Publishing Limited, Bingley, pp. 17-68.
- Latvia. Cross-Sectoral Coordination Centre (2018), *Implementation of the Sustainable Development Goals*. <https://sustainabledevelopment.un.org/memberstates/latvia>.
- Law on Higher Education Institutions. Article 56. Adopted: 02.11.1995. <https://likumi.lv/ta/en/en/id/37967>.
- Martinez-Fernandes. Cr., Hinojosa. C. Miranda., G. (2010) Green jobs and skills: the local labour market implications of addressing climate change. OECD. pp.18-25.
- Menon. S., Suresh., M. (2020) Synergising education, research, campus operations, and community engagements towards sustainability in higher education: A literature review. *Journal of Sustainability in Higher education*, Vol. 21, No. 5, pp. 1015-1051.
- Ministry of Economy, The Republic of Latvia, 2020.
- Ministry of Education and Science, The Republic of Latvia <https://www.izm.gov.lv/en/education-system-latvia>.
- National Centre for Education. The Republic of Latvia <https://www.visc.gov.lv/en/professional-standards-and-programs>.

- OECD (2019), *Measuring Distance to the SDG Targets 2019: An Assessment of Where OECD Countries Stand*, OECD Publishing, Paris. <https://doi.org/10.1787/a8caf3fa-en>.
- OECD (2019), *Economic Surveys: Latvia 2019*, OECD Publishing, Paris, <https://doi.org/10.1787/f8c2f493-en>.
- OECD (2019), *OECD Economic Surveys: Latvia 2019*, OECD Publishing, Paris, <https://doi.org/10.1787/f8c2f493-en>.
- O'Neill, K., & Gibbs, D. (2016). Rethinking green entrepreneurship – Fluid narratives of the green economy. *Environment and Planning A: Economy and Space*, 48(9), p. 1727–1749. <https://doi-org.db.rsu.lv/10.1177/0308518X16650453>.
- Preparation and management of SMEs for work in the Green Economy. Satakunta University of Applied Sciences (SAMK), Dr. Kari Lilja, Dr. Sirpa Sandelin and Sanna Lindgren, 2020 European Commission. Erasmus+. Hanse-Parlament projects <https://www.hanse-parlament.eu/projects/>.
- Public Utility Foundation, Gent, Belgium <https://www.vlerick.com/en/contact>; Entrepreneurship and innovation- <https://www.vlerick.com/en/management-expertise/entrepreneurship-and-innovation-overview>.
- Three-level Centres of Professional Excellence. Qualification, entrepreneurship and innovation in the Green Economy. European Commission Erasmus + <https://www.rsu.lv/en/project/31-oe-three-level-centers-professional-excellence-qualification-entrepreneurship-and>.
- Towards a European Education Area by 2025. https://ec.europa.eu/education/education-in-the-eu/european-education-area_en.
- UN Action for Climate Empowerment. <https://unfccc.int/ace>.
- Vocational Education Law. The Parliament of the Republic of Latvia (*Saeima*) on 10 June 1999; *Latvijas Vēstnesis*, 213/215, 30.06.1999. amended on 06.01.2017. <https://likumi.lv/ta/en/en/id/20244>.
- Weiss, M., M. Barth. M. (2019) Global research landscape of sustainability curricula implementation in higher education, *International Journal of Sustainability in Higher Education*, Vol..20, No. 4, pp. 570-589.
- We asked young people about work and skills. World Economic Forum (WEF). https://www.weforum.org/agenda/2021/07/we-asked-young-people-about-work-and-skills/?utm_source=sfmc&utm_medium=email&utm_campaign=2752036_Agenda_weekly-6August2021-20210804_095303&utm_term=&emailType=Agenda%20Weekly.

Protected Rights and their Enforcement

Christiane Trüe*

Climate Rights Enforcement in the EU: Individual Rights – Causation – Standing

Summary: Climate change has begun to make itself felt also in Europe. The article seeks to identify responses to the challenges from the law through the protection of fundamental rights to life, health, occupation and property, as well as ‘environmental rights’. It establishes that, in spite of a general consensus that these rights are guaranteed and protected by the law, it is very difficult to substantively show and prove a violation of such a right by a specific entity. Following this, the hurdle of the right to access to justice regarding enforcement of these rights by individuals is explored, in particular looking at the Peoples’ Climate Case recently dismissed by the Court of Justice of the European Union (ECJ). In doing so, the article identifies a gap in traditional legal protection of human rights. The article will identify solutions *de lege lata* and suggest solutions *de lege ferenda*, including causation and standing issues in order to at least increase pressure on political processes to mitigate and adapt to climate change. Overall, European Union (EU) law may have to choose between adapting existing human rights instruments in order to maintain protection in the face of new challenges or accepting a gap in the protective system for short-term convenience, risking the acceptance of EU law supremacy and the ECJ’s prerogative to assess compatibility of EU climate change mitigation and adaptation measures with fundamental rights.

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Introduction

I. Consequences of climate change impacting on individual rights

Climate change has become an undeniable part of our lives, hitting ourselves or our neighbourhood, with more extreme or more changeable weather conditions, such as torrential rain and flooding, devastating storms and the extreme summer heat, draught and wildfires, warmer or colder, longer or shorter winters, experienced in recent years. These changes do not only affect the environment, but result in loss of lives and health, jobs and economic loss extending as far as insolvencies. For instance, farmers find that they cannot use their land any more, or not in the same way as before, or that their cattle cannot adapt to new conditions. Industry or businesses may be affected by temporary or permanent changes in options for land use, higher costs, for instance for heating and cooling or to balance out instable wetness or dryness, for safety measures such as dykes, pump or irrigation systems, higher energy costs, changes in demand, generally less reliable conditions with an ensuing rise in insurance premiums or unavailability of insurance, frustrated investment, higher risk of insolvencies, etc. Effects on individual persons include threats to life and health in extreme conditions. Changes may require retraining of large numbers of people if their jobs are lost or require new knowledge. Costly changes to our everyday way of life will ensue, particularly hitting the more vulnerable parts of the population, with prices for essential food staples going up, housing and transport becoming more vulnerable and costly. Essential and less essential goods and services may become less affordable.¹

II. Answers from the law?

These consequences of climate change constitute new challenges to all entities, public or private, local, regional and national, supra- and international. Are thus all greenhouse gas (GHG) emitting activities of the EU and the Member States, or law and decisions permitting such emissions, in principle, illegal violations of fundamental rights? This would pertain to activities such as the running of fossil-powered plants or power stations,

1 Cf. IPCC Sixth Assessment Report, AR6 Climate Change 2021: The Physical Science Basis, https://www.ipcc.ch/report/ar6/wg1/?utm_source=POLITICO.EU&utm_campaign=0ca76056ca-EMAIL_CAMPAIGN_2021_08_12_05_07&utm_medium=email&utm_term=0_10959e deb5-0ca76056ca-189019861 (2/1/23); Leuchner, in: Frenz, Klimaschutzrecht, Einl. D., no. 1 et seq.

starting a combustion-engine-powered car, etc. – many everyday activities regarding which political consensus to restrict or prohibit them is hard to achieve, even more so as rights or legitimate expectations may be involved to continue such activities. The law will have to provide a framework for the instruments to change peoples’ industries’ and other stakeholders’ behaviour. The EU and its Member States, as well as other states, have started to react, the EU in particular with the Green Deal strategy. Still, a strategy needs to be implemented, and answers from the law are evolving rather too slowly: aims for mitigating climate change, institutions and processes of progress monitoring have been included in the law, namely in the UN Paris Agreement², the Climate Law regulation of the EU³ or in the German Climate Act⁴. However, including aims into the law does not produce much of a result as long as the instruments for achieving these aims, concrete provisions leading there in particular, are lacking. The legislative program under way for implementation of the EU’s Green Deal strategy highlights paths and chances⁵, however, the legal framework is far from complete. This is not surprising: politically, namely in the legislative procedure, numerous interests will need to be taken into consideration. Demanding state or private action, or demanding that the state or private stakeholders refrain from some activity, will thus, first, be an issue of scientific and political discourse to ensure a full and proper balancing of all rights and interests involved, and majority views will prevail in a democracy.

Still, majority decision-making finds its legal limits namely in fundamental individual rights. These cannot be disposed of even by a majority, thus protecting individual human beings from being encroached upon excessively, or singled out to bear the burden of all. So, as political decision-making takes its time, it may lead to Greta Thunberg’s ‘How dare you?’⁶, or ‘How dare you violate my human rights – by your inadequate law-making?’ – by not outlawing and effectively prohibiting continuing GHG-emitting production, provision of services, consumption?’ to put the

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- 2 United Nations Treaty Series (UNTS), I-54113 Multilateral Paris Agreement. Paris, 12 December 2015 Entry into force: 4 November 2016; text https://unfccc.int/files/essential_backround/convention/application/pdf/english_paris_agreement.pdf.
 - 3 Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate (‘European Climate Law’), OJ L 243/1–17.
 - 4 Federal Climate Act/Bundes-Klimaschutzgesetz of 12 December 2019 (BGBl. I p. 2513), last amended by Article 1 of the Act of 18 August 2021 (BGBl. I p. 3905).
 - 5 Cf. the EU Commission’s webpage https://ec.europa.eu/clima/eu-action/european-green-deal/delivering-european-green-deal_en.
 - 6 Greta Thunberg, 23 September 2019, UN Climate Summit, New York, on <https://www.youtube.com/watch?v=TMrtLsQbaok>.

question more legally. The democratic majority, and governments carried by it, still appear to accept violations of individual rights by the lack of sufficient legislation, in order to avoid burdens on the electorate's current way of life – although these violations are not open even for a majority to authorise. Accordingly, the question has been brought before numerous courts⁷, including the ECJ and its General Court, where, in the 'Peoples' Climate Case'⁸, 36 applicants from various countries in the EU and the rest of the world, from agricultural or tourism sectors, and an association representing young indigenous Sami, a Scandinavian people living traditionally on reindeer herding⁹, addressed the lack of ambition in EU law; this action was brought against certain directives and regulations ('legislative package') implementing the Paris Agreement and the UN Framework Convention on Climate Change¹⁰, for not taking more ambitious measures. The applicants sought the annulment in part of the said 'legislative package,' and an injunction obliging the EU Commission, Council and Parliament, to adopt measures 'requiring a reduction in greenhouse gas emissions by 2030 by at least 50% to 60% compared to their 1990 levels, or by such higher level of reduction as the Court shall deem appropriate.'¹¹ The applicants based this on the submission that the EU's level of ambition at the time was not sufficiently high with regard to reducing greenhouse gas emissions, and infringes binding higher-ranking rules of law.¹²

7 Cases are collected in two major data bases, the Sabin Center for Climate Change Law at Columbia Law School and Arnold & Porter, <http://climatecasechart.com> and the Grantham Research Institute on Climate Change and the Environment/LSE at https://climate-laws.org/litigation_cases.

8 Order of the General Court (Second Chamber) of 8 May 2019, Case T-330/18 *Carvalho and Others*, Appeal ECJ, 25 March 2021, C-565/19 P.

9 The case of minorities, such as the Sami people in Scandinavia, being specifically affected by climate change has been considered by the author, Minderheitenschutz und Klimawandel, in: *Festschrift Gornig*, p. 197 et seq. regarding their traditional way of life.

10 Directive (EU) 2018/410 to enhance cost-effective emission reductions and low-carbon investments; Decision (EU) 2015/1814 (OJ 2018 L 76, p. 3); Regulation (EU) 2018/841 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework (OJ 2018 L 156, p. 1); Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement (OJ 2018 L 156, p. 26). These are acts of the EU whereby the European Union seeks to comply with its commitments under the Paris Agreement, namely to reduce emissions by 40 % over 1990 levels by 2030 (now increased to 55 %).

11 Order of the General Court, Case T-330/18 *Carvalho and Others*, para 22.

12 Order of the General Court, Case T-330/18 *Carvalho and Others*, para 22 et seq.

This contribution will seek to identify responses from the law as to how far, due to legally protected individual rights and interests, the EU, states or regions are already under legal obligations to legislate or act otherwise, refrain from or prevent climate-unfriendly activity, even in the absence of sufficient specific legislation. In doing so, it will look at existing rights – classical human rights and more recent ‘solidarity rights’ or ‘environmental rights’, and their limits (part A).

Following this, the procedural enforcement of these rights before court will be explored. What should the procedural powers of individual persons, as holders of individual rights, be regarding climate change mitigation and adaptation? (part B).

In doing so, the article will identify solutions *de lege lata* and suggest solutions *de lege ferenda*, including causation and standing issues in order to at least increase pressure on political processes to mitigate and adapt to climate change. Finally, the question remains as to whether courts can, and should, fill the gap in the protection of fundamental rights?¹³

A. Climate Change Rights and Interests

First, this contribution shall establish the legal requirements under which protected rights and interests may help address climate change issues. In doing so, first, we need to consider the definition and allocation of **rights to individuals** (I.1.), which are the relevant **rights** and interests (I.2.) and what may be an **encroachment** on them by an EU or state activity or failure to act in the context of climate change (I.3.). Second, to be legally relevant the encroachment on the rights must be connected by a **causal link** to a specific activity or failure to act. (II.). Third, there is a question how far such an encroachment may be **justified** by other rights or interests, and consideration will be given to the details of such potential justification (III.).

I. Individual rights – Fundamental Rights and Encroachment

1. Definition and Allocation of Individual Rights

The primary legal bases to consider regarding climate change issues are individual rights. Individual rights are allocated by law to individual persons, with corresponding obligations on the EU, states, or other public (in

13 This contribution builds on and extends the author’s previous article on the climate change rights, *Economic and Legal Issues, European Studies* (8) 2021, p. 161 et seq.

particular sub-state) or private entities¹⁴, to respect and protect these rights. In the absence of more specific legislation, such individual rights can be found at the constitutional law level, i.e. among human and fundamental rights. With human and fundamental rights it is usually quite clear that there is a right and who is the holder of the right. The main difficulty here is to allocate a right against climate change to individual persons, as it is a phenomenon that concerns all. Still, fundamental rights may provide a starting point for a given natural or legal person to prevent legislation or administrative measures, or demand environmental action, insofar as the relevant rights protect specific interests or goods otherwise at risk, and may also provide a basis for assessing the compatibility of climate change legislation with higher constitutional principles, or a source of inspiration regarding the interpretation of climate-relevant law.¹⁵

2. Relevant Fundamental Rights

At the EU level, modern human and fundamental rights protection finds its legal basis first and foremost in the EU Fundamental Rights Charter (CFR), in force as a legal document since 2009¹⁶, supplemented where necessary by common principles of law under Art. 6 (5) of the Treaty on European Union (TEU), namely rights protected by the European Convention on Human Rights (ECHR)¹⁷ and the Social Charter¹⁸ of the Council of Europe, and the member state constitutions¹⁹. Here we will focus on the EU's CFR, which may be regarded as the essence of modern European fundamental rights protection.²⁰ Each of the fundamental rights mentioned is legally binding on the EU and its Member States under Art. 51 CFR within the scope of the Treaties (and beyond under the ECHR and the member state constitutions).

14 Regarding types of applicants and defendants in litigation see Savaresi/Setzer, Mapping the Whole of the Moon, p. 5 et seq.

15 With case law Setzer/Higham, Climate change litigation, p. 18 et seq.

16 Charter of Fundamental Rights of the European Union, OJ C 303, 14.12.2007.

17 The European Convention on Human Rights, Council of Europe, https://www.echr.coe.int/documents/convention_eng.pdf.

18 The Social Charter, Council of Europe, <https://www.coe.int/en/web/european-social-charter>.

19 The latter have also fed into the EU's Court of Justice's case law establishing human rights protection as 'general principles common to the laws of the Member States' over the years, cf. the Court's website: https://curia.europa.eu/common/recdoc/repertoire_juris/bull_1/ab_index_1_04.htm.

20 Cf. Craig/de Búrca, EU Law, p. 429 et seq.: 'a creative distillation of the rights contained in the various European and international agreements and national constitutions.'

These rights will be examined in turn, first the classical fundamental rights (a), and below the solidarity rights (b), as to how far they may be helpful regarding climate change issues.

a) Classical Fundamental Rights: Defensive Rights and Rights to Protection

Specific rights under the Charter potentially relevant for preventing the EU, or Member States and sub-state entities, from further contributing to climate change, or from not taking sufficient steps to mitigate it, or regarding adaption measures, are guaranteed: Article 2 CFR recognises that ‘*Everyone has the right to life*’, and Article 3 CFR ‘*the right to respect for his or her physical and mental integrity*’. Article 15 CFR generally guarantees that ‘*Everyone has the right to engage in work and to pursue a freely chosen or accepted occupation*’ and, under Article 16 CFR, ‘*The freedom to conduct a business in accordance with Union law and national laws and practices is recognised*’. Another relevant fundamental right is guaranteed by Article 17 (1) CFR, under which ‘*Everyone has the right to own, use, dispose of and bequeath his or her lawfully acquired possessions*’. The scope of protection afforded by these rights extends to all human beings, and to legal persons, such as companies, where appropriate.²¹ The core of their substantive scope appears self-explanatory, and there is nothing in the text of the charter to suggest that these fundamental rights were to be non-existent in the context of climate change. This is supported by the preamble of the CFR, which states for the EU that ‘*it seeks to promote balanced and sustainable development*’. Considering the scientific evidence outlined above,²² sustainable development must include mitigating and adapting to climate change, as there is no viable alternative for humanity. An interpretation of fundamental rights protection to include climate change issues may also be supported by more specific norms, at EU level namely the integration clause of Art. 37 CFR, mirroring Art. 11 TFEU, which require environmental concerns to be considered in all EU policies or activities.

Fundamental rights have a considerable range of legal consequences: taken as ‘negative’ rights, they allow their holders to defend their individual interests protected thereunder, i.e. their lives, health, freedom of occupation or business activity, and their property, against any encroachment on any of

21 Already ECJ, 13 December 1979, C-44/79 – *Hauer*, ECR 290 regarding property rights; regarding business freedom ECJ C-314/12, 27/03/2014 - *UPC Telekabel Wien*, ECR 192 no. 49. Different e.g. for the protection of privacy and personal data ECJ, 9 November 2010, C-92, 93/09 – *Volker und Markus Schecke GbR u.a./Land Hessen* ECR 284 no. 52 et seq.

22 Introduction I. above.

them by the EU and the Member States. They are rights ‘to be left alone’ in one’s sphere. In the context of climate change, examples of relevant encroachment may be any state activity leading to GHG emissions, such as running of emitting state industries or other state-governed emitting activities e.g. in fossil-fuelled public transport, or the granting of permits or subsidies for GHG emitting activities.

Conversely, in terms of a ‘positive’ side of fundamental rights, and complementing the ‘negative’ side, individual persons may have a right against the states or the EU that they act in order to protect these rights. This is underlined by Art. 51 (1) CFR: the institutions, bodies, offices and agencies of the Union and the Member States shall not only ‘respect the rights’, but also ‘promote the application thereof in accordance with their respective powers and respecting the limits of the powers of the Union as conferred on it in the Treaties’.

With regard to climate change, this may involve the right to protective legislation, enforcement or administrative action, to have the state or the EU prevent others from emitting GHG, to stipulate prohibitions of emitting activities, environmental quality standards or limit values in legislation.²³ In addition, the EU might provide incentives for climate-friendly behaviour and disincentives for any behaviour aggravating climate change, for instance, an effective emissions trading system.

However, classical fundamental rights are often not specific enough to dictate a particular concrete action that the state or the EU must take in order to protect them in the face of climate change. Often there are various ways to achieve protection, and, whilst the right involved has been clarified by long lines of case law of the ECJ, the European Court of Human Rights and Member State constitutional courts²⁴, often there seems no identifiable

23 Cf. on a case-law basis Savaresi/Setzer, Mapping the Whole of the Moon, p. 10 et seq.

24 More or less successful climate cases based on Human rights protection include the *Urgenda* case Hoge Raad (Netherlands), case no. 19/00135 (Engels), 20 December 2019, ECLI:NL:HR:2019:2007. In English translation <https://uitspraken.rechtspraak.nl/#!/details?id=ECLI:NL:HR:2019:2007>, original Dutch judgment ECLI:NL:HR:2019:2006 <https://uitspraken.rechtspraak.nl/#!/details?id=ECLI:NL:HR:2019:2006&showbutton=true&keyword=urgenda&idx=3>. Similar Federal Court of Australia, case *Sharma by her litigation representative Sister Marie Brigid Arthur v Minister for the Environment* [2021] FCA 560, File number: VID 607 of 2020, Bromberg J, 27 May 2021, No 179 on standing based on relevant activities during the last two years https://www.Judgments.fedcourt.gov.au/judgments/Judgments/fca/single/2021/2021fca_0560#_Ref72921796. Also ECHR case no 39371/20 - *Duarte Agostinho and Others v. Portugal and Others* (pending), <https://hudoc.ec hr.coe.int/eng#%7B%22appno%22:%5B%2239371/20%22%7D>; ECHR No 36022/97 - *Hatton and Others v. United Kingdom*, <https://hudoc.echr.coe.int/>. Cf. the collection of Sabin Center

single path towards protection against climate change, meaning that the exact content of the positive side of a fundamental right is difficult to identify with the preciseness required to make it enforceable before court. Accordingly, only in rare cases can courts pronounce and give judgment on how to avoid the violation. Still, even if the courts may not be in a position to remedy a specific situation by identifying a specific measure to be taken, they will at least be able to state that actions are insufficient or that omissions of public or private entities leave gaps in protection in violation of human rights. Under the rule of law such a judgment should at least trigger more ambitious and more specific legislation.²⁵ Such cases have been termed ‘Systemic Mitigation Cases,’ meaning that the claim was not regarding a specific action or inaction, but rather for an overhaul of the whole system.²⁶ The issue of what exactly such a law suit seeks to achieve will be relevant later (part B) when it comes to the requirements of standing: Does the procedural law of access to court include a right to bring a law suit for systemic action?

A concrete path of action may be easier to specify regarding adaptation measures: for instance, one might argue that the EU or a state, having failed to effectively mitigate climate change, might still be under an obligation to take adaptation measures, such as building a dam to protect a specific property against floods, or a specific irrigation system against droughts (or to provide the financing for these), or provide means of insulation for buildings against heat or cold, or air-conditioning, etc. At least if there is only one way of achieving protection, the obligation on the public or private entity or individual may be sufficiently clear and precise to be claimed against them. The ECJ has shown itself up to such challenges already to some extent, by at least identifying rights to procedural measures from existing,

for Climate Change Law (Fn. 7). With further references Winter, ZUR 2019, p. 259 et seq. (269); Beyerlin, ZaöRV 2005, p. 525 et seq.; Wegener, ZUR 2019, p. 3 (6); Frenz, E. Klimaschutz und Grundrechte, in: Frenz, Klimaschutzrecht, no. 2 et seq.

- 25 Cf. the example of the German Federal Constitutional Court in *Neubauer et al. v Germany*, decision of 24/03/2021, 1 BvR 2656/18 et al., https://www.bundesverfassungsgericht.de/SharedDocs/Entscheidungen/DE/2021/03/rs20210324_1bvr265618.html; commented on by Schlacke, NVwZ 2021, 912. For the example of the legislative (and political) follow-up on the (previous) Climate Case in Ireland Jackson, Systemic climate litigation, p. 44 et seq. in: Setzer/Higham/Jackson/Solana: Climate change litigation and central banks.
- 26 Jackson, Systemic climate litigation, p. 26 et seq. in: Setzer/Higham/Jackson/Solana: Climate change litigation and central banks; Setzer/Higham, Climate change litigation, p. 5 (15 et seq.) in: Setzer/Higham/Jackson/Solana: Climate change litigation and central banks.

more specific legislation, such as the right to an action plan for improving air quality, by means of a wide interpretation of the implementing law.²⁷

In addition, there are existing systems under specific law, which may require adaptation to protect fundamental rights. One example here are the health systems of the Member States, which, among other illnesses, look after persons affected by infections, and must include new infections e.g. carried by species migrating due to climate change. Similarly, legal systems will have to adapt their rules to new climate-induced threats regarding health and safety of buildings, work places, etc. As more legislation of this kind is enacted, rights to demand specific action will become increasingly identifiable, and thus an effective protection of fundamental rights may gain shape in the context of climate change.

b) Solidarity Rights

In its Solidarity Chapter IV the CFR sets out relevant rights beyond the classical fundamental rights, such as workers' rights including '*fair and just working conditions*' (Art. 31 CFR), the right to *family and professional life* (Art. 33 CFR), to *social security and assistance* (Art. 34 CFR), to *health care* (Art. 35 CFR), or to *access to services of general economic interest* (Art. 36 CFR), which would include essential facilities such as energy, heating/cooling, water, transport etc. The solidarity rights chapter also stipulates an obligation to include environmental protection (Art. 37 CFR), stating that '*A high level of environmental protection and the improvement of the quality of the environment must be integrated into the policies of the Union and ensured in accordance with the principle of sustainable development*'.

The effectiveness of solidarity rights suffers from similar shortcomings as the 'positive' side of classical fundamental rights.²⁸ In particular, the holders of solidarity rights will need to await the enactment of specific rights under implementing secondary legislation of the EU and its Member States, to which enactment they may have an individual right. Moreover, it appears very difficult to carve out a right to a quality environment, starting with the problem of defining such an environment. Moreover, it may be contested what level of quality – high, medium, low or minimum quality – is to be guaranteed. There are numerous definitions of the concept of a right to a quality environment at global, regional and national level, starting

27 Cf. ECJ, 25 July 2008, Case C-237/07 – *Janecek*. For a more general view on law suits brought for adaptation measures, usually against states, see Savaresi/Setzer, Mapping the Whole of the Moon, p. 6 et seq.

28 Above A)I.2.a).

with the UN Stockholm Declaration on the Human Environment²⁹, which requires ‘an environment of a quality that permits a life of dignity and well-being’³⁰. In addition, although the ECJ regards Art. 37 CFR as a right within the meaning of Art. 52 (2) CFR, it shall be exercised under the conditions and within the limits defined by those Treaties.³¹ Given that the relevant provisions in the TFEU, similar to Art. 37 CFR, appear rather vague it is difficult to see how an individual could prevent or claim a specific action of the EU or its Member States.

Accordingly, even though it may be clear what the scope of the solidarity rights is in its core, the scope remains unclear regarding which measures, including legislation, it may require in order to get beyond a mere statement of there being a violation of a fundamental right. However, in the same way as classical fundamental rights, solidarity rights may ground law suits aimed at systemic mitigation, to get courts to pronounce that there is a violation. Even without them also pronouncing a specific remedy in the shape of a specific action or prohibition addressed to the responsible legislative or administrative bodies, the demand that they live up to their obligations to protect fundamental rights is of more than symbolic value under the rule of law.³²

3. Encroachment

a) General considerations

An encroachment on a fundamental right under the CFR is any loss or diminution within the scope of the relevant right or interest, resulting from an activity or failure to act by the EU, a state or other public entity³³ (or by a private entity³⁴). Consequently, looking first at the ‘negative’ side of fundamental rights in the climate change context, any EU, state or other public

29 UN Stockholm Declaration, 16 June 1972, A/CONF.48/14 and Corr.1., <http://web.archive.lo c.gov/all/20150314024203/http%3A//www.unep.org/Documents.Multilingual/Default.asp? documentid%3D97%26articleid%3D1503>.

30 Cf. with numerous examples Boer, Environmental principles, in: Krämer/Orlando, Principles of Environmental Law, p. 55 et seq. On the un-enumerated right to a quality environment under the Irish constitution Jackson, Systemic climate litigation, p. 26 (30/40 et seq.) in: Setzer/Higham/Jackson/Solana: Climate change litigation and central banks.

31 ECJ, judgment of 21 December 2016, C-444/15 – *Associazione Italia Nostra Onlus*.

32 Above A)I.2.b).

33 In more detail e.g. Schwerdtfeger, Article 51 in: Meyer/Hölscheidt, no 67.

34 Claims against private entities or persons have also been raised successfully to some extent, see Setzer/Higham, Climate change litigation, p. 18 et seq. in: Setzer/Higham/Jackson/Solana

entity activity endangering or taking away a person's right to life, health etc. by aggravating or not acting against climate change, is an encroachment on the relevant fundamental right.³⁵ Member State actions with a potential of encroachment on fundamental rights to life, health, property etc. may be any state activity leading to GHG emissions, for instance, running of GHG-emitting state industries, public buildings and facilities, fossil-fuelled public transport or legislation promoting or allowing for GHG emissions.³⁶ On the administrative side this may include the granting of permits by the state to start or to continue emitting GHG for industries or energy providers, permits for producing and using cars, lorries or other means of transport. A more indirect way of encroachment may be the granting of state aid e.g. for fossil fuels.³⁷ On the EU's side, such encroachment may include EU legislation favouring climate-unfriendly activities, such as harmonising legislation regarding product standards including unambitious emission standards, or providing the basis for granting EU subsidies for GHG-emitting entities, eg by funding under the Common Agricultural Policy for GHG-emitting farming (in particular meat production), funding granted via the structural funds, such as the European Fund for Regional Development (EFRD), for regional GHG emitters, via the Connecting Europe Facility for road transport or for research under the Horizon program, unless it is strictly geared towards mitigating climate change. In addition, the EU may at least be involved in encroachments on rights by exempting climate-unfriendly state aid, for instance for LNG terminals, from the general prohibition of state aid in Art. 107 TFEU if it does not adequately consider environmental concerns in doing so.

Considering the 'positive' side of fundamental rights, requiring protective activity by the state or the EU, encroachments resulting in a diminution of fundamental rights will be failures to provide adequate protection by no or unambitious legislation, in particular including failure to prevent further GHG emissions.³⁸ For instance, this may include too little legislation containing prohibitions or disincentives, or a failure to provide a framework for those, or failures by government and administration to use existing legal

ana: Climate change litigation and central banks. However, these will not be considered further here.

35 Whether this is an illegal violation of the right depends on whether there is a valid justification for the activity or inaction, explained in more detail below A.III.

36 Cf. above A)I.2.a) (negative rights with first examples).

37 See for government funding cases case law Setzer/Higham, Climate change litigation, p. 21 et seq. in: Setzer/Higham/Jackson/Solana: Climate change litigation and central banks.

38 Order of the General Court, Case T-330/18 *Carvalho and Others*.

bases to prevent emissions, e.g. by closing industrial facilities, or prohibiting car or lorry traffic unless climate-neutral.

b) Encroachment under limited competences to act?

In identifying potential encroachments on rights by failures to act on the side of the EU, a special difficulty arises due to the limits to the EU's competences in the environmental sphere. A relevant failure to act on the side of the EU can only occur if the EU can actually take action at all, and is obliged to do so. This pertains particularly to administrative measures, as most of EU administration is indirect, i.e. is performed by the Member States' administrations.³⁹ Regarding legislation, limits to EU competences stem in particular from the subsidiarity principle applying to shared competences, one of which is the competence for environmental legislation. Under the principle of subsidiarity, the EU can *'act only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States, either at central level or at regional and local level, but can rather, by reason of the scale or effects of the proposed action, be better achieved at Union level'* (Art. 5 (3) TEU). It thus appears particularly difficult to establish encroachments by the EU on fundamental rights by a failure to act, or to act more effectively: it will involve showing that the EU should have acted notwithstanding the principle of subsidiarity. This may end in EU and Member States pointing to each other as the competent actor, without adequate action being taken.

II. Causation issues

Having established previously how in principle the EU, the states or other entities can encroach upon fundamental rights, the next step is to look more closely at the connection between the diminution of the right and the action or failure to act of the EU, state or other entity. There needs to be a causal link between the two for them to be legally relevant, helping to identify who is responsible. In principle, under the traditional approach in law at least, any claim of a specific person against a specific defendant must be based on specific facts, excluding alternative causes or showing joint causation by several defendants, and the same for any measure sought. So it will be necessary to nail down individual sources and their share in

39 Cf. Gornig/Trübe, EuGH und EuG zum Europäischen Verwaltungsrecht – Teil 1, JZ 2000, p. 395 et seq.

the encroachment on the right. This starts with the natural sciences-proven causal link of ‘factual causation.’ Establishing this causal link poses a major problem in the context of climate change: even if the foregoing (rights and encroachment on them) are clear regarding a specific person, the showing and proof of the causal link between a specific activity or failure to act by a specific entity and the specific encroachment on such a right of a specific person is hard to prove, even more so the link between the encroachment and any option to end it, i.e. the remedy required. As explained in the beginning, with multiple sources contributing to climate change, and multiple effects in mitigating or adapting to it, demanding that the EU or a state who (putatively) contributes to climate change refrain from some activity, as well as demanding EU or state action for mitigating or adapting to climate change, will be a matter of difficult scientific proof. Given the all-encompassing nature of climate change, and the fact that the composition of the atmosphere, with the prevalence of various gases, has changed considerably due to human GHG emissions from the beginning of industrialisation, it is not possible to nail down one individual source as the sole cause and originator, say, of a specific drought or flooding event, in the sense that the event would not otherwise have occurred.⁴⁰ There are always likely to be many causes operating together that contributed to it, most of them being no more than the proverbial ‘drop in the ocean.’ Under German tort law the concept of ‘alternative causation’ would not help: it is only where there are several causes for damage occurring, each of which would alone have led to the damage occurring, that each of them is regarded as causal in the legal sense. Climate change is brought about by cumulative causation of many emitters, not by the individual emission of GHG, which would not in itself suffice to cause climate-related damage. Even if one wanted to bridge the causality gap by giving applicants the benefit of various proof modifications, including even reversing the burden of proof on causation, or introducing a legal presumption of responsibility, this might not hold against the problem of there being known and proven alternative causes (in the form of the GHG emissions contributed by other parties).

Still, with the progress of natural sciences, it is better understood nowadays which sort of activities, or failures to act, generally lead to an encroachment on rights by contributing to climate change, allowing, for instance, to show the exact share of a specific emitter in the change of atmospheric composition and specific weather events for encroachments of the said

40 In detail Stuart-Smith/Otto/Saad/Lisi/Minnerop/Cedervall Lauta/van Zwieten/Wetzler, Filing the evidentiary gap in climate litigation, in: *Nature Climate Change* 2021 p. 651 et seq.

rights occurring. It will ‘only’ be with regard to major emitters that this share reaches a relevant dimension to make legal action worthwhile, but this might still provide a step in the right direction. The problem here is that a claimant would need to sue many states around the world, and the EU (and, indeed, an even higher number of private parties) in order to achieve a relevant reduction of emissions, if each defendant is held responsible only for his or her own share. An approach that could help here would be to adopt an aggregated causal view, in which a claimant needs to show only that the defendant entity’s activity/failure to act contributed to climate change at large, and that a specific diminution in the sphere of rights is caused by climate change. In the light of the preamble and Art. 51 CFR⁴¹, according to which the EU ‘*seeks to promote balanced and sustainable development*’, and the Union and the Member States shall ‘*promote the application*’ of fundamental rights, such an approach could include a departure from the normal need for claimants to show a causal link between the defendant’s specific activity and their specific injury.⁴²

Similarly, the need to show causal links limits the possibility to demand a specific action or prohibition: with its multiple sources and global chains of causation it is difficult to see what a court judgment imposing a specific duty on the EU, or a specific state, might be. Only where the causal links are clear, and the specific action can be identified which might at least ease the encroachment on the fundamental right, can this be crystallised into a judgment leading to a concrete and identifiable obligation to act. Overall this does not leave much scope for an interpretation of the fundamental rights in line with the preamble’s demand for ‘*promoting balanced and sustainable development*’ directly.

III. Justification

Assuming that the obstacles concerning the identification of sufficiently specific rights, encroachments and causation mentioned above can be overcome in the individual case, and interpreting rights to defend oneself against actions furthering climate change in the suggested way, the next step to be considered on the path to successful climate law suits is the possibility of justification. In this regard, even fundamental rights protecting against

41 See above A)I.2.a).

42 Cf. the approach taken in Luciano Lliuya v. RWE AG, case no. 2 O 285/15 Essen Regional Court, appeal pending before OLG Hamm, no. 5 U 15/17. Cf. Stuart-Smith/Otto/Saad/Lisi/Minnerop/Cedervall Lautu/van Zwieten/Wetzler, Filling the evidentiary gap in climate litigation, in: *Nature Climate Change* 2021 p. 651 et seq. with further considerations.

consequences of climate change do not necessarily prevail, at least in the current legal situation, and an encroachment is not automatically an illegal violation of the right as long as there is a justification for it. This brings us back to the highly complex issues slowing down action in the political sphere, including multiple other interests to be balanced against each other, in mitigating or adapting to climate change. In the following an attempt will be made to elaborate relevant cornerstones of any argument to be brought forward.

Specifying the relationship between conflicting general interest issues or rights, Article 52 (1) CFR requires that *'Any limitation on the exercise of the rights and freedoms recognised by this Charter must be provided for by law and respect the essence of those rights and freedoms. Subject to the principle of proportionality, limitations may be made only if they are necessary and genuinely meet objectives of general interest recognised by the Union or the need to protect the rights and freedoms of others.'* It follows that any encroachment on fundamental rights protecting against climate change due to activity or inaction of the EU, a Member State or other entity may be justified if occurring on a legal basis, not encroaching on the core substance of the right, and if it is within the limits of proportionality.⁴³ As regards the balancing of fundamental rights against each other, the Preamble of the CFR (para 6) posits relevant limits for any charter rights in so far as *'Enjoyment of these rights entails responsibilities and duties with regard to other persons, to the human community and to future generations.'* This responsibility to future generations arguably also implies a precedence for fundamental rights protecting against climate change, demanding mitigation and adaptation measures, providing an argument for giving priority to rights related to protection against climate change. Any holder of fundamental rights opposing climate change mitigation, e.g. on the basis of property rights connected with old permits or law, is required to exercise such rights in a way that preserves the climate in a state that allows future generations the exercise of the same rights. This indicates at least that the protection of *status-quo*-related rights cannot generally prevail over mitigation and adaptation to climate change. Still, such conflicting rights must be respected to some extent in the transition to a climate-neutral economy and way of life. This is confirmed by the Preamble's para 3 stating that the EU *'seeks to promote balanced and sustainable development'*.

Status-quo-related rights and interests to be balanced against mitigating climate change and adaptation include aspects of natural justice and the rule

43 See already the author's previous article on climate rights, *Economic and Legal Issues, European Studies* (8) 2021, p. 161 (165).

of law, including the principle of non-retroactivity and the protection of legitimate expectations, fundamental rights to property and occupation based on the previous legal situation. In addition, there is the public interest in a functioning economy, issues regarding provision of essential public services, including security of supply with energy, food, other products and services, transport etc., and social cost and social justice issues.⁴⁴ Cases arising from the desire to protect the latter are known as ‘just transition litigation.’⁴⁵ In such cases applicants try to query the justification of climate action based on their own fundamental rights; they often do not object to climate action in and of itself, but rather to the way in which it is carried out, for instance, for encroaching upon traditional land uses⁴⁶ and livelihoods.⁴⁷ Here an assessment is required how far alternatives to a demanded course of climate change mitigation or adaptation may be better suited to also accommodate rights of others such as legitimate expectations, or the general interest in security of energy supply etc. Where there are clearly identifiable alternatives courts may well be able to scrutinise decisions taken by administrative authorities or even the legislature, and correct these in the interest of ‘just transition.’

Where such clarity cannot be achieved, the law and in particular the courts will need to check whether the proposed balancing respects the legal limits, and pick up on any violation of rights that must be recognised at least in extreme cases. In this regard, the courts may find a violation of climate-related fundamental rights based on the assumption that an encroachment is not justified as long as the justification of the encroachment cannot be shown and proven. This derives from the principle that each party to litigation must show and prove what supports his or her claim or defence.

In summary, Part A) of this contribution has shown that, although fundamental rights are protected in principle, there are still many obstacles to overcome in order to develop a cause of action so far as to be able to win it on the merits, considering in particular causation (A.II.) and justification (A.III.) issues.

44 A selection of cases can be found at Setzer/Higham, *Climate change litigation*, p. 17 et seq., in: Setzer/Higham/Jackson/Solana: *Climate change litigation and central banks*;

45 Savaresi/Setzer, *Mapping the Whole of the Moon*, p. 2 (16).

46 See Introduction I. above; for land use issues the author, *Minderheitenschutz und Klimawandel*, in: *Festschrift Gornig*, p. 197 et seq.

47 Savaresi/Setzer, *Mapping the Whole of the Moon*, p. 2 (16).

B. Standing before court

I. Introduction

The best rights are useless if they only exist on paper, i.e. if there is no effective enforcement. It is thus crucial that there are courts to enforce fundamental rights, and that the holders of these rights have access to court, i.e. the procedural right to bring an action, known as ‘standing’. Accordingly, Article 47 CFR demands that the EU and, within the realm of EU law, the Member States, also respect the citizens’ right to an effective remedy, stating that *‘Everyone whose rights and freedoms guaranteed by the law of the Union are violated has the right to an effective remedy before a tribunal in compliance with the conditions laid down in this Article. Everyone is entitled to a fair and public hearing within a reasonable time by an independent and impartial tribunal previously established by law. [...]’*

However, the question arises as to what remedy is available if more or less everybody’s rights are affected? Access to courts is usually limited in order to avoid overload, keeping litigation within a reasonable number of cases. This is achieved by defining conditions under which people have access to court: it is generally recognised that individual claimants can only enforce their own rights and legally protected interests, not the general interest of the public. The latter is to be looked after by the political processes.⁴⁸ The conditions under which holders of rights pertaining to climate change may have standing before the ECJ thus need to be examined in more detail: from ECJ case law, it will become apparent that there is a gap in the system.

II. Standing Conditions by Type of Action

1. Conditions of Standing before the ECJ: Annulment

Starting with the option to have climate-unfriendly law annulled, there are three possibilities of standing against an EU act, which are laid down in Article 263(4) TFEU: *‘Any natural or legal person may, under the conditions laid down in the first and second paragraphs, institute proceedings against an act addressed to that person, or which is of direct and individual concern to them, and against a regulatory act which is of direct concern to them and does not entail any implementing measures.’*

48 Cf. Wegener, ZUR 2019, p. 3 et seq.

The effect of this provision is to confer standing on applicants in three alternative constellations. The first of these applies in respect of EU decisions, as a form of act addressed to the applicant individually (i.e. by name). So far, though, there is not much, if any, legislation in place authorising decisions towards individual persons on climate change matters, let alone at EU level. It is in line with this that the General Court stated that the applicants in the Peoples' Climate case were not addressees of any of the contested acts (Paris Agreement, EU legislative package for implementing it).⁴⁹ Admittedly, this may become more relevant in the future, once specific acts fleshing out climate change law have been made.

The second constellation recognises standing for a person who is 'directly and individually concerned' by the EU act. This might appear to cover, *prima facie*, having an individual right violated, with the individualisation being effected by the allocation of the right to individual persons by the CFR; Article 47 CFR seems to be complied with here. The relevant concept of 'individual concern'⁵⁰ has, however, been extremely narrowly defined by the ECJ since its leading *Plaumann* judgment in the 1960s: individual concern is only recognised where individuals are affected, '*by reason of certain attributes which are peculiar to them or by reason of circumstances in which they are differentiated from all other persons and by virtue of these factors distinguished individually just as in the case of the person addressed*'⁵¹. According to *Plaumann*, sufficient individuality requires that one's individual right encroachment is a very singular matter, whilst the violation of the individual rights of many persons would appear to not be enough for 'individual concern'. Following *Plaumann*, individual concern indeed appears to be a numerical rather than an individual rights matter⁵², and has only been recognised by the ECJ at

49 General Court, Case T-330/18 - *Carvalho*, para 35, see Introduction II. for details regarding the legislative package.

50 The requirement of 'direct concern' appears less of a hurdle regarding climate actions and will not be considered further here; it serves as a protection against overload as well, and, in addition, helps preserve the allocation of competences in executing EU law by member states' authorities, and legal remedies against member state authorities by member state courts or administrative tribunals, cf. Winter, ZUR 2019, p. 259 (265 et seq.).

51 Case 25/62 - *Plaumann* [1963] ECR 95 para 31. This judgment has been relied upon in numerous other cases by the ECJ or the General Court, e.g. recently C-583/11 P - *Inuit Tapiriit Kanatami and Others v Parliament and Council*, EU:C:2013:625, no. 72; C-132/12 P - *Stichting Woonpunt and Others v Commission*, EU:C:2014:100, no. 57; C-133/12 P - *Stichting Woonlinie and Others v Commission*, EU:C:2014:105, no. 44; General court cases see e.g. T-330/18 - *Carvalho et al.*, para 45. On standing Gornig/Trüe, EuGH und EuG zum Europäischen Verwaltungsrecht – Teil 1, JZ 2000, p. 395 (398 et seq.).

52 Similar Winter, Not fit for purpose, Europarecht 2022, p. 367 (368 et seq.).

present in a very limited number of cases for EU legislation, in particular in the following groups of cases:

- ‘Closed shop’, i.e. a group of persons is concerned which cannot be joined by more persons,⁵³ or
- On the basis of a provision of EU law protecting specific interests of specific claimants; here the individualisation is effected by the granting of specific individual rights to specific persons.⁵⁴

Regarding the question of standing for a systemic action aiming at a court statement that the current legal situation does not live up to the obligations under higher-ranking EU law such as the fundamental rights under the CFR, it will be obvious that these are no cases of ‘individual concern’ under the *Plaumann* case law, as there is no individualisation based on smallest numbers of persons concerned. ECJ procedural law of access to court thus does not include a right to bring a law suit for systemic action.

Arguably, the wording of Article 263(4) TFEU allows a wider interpretation of ‘individual concern’, covering more constellations than the *Plaumann* ones,⁵⁵ as this could also be plausibly based on whether there is an individual right involved. However, so far such arguments have been unsuccessful even in the context of climate change. In particular, the General Court and the ECJ, while accepting that fundamental rights might be violated, recently denied standing to the applicants in *the Peoples’ Climate Case*:

“48 It is apparent from the case-law that, although it is true that, when adopting an act of general application, the institutions of the Union are required to respect higher-ranking rules of law, including fundamental rights, the claim that such an act infringes those rules or rights is not sufficient in itself to establish that the action brought by an individual is admissible, without running the risk of rendering the requirements of the fourth paragraph of

53 Such as CJEU Case T-135/96 *UEAPME* [1998] ECR II-2335; Joined Cases 87/77, 130/77, 22/83 and 9-10/84 – *Salerno* [1985] ECR 2523; ECJ, C-309/89 – *Codorniu/Council*, 1994 ECR I-1853 no. 21.

54 E.g. General Court, cases T-481/93 and T-484/93 – *Vereeniging van Exporteurs in Levende Varkens/Commission*, 1995 ECR II-2941, no. 61; T-480/93 und T-483/93 – *Antillean Rice Mills/Commission*, 1995, ECR II-2310, no. 67 ff.; older ECJ case C-152/88 – *Sofrimport/Commission*, 1990, ECR I-2477; case C-11/82 – *Piraiiki-Patraiki/Commission*, 1985, ECR 207, no. 75, recently e.g. case T-315/01 – *Kadi*, ER 2005 II-3659. With a finer differentiation and analysis of inconsistencies in ECJ case law, plus further references Winter, Not fit for purpose, *Europarecht* 2022, p. 367 (369, 374 et seq.).

55 Peers/Costa, Court of Justice of the European Union (General Chamber) Judicial Review of EU Acts after the Treaty of Lisbon; *European Constitutional Law Review* 2012, pp. 82-104; Winter, Not fit for purpose, *Europarecht* 2022, p. 367 (375).

*Article 263 TFEU meaningless, as long as that alleged infringement does not distinguish the applicant individually just as in the case of the addressee. ... 50 It is true that every individual is likely to be affected one way or another by climate change, However, the fact that the effects of climate change may be different for one person than they are for another does not mean that, for that reason, there exists standing to bring an action against a measure of general application. ...*⁵⁶

Thus, whilst the institutions of the EU are required to respect fundamental rights under Art. 47 CFR, the claim that an act infringes those rights was not regarded as sufficient in itself to establish that the action brought by an individual was admissible. In short, it appears (paradoxically) that if the individual rights of many or all people are encroached upon, none of them will have standing, leaving the rights to the political process⁵⁷. The Court also applied this to members of the Sami minority, in spite of this minority's specific exposure to climate change due to specific attributes. This approach neglects specific international rights protection for ethnic minorities, which is not even discussed in the case.⁵⁸

The third constellation under Art. 263 (4) TFEU – only added in 2009 – confers standing in an action against ‘a regulatory act which is of direct concern to them’: here the requirement of ‘individual concern’ has been omitted; this allows for individual applicants to bring an action against EU acts, mostly made by the Commission, in order to implement EU legislation. On the face of it, this appears helpful to applicants: where the holder of a right is affected in the same way as many other holders of the same right, a given individual could nevertheless still be able to assert it before court.

In the *Peoples’ Climate Case*, however, the General Court held that the directive and regulations within the legislative package of the EU for implementing the Paris Agreement were legislative rather than regulatory acts, as they had been made under the Ordinary Legislative Procedure under Articles 289 and 294 TFEU, and that the applicants thus needed to also show their *individual* concern in the matter under the second alternative of Art. 263 (4) TFEU.⁵⁹ Standing against regulatory acts may thus only become

56 General Court, Case T-330/18 – *Carvalho*. Confirmed by ECJ C-565/19 P – *Carvalho*.

57 Supporting this approach e.g. Wegener, ZUR 2019, p. 3 et seq.

58 See in detail the author, Minderheitenschutz und Klimawandel, in: Festschrift Gornig, p. 197 et seq.

59 General Court, Case T-330/18 – *Carvalho*, paras 37 et seq., relying on previous case law, namely ECJ, 3 October 2013, C-583/11 P – *Inuit Tapiriit Kanatami*, para 60/61 and order of 6 September 2011, T-18/10 – *Inuit Tapiriit Kanatami*, para 56; ECJ 25 October 2011, T-262/10 – *Microban*, para 21. Confirmed by ECJ C-565/19 P – *Carvalho*, paras 35 et seq.

relevant in the future regarding climate change once there are relevant regulatory rather than merely legislative acts in place.

2. Conditions of Standing before the ECJ: Failure to Act

Given that the problem of climate change mitigation often lies in no or insufficient activity by a relevant legislative or administrative entity violating rights, rather than in an activity as such, the gap under Art. 263 (4) TFEU under ECJ case law might be filled to some extent by looking at a failure to act: regarding failures to act, standing is made conditional on a direct legal relationship between the institution or entity expected to act, and the applicant. Under Article 265 (3) TFEU ‘*Any natural or legal person may ... complain to the Court that an institution, body, office or agency of the Union has failed to address to that person any act other than a recommendation or an opinion.*’ Still, a failure to act can only be made subject of an action where the applicant shows an interest in the hypothetical act that should have been addressed to him or her individually, or – mirroring Art. 263 (4) TFEU⁶⁰ – if the applicant would (had there been such an act) have been directly and individually concerned by it, akin to an addressee. In both cases, this would require a pre-existing legal relationship between the applicant and the EU sufficiently close to give rise to such an expectation.⁶¹ This would not be the case if the relevant act, namely a regulation or directive, would be addressed to the general public or the Member States, as in the *Peoples’ Climate Case*. Still, possibly in the future there may be more specific climate change mitigation law authorising EU institutions to prohibit specific climate-unfriendly behaviour of competitors or other market players affecting the applicants. The latter might then base their expectation of the relevant institution’s activity against the relevant person or undertaking on the existence of such law.

3. Analysis

Based on the judicial findings discussed in 1.-3. above, it is apparent that, following the *Peoples’ Climate Case*, there is no appropriate EU procedural framework of access to justice to deal with putative violations of fundamental rights by the EU, in particular in climate change mitigation or adaptation cases. In short, there is no standing, no access to court, at EU level. This

60 Above B)II.1.

61 This would namely be the case if the claimant can only enforce his or her rights via the act demanded, e.g. as a competitor of an undertaking receiving state aid defending the level playing field under state aid law.

is in violation of the right of access to justice in fundamental rights cases under Art. 47 CFR. Above all, the approach of guaranteeing these rights even against the will of a majority, by regarding them as inalienable, is undermined if the guarantee is given into the hands of the EU's and Member States' legislature.⁶²

Given the complexity of the issue of climate change it may appear understandable that the courts cannot take on the task of the legislature in solving the issues, but on the other hand elementary rights are left entirely without legal protection, if not even a 'systemic judgment' stating the illegality of the current legal situation is offered, supported by a reference to the rule of law.⁶³ An alternative might be to at least admit such actions and deal with them on the merits – winning the action, as shown under A., will still be extremely difficult to achieve for any applicant, but at least the competing policy concerns at issue could be debated in the open before court, and for the whole of the EU.

Whether it is sufficient here to rely on the member state court systems, as the General Court and the ECJ do,⁶⁴ i.e. to refer claimants to bringing actions against Member States, remains subject to considerable doubt for various reasons.⁶⁵ Regarding climate change it needs to be considered in particular that the relevant EU legislative competence is a shared one. Under the principle of subsidiarity, at least framework legislation regarding global climate change issues appears not only best placed at EU level, but can necessarily only be achieved effectively at EU level within the global scene. Sole Member State court jurisdiction would result in fragmentation, even if these may refer cases before them to the ECJ for a preliminary ruling under Art. 267 TFEU, as no Member State court would have the global and summary standing of the ECJ, but could only look at the relevant Member State's share in the matter. In addition, the necessary effort for any applicant would be a strong disincentive for seeking recourse to courts, as they would need to bring an action in each Member State in order to cover the whole of the EU.

62 One might want to consider here that the majority at EU level is not a simple majority in Parliament, as the European Parliament is only one of the legislating institutions, and that the Council with its complicated double majority voting represents the Member State governments, with the ensuing potential democratic deficit, weakening concerns regarding democratic majority rule and calling even more for the control by the ECJ, cf. Winter, Not fit for purpose, *Europarecht* 2022, p. 367 (381 et seq.).

63 Cf. above A)I.2.a).

64 General Court, Case T-330/18 – *Carvalho*, para 52 et seq.

65 With further arguments Winter, Not fit for purpose, *Europarecht* 2022, p. 367 (376 et seq.).

In addition, the reference to Member State courts by the General Court and the ECJ contradicts the decades-old approach of the ECJ itself to claim jurisdiction over EU law for itself even regarding human rights protection, building up a human rights protection in its case law, which was crowned by the entering into force of the CFR. If the ECJ does not offer a by and large adequate fundamental rights protection regarding climate change mitigation and adaptation, this is called into question. Friction within the system of fundamental rights protection can only be avoided by an adequate access to the ECJ, and adequate answers on the merits of such cases.⁶⁶

Conclusion

A. As shown the current EU system in principle offers a legal framework for the protection of fundamental rights against human-induced climate change, consisting of the implementation of the UN Framework Convention on Climate Change and the Paris Agreement, taken together with the EU Treaties and, in particular, the EU Charter on Fundamental Rights. However, in terms of enforcement, the system still leaves various gaps:

First, the rules on showing and proving that a specific activity or failure to act has resulted in a specific violation of a right, and in damage, are difficult to apply in practice regarding climate change. Defining a legal solution bridging the causality gap could include proof modifications or even reversing the burden of proof on causation, or introducing a legal presumption of responsibility of emitters, and the EU and Member States permitting or subsidising emissions. However, this will not help much unless a more global causation approach is taken, regarding it as sufficient in terms of causation to show a contribution to the general problem of climate change, without having to prove a direct causal link to the violation of a person's fundamental right.

Second, there is ongoing EU and Member State legislation, namely for the implementation of the EU Green Deal legislative package. The more this includes specific rights for individuals, translating reduction and adaptation targets into concrete action obligations and specific individual rights, the easier it will become for holders of individual rights to claim these. Still, the political processes in the EU, its Member States and sub-state levels are so slow that immediate enforcement appears absolutely necessary in order to effectively protect fundamental rights today, against the will of a majority to

66 See specifically regarding minority rights the author, *Minderheitenschutz und Klimawandel*, in: *Festschrift Gornig*, p. 197 et seq.

complacently continue business more or less as usual, ignoring the damage to fundamental rights already on its way, or already materialised. The Green Deal legislative package appears no more than a hopeful beginning here.

B. Regarding access to court, the current EU system has shown itself strikingly inadequate. If the ECJ finds itself unable to come to a wider interpretation of the rules of standing and access to court regarding fundamental rights, and in spite of individual rights enforcement being fully covered under the wording of Art. 263 (4) TFEU as well as demanded by the entering into force of Art. 47 CFR in 2009, the paradoxical situation remains that the more catastrophic the situation, the more holders of individual rights affected, the less legal protection will be afforded to them.⁶⁷ This situation is untenable from a fundamental rights point of view, and cannot be reconciled with the demands under Art. 47 CFR, and raises doubts regarding the Aarhus Convention⁶⁸. The next Treaty Amendment will need to include an amendment of the standing provisions in Art. 263 and 265 TFEU.⁶⁹ This appears the more necessary in order to make sure that the ECJ's jurisdiction matches the wider competences conferred on the EU, and Art. 47 CFR. The limited ECJ jurisdiction is incompatible with the leading role the EU has assumed in climate change matters which has manifested itself in particular in the Green Deal package. Regarding the global issue of climate change, individual action of Member States, important as it may be, cannot achieve equal weight to that of the EU.

Second, appropriate associations, such as environmental protection organisations or the Saminuorra representing the Sami minority in the *Peoples' Climate Case*, might be recognised as entitled to represent current and future generations.⁷⁰ An extension of standing for individual applicants regarding legislative acts, and a relaxation of the definition of individual concern, as well as an extension of standing to climate change organisations might be options to bring mitigation and adaptation to climate change forward. This may well also be necessary to bring the EU's procedural law obligations into line with international law.

67 Winter, Not fit for purpose, *Europarecht* 2022, p. 367 (369).

68 Cf. Findings and recommendations of the Compliance Committee, 17 March 2017, <https://unece.org/fileadmin/DAM/env/pp/compliance/CC-57/ece.mp.pp.c.1.2017.7.e.pdf>.

69 For suggestions here see Winter, Not fit for purpose, *Europarecht* 2022, p. 367 (379 et seq.)

70 Cf. the Netherlands' *Urgenda* case, De Hoge Raad (fn. 24). In more detail the author, Minderheitenschutz und Klimawandel, in: *Festschrift Gornig*, p. 197 et seq.; Winter, Not fit for purpose, *Europarecht* 2022, p. 367 (373, 378 et seq.).

List of References

- Beyerlin, Ulrich, Umweltschutz und Menschenrechte, *ZaöRV* 2005, p. 525 et seq.
- Boer, B. Environmental principles and the right to a quality environment, in: Krämer, L./Orlando, E., *Principles of Environmental Law*, Cheltenham (UK)/Northampton, MA (USA), Elgar Publishing, 2018, p. 52 et seq.
- Climate Action Network (CAN) Press Releases, People's Climate Case: Court acknowledges climate change is affecting everyone but dismisses the case. Available at: <http://www.caneurope.org/publications/press-releases/1776-people-s-climate-case-court-acknowledges-climate-change-is-affecting-everyone-but-dismisses-the-case>.
- Court of Justice of the European Union, Répertoire de Jurisprudence, Recherche et Documentation, Partie 1 - L'ordre juridique de l'Union européenne, 1.04 Droits fondamentaux. Available at: https://curia.europa.eu/common/recdoc/repertoire_juris/bull_1/tab_index_1_04.htm.
- Craig, Paul/de Búrca, Grainne, *EU Law*, 7th ed. Oxford 2020.
- Frenz, Walter, Klimaschutz und Grundrechte, E., No. 1 et seq., in: Frenz, Walter (ed.), *Klimaschutzrecht: EU-Klimagesetz, KSG Bund und NRW, BEHG, Steuerrecht, Querschnittsthemen – Gesamtkommentar*, 2nd ed. Berlin 2022.
- Gornig, Gilbert/Trüe, Christiane, Die Rechtsprechung des EuGH und des EuG zum Europäischen Verwaltungsrecht – Teil 1, *Juristenzeitung* 2000, p. 395 et seq.
- Gornig, Gilbert/Trüe, Christiane, Die Rechtsprechung des EuGH und des EuG zum Europäischen Verwaltungsrecht – Teil 3, *JZ* 2000, p. 501 et seq.
- Jackson, Andrew, Systemic climate litigation in Europe: transnational networks and the impacts of Climate Case Ireland, p. 26 et seq. in: Setzer, Joana/ Higham, Catherine/Jackson, Andrew/Solana, Javier (eds), *ECB Legal Working Paper Series No 21 / December 2021: Climate change litigation and central banks*, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3977335.
- Leuchner, Michael, Aktueller Klimazustand und zukünftige Klimaentwicklung – Einflussfaktoren, Folgen und Herausforderungen, Introduction Part D, no. 1 ff., in: Frenz, Walter (ed.) *Klimaschutzrecht: EU-Klimagesetz, KSG Bund und NRW, BEHG, Steuerrecht, Querschnittsthemen – Gesamtkommentar*, 2nd ed. Berlin 2022,
- Peers, Steve/Costa, Marios, Court of Justice of the European Union (General Chamber) Judicial Review of EU Acts after the Treaty of Lisbon; Order of 6 September 2011, Case T-18/10 *Inuit Tapiriit Kanatami and Others v. Commission & Judgment of 25 October 2011, Case T-262/10 Microban v. Commission. *European Constitutional Law Review*, 2012, vol 8 no 1, pp. 82 et seq. Available at: <http://openaccess.city.ac.uk/5846>*
- Savaresi, Annalisa/Setzer, Joana, Mapping the Whole of the Moon: An Analysis of the Role of Human Rights in Climate Litigation (February 18, 2021), p. 5 et seq. Available at SSRN: <https://ssrn.com/abstract=3787963> or <http://dx.doi.org/10.2139/ssrn.3787963>.
- Schlacke, Sabine, Klimaschutzrecht – Ein Grundrecht auf intertemporale Freiheitssicherung, *NVwZ* 2021, p. 912 et seq.
- Schwerdtfeger, A., Article 51. In: Meyer, J./Hölscheidt, S. (eds.), *Charta der Grundrechte der Europäischen Union*. 5th ed. Baden-Baden 2019.

- Setzer, Joana/Higham, Catherine, Climate change litigation, p. 5 et seq. in: Setzer, Joana/Higham, Catherine/Jackson, Andrew/Solana, Javier (eds.), Climate change litigation and central banks, in: ECB Legal Working Paper Series No 21 / December 2021.
- Setzer, Joana/Higham, Catherine/Jackson, Andrew/Solana, Javier (eds.), Climate change litigation and central banks, ECB Legal Working Paper Series No 21 / December 2021; from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3977335.
- Stuart-Smith, Rupert F./Otto, Friederike E.L./Saad, Aisha I./Lisi, Gaia/Minnerop, Petra/Cedervall Lauta, Kristian/van Zwieten, Kristin/ Wetzler, Thom, Filling the evidentiary gap in climate litigation, in: *Nature Climate Change* 2021 p. 651 et seq., www.nature.com/natureclimatechange.
- Trüe, Christiane, Economic and Legal Issues of Climate Change, *European Studies* (8) 2021, p. 161 et seq.
- Trüe, Christiane, Minderheitenschutz und Klimawandel im Recht der Europäischen Union: das Problem der Klagebefugnis auf brennendem Eis? In: Vol. I, *Europäisches Minderheitenrecht*, Festschrift für Professor Gilbert Gornig (Minority Protection and Climate Change: the Issue of Standing on Deadly Ground?, in: Vol. I, *European Law on the Protection of Minority Rights*, Festschrift for Professor Gilbert Gornig, p. 197 et seq., 2023.
- Warne K./Svold, M., A Voice for Nature, *National Geographic*, 2019, vol 4, from: <https://www.nationalgeographic.com/culture/2019/04/maori-river-in-new-zealand-is-a-legal-person>.
- Wegener, Bernhard, Urgenda – Weltrettung per Gerichtsbeschluss? *ZUR* 2019, p. 3 et seq.
- Winter, Gerd, Armando Carvalho et alii versus Europäische Union: Rechtsdogmatische und staatstheoretische Probleme einer Klimaklage vor dem Europäischen Gericht, *ZUR* 2019, p. 259 et seq.
- Winter, Gerd, Not fit for purpose. Die Klagebefugnis vor dem Europäischen Gericht angesichts allgemeiner Gefahren, *Europarecht* 2022, p. 367 et seq.

Procurement

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The role of Green Public Procurement (GPP) under the EU Green Deal as a key lever of the transition to a circular and climate neutral Europe

Abstract

This paper aspires to provide a comprehensive overview of the role of Green Public Procurement (GPP) as a key lever in moving towards a circular economy as well as in closing the gap between current policies and the 1.5°C climate target. Emphasis will be placed on the latest policy and legislative developments under the EU Green Deal, which highlights the significance of public procurement regime in pursuing the existing environmental goals focusing on promoting “green products”, reducing carbon footprint and enhancing resource-efficient strategies. In this context, the adoption of low-carbon choices by public buyers contributes to enhancing the design and production of sustainable and toxic-free products which constitutes a prerequisite for climate neutrality.

Keywords: Public Procurement, Green criteria, EU Green Deal, circular economy

A. Introduction

The EU Green Deal,¹ which is the current EU growth strategy focusing on tackling climate and the other pressing environmental-related challenges, maps the transition towards a climate-neutral Europe by 2050 based on the efficient use of resources by moving to a clean, circular economy, the restoration of biodiversity and the reduction of pollution. Without putting the spotlight on the detailed provisions and actions in different environmental areas, the adoption of the EU Green Deal reflects the continuous strengthe-

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1 Available at: https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf.

ning of the environmental considerations when shaping EU sectoral policies enshrined in Article 11 TFEU, which is known as the “environmental integration clause” and explicitly requires “*environmental protection requirements to be integrated into the definition and implementation of the Union policies and activities, in particular with a view to promoting sustainable development*”. Hence, environmental policy integration attempts to act on the recognition that more can be achieved by incorporating environmental concerns with-in other policy areas (such as agriculture, energy, internal market, trade, fisheries, transport, industry, tourism, economic and financial affairs) than by leaving them to explicitly “environmental policy”.² In this context, the adoption of the EU Green Deal triggers intensive discussions about the role of public procurement rules as a crucial mechanism in achieving the new and ambitious EU environmental goals.

Namely, according to the provisions of the EU Green Deal, “*public authorities, including EU institutions, should lead by example and ensure that their procurement is green. The Commission will propose further legislation and guidance on green public purchasing*”.³ In addition to this, “*the Commission will propose minimum mandatory green criteria or targets for public procurements in sectorial initiatives, EU funding or product-specific legislation. Such minimum criteria will ‘de facto’ set a common definition of what a ‘green purchase’ is, allowing collection of comparable data from public buyers, and setting the basis for assessing the impact of green public procurements. Public authorities across Europe will be encouraged to integrate green criteria and use labels in their procurements. The Commission will support these efforts with guidance, training activities and the dissemination of good practices*”.⁴ It is therefore evident that the concept of Green Public Procurement (hereafter: GPP) may have a crucial role in the tool kit of the policy makers when developing policies that either affect environmental goods or aim to achieve the already adopted environmental objectives.

The nexus between the public procurement and the environmental policy goals under the EU Green Deal, can be explained as follows. Government expenditure on works, goods and services represent around 19% of EU GDP,

2 *European Commission*, A Blueprint to Safeguard Europe’s Water Resources COM(2012) 673. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012DC0673&from=EN>.

3 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Sustainable Europe Investment Plan – European Green Deal Investment Plan, Brussels, 14.1.2020, COM(2020) 21 final, p. 8.

4 *Ibid.*, p. 12.

accounting for roughly EUR 2.3 trillion annually.⁵ Due to this massive value of public procurement, and the enormous market it creates, public procurement, particularly when used in a strategic way, is a relevant and powerful way to respond to societal, environmental and economic challenges, and to shape the way in which both the public and private sector behave on the market. Hence, nowadays, public procurement satisfies a variety of concerns relating to: (a) anticorruption and transparency; (b) efficiency (the best value for money); (c) policy instruments, such as social and environmental considerations; (d) competition concerns; and (e) building an internal market for government procurement in the EU context.⁶

Generally, in developed as well as developing countries, a sound procurement system seems to have two groups of objectives: procurement and non-procurement.⁷ Namely, the procurement objectives normally include quality, timeliness, cost (more than just price), minimizing business, financial and technical risks, maximizing competition and maintaining integrity, whilst the non-procurement objectives cover environmental protection priorities, social objectives and international relations (i.e. global trade agreements) objectives. At EU level, the debate about the interrelationship between the public procurement rules and the achievement of environmental goals at EU level has revived in the wake of the 2014 EU Public Procurement reform, where it was acknowledged that public procurement is a powerful tool of the competitiveness and sustainable growth agenda.⁸ Therefore, no longer will the EU simply coordinate national procurement procedures to protect the integrity of the internal market in public contracts, but now it also seeks to deploy public procurement as a “demand-side policy” to achieve its own key economic goals.⁹ In this context, the new Directive 2014/24/EU (hereafter: Public Procurement Directive) used the lever of public procurement to integrate strong social and environmental dimensions, without, however, specifying the conditions under which these two fields will jointly serve their original purposes.

The emergence of the concept of GPP is directly linked to the constantly increasing role of environmental protection in the EU policy priorities and targets since 1986, with the entry into force of the Single European

5 *European Commission*, *Bying Green! – A Handbook on green public procurement*, 3rd edition, 2016, p. 4-5.

6 *Schebesta*, in *Schoenmakers/Devroe/Philipsen* (eds), pp. 130-131.

7 *Thai*, p. 2.

8 Recital 3 of Directives 2014/23/EU, 2014/24/EU and 2014/25/EU.

9 *European Commission*, *Europe 2020 – A Strategy for Smart, Sustainable and Inclusive Growth*, COM(2010) 2020 final, p. 14-17.

Act (SEA). Namely, over the last two decades, environmental issues have been placed very high on the EU political agenda, given that the current situation of the environment worldwide is alarming for a combination of reasons. In order to face these challenges and strengthen the achievement of local, regional, national and EU environmental goals, the EU legislator has conceived the green shift in public purchasing leading to the adoption of several EU green public procurement framing measures, some of which are actually binding. In a broader conceptual framework, GPP is but one of sustainable public procurement (SPP)'s components¹⁰, which encompasses the three pillars of economic, social and environmental responsibility.

According to the definition given by the Commission, GPP is “*a process whereby public authorities seek to procure goods, services and works with reduced environmental impact through their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured*”.¹¹ In other words, GPP constitutes an important tool to promote the use of greener products and services by the public authorities and, therefore, to achieve environmental policy goals relating to climate change, biodiversity loss, resource efficiency and sustainable production and consumption. Indicatively, GPP can be instrumental in addressing environmental problems, such as: deforestation (e.g. through the purchase of wood and wood products from legally harvested and sustainably managed forests), greenhouse gas emissions (e.g. through the purchase of products and services with a lower CO₂ footprint through their life-cycle), waste (e.g. by specifying processes or packaging which generate less waste or encouraging reuse and recycling of materials), or air, water and soil pollution (by controlling chemicals and limiting the use of hazardous substances).¹²

Currently, GPP is still a voluntary instrument meaning that it is up to the Member States (hereafter: MS) and their contracting authorities to implement it. In this context, the EU GPP criteria sets developed by the European Commission for 20+ priority products¹³ are non-binding and not formally adopted as a legal act. In other words, the EU GPP criteria

10 *European Commission*, [15], pp. 219-223.

11 European Commission, Communication, Public procurement for a better environment, 2008.

12 https://ec.europa.eu/environment/gpp/benefits_en.htm.

13 Copyright and graphic paper, computer and monitors, transport, electricity, textiles, cleaning products and services, Office Building, Furniture, Food and Catering Services, Gardening products and services, wall panels, water-based heaters, waste water infrastructure, flushing toilets and urinals, imaging equipment, roads, combined heat and power, street lighting and traffic signals, Indoor lighting, sanitary tapware, EEE Health care sector.

are a supporting framework, providing concrete clauses on how to “green” public purchasing of the targeted products, and setting a non-binding level of ambition as to what is considered a sufficient “effort” in greening the purchasing.¹⁴

In general, the discussions about the role of the GPP as an environmental policy tool have been stepped up in the last decade, given that environmental concerns have become a fundamental part of EU law through the establishment of more than 130 separate environmental targets to be met between 2010 and 2050.¹⁵ In this context, public procurement has explicitly emerged as a potentially effective toolkit in the hands of policy makers for achieving compliance with the adopted environmental objectives at EU law landscape. Accordingly, the main research focus of this paper revolves around the question of how the public procurement process will contribute to the transition to a circular and climate neutral Europe as prescribed in the EU Green Deal.

To this end, in the second section the role of the Public Procurement within the EU Green Deal priorities is identified, while in the third section emphasis is placed on the GPP requirements under the current EU public procurement regime. The fourth section focuses on analyzing the latest policy and legislative developments under the EU Green Deal, highlighting the interconnections between GPP, circular economy and climate objectives. In the fifth and final section some concluding remarks are briefly formulated.

B. Identifying the role of GPP within the EU Green Deal priorities

The EU Green Deal aspires to function as the overarching umbrella, coordinating comprehensively the developments in the field of environmental policy, which has been constantly evolving in order to deal effectively with the growing environmental problems, such as climate change, biodiversity loss, soil degradation and water scarcity. As captured in the EU Green Deal, the new EU environmental objectives, which have been adopted in different policy areas, such as circular economy, Sustainable Development Goals (SDGs), Climate Change and Decarbonization of Economy, test sorely the existing environmental policy tools. Hence, in order to achieve these ambitious and highly complicated environmental goals, “demand-side policies” such as the GPP can be a useful tool.¹⁶

14 *Schebesta*, European Journal of Risk Regulation 2018, p. 319.

15 *Mélon*, Sustainability 2020, p. 5

16 *Martinez Romera/Caranta*, EPPPL 2017, pp. 281-282.

I. Sustainable Development Goals

Since the adoption of the new Public Procurement Directive, it has become clear that a key factor in governments' public purchasers' choices is no longer exclusively the cheapest option available, but the integration of social and environmental dimensions in public procurement rules. Given the high impact of public procurement on a country's economic development, the introduction of environmental and social sustainability principles in this process aims to achieve a number of social and environmental objectives. Based on that, the concept of sustainable public procurement has emerged, capturing the need to address sustainability issues through procurement. Sustainable public procurement builds on three decades of thinking on sustainable development, following the seminal World Commission on Environment and Development (the Brundtland Report) of 1987 and the United Nations Conference on Environment and Development in 1992 (Earth Summit).¹⁷

At the beginning of 2015, the UN Sustainable Development Summit ended with the adoption of the 2030 Agenda for Sustainable Development, which encompasses 17 Sustainable Development Goals (SDGs) at its base. This Agenda is the most important international strategy on sustainability and was subscribed to by 193 UN member countries during COP21 (Paris Agreement on Climate Change in December 2015).¹⁸ GPP is enshrined in SDG 12 "*Ensure sustainable consumption and production patterns*" in a specific target: No 12.7 focuses on promoting public procurement practice that are sustainable, in accordance with national policies and priorities; and No 12.7.1 reaffirms the importance of implementation of sustainable public procurement policies and action plans by the countries. Hence, incorporating sustainability considerations into public procurement will assist governments in reducing CO₂ emissions, protecting water and energy resources, alleviating poverty, equity and cohesion problems, and finally gaining technological innovations.¹⁹

Given that the EU Green Deal is an integral part of the 'Europe 2020' strategy to implement the United Nation's 2030 Agenda and the sustainable development goals, achieving Sustainable Development constitutes an EU priority, which does not only legitimize but also necessitates further EU action on this matter. Based on that, it is of paramount importance to discuss the ways procurement law and policy frameworks as well as actual

17 Fisher, EPPPL 2017, p. 2.

18 Litardi/Fiorani,/Alimonti in: Brunelli/Di Carlo (eds), p. 177.

19 Nikolaou/ Loizou, Journal of Integrative Environmental Sciences 2015, p. 50.

government purchasing practices will be brought into alignment with the SDGs and the other EU Sustainable Development commitments.

II. Circular Economy Package

In 2015 the EU decided to transform its linear economy (take-make-dispose) into a Circular Economy (CE)²⁰ aspiring to decouple economic growth and well-being from ever-increasing waste generation, strengthen environmentally sound waste management, enhance eco-design, achieve higher recycling rates and reduction of waste, stimulate competitiveness and resource-efficiency, as well as to create new jobs and opportunities for new businesses, innovations and investments by keeping the added value in products for as long as possible in the market. The CE policy pointed out in a holistic way the interrelation among resource, substance, product and waste, highlighting the interface among the waste, product and chemical legislations and taking into consideration that waste –other than pollution– can be conceived and used as the virgin material in the production process. In this regard, the life-cycling thinking incorporated in the CE concept stresses the need to take into account the environmental impacts of the entire material lifecycle in an integrated way.²¹

The fact that the CE put the spotlight on the life-cycle perspective constitutes a clear sign towards the building of interlinkages among the legally binding product standards, resource and waste law and policy, and the legislation on chemicals, given that the decisions made in the period when a product is conceptualized and manufactured by industry (design stage) are extremely important for all the stages of its lifetime. In this vein, the CE Package of 2015 recognized public procurement as a key driver in the transition towards the circular economy, and it sets out several actions which the European Commission will take to facilitate the integration of circular economy principles in GPP.²² These include emphasizing circular economy aspects in new or updated sets of EU GPP criteria, supporting

20 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – Closing the loop – An EU action plan for the Circular Economy, Brussels, 2.12.2015, COM(2015) 614 final.

21 *Hughes*, *Procedia CIRP*, p. 14-15.

22 European Parliament, *Green Public Procurement and the EU Action Plan for the Circular Economy*, Study for the ENVI Committee, 2017, pp. 14-19. Available at: [https://www.europa.eu/regional_data/etudes/STUD/2017/602065/IPOL_STU\(2017\)602065_EN.pdf](https://www.europa.eu/regional_data/etudes/STUD/2017/602065/IPOL_STU(2017)602065_EN.pdf).

a higher uptake of GPP among European public bodies, and leading by example in its own procurement and in EU funding.²³

Based on this policy, the concept of “circular public procurement” has emerged. According to the definition given by the European Commission,²⁴ it refers to an approach to greening procurement by recognizing the role that public authorities can play in supporting the transition towards a circular economy. In other words, circular procurement can be defined as the process by which public authorities purchase works, goods or services that seek to contribute to close energy and material loops with supply chains, whilst minimizing, and in the best case avoiding, negative environmental impacts and waste creation across their whole life-cycle.

Given that the transition towards a circular economy at EU level remains one of the first priorities under the EU Green Deal, a new CE Action Plan was published in March 2020 stressing the need to tackle the environmental and climate impact of our products and economic activities.²⁵ The new CE Action Plan put the spotlight on the creation of an overarching sustainable product policy framework as a way to ensure that products which are either short-lived, toxic, unrepairable, unrecyclable or simply untraceable, are phased out from the EU market. Hence, the focus is on the sectors that use most resources and where the potential for circularity is high, such as: electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, food, water and nutrients. Additionally, there is a proposal to develop waste prevention targets, expand the use of Extended Producer Responsibility tools and restrict waste exports outside the EU. In this context, the crucial role of public procurement in treating waste as a resource with energy and materials embedded in products, which must be kept in the economic process for as long as possible and at the higher level of quality,²⁶ was reiterated in the new CE Action Plan, as will be analyzed under section D.

23 *European Commission*, Public Procurement for a Circular Economy – Good practice and guidance, 2017, p. 5. Available at: https://ec.europa.eu/environment/gpp/pdf/Public_procurement_circular_economy_brochure.pdf.

24 *Ibid.*, p. 5.

25 Available at: https://ec.europa.eu/environment/circular-economy/pdf/new_circular_economy_action_plan.pdf.

26 ZeroWaste, Europe, Redesigning Producer Responsibility – A new EPR is needed for a circular economy, 2015, p. 5.

III. EU Climate Objectives

The evolution of climate change and low carbon agendas²⁷ over the last decades have gradually been raising expectation from public procurement that it should act as a practical and policy instrument for emissions' reductions. Thus, in December 2015 the Paris Agreement was adopted with the long-term goal of keeping the global temperature increase by the end of the century to well below 2°C (and pursue efforts towards 1.5°C) compared to pre-industrial levels.²⁸ More specifically, the agreement stressed the urgent need for signatory parties to “undertake rapid reductions thereafter in accordance with the best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century”.²⁹ The main instrument of national voluntary pledges is the National Determined Contributions (NDC) which is put forward by each signatory party and reviewed every five years.

The EU (and its MS) has been traditionally among the leaders at international level for setting ambitious policies to tackle climate change. The EU is a signatory of all main international climate agreements and has consistently and actively contributed to the processes relating to the negotiation, adoption and entering into force of climate instruments.³⁰ In this vein, the EU has adopted a number of climate policy and legal instruments since 1992.³¹ Focusing on the most recent developments, in 2018 the EU adopted its new and very ambitious 2030 framework for Climate and Energy relating to the implementation of the Paris Agreement. The agreed headline targets provide for at least 40% cuts in GHG emissions (from 1990 levels), 32% share for renewable energy and 32.5% improvement in energy efficiency. In this context, the “Transition to a Low-carbon Economy” Package and the “Clean Energy for all” Package were adopted.

The relevance of public procurement as regards the achievement of the climate-related commitments has been explicitly recognized in the new

27 In 1992, the United Nations Framework Convention on Climate Change (UNFCCC) was adopted aiming at the “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system” (Article. 2). In 1997, the Kyoto Protocol set binding quantified emission limitation or reduction objectives for developed countries, including the EU MS, without, however, leading to their practical implementation.

28 UNFCCC, Paris Agreement (Paris, 12 December 2015), Article 2.1.

29 Paris Agreement, Article 4.1.

30 *Martinez Romera/Caranta*, EPPPL 2017, p. 283.

31 *Bogojević*, in Gray/Tarasofsky/Carlarne (eds), pp. 671-688.

Public Procurement Directive, since the integration of energy efficiency considerations in procurement, public administrations across EU MS could save up to 20% of their energy use by 2020, with corresponding carbon reductions.³² At global level, Sustainable Public Procurement (SPP) has been introduced by at least 56 national governments and many more local governments, who have long understood how public procurement can improve sustainability, including through lowering greenhouse gas emissions.³³

In the wake of the EU Climate Law under the EU Green Deal³⁴ and the urgency of climate challenges, the rationale for climate-oriented public purchasing in the EU is valid more than ever. Hence, GPP offers authorities the option to make purchase decisions based on implicit carbon prices that are higher than the general carbon price, as well as taking into account more environmental impacts than solely carbon emissions.³⁵ This implies that when buying green products and services, authorities can substantially reduce their own environmental impact³⁶ by using their discretion towards the actual integration of more stringent climate consideration in their public procurement decisions. Given that GPP has been (more actively) on the EU political agenda for more than a decade now, MS should start designing and implementing more ambitious low-carbon strategies where public procurement can play a more prominent role in ensuring compliance with the relevant environmental objectives.

C. Unpacking the GPP requirements in the EU Public Procurement regime

In the wake of the well-known CJEU case law in this field,³⁷ the 2014 EU Public Procurement Reform led to the adoption of Article 18(2), which

32 *Correia/Howard/Hawkins/Pye/Lamming*, *Journal of Purchasing and Supply Management* 2013, p. 58.

33 *Baron (OECD)*, *The Role of Public Procurement in Low-Carbon Innovation*, Background Paper for the 33rd Round Table on Sustainable Development, 12-13 April 2016, OECD Headquarters, Paris, available at: <https://www.oecd.org/sdroundtable/papersandpublications/The%20Role%20of%20Public%20Procurement%20in%20Low-carbon%20Innovation.pdf>.

34 Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020PC0080&from=EN>.

35 *Martinez Romera/Caranta*, *EPPPL* 2017, p. 282.

36 *Chiappinelli/Zipperer*, *DIW Economic Bulletin* 2017, p. 524.

37 C-513/99 *Concordia Bus Finland*, C-448/01 *EVN AG & Wienstrom* and C-368/10 *Dutch Coffee or Max Havelaar*.

explicitly recognizes that “MS shall take appropriate measures to ensure that in the performance of public contracts economic operators comply with applicable obligations in the fields of environmental, social and labour law established by Union law, national law, collective agreements or by the international environmental, social and labour law provisions listed in Annex X”. Hence, the new Public Procurement Directive facilitates the integration of environmental considerations at various stages of the public procurement procedure, including allowing for environmental requirements, the use of criteria underlying environmental labels, and the option to take into account environmental factors in the production process and life-cycle analysis.³⁸

More specifically, as regards the definition of the subject matter of the contract, the contracting authorities as buyers have a wide discretion and the Directive does not prevent them from implementing environmental considerations when deciding on a purchase.³⁹ However, a limit on their discretionary power can be found in Article 18(1), which provides that “*the design of the procurement shall not be made with the intention of excluding it from the scope of this Directive or of artificially narrowing competition*”.

Furthermore, the technical specifications, which define the characteristics required of a work, service or supply according to Article 42 of the Directive, may be formulated in terms of performance or functional requirements including environmental aspects.⁴⁰ Indicatively, they may cover environmental and climate performance levels, production processes and methods at any stage of the life-cycle of works and packaging.⁴¹ In the same vein, Article 43 spells out the conditions under which the contracting authorities may purchase works, supplies or services with specific environmental, social or other characteristics requiring – in the technical specifications, the award criteria or the contract performance conditions – a specific label as means of proof that the works, services or supplies at stake correspond to the required characteristics. Here, the label requirements must concern

38 *European Commission*, Public Procurement Reform Factsheet No. 7: Green Public Procurement, 2014.

39 *SIGMA*, Incorporating Environmental Considerations into Public Procurement, Brief 13, 2016, p. 5. Available at: <http://www.sigmaxweb.org/publications/Public-Procurement-Policy-Brief-13-200117.pdf>.

40 *Weatherill* in Bogojevic/Groussot/Hettne, p. 41-42.

41 *van den Abeele*, Integrating social and environmental dimensions in public procurement: one small step for the internal market, one giant leap for the EU?, Working Paper 2014.08, Brussels, 2014, p. 12. Available at: <https://www.etui.org/publications/working-papers/integrating-social-and-environmental-dimensions-in-public-procurement-one-small-step-for-the-internal-market-one-giant-leap-for-the-eu>.

only criteria which are linked to the subject-matter of the contract, and are based on non-discriminatory criteria which are objectively verifiable by the contracting authorities. Additionally, the labels must be established in an open and transparent procedure, accessible to all interested parties and set by a third party over which the economic operator cannot exercise a decisive influence.

With respect to the selection and award of contracts phase, there is scope for introducing environmental considerations. Namely, according to the Article 56(2), contracting authorities may circumvent the general rule of awarding the contract based on the most economically advantageous tender (Article 67) “*where they have established that the tender does not comply with the applicable obligations referred to in Article 18(2)*.” The use of this ambitious but optional provision to reject a tenderer who fails to take into account environmental (and/or social) impacts of their tender, lies exclusively in the power of the contracting authorities and the MS. In addition to this, as regards environmental considerations, Article 57(4) of the Directive sets out non-binding grounds on which economic operators may be excluded from participation in a procurement procedure. It is again left to the contracting authorities to bring these voluntary exclusions for violation of environmental obligations to life. In the same vein, but this time based on a compulsory provision enshrined in Article 69(3), “*contracting authorities shall reject the tender, where they have established that the tender is abnormally low because it does not comply with applicable obligations referred to in Article 18(2)*”.

Moreover, as shown by *Concordia* and a number of subsequent cases, award criteria provide the most relevant opportunity for green public procurement.⁴² Article 67 is therefore of paramount importance, since it gives MS the discretionary power to provide that contracting authorities may not use price only or cost only as the sole award criterion. This allows the contracting authorities to award a contract in line with the optimum price-quality ratio assessed on the basis of criteria which may include environmental considerations as well.⁴³ However, again this discretion is not unrestricted. According to Article 67(3)-(5) award criteria must: have a link to the subject-matter of the contract; be specifically and objectively quantifiable; have been advertised/notified previously; respect EU law and comply with the fundamental principles of equal treatment, non-discrimination and transparency.

42 *Martinez Romera/Caranta*, EPPPL 2017, p. 291.

43 *SIGMA*, Incorporating Environmental Considerations into Public Procurement, Brief 13, 2016, p. 9. Available at: <http://www.sigmaxweb.org/publications/Public-Procurement-Policy-Brief-13-200117.pdf>.

An additional innovative element of great importance relating to the “greening” of the public procurement process is the codification of the life-cycle costing in Articles 67(2) and 68. In light of this concept, “*the most economically advantageous tender from the point of view of the contracting authority shall be identified on the basis of the price or cost, using a cost-effectiveness approach, such as life-cycle costing*” which “*covers parts or all of the costs over the life cycle of a product, service or works*”. This includes “*costs imputed to environmental externalities linked to the product, service or works during its life cycle, provided their monetary value can be determined and verified; such costs may include the cost of emissions of greenhouse gases and of other pollutant emissions and other climate change mitigation costs*”.

Finally, at the contract performance stage, the Directive in Article 70 authorizes the contracting authorities to set out specific conditions relating to the performance of a contract, provided that they are linked to the subject matter of the contract, are not directly or indirectly discriminatory and are indicated in the call for competition or in the procurement documents. As explicitly indicated in this provision, contract performance conditions “*may include economic, innovation-related, environmental, social or employment-related considerations*”, creating a potentially dynamic field to be enacted by the contracting authorities.

As highlighted in legal doctrine, from “secondary considerations” in the 2004 Directives, the need to include social and environmental considerations in public tendering procedures has resulted in coining new terms, much more powerful and all-encompassing, such as “horizontal policies”, “sustainable procurement” or even “strategic procurement”.⁴⁴ Following this reform, it has been left up to the MS to determine how and to what extent they may seek to achieve environmental goals through the public procurement requirements. Nevertheless, the practical enforcement of these provisions remains largely untapped so far.

D. Strengthening the links between GPP, Circular Economy and climate policies

As briefly mentioned beforehand, in the new CE Action Plan adopted in March 2020 all action areas of the circular economy (production, consumption, end-life management) are addressed through the lens of climate neutrality, with a focus on key product value chains (electronics and ICT, batte-

44 Dragos/Neamtu, EPPPL 2013, pp. 301-302.

ries and vehicles, packaging, plastics, textiles, construction and buildings, food, water and nutrients). More specifically, emphasis is placed on measuring circularity contribution to climate mitigation, strengthening the role of circularity in future revisions of the National Energy and Climate Plans and promoting the certification of carbon removals. In addition, with respect to the business and finance perspectives, the Action Plan laid the basis for integrating CE in EU Taxonomy Regulation, supporting EU Ecolabel criteria for financial products as well as promoting Circular Economy solutions in State Aid, business strategies, financial instruments and reporting.

Concerning GPP particularly, in a dedicated section of the CE Action Plan (“2.2 Empowering consumers and public buyers”), it is laid down that the Commission will propose minimum mandatory GPP criteria and targets in sectoral legislation and phase in compulsory reporting to monitor the uptake of GPP without creating unjustified administrative burden for public buyers. Furthermore, the Commission will continue to support capacity building with guidance, training and dissemination of good practices and encouraging public buyers to take part in a “Public Buyers for Climate and Environment” initiative, which will facilitate exchanges among buyers committed to GPP implementation.

In this context, the new Action Plan introduces legislative and non-legislative measures targeting areas where action at the EU level brings real added value. In a nutshell, the measures that will be introduced under the new action plan aim to make sustainable products the norm in the EU, empower consumers and public buyers, ensure less waste, make circularity work for people, regions and cities and lead global efforts on circular economy. In addition to this, GPP elements are taken into consideration in sectors beyond the CE Action Plan, such as the EU energy efficiency directive and the Farm to Fork Strategy.

1. Circular Economy Action Plan: recent developments

A new vision for products in the EU by adopting a Sustainable Product Policy Framework is placed at the epicenter of the new CE Action Plan. Given that many products break down too quickly, cannot be easily reused, repaired or recycled, and many are made for single use only, the development of a new overarching framework addressing all products placed on the EU market, supporting more sustainable patterns of consumption and cutting waste generation, has emerged as a top priority. This framework aims to tackle both the fact that production processes in Europe are not resource efficient and lead to air, water and soil pollution, and that consumers do

not repair products or are overloaded with eco-labels, some of which might constitute misleading green claims.

In this context, the European Commission has decided to adopt a legislative proposal to ensure high environmental performance of all products and, to the extent possible and relevant, services on the EU market, by setting out sustainability principles and specific requirements linked to environmental and, where appropriate, social aspects. Within this Sustainable Products Policy Initiative the revision of the Eco-design Directive beyond energy related products is prescribed, while the presence of harmful chemicals in products such as electronics and ICT equipment, textiles, furniture, steel, cement and chemical is addressed. This initiative aims to improve durability, reusability, upgradability, reparability and energy-efficiency of products, restrict single-use and counter premature obsolescence, incentivise product-as-a-service and promote digitalisation, including digital product passports.

The Sustainable Products Policy Initiative will be developed in close coordination with other initiatives announced in the CE Action Plan, in particular the initiative on empowering consumers for the green transition and the initiative on the substantiation of environmental claims using product and organisational environmental footprint methods. Namely, concerning the former initiative, it aspires to address the lack of specific Union rules on key sustainability information for consumers by revising consumer law in order to ensure that consumers receive trustworthy and relevant information on products at the point of sale, including on their lifespan and the availability of repair services, spare parts and repair manuals. Beyond the establishment of the “right to repair,” emphasis is placed on further strengthening consumer protection against greenwashing and premature obsolescence through a legislative proposal to ensure companies substantiate their environmental claims using Product and Organisation Environmental Footprint methods.

The first initiative delivered under the new CE Action Plan is the Commission’s legislative proposal for a new Batteries Regulation published on 10 December 2020.⁴⁵ Given that every year, approximately 800.000 tons of automotive batteries, 190.000 tons of industrial batteries, and 160.000 tons of consumer batteries enter the European Union, and not all of these are properly collected and recycled at the end of their life, thus increasing the risk of releasing hazardous substances and leading to a waste of resour-

45 Proposal for a Regulation of the European Parliament and of the Council concerning batteries and waste batteries, repealing Directive 2006/66/EC and amending Regulation (EU) No 2019/2020, Brussels, 10.12.2020, COM(2020) 798 final.

ces, this new EU law aims to minimise batteries' harmful effects on the environment. The proposed rules cover batteries' full life cycle, from design and production to reuse and recycling. In line with other sustainability-related policies, this initiative would update EU rules to ensure that all batteries (especially those used in the growing market for electric vehicles) are produced sustainably (i.e. with low resource consumption and little waste generated), and can be easily recycled. According to Article 70 of the proposed regulation, contracting authorities of Member States shall adopt mandatory green public procurement criteria when procuring batteries or products containing batteries.

With respect to the end-of-life management, the CE Action Plan aims at preventing waste from being created in the first place and once waste has been created, requires it to be transformed into high-quality resources. To this end, the measures to be developed will focus on adopting specific waste reduction targets for more complex streams, enhancing the implementation of the requirements for EPR schemes, harmonising separate waste collection systems, reviewing the rules on waste shipments facilitating recycling or re-use within the EU,⁴⁶ and assessing the scope to develop further EU-wide end-of-waste criteria for certain waste streams. As regards the reduction of packaging waste in particular, the Commission will review the requirements on packaging and packaging waste in the EU, including the assessment on how to improve packaging design to promote reuse and recycling as well as increase recycled content in packaging. To this end, the introduction of minimum mandatory GPP criteria and targets for packaging is considered in order to tackle excessive packaging and reduce packaging waste.

II. EU energy efficiency directive

As already highlighted, under the European Green Deal, the Commission has committed to stronger action on climate change aiming to assess how the EU's greenhouse gas emissions could responsibly be reduced by at least 50% to 55% by 2030. As the efficient use of energy is key to achieving such a target, the revision of the EU Energy Efficiency Directive aims at further stimulating EU efforts to promote energy efficiency and achieve energy savings in the fight against climate change. This Commission proposal for a Directive (recast) published on 14 July 2021 and contributes to other European Green Deal initiatives. Based on the current energy efficiency directive

46 Proposal for a Regulation of the European Parliament and of the Council on shipment of waste and amending Regulation (EU) No 1257/2013 and (EU) No 2020/1056, Brussels, 17.11.2021, COM(2021) 709 final.

(2012/27/EU, amended in 2018 by Directive 2018/2002), the public sector must lead by example by renovating 3% of buildings owned and occupied by the central governments starting from 01 January 2014 and by including energy efficiency considerations in public procurement.

Furthermore, according to the latest legislative proposal,⁴⁷ Article 7 strengthens the public procurement provisions by extending the obligation to take into account the energy efficiency requirements by all public administration levels, and by removing conditionalities with regard to cost-effectiveness, technical and economic feasibility. The amendments will include a provision that Member States may require that public bodies consider where appropriate circular economy aspects and green public procurement criteria in public procurement practices. In addition to this, Member States will be required to support public bodies by providing guidelines and methodologies on the assessment of lifecycle costs, and by putting in place competence support centres and encouraging the use of aggregated procurement and digital procurement. Member States would be required to publish information on winning tenders (in line with the thresholds set out in the public procurement directives).

III. Proposal for a legislative framework for sustainable food systems (2023) within the Farm to Fork Strategy

The Farm to Fork Strategy published in May 2020 aims to make the EU food system fair, healthy and environmentally friendly, and has been hailed as a cornerstone of the European Green Deal. It is the first time in the history of EU food law that the Union has addressed food sustainability in a comprehensive manner, from primary production to the consumer.⁴⁸ The strategy includes ambitious and concrete targets on pesticides, fertilizers, organic farming and antimicrobial resistance to be achieved by 2030. In this context, the proposal for a legislative framework for sustainable food systems (FSFS) constitutes one of the flagship initiatives of the Farm to Fork Strategy. Namely, its goal is to accelerate and make the transition to sustainable food systems easier. It will also have as its core objective the promotion of policy coherence at EU level and national level, mainstream sustainability in all food-related policies and advocacy of strong and resilient food systems.

47 Proposal for a Directive of the European Parliament and of the Council on energy efficiency, Brussels, 14.7.2021, COM(2021) 558 final.

48 *Schebesta/Candel*, *Nature Food*, 2020, p. 586. Available at: Game-changing potential of the EU's Farm to Fork Strategy (nature.com).

The preparatory work, including the related impact assessment, that will precede the adoption of the legislative proposal by the end of 2023, will also cover the mandatory sustainability criteria for public procurement aiming to improve the availability and price of sustainable food options and to promote healthy and sustainable diets in institutional catering. More specifically, the Joint Research Centre's forthcoming work focuses on defining minimum mandatory EU GPP criteria together with nutritional/health and social criteria for sustainable food procurement in schools, hospitals and public institutions. In addition to this, the Commission will also review the EU school scheme to focus it on healthy and sustainable food and strengthen the educational messages on the importance of healthy nutrition, sustainable food production and reducing food waste.

E. Concluding remarks

In conclusion, the analysis in the previous sections has attempted to map out how the latest policy and legislative developments in the field of environmental protection constitute the driving forces in strengthening the role of public procurement as a regulatory compliance mechanism exceeding the simple act of buying a good or service. Given the predominant role of public authorities in mass consumption, it is apparent that they can use their power to structure the selection-process for goods, services and works in a way that would reduce the environmental impact and promote main environmental policy goals. This has been highlighted by the EU Green Deal, which aims at strengthening the role of the GPP as an environmental policy instrument, despite its limited uptake so far.

Even though the current EU Public Procurement regime opened the door for a potential transition towards a more operational integration of environmental considerations into the public purchasing, the existing legal uncertainties undermine EU legislator's good intention. Namely, the voluntary GPP uptake coupled with the wide scope of contracting authorities' discretion in pursuing environmental goals hampers any dynamic features aiming to increase implementation and enforcement. In addition to this, due to the legally ambiguous formulation of Article 18(2), the obligation of MS and contracting authorities to take appropriate measures to ensure that the economic operators comply with the enforceable requirements in the fields of environmental, social and labour law may turn into an idle declaratory policy statement.

In this context, the EU Green Deal focuses on how to ensure that social and environmental compliance constraints that are not inherent to the act

of buying are adequately deployed when shaping the buying decision. Being an overarching policy framework, which encompasses other policy areas such Sustainable Development, Circular Economy and Climate change, it calls for determined efforts for giving effect to the GPP in order to bring the realization of “smart, sustainable and inclusive growth” closer. Addressing this challenge and examining ways to empower the role of public procurement as a mechanism for supporting the EU environmental policy commitments, the new CE Action Plan, which targets how products are designed, promotes circular economy processes, encourages sustainable consumption, and aims to ensure that waste is prevented and the resources used are kept in the EU economy for as long as possible, emerges as the most dynamic policy framework in achieving this objective.

Bibliography

- van den Abeele, Integrating social and environmental dimensions in public procurement: one small step for the internal market, one giant leap for the EU?, Working Paper 2014.08, Brussels, 2014, Available at: <https://www.etui.org/publications/working-papers/integrating-social-and-environmental-dimensions-in-public-procurement-one-small-step-for-the-internal-market-one-giant-leap-for-the-eu>.
- Bogojević, Climate Change Law and Policy in the European Union, in Gray/Tarasofsky/Carlarne (eds), *The Oxford Handbook of International Climate Change Law*, OUP, 2016, pp. 671-688.
- Chiappinelli/Zipperer, Using public procurement as a decarbonization policy: a look at Germany, *DIW Economic Bulletin*, 49.2017, pp. 523-533.
- Correia/Howard/Hawkins/Pye/Lamming, Low Carbon Procurement: An emerging agenda, *Journal of Purchasing and Supply Management*, 19(2013), p. 58-64.
- Dragos/Neamtu, Sustainable Public Procurement: Lifecycle in the New EU Directive Proposal, *EPPPL*, 1/2013, pp. 22-24.
- Fisher, The power of purchase: Addressing Sustainability through public procurement, *European Procurement and Public Private Partnership Law*, 1/2013, pp. 1-7.
- Litardi/Fiorani/Alimonti, The State of the Art of Green Public Procurement in Europe: Documental Analysis of European Practices, in Brunelli/Di Carlo (eds.), *Accountability, Ethics and Sustainability of Organizations - New Theories, Strategies and Tools for Survival and Growth*, Springer, 2020, pp. 175-192.
- Martinez-Romera/Caranta, EU Public Procurement Law: Purchasing Beyond Price in the Age of Climate Change, *EPPPL*, 3/2017, p. 291.
- Melon, More than a Nudge? Arguments and Tools for Mandating Green Public Procurement in the EU, *Sustainability*, (12)2020, pp. 1-24.

- Nikolaou/Loizou, The Green Public Procurement in the midst of the economic crisis: is it a suitable policy tool?, *Journal of Integrative Environmental Sciences*, vol. 12, No 1, 2015, p. 49-66.
- Schebesta, Revision of the EU Green Public Procurement Criteria for Food Procurement and Catering Services – Certification Schemes as the main determinant for Public Sustainable Food Purchases? *European Journal of Risk Regulation*, 9 (2018), p. 319.
- Schebesta, “EU Green Public Procurement Policy Modernisation Package, Eco-Labeling and Framing Measures”, in *Schoenmakers/Devroe/Philipsen* (eds), *State Aid and Public Procurement in the European Union*, Intersentia 2014.
- SIGMA, Incorporating Environmental Considerations into Public Procurement, Brief 13, 2016, Available at: <http://www.sigmaxweb.org/publications/Public-Procurement-Policy-Brief-13-2016.pdf>.
- Thai (ed.), *Global Public Procurement Theories and Practices*, Springer, 2017.
- Weatherill*, EU Law on Public Procurement: Internal Market Law made better, in *Bogoevic/Groussot/Hettne*, *Discretion in EU Public Procurement*, Hart Publishing, 2019.
- ZeroWaste Europe, *Redesigning Producer Responsibility – A new EPR is needed for a circular economy*, 2015.
- Schebesta/Candel, *Nature Food*, vol. 1, October 2020, p. 586-588. Available at: [Game-changing potential of the EU’s Farm to Fork Strategy \(nature.com\)](https://www.nature.com/articles/s43773-020-00000-0).

Migration

Lisa-Marie Hartwig*

Climate Refugees – Current or future issue in Society and Law?

On 13 November 2021, the COP26 ended in Glasgow. Thousands of delegates from almost 200 countries came to Scotland. The 26th UN Climate Change Conference was about the further implementation of the Paris Climate Agreement, which should limit global warming to 1.5 degrees. The "Glasgow Climate Pact" adopted an explanation regarding commitments of the signatory states to a "phase down" on the use of coal energy as well as inefficient subsidies for fossil fuels. Although the conference also made financial aid an issue, the precise design of the aid for adaptative measures was not considered.

While the world's governments are mainly concerned with reducing greenhouse gases, climate change is robbing more and more people of their living space. Natural disasters such as drought or heavy rain result in crop losses which lead to poverty and hunger. As a result, the number of people, who initially flee to neighboring regions and then seek refuge in other, rich countries is also increasing.

A World Bank report from 2021 estimates that 216 million people will be forced to migrate to temperate areas by 2050.¹ Their existence depends on agriculture and natural resources; however, the affected countries lack the financial resources to protect these resources and put in place necessary climate adaptations. Comparing this figure with those from the so-called "refugee crisis" in 2015: around one million people migrated to Europe from Syria, Iraq and Afghanistan. This stream of refugees alone gave rise to social and legal conflicts.

I. Definitions of Climate Flight

There is still no standardized legal definition for refugees who are forced to leave their home country due to climatic or environmental factors.² The first step is to distinguish between environmental refugees in general and migrants due to political persecution. In international refugee law, "environmental refugees" were first mentioned as a generic term for migration due

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1 World Bank, Report: Groundswell Part 2: Acting on Internal Climate Migration, 2021, p. 80.

2 Brouers, ZUR 2012, p. 81, 82.

to climactic conditions in a report by the United Nations Environmental Program in 1985.³ Environmental refugees are therefore "people who have been forced to leave their traditional habitat, temporarily or permanently because of marked environmental disruption (natural and/or triggered by people) that jeopardized their existence and/or seriously affected the quality of their life".⁴ These are people who have to leave their homes due to "natural disasters".⁵ This first definition raises some unanswered questions: do people migrate voluntarily or involuntarily, permanently or temporarily; does the underlying environmental disaster happen suddenly or gradually; was it anthropogenic or was it caused by natural influences; and does a granted refugee status in this context only protect the individual or also his family and relatives?⁶

The term environmental catastrophe, on the other hand, is to be viewed as an all-encompassing one. Environmental disasters may trigger migration regardless of whether or not they are anthropogenically caused, climate-related disasters, so-called "man-made disasters".⁷ Climate change as a root cause of climate migration therefore requires a narrower definition.⁸ The colloquial term "refugee" is widespread and appears to be justified at this point. However, if you look at the legal level, there is a wide variety of terms, for example climate migrants or climate refugees.⁹ The various terms are mostly used synonymously.¹⁰ Because of this, a precise legal definition proves to be particularly difficult.

Climate-induced migration is related to a creeping ("slow-onset") or an abrupt ("sudden-onset") process of deterioration in natural living conditions caused by natural phenomena.¹¹ This cause of migration can only be ascribed to climate change in the rarest of cases. When in doubt, it is directly related to other factors, such as economic factors.¹² Biermann

3 See *El-Hinnawi*, Environmental Refugees, 1985.

4 *El-Hinnawi*, Environmental Refugees, 1985, p. 4.

5 UNHCR, Climate change, natural disasters and human displacement: a UNHCR perspective, 2008, p. 9; also: *Nümann*, ZAR 2015, p. 165, 167.

6 *Brouers*, ZUR 2012, p. 81, 82.

7 *Ammer/Nowak/Stadlmayr/Hafner*, Rechtsstellung und rechtliche Behandlung von Umweltflüchtlingen, 2010, p. 26; *IOM*, World Migration Report 2010, p. 74; also: *Nümann*, ZAR 2015, p. 165, 167; *Brouers*, ZUR 2012, p. 81, 82.

8 After: *Hanschel*, ZAR 2017, p. 1, 2.

9 *Hanschel*, ZAR 2017, p. 1, 2 et seq.

10 *Zerger*, ZAR 2009, p. 85, 87.

11 To distinguish between "slow-" and "sudden-onset" take a look at: *Kälin*, in: McAdam, Climate Change and Displacement, pp. 84 et seq.

12 *Hanschel*, ZAR 2017, p. 1, 2.

and Boas' 2010 definition, which is widespread in literature, names this group of people as “climate refugees”.¹³ This includes people, “who have to leave their habitats, immediately or in the near future, because sudden or gradual alterations in their natural environment related to at least one of the three impacts of climate change: sea-level rise, extreme weather events, and drought and water scarcity”.¹⁴ The group of people affected is determined on the basis of scientific findings, in particular the IPCC reports.¹⁵ Reasons for migratory movements that can specifically be traced back to climate change are therefore tropical cyclones, the rise in sea levels and the drought caused by water scarcity and warming of the earth's surface.¹⁶ A causality with regard to climate change cannot be assumed for all environmental events.¹⁷ For the rise in sea level, this can be answered in the affirmative at this point in time.¹⁸

From today's perspective, climate change is seldom the only reason for migration and flight. Rather, there is an interplay of various individual reasons. A clear differentiation seems impossible.¹⁹ The distinction between climate-induced and environmental migration is relevant on a legal level. It serves a better understanding of different causes. But it is not substantial for those affected, as they are forced to leave their homes for various reasons. Possible protective mechanisms should therefore be developed and applied independently of a direct causation by climate change.

II. International and regional refugee Law

In terms of articulating an appropriate cultural and political response to climate-related migration, it seems natural to seek solutions in the international refugee law. In the following, we will distinguish between climate-induced domestic migration and international migration.

13 *Biermann/Boas*, Preparing for a Warmer World, p. 8.

14 *Biermann/Boas*, Preparing for a Warmer World, p. 8; also: *Nümann*, ZAR 2015, p. 165, 166.

15 See *Nümann*, ZAR 2015, p. 165, 167.

16 *IPCC*, special report 2021, p. 42.

17 The problem of causality shall not be considered in more detail at this point: in detail on the problem of causality in the case of climate damage *Frank*, NVwZ 2018, pp. 960; also *Frank*, NVwZ 2019, p. 529, 531.

18 *Frank*, NVwZ 2019, p. 529, 531.

19 *Hanschel*, ZAR 2017, p. 1, 2; also: *Welzer*, Klimakriege, 2008; *Bittner*, Die Klima- Kriege, 2007.

1. Refugee Law of the Geneva Refugee Convention - International Migration

The displacement of people from their home countries will be a central problem of climate change. Migrants will flee into temperate areas of the world. This is called international migration. International refugee law is based primarily on the Agreement on the Legal Status of Refugees from 1951 (Geneva Refugee Convention, hereafter 'GRC') in conjunction with the 1967 Protocol on the Legal Status of Refugees. The European Union has also obligated itself to comply with these.²⁰

The term refugee is defined in Art. 1A No. 2 GRC in conjunction with Art. 1 of the Protocol as follows: A refugee is anyone who has a "well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; (...)" A high level of protection for people who fall under it can be derived from this definition. However, it is subject to limitations of scope, which will be discussed in the following parts.

a) Fear of Persecution – "forces of nature"

It should be noted that the protection provided by the GRC requires crossing national borders.²¹ Refugees who are forced to flee within the state borders of their home state are not covered by the protection.²² Furthermore, climate catastrophes are problematic in terms of a positive argument regarding the cause of flight, the requirement of fear of persecution required by the convention.²³ Historically, the GRC has a special exclusive relationship to the preconditions for persecution.²⁴ The focus here is on the persecutor's political motivation. Human behavior or omission is therefore essential for this requirement to be met.²⁵ Environmental changes are "forces of

20 Art. 78 TEU, Art. 18 GRCh and especially the Council Directive 2001/55/EC of July 20th 2001.

21 Art. 1A No. 2 GRC.

22 *Nümann*, ZAR 2015, p. 165, 167.

23 Art. 1A No. 2 GRC.

24 See Supreme Court of Canada, Canada (Attorney General) v. Ward, [1993] 2 S.C.R. 689; High Court of Australia, A. v. Minister for Immigration & Ethnic Affairs [1997] HCA 4; also: *Nümann*, ZAR 2015, p. 165, 168.

25 *Zimmermann*, The 1951 Convention Relating to the Status of Refugees and its 1967 Protocol, Art. 1A No. 2, para. 568; also: *Brouers*, ZUR 2012, p. 81, 83.

nature",²⁶ making the satisfaction of this prerequisite problematic, given the lack of an actor or human activity that triggers the flight.²⁷ Similarly, environmental changes do not create fear of persecution.

This line of reasoning was followed by the New Zealand High Court in 2013, which did not recognize the prerequisite for individual persecution in the case of environmental migration.²⁸ There is no “ongoing systematic violation of fundamental human rights”.²⁹

b) Fear of persecution – Behavior contributing to Climate Change

A similar picture emerges when someone is persecuted by behavior that contributes to climate change. Global warming is due to the interaction of all global greenhouse gas emissions.³⁰ The international community as a whole is responsible for the anthropogenic climate change.³¹ Every state that contributes to global warming would be an actor. The refugee status according to the GRC is also to be rejected due to the wording of Art. 1 A GRC. The industrialized countries and thus the host countries themselves make a significant contribution to climate change. They too are actors and persecutors of the refugees.³² Furthermore, a specific allocation of anthropogenic emissions to individual countries is impossible.³³ The Convention imposes a protective function on the host third country, but this is not the case here.³⁴ A systematic interpretation of the Convention does not come to a different conclusion.³⁵ The historical formation of the GRC

26 See RRTA, N97/13305 [1997] 1731, S. 9f; RRTA, N99/30231 [2000] 17, S. 4; RSAA NZ, Refugee Appeal No. 72185/2000, S. 5; Nümann, ZAR 2015, p. 165, 168.

27 Nümann, ZAR 2015, p. 165, 168.

28 *Supreme Court of New Zealand, Ioane Teitiota v. The Chief Executive of the Ministry of Business*, July 20th, 2015, [2015] NZSC 107, paras. 12 et seq.

29 *Supreme Court of New Zealand, Ioane Teitiota v. The Chief Executive of the Ministry of Business*, July 20th, 2015, [2015] NZSC 107, paras. 12 et seq; Nümann, ZAR 2015, p. 165, 169.

30 Nümann, ZAR 2015, p. 165, 169.

31 New Zealand High Court, *Teitiota v. Chief Executive of the Ministry of Business, Innovation and employment* [2013] NZHC 3125 para. 55; RRTA, 0907346 [2009] 1168, paras. 51 et seq.

32 See *McAdam*, MelbJIL 579, 592; *McAdam*, *Climate Change and Displacement*, 2010, p. 2; Nümann, ZAR 2015, p. 165, 169.

33 According to the rejection of the qualified accountability of the effects of climate change: cf. UNHRC, Report on the relationship between climate change and human rights, para. 96; Nümann, ZAR 2015, p. 165, 169.

34 See *Zimmermann*, *The 1951 Convention Relating to the Status of Refugees and its 1967 Protocol*, p. 281, 347; Nümann, ZAR 2015, p. 165, 170.

35 *Hanschel*, ZAR 2017, p. 1, 3.

refugee definition must also be considered. In post-war Europe, following the Second World War, the focus was primarily on political persecution.³⁶ Environmental refugees and climate refugees were explicitly not included in the convention.³⁷ If one looks at the genesis of this international treaty, it can be seen that environmental refugees have been seen, but the definition has not been expanded.³⁸ The teleological interpretation based on Article 31, Paragraph 1 of the Vienna Convention (according to which treaties should be given their ordinary meaning in the light of their context and purpose) does not lead to a different conclusion either.

c) Fear of Persecution – Behavior in response to environmental changes

A small group of climate refugees can still be granted refugee status according to the GRC. If political persecution is implicated in official behavior in response to environmental changes, such as, for example, government aid to certain groups of people being denied,³⁹ Relief and repair measures can lead to an unbalanced distribution of aid. The media is currently focusing on the renewed seizure of power by the Taliban in Afghanistan. In addition to the discussion about politically motivated persecution, famine and water crises, which threaten around 90% of the population, cannot be ignored.⁴⁰ The Afghanistan conflict illustrates that the increase in climate-related scarcity of resources and the failure of aid can, in combination, lead to both internal migration and international flight. In this context, it must be considered that refugee status per se is not sufficient to be accepted in the country of arrival. Further explanations in this regard would lead too far at this point.

The UN Human Rights Office emphasized in January 2020 that climate refugees should not be denied the right to asylum.⁴¹ Climate issues should be regarded as a potentially relevant factor in asylum procedures in the future and should be considered.⁴² In this respect, the decision of the UN Human Rights Committee in Geneva in relation to the judgment of the

36 *Brouers*, ZUR 2012, p. 81, 83.

37 *Brouers*, ZUR 2012, p. 81, 83.

38 *Brouers*, ZUR 2012, p. 81, 83; in addition to this: Preparatory work according to Art. 32 of the Vienna Convention on the Law of Treaties.

39 See RRTA, N94/05599 [1995] 488; RRTA, N96/12893 [1996] 992; RRTA, N96/05583 [1997] 1798; RRTA, N97/14406 [1997] 3626; RRTA, 0806395 [2008] 476; also: *Nümann*, ZAR 2015, p. 165, 170.

40 *Tagesthemen*, Die Not der Menschen in Afghanistan, September 13th, 2021.

41 *Zeit-Online*, Urteil: Klimaflüchtlinge, 2020.

42 *Zeit-Online*, Urteil: Klimaflüchtlinge, 2020.

New Zealand High Court was described as "historic",⁴³ but for the time being, climate issues alone are not sufficient grounds under the GRC for acceding refugee status to those who flee their effects.⁴⁴

Accordingly, cross-border environmental or climate refugees are regularly not granted protection by the GRC. This is reinforced by the requirement, noted earlier, that the putative refugee show they are in fear of persecution (deriving from political or cultural factors of some kind).

2. Internal Migration – Examples around the world

Notwithstanding ongoing efforts to limit the amount and effects of future global warming, it is apparent that there are already today extreme weather events and hot regions around the world that make it impossible to inhabit and manage them. In most cases, migration will be limited to resettlement in one's own territory.⁴⁵ This is obvious because there are fewer legal and socio-economic hurdles. This type of migration is called internal migration.⁴⁶

In the area of internal migration, the concept of European law is shaped by international law. In 1998 the so-called Guiding Principles on Internal Displacement of the UN emerged. These explicitly record "natural and man-made disasters" as reasons for emigration.⁴⁷ The Guiding Principles contain a useful set of rules for dealing with climate related migration within a territory, but they have no legally binding effect.⁴⁸

The Cartagena Declaration for Central America contains similar regulations for internal migration in Central America.⁴⁹ It has no legally binding effect either. Unlike the Guiding Principles, it is recognized as regional

43 *Zeit-Online*, Urteil: Klimaflüchtlinge, 2020.

44 *Zeit-Online*, Urteil: Klimaflüchtlinge, 2020.

45 See et al. EACH-FOR, Synthesis Report, p. 72.

46 Among others: *Zerger*, ZAR 2009, p. 85, 86.

47 Introduction para. 2 GP; *Nümann*, ZAR 2015, p. 165, 170 et seq.; also: *Hanschel*, ZAR 2017, p. 1, 3.

48 *Hanschel*, ZAR 2017, p. 1, 4; also: *Nümann*, ZAR 2015, p. 165, 171; *Brouers*, ZUR 2012, p. 81, 84.

49 *Brouers*, ZUR 2012, p. 81, 84.

customary law^{50,51} The Organization of American States recognizes its definition of refugee as territorially binding.⁵²

The so-called Nansen Initiative, which contains protective mechanisms for refugees exists on the European continent since 2012.⁵³ Since it was founded in Switzerland and Norway, it has set itself the goal of improving the protection of people who must emigrate from their homeland due to natural disasters. Their protection agenda contains, among other things, regulations for the protection of “people displaced across international borders by natural hazards, including the effects of climate change”.⁵⁴ A legally binding implementation, both at national and international level, has so far been lacking.

But legally binding protection for environmental refugees is already granted in some parts of the world. The African Union Convention on the Protection and Assistance of Internally Displaced Persons in Africa⁵⁵ is particularly exemplary.⁵⁶ Since it came into force in 2012, it has included an obligation to take measures “to protect and assist persons who have been internally displaced due to natural or human made disasters including climate change”.⁵⁷

3. *Statelessness caused by Climate Change*

In the future, climate disasters can also affect entire national territories. Due to the rise in sea level, causally attributable to climate change, small island states which are located a little above the sea level can disappear completely below it. If the global temperature rises indefinitely, entire territories will inevitably be lost. That is why the existence of island states is seriously threatened.⁵⁸ The loss of states not only leads to conflicts with the state population, but also to international conflicts under maritime law, which

50 According to Article 38 (1) (b) ICJ Statute, customary international law is one of the unwritten sources of international law; similar to general international law, it regulates legal relationships between the subjects of international law connected by treaty.

51 *Brouers*, ZUR 2012, p. 81, 84.

52 *McAdam*, Climate Change and Displacement, p. 38; *Arboleda*, Refugee Definition in Africa and Latin America: The Lessons of Pragmatism, p. 185, 187.

53 More details on the Nansen initiative: www.nanseninitiative.org.

54 *Nümann*, ZAR 2015, p. 165, 171.

55 Also called Kampala Convention.

56 *Hanschel*, ZAR 2017, p. 1, 4; also: *Nümann*, ZAR 2015, p. 165, 171.

57 Art. 5 para. 4, Art. 12 para. 2 Kampala Convention.

58 See *Hanschel*, ZAR 2017, p. 1, 4; *Nümann*, ZAR 2015, p. 165, 166.

lead to the shifting of baselines and other territorial disputes. But at this point the focus shall remain on the resettlement of populations.

In this context, Jellinek's three-element doctrine of the state from 1914 is particularly relevant for the protection of stateless persons. According to this, a state consists of three elements: state authority, state people and state territory.⁵⁹ It should be noted, that the flight of parts of the population does not cause a statelessness of the whole population. The question arises as to whether a state continues to exist if it can no longer be assigned a sovereign territory. To explain the legal status of a stateless population, international law has to be taken into account. The 1954 Convention on the Legal Status of Stateless Persons based on the Geneva Convention on Refugees contains corresponding regulations.⁶⁰ If a state loses its sovereign territory, the individual who moves elsewhere has at least subjective rights.⁶¹ For those affected, this includes protection against expulsion, the facilitation of naturalization and further minimum standards in the host country.⁶²

III. International Human Rights

Refugee law does not provide any real protection for refugees due to climate change. But a protection of those could be required by human rights.

First, there is arguably an incipient, if not yet unified, human right to a healthy environment.⁶³ Such is demanded more and more vehemently not only in law but also in society. However, other basic human rights could also be violated by climate disasters. At the European level, the relevant standards can be found in the European Convention on Human Rights.⁶⁴ A violation of the right to life⁶⁵ and the right to respect for private and family life⁶⁶ come into consideration here. A state protection obligation in

⁵⁹ *Jellinek*, Allgemeine Staatslehre, pp. 396 et seq.

⁶⁰ Convention on the Status of Stateless Persons v. 9/28/1954, 360 UNTS 117.

⁶¹ Regarding the individual subjective rights: Art. 4, 13, 15, 16, 17, 22, 31, 32 Convention on the Status of Stateless Persons.

⁶² *Hanschel*, ZAR 2017, p. 1, 4.

⁶³ European Court of Human Rights, 2005 – 55723/00, June 9th, Fadeyeva/Russia, para. 68; *Meyer-Ladewig*, in: Meyer-Ladewig/Nettesheim/von Raumer, EMRK, Art. 8, para. 45.

⁶⁴ Short: ECHR

⁶⁵ Art. 2 ECHR; for this: European Court of Human Rights, 36022/97, July 8th, 2003, Hatton et al./United Kingdom, NVwZ 2004, p. 1465.

⁶⁶ Art. 8 ECHR; for this: European Court of Human Rights, 15339/02, March 20th, 2008, Budayeva et al./Russia; European Court of Human Rights, 48939/99, November 30th, 2004 Öneriyildiz/Turkey.

this regard is associated with some difficulties. Basically, since human rights are territorially oriented, their *de lege lata* extraterritorial effect is limited.⁶⁷ Each subordinate state is only obliged to protect its own population.⁶⁸ An obligation of one European Member state is primarily limited to the domestic area. Foreign refugees are therefore not entitled to the protection of the European Convention on Human Rights.

IV. European Secondary Law

The European Union's Qualification Directive⁶⁹ also only obliges member states to a limited extent to grant protection to environmental refugees. Art. 15 (a) and (b) of the Directive are to be understood as a ban on deportation due to environmental changes if they threaten the right to life or the requirements of Art. 3 ECHR.⁷⁰

The situation is similar with the Directive on minimum standards for the granting of temporary protection in the event of a mass influx of displaced persons,⁷¹ i.e. persons “who have had to leave their country or region of origin or, in particular, have been evacuated after a corresponding appeal by international organizations and because of the situation prevailing in that country, cannot return safely and permanently”. Here, protection for “environmental refugees” is severely limited due to the temporary granting of protection for a maximum of three years. This is even more serious because it is at the discretion of the member states, which have to come to a

⁶⁷ See *Hanschel*, ZAR 2017, p. 1, 5.

⁶⁸ *Hanschel*, ZAR 2017, p. 1, 5.

⁶⁹ Directive 2004/83/EC of April 29th, 2004 on minimum standards for the recognition and status of third-country nationals or stateless persons as refugees or as persons who otherwise need international protection, and on the content of the protection to be granted, OJ EC L 304, p. 12.

⁷⁰ Kolmannskog/Myrstad, in: Brill/Nijhoff, *European Journal of Migration and Law* vol. 11 No. 4 (2009), p. 313, 322; *Kreck*, *Kritische Justiz* vol. 44, No. 2 (2011), p. 178, 183.

⁷¹ Directive 2001/55/EC of July 20th, 2001 on minimum standards for granting temporary protection in the event of a mass influx of displaced persons and measures to promote a balanced distribution of the burdens associated with the reception of these persons and the consequences of such reception among the Member States, OJ EC L 212, p. 12; *Kreck*, *Möglichkeiten und Grenzen des rechtlichen Schutzes für Umweltflüchtlinge*, *Kritische Justiz*, p. 178, 183.

joint decision.⁷² This Directive therefore does not grant any direct individual right, either.

V. International Environmental Law

International environmental law also does not contain an explicit obligation to protect climate migrants. Directly there neither is a protection through the precautionary-⁷³ nor the polluter pays principle.⁷⁴ However, the principles can be considered by way of interpretation.⁷⁵

The quasi-universal, fundamental frame of reference of international environmental law is the United Nations Framework Convention on Climate Change,⁷⁶ which arose from the Rio Declaration of 1992. At this point, the signatory states recognized a joint, shared responsibility for anthropogenic climate change and established a framework for combating it, through a reduction in greenhouse gas emissions and possible adaptation measures.⁷⁷ This convention also stressed the desirability for a particularly high level of protection for developing countries.⁷⁸

1. The Paris Agreement

The Paris Agreement, which came into force in 2016, has been a particular focus since 2015. The logical consequence of all-encompassing regulations on dealing with climate change would be a substantive discussion and legal assessment of the status of climate migrants. The Paris Agreement does not contain such regulations. It does indeed make "loss and damage" an issue and regulates adaptation measures to climate change; liability issues regarding climate migration are, however, left open.⁷⁹ Dealing with climate refugees remains a question of interpretation of the general state responsibility,⁸⁰ based on Article 31 § 3 lit. c) of the Vienna Convention.⁸¹ In this

72 Kolmannskog/Myrstad, in: Brill/Nijhoff, *European Journal of Migration and Law* vol. 11 No. 4 (2009), p. 313, 318; *Kreck*, *Kritische Justiz* vol. 44, No. 2 (2011), p. 178, 183.

73 Principle 15 of the 1992 Rio Declaration in conjunction with Art. 3 para. 3 UNFCCC.

74 Art. 2 para. 2 PA.

75 *Frank*, *ZUR* 2016, p. 352, 354.

76 UNFCCC (1994).

77 See preamble and Art. 3 paras. 1, 2, 3 UNFCCC.

78 See preamble and Art. 3 paras. 1, 2, 3 UNFCCC.

79 Art. 8 para 1 PA.

80 „State responsibility“.

81 *Frank*, *ZUR* 2016, p. 352, 354.

context, climate refugees are at least subsidiarily or indirectly protected. The contributing states share the responsibility for the anthropogenic climate change.⁸² A right to appropriate help would arise from §§ 4, 5 and 7 of the preamble in conjunction with Article 4, Paragraph 15 of the Paris Convention. Section 11 of the preamble explicitly names migrants.

In addition, the host countries are obliged to cooperate in international efforts to reduce greenhouse gas emissions and to take appropriate adaptation measures.⁸³ An interpretation of the provisions of the Paris Agreement could lead to the result that individual host countries would not have to accept all climate refugees on their own, since they are only partially responsible for climate change.⁸⁴ However, they committed to take appropriate measures, which might be read to include taking in people displaced from their home countries by climate change.⁸⁵ The European principle of promoting fairness and solidarity between the individual member states must also be interpreted in this way.⁸⁶ In emergency situations, the ECJ decided in 2017 regarding Art. 78 Para. 3 TFEU, that when distributing refugees, it is necessary to consider the principle of solidarity and the equitable division of the responsibilities of the member states according to Art. 80 TFEU.⁸⁷ Even so, approaching the protection of climate refugees based on general principles of this kind (not closely related to climate-related flight) is problematic.⁸⁸ Exemplarily the burden on the Federal Republic of Germany with regard to the admission of refugees is high, stresses Frenz 2021.⁸⁹ A human rights-compatible climate flight policy should here arguably also help the countries of origin counteract threatened population loss through appropriate climate change adaptation strategies, taking into account the resources available to them. The industrialized countries⁹⁰ should play a supportive role here by guaranteeing a transfer of finance⁹¹ and technology.⁹² In addition, a refugee-friendly interpretation of the Paris Agreement already requires border openings, a distribution of climate refugees in accordance

82 *Frank*, NVwZ 2019, p. 529, 531.

83 *Hanschel*, ZAR 2017, p. 1, 3.

84 *Frank*, NVwZ 2019, p. 529, 533.

85 *Frank*, NVwZ 2019, p. 529, 533.

86 Art. 2 para. 2 EU Climate Act.

87 ECJ, C-643/15 ECLI:EU:C:2017:631, Slovakia/Council, September 6th, 2017, paras 253, 291, 304, 323.

88 Frenz, EnWZ 2021, p. 201, 204.

89 Frenz, EnWZ 2021, p. 201, 204.

90 In this context, these are usually also host countries.

91 § 6 preamble in conjunction with Art. 2 para. 1 lit. c) PA.

92 Art. 4 para. 19 PA.

with the respective contribution of the industrialized countries to climate change, and financial support among each other.

VI. The EU Green Deal

Considering the topic of the conference proceedings, the EU Green Deal should also be mentioned here. The "Fit for 55" program should also include the social context as a comprehensive regulatory framework for the European act of transformation.

Recently, in the summer of 2021, the European Parliament and the European Council passed Regulation (EU) 2021/1147 to set up an Asylum, Migration and Integration Fund,⁹³ which should support the previous mentioned Directives and strengthen the European Union's migration law. However, while the 67th recital of this Regulation recognises the problem of environmental and climate events, the definitions of terms in its Art. 2 only refer to the norms already mentioned in European migration law.

In this regard, the "Fit for 55" package fails not only to contain any legally binding regulations on wider social aspects of climate change, but also to address the important questions about climate flight.

VII. Social Aspects

The social acceptance of climate refugees can be illustrated and compared particularly clearly with the so-called "refugee crisis" in Europe, 2015. This example shows that there is a fundamentally hostile attitude especially towards foreign groups. Right-wing populism embraces this fear, both in European countries and in other parts of the world. The nationalist movements propagate a potential threat to cultural values from foreign migrants and thereby make clear the need to strengthen one's own population. This way, the refugee issue is emotionalized. One might easily assume that these prejudices exist not only against politically persecuted people or refugees for economic reasons, but also against climate refugees.

In fact, the 2019 project "Climate Change Impacts on Migration and Urbanization" (Impetus)⁹⁴ of the Potsdam Institute for Climate Impact Re-

93 Regulation (EU) 2021/1147 of the European Parliament and of the Council of 7 July 2021 establishing the Asylum, Migration and Integration Fund, Official Journal of the European Union, L 251/1.

94 The Project was funded by Leibniz Association and runned from 03/2018 to 08/2021.

search (PIK), the Berlin Social Science Center (WZB), the Research Institute for Regional and Urban Development (ILS) and the City University of New York (CUNY) showed instead that climate refugees have a higher social standing than other refugee groups in society. Among other things, this may be because their reason for fleeing is seen as “legitimate”⁹⁵ However, it could also reflect the absence to date of systematic discussion at the public level, due to the lack of generally direct, strong effects of climate change.⁹⁶

In particular, the latter does not occur as suddenly as a war caused by political or religious reasons. Here, the current political discourse sees climate flight as a future problem that does not yet require any control. A low public disapproval thus may have less to do with the legitimacy of their cause than simply that so far climate refugees do not present a large-scale social phenomenon. The fear of the new, including cultural or social changes, is not exclusively dependent on the reasons for flight.

VIII. Conclusion and Outlook

According to the IOM in its 2020 report, as early as 2018 there were some 17.2 million climate refugees globally.⁹⁷ As it pointed out:

“There has been growing recognition in recent years of the need to better integrate migration into global climate and environmental mechanisms, and for climate change mechanisms to incorporate human mobility aspects. The places people currently live and work in are under increasing pressure from environmental and climate change. Migration, displacement and planned relocation are capturing increased attention from research, policy and practice as people attempt to move away from stress and risk, and towards safety or opportunity. (...) The literature and cases examined in this chapter indicate a need for research, policy and practice on which adaptive options can help people move towards well-being even in the face of growing environmental and climate risks. (...) The importance of environmental, climate change and disaster drivers will continue to be a key area for future research and policy developments in the international migration governance debate. The reality of how slow and sudden-onset hazards impact people’s livelihoods and influence their migration strategies, as much as the signifi-

95 Helbling, Attitudes towards climate change migrants, Climatic Change 2020 No. 1, p. 89, 91.

96 Helbling, Attitudes towards climate change migrants, Climatic Change 2020 No. 1, p. 89, 98.

97 IOM, World Migration Report 2020, PUB2019/006/L WMR 2020, p. 45.

cance of the political questions around migration and climate change issues will continue to position environmental migration at the forefront of these debates."⁹⁸

The focus of current and future governments is largely on mitigating climate change. As part of this, the resulting refugee flows should also be named. IOM pointed out that there is already a political debate, but this has to be intensified as the problems relating to climate change are increasing. It is correctly recognized that a humanitarian approach to support potential refugees would initially be to equip people in threatened regions with the aids they need to protect themselves from disasters. In the future, larger adaptative measures will become necessary due to the enormous number of refugees. In this respect, it is not only a question of responding to slowly advancing climate change, but also to effects that in some cases, are not slowly advancing (like the rise in sea level), but rather are abrupt and sudden, like hurricanes or heavy rain events, and can trigger migratory flows.

Climate change already affects people now and it is not sufficient to view this as solely a "future issue". In fact, the number of people fleeing will further increase in line with climate change in the coming decades. Adaptative options must be found for the even bigger challenges in the future. Climate refugees are both a present and future issue in law and society. Legal uncertainty and problems that may occur with social acceptance could be reduced through appropriate readjustments at European level. This also applies to the level of international law. Already Antonio Guterres, currently the UN Secretary-General, said that "we can't deter people fleeing for their lives. They will come. The choice we have is how well we manage their arrival, and how humanely."⁹⁹

Bibliography

- Ammer/Nowak/Stadlmayer/Hafner, Studie: Rechtsstellung und rechtliche Behandlung von Umweltflüchtlingen, Texte Umweltbundesamt 54/2010, 2010.
- Arboleda, Refugee Definition in Africa and Latin America: The Lessons of Pragmatism, in: International Journal of Refugee Law, 1991.
- Biermann/Boas, Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees, Massachusetts, 2010.
- Biermann/Boas, Für ein Protokoll zum Schutz von Klimaflüchtlingen – Global Governance zur Anpassung an eine wärmere Welt, Vereinte Nationen 01/2008, pp. 10 et seq.

⁹⁸ IOM, World Migration Report 2020, PUB2019/006/L WMR 2020, pp. 268 et seq.

⁹⁹ Time Magazine, "U.N. Refugee Chief: Europe's Response to Mediterranean Crisis Is 'Lagging Far Behind'", 2015.

- Bittner, Die Klima-Kriege, DIE ZEIT, may 2007.
- Brouers, Der Schutz der Umwelt- und Klimaflüchtlinge im Völkerrecht: Regelungslücken und Lösungsansätze, ZUR 2012, pp. 81 et seq.
- EACH-FOR, Synthesis Report: Civil-Military Relations in International Operations – A Danish Perspective, DIIS Report, april 2009.
- El-Hinnawi, Essam, Environmental Refugees, United Nations Environment Programme, Nairobi 1985.
- Frank, Klimabedingte Migration – Anmerkungen zum Vorschlag des WBGU zur Einführung eines „Klimapasses“, NVwZ 2019, pp. 529 et seq.
- Frank, Klimawandel – (auch) juristisch keine Blackbox, NVwZ 2018, pp. 960 et seq.
- Frank, Anmerkungen zum Pariser Klimavertrag aus rechtlicher Sicht – insbesondere zu den „(I)NDCs“, der 2°/1,5° Celsius-Schwelle und „loss and damage“ im Kontext völkerrechtlicher Klimaverantwortung, ZUR 2016, pp. 352 et seq.
- Frenz, Klimaschutz nach BVerfG-Beschluss und EU-Klimagesetz, EnWZ 2021, pp. 201
- Hanschel, Klimaflüchtlinge und das Völkerrecht, ZAR 2017, pp. 1 et seq.
- Helbing, Attitudes towards climate change migrants, Climatic Change 2020 No. 1, pp. 89 et seq.
- International Organisation for Migration (IOM), World Migration Report 2010 - The Future of Migration: Building Capacities for Change, 2010.
- International Organization for Migration (IOM), World Migration Report 2020, PU-B2019/006/L WMR 2020, Geneva.
- IPCC, special report 2021, online: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf.
- Jellinek, Allgemeine Staatslehre, Berlin 1914.
- Kolmannskog/Myrstad, in: Brill/Nijhoff, Environmental Displacement in European Asylum Law, European Journal of Migration and Law 2009 vol. 11 issue 4, pp. 313 et seq.
- Kreck, Möglichkeiten und Grenzen des rechtlichen Schutzes für Umweltflüchtlinge, Kritische Justiz 2011 vol. 44, No. 2, pp. 178 et seq.
- Kälin, in: McAdam, Climate Change Displacement and International Law: Complementary Protection Standards, Schweiz, may 2011.
- Meyer-Ladewig, in: Meyer-Ladewig/Nettesheim/von Raumer, Kommentar zur europäischen Menschenrechtskonvention, 4th ed. 2017.
- Nümann, Kein Flüchtlingsschutz für „Klimaflüchtlinge“, in: ZAR 2015, pp. 165 et seq.
- Tagesthemen (ARD), Die Not der Menschen in Afghanistan, september 13th, 2021, online: <https://www.ardmediathek.de/video/tagesthemen/das-erste/Y3JpZDovL2Rhc2Vyc3RlLmRlL3RhZ2VzdGhlbWVuLzEyYWYzNDA5LTE3NzAtNGNkNy1hYTdmLTJkNTQwMDNmYjc1NA/>.
- Time Magazine, "U.N. Refugee Chief: Europe's Response to Mediterranean Crisis Is 'Lagging Far Behind'; April 23rd, 2015, online: <http://time.com/3833463/unhcr-antonio-guterres-migration-refugees-europe>.
- UNHCR, Climate change, natural disasters and human displacement: a UNHCR perspective, 2008, online: www.unhcr.org/climate.

Welzer, Klimakriege – Wofür im 21. Jahrhundert gekämpft wird, Frankfurt a. M., 2008.

World Bank, Report: Groundswell Part 2: Acting on Internal Climate Migration, 2021.

Zerger, Klima- und umweltbedingte Migration, in: ZAR 2009, pp. 85 et seq.

Zeit-Online, Urteil: Klimaflüchtlinge können Asylanspruch haben, January 20th, 2020, online: <https://www.zeit.de/news/2020-01/21/urteil-klimafluechtlinge-koennen-asylanspruch-haben>.

Zimmermann, *The 1951 Convention Relating to the Status of Refugees and its 1967 Protocol: A Commentary*, Oxford University Press, 2011.

Urban Planning

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SDGs and Port Systems: New Challenges and Opportunities for Marine Protection from the EU Green Deal Perspective

Summary

The attention to the climate emergency leaves us facing a scenario in which public officials must take sides if they do not want to face a planet in which the conditions for human life are extreme. The public administrations, guarantors and at the service of the general interest, must attend through the formulation of intervention mechanisms to this situation of exception and implement the necessary instruments for it. This paper addresses not only a global diagnosis of the situation of a pandemic world affected by an unprecedented environmental and climate crisis, but also reviews the main lines of the policies to combat climate change implemented, and their necessary interweaving in aspects such as urban planning, or the projection in the life of our oceans. Thus, it examines the interesting opportunity that nature itself offers us, within the framework of nature-based solutions, and green infrastructures, and the circular economy, to build new integrated regulatory approaches, which for their implementation can specify the corresponding sustainable "nudging", and allow the qualification of circular cities. In addition, attention to our seas and oceans passes on land through the port space and its integration into the space of the city. The ports are the prelude to the care of our seas, and the spaces in which an intense economic, tourist, and environmental impact activity takes place. The action of man has proven to be the catalyst for the great natural disasters that we experience today. The effects of climate change, as well as the inevitable search for spaces not yet explored, make us think that it is necessary to review to what extent it is precisely our port spaces that should exemplify the enhancement of the sustainable development goals, such as Millennium Development Goals, in the midst of crises and emergencies such as those that occur in this first half of the twenty-first century.

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Keywords

Marine Sustainability, Port Space, SDGs, Resilience, COVID-19, Blue Development

Abstract

The attention deserved by the sea projects into the space connected by the port system and its integration in the city fabric. In addition, ports represent an opportunity to care for the sea and involve intense activity in the economic, touristic and environmental arena. The action of humans forms the origin of the main natural disasters we are currently experiencing. The effect of climate change, and the unavoidable look in search of unexplored spaces, makes us reflect on the need for integrating the fulfilment of the SDG in our Ports System. The topic will be explored in the present paper.

Summary of sections

1. Legal Instruments for Sustainability: Code Red for the Planet. 2. Sustainability policies applied to climate change. 2.1. Strategy to combat climate change: From the European Climate Law to the new Spanish environmental scenario. 2.2. The projection of the Climate Change Law in urban agendas and urban planning. 3. National Green and "Blue" Infrastructure Strategy. 4. Energy and care for the Sea: A Treasure of Our Planet that requires attention; premises from the Blue development. 5. The projection of the SDGs in the port system. 6. Sustainable behaviour, rights and attitudes; approaching sustainable nudging. 7. Some Concluding Reflections.

1. Legal Instruments for Sustainability: Code Red for the Planet

Everything is connected. From a systemic – or ecosystemic, approach, the actions we carry out in one part of the planet have a drastic impact on other parts,¹ and time is running out.² These phrases that seem to be taken

1 This statement is not far from the expression contained in "the Butterfly Effect" Gleick, James. *Chaos: Making a new science*. Random House, 1997, or the expression of it in the conference given on December 29, 1972, by Edward Lorenz at MIT, whose consultation has no waste and can be seen in: https://web.archive.org/web/20130612164541/http://eaps4.mit.edu/research/Lorenz/Butterfly_1972.pdf.

2 The report of the United Nations Climate Panel made public on August 9, 2021, has shown that we are in a Code Red, meaning that the consequences for climate change on the planet will be irreversible.

from a fictional story are nevertheless part of the message that, from the International Panel on Climate Change, try to alert humanity about the dramatic consequences of climate change and the need to take action for the climate.³ The feared heat waves,⁴ floods, fires, prolonged droughts, unusual and intense snowfall,⁵ reflect the drastic consequences of global warming, and the impact that human activity is having on the climate. These conditions are receiving an inadequate response from community institutions in climate action packages, arguably notwithstanding the approval of the European Green Deal.⁶

Spain is one of the countries most affected by the Code Red of Climate Change, its geographical location, and the intensity of use and urbanization,⁷ has alerted ecologists and experts in the field about the consequences that a modification in ecosystems would have for the health of the planet and the specific condition for Spain. Recent examples of ecological disasters that reveal the intensity of the problem we have on our coasts, include the case of fish that day after day have appeared dead in the Mar Menor, for reasons not yet entirely clear, but warn about pollution levels, the possible low level of oxygen in the water, or the effect of high temperatures.⁸ Indeed, many risks have been described by the scientific community of a water nature (risk of availability of water resources, risk⁹ of increased eutrophication

3 The idea of Climate Action has given rise to grassroots actions as well.

4 According to the State Meteorological Agency (AEMET), heatwave frequency has doubled in Spain in a decade, which corresponds in figures to the forecasts contained in the World Meteorological Organization Report, "The State of the Climate" published in 2020, which indicated that the global average temperature has risen 1.2 degrees.

5 In the collective memory are the scenes of the unprecedented snowfall of early 2021, (Filomena) and its devastating effects in Madrid.

6 *Bibliography on the European Green Deal can be found at:* FAJARDO CASTILLO, T: *Climate diplomacy in the European Union. External action on climate change and the global green deal*, Editorial REUS, 2021.

7 The attention to intense urbanization and the model of occupation of space in our country was already the subject of attention by the European Parliament in the EUKEN Report, on the impact of extensive urbanization in our country.

8 <https://www.lavanguardia.com/natural/20210816/7665096/nuevo-episodio-muerte-masiva-peces-pone-alerta-mar-menor.html> with the foresight in this sense of the SOS Mar

9 Menor platform, which had been warning of the need to take proactive measures for the preservation of the Environment (<https://www.laopiniondemurcia.es/comunidad/2021/04/22/sos-mar-menor-denuncia-paralizacion-48577439.html>). One of the causes of the disaster that the Mar Menor has been suffering, derives from the existence of illegal irrigation that incorporated fertilizers in the form of nitrates, which has caused eutrophication. It resulted in a decrease in oxygen that has been causing the death of fish and fauna of the Mar Menor.

and decrease in water quality), terrestrial (desertification,¹⁰ increased erosion and loss of biodiversity, etc). Other risks relate to agriculture and livestock¹¹ (variation in the seasonality of horticultural activity, loss of livestock farms) and the marine environment (risks to the stability of marine ecosystems due to increased temperatures and heat waves, among others).¹² The time to address measures that can stop the deterioration of the environment and mitigate the effects of climate change, is running out. This has been shown by the latest reports on climate change, in a clear warning aimed at the anthropogenic action of man in the environment, with effects that cannot be totally reversed.¹³ In this scenario, the urgency to find solutions to avoid catastrophes derived from irreversible changes,¹⁴ must act as an engine to implement innovations that result in a new way of relating man with the environment.

The effects of climate change on health are incontestable,¹⁵ and affect all countries to varying degrees. Thus, the incidence of so-called climate

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- 10 The announced desertification also involves taking into account a risk that may affect 75 percent of the territory. Spanish (<https://www.efe.com/efe/espana/sociedad/mas-del-75-de-espana-esta-en-riesgo-desertificacion-segun-greenpeace/10004-4563933>). See in this sense, the measures addressed by the Administration: https://www.miteco.gob.es/es/biodiversidad/temas/desertificacion-restauracion/lucha-contra-la-desertificacion/lch_espana.aspx.
 - 11 And this regardless of the initiatives that try to alleviate the effects of climate change, in European projects that try to enhance soils as carbon sinks. It is not only about reducing CO₂, but about mitigating emissions and designing policies that can address the effects of climate change on agriculture.
 - 12 The report prepared by the Spanish Office of Climate Change points out the 35 environmental risks. You can also see the work developed in: http://escenarios.adaptecca.es/#&cmo=del=EURO-CORDEX-EQM.average&variable=tasmax&scenariopc85&temporalFilter=year&layers=AREAS&period=MEDIUM_FUTURE&anomaly=RAW_VALUE&ids=17.
 - 13 Sea level rise is forecast, affecting the delicate balance of the entire ecosystem.
 - 14 The idea of irreversibility implies the connection between activities and the tipping point that shows that the efforts made will not be enough to offset the devastating effects on climate change derived from human intervention. The COP26 report, incorporate in this sense 10 recommendations that address the necessary intervention and action to avoid reaching the turning point, and therefore irreversibility. And this is without prejudice to the recognition by the scientific community that irreversible changes and effects are taking place, https://www.eldiario.es/carnecruda/programas/cambio-climatico-irreversible-extremo_132_8346109.html.
 - 15 Generating climatic migrations, and in the direct projection caused by floods or major droughts, at the same time that shortages of certain foods are foreseen when they cannot be guaranteed by agricultural activity. Climate migrations are one of the most serious consequences of climate change, on which initiatives such as those seen are being carried out in: https://www.eldiario.es/carnecruda/programas/cambio-climatico-irreversible-extremo_132_8346109.html.

refugees¹⁶ who must leave part of the territory where they were developing their lives looking for habitable spaces to live are a clear example of the impact of climate on our health and way of occupying space. The importance of vital conditions motivated by climate change, in the qualification of public policies, is reflected in the recommendations integrated in the document presented in the special report of the World Health Organization, at the height of COP26 that point out the health benefits derived from the fight against climate change. Other equally relevant reports such as the one published by *The Lancet*, or those issued by the Ministry of Health, Social Services and Equality during 2020, emphasize the need to address environmental issues that have a "recognized influence" on health and well-being. This logical interrelation between the health of the planet and our own health allows awareness for an active policy of attention to climate change in an approach that pays more attention to proposals for action than to risk analysis.¹⁷ This was highlighted during the Environment Council on 6 October 2021,¹⁸ by the environment ministers of the European Union in the conclusions drawn up for the United Nations Climate Change Panel on Climate Change COP26 held in Glasgow, and the "one health" approach. The latter is beginning to resonate strongly in the design of public policies.

2. Sustainability Policies Applied to Climate Change

In this context, the EU's regulatory activity on climate change has had several milestones of enormous interest, the first derived from the approval of the EU Green Deal, which was the subject of approval in the Communication of the European Parliament of December 2019.¹⁹ The idea behind communication is the need to make the European Union climate neutral by 2050, a goal that is emerging as the scenario in which many transformations are required both in our way of understanding the environment and caring

16 Prof. López Ramón, F, would brilliantly illustrate them: "Climate refugees", *Environmental Legal News*, No. 68, 8 May 2017.

17 Thus, it has been evident in the valuable words of Prof. Martín Mateo, in his treatise on environmental law, when he began it by pointing out precisely this correlation between climate change and health or environmental health and its impact on human health. In this same sense and much more recently incorporating animals into the equation as well, the formulation of the ONE approach can be found. Health which refers to the idea that interdisciplinary collaboration is necessary for health care that affects people, animals and the environment.

18 Can be seen in: <https://www.consilium.europa.eu/es/meetings/env/2021/10/06/>.

19 COM (2019) 640 final.

for it,²⁰ and this without prejudice to the irreversible changes that have already taken place.²¹ The adoption of the European Green Deal raises awareness that action is needed at Community level to tackle climate change urgently. The projection of this action forecast has had a response in the field of regulation derived from the approval of the Regulation of the European Parliament and of the Council, which establishes the framework to achieve climate neutrality and modifies Regulation (EU) 2018/1999,²² the so-called Climate Law, approved by Regulation (EU) 2021/1119 of the European Parliament and of the Council of June 30, 2021.²³ The rule that takes as its legal basis Articles 191 to 193 of the Treaty on the Functioning of the European Union, recalls that climate change is a problem of a cross-border nature and therefore requires measures of a supra-national and supra-local nature. It is a Community policy outlined from the principle of subsidiarity, and governance requires Community coordination in the adoption of measures and policies aimed at achieving the objectives of climate neutrality. In other words, sectoral policies – whatever they may be – must be aligned with the objectives of mitigating and combating climate change and involve Community coordination, also taking into account the application of the principle of proportionality.²⁴

In this context, the European Climate Law directs attention to the need not only to reduce the emission of greenhouse gases, but also to absorb emissions through natural sinks "such as forests, soils, agricultural land and wetlands".²⁵ These natural sinks, which have perhaps received less attention than expected in national policy, are incorporated with the link to the so-called LULUCF, ("Land Use , Land Use Change and Forestry"). This is the projection of urban policies in the use of land and in the forestry field as determinants of the policy of attention to climate change. In addition to the above, the EU package "fit for 55" was approved, which identifies three major sectors in which action should be taken: energy sector, mobility sector and construction sector. Indeed, the thematic projection of the European

20 On the examination of carbon neutrality strategies, Gómez Jiménez, M.L., can be read: *Strategy for carbon neutrality of the Junta de Andalucía*, IEHPA, Seville, 2020.

21 The information revealed in the IPCC report for 2022, <https://www.unep.org/resources/report/ipcc-sixth-assessment-report-climate-change-2022>.

22 Official Journal of the European Union of 4 March 2020, extension://ieepebjnkhaiiojkepfniiodjmjjihl/data/pdf.js/web/viewer.html?file=https%3A%2F%2Feur-lex.europa.eu%2Flegal-content%2FES%2FTXT%2FPDF%2F%3Furi%3DCELEX%3A52020PC0080%26from%3DEN.

23 The rule entered into force on July 29, 2021.

24 Page 6 Regulation of the European Climate Law.

25 Sic, p. 9 of the Climate Law.

Commission is increasingly prioritizing activities that address the climate protection of the planet and with that of life in the content – within the framework of the competences attributed in the sectors that may significantly affect it, such as the transport or construction sector, without forgetting the enormous problem that energy management versus consumption poses on a planetary scale. These are the major issues that Code Red has brought to the public policy stage, highlighting the thematic priority not only of European, but also national research proposals. There is also a necessary attention to food capacity, in a scenario of scarcity of resources,²⁶ and the need to generate new proposals that attend to the transformation of the agricultural sector. At the same time, we live in an increasingly sedentary society, which is witnessing the voracious integration of technology – in the form of metaverses and scenarios of digitalization and digital divide - that do not contribute to the traditional formulation of the markets of food,²⁷ but generate other new challenges for the law and new stress tests for our planet. From the projection of activities in defense of the environment to measures to address climate change and fight against its effects, attention is projected both internationally and nationally on our country. Thus, the scientific reports have been followed by a set of administrative soft-law working documents²⁸ that guide the action of the public authorities under the constitutional precept – ex article 149.1 EC, which attributes to the State the competence on the bases of the protection of the Environment.²⁹ In this context, the recent approval of Law 7/2021, of May 20,³⁰ on Climate Change, specifically addresses the need to adopt measures to adapt to climate change from the forecast of provisions that affect territorial and urban

26 The food crisis has already led to the investment of the world's great fortunes in farmland, or the assurance of the logistics of food production, as an investment portfolio since overpopulation and the scarcity of resources decimated by climate change and adverse weather events, will have a decisive impact on the way in which the food sector is conceived and managed.

27 3D printing of food, as a proposal and test that is currently taking place, design of new devices that allow to investigate the creation of products that serve human food and do not emanate only from the traditional garden - whether urban or urban garden, but from a laboratory, are ideas that are in the minds of innovators of the XXIst century.

28 The expression soft-law administrative, is by far one of those that best expresses the maelstrom of documents that, interwoven in the field of governance and public management rather than in the definition of regulatory, can be consulted in the fight against climate change.

29 See now article 193 TFEU.

30 BOE of 21 May 2021.

planning.³¹ The attention to sustainability however is not new and was already present in the Land Law in its reform operated in the Consolidated Text 7/2015, which detailed in its Article 3 the need to incorporate sustainable territorial and urban development as a principle of action.³² The sustainability present in territorial planning is thus predicated, in a transversal way for all urban actions, and has led to the necessary adaptation of regional urban regulation to implement the principles of sustainable urban development in urban activity and territorial planning.³³

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- 31 Thus, it has been recalled in article 21 of the norm that states: "Territorial and urban planning and management, as well as interventions in the urban environment, building and transport infrastructures, for the purposes of their adaptation to the impacts of climate change, will mainly pursue the following objectives:
- The consideration, in its preparation, of the risks derived from climate change, in coherence with other related policies.
 - The integration, in planning and management instruments, of the measures necessary to promote progressive adaptation and resilience to climate change.
 - The adaptation of the new instructions for calculation and design of buildings and transport infrastructures to the effects derived from climate change, as well as the progressive adaptation of those already approved, all with the aim of reducing emissions.
 - The consideration, in the design, remodeling and management of the mitigation of the so-called "heat island" effect, avoiding the dispersion into the atmosphere of waste energies generated in urban infrastructures and their use in them and in surface buildings as renewable energy sources.
 - To ensure that new energy production facilities from renewable energy sources do not have a severe impact on biodiversity and other natural values, zoning will be established that identifies areas of sensitivity and exclusion for their importance for biodiversity, connectivity and provision of ecosystem services, as well as on other environmental values. To this end, the Ministry for the Ecological Transition and the Demographic Challenge will develop and periodically update a cartographic tool that reflects this zoning, and will ensure, in coordination with the Autonomous Communities, so that the deployment of renewable energy projects is carried out, preferably, in locations with less impact."
- 32 The precept in question has been the subject of attention in the jurisprudential field in the Judgment of the Constitutional Court 42/2018, of April 26 and STC 86/2019, of June 20; and is guided by the Judgment of the Superior Court of Justice of Asturias of May 29, 2020 and July 13, 2020.
- 33 The autonomic competence in matters of Urbanism, correctly expressed by the Constitutional Court in the historic Judgment 61/97, of March 30, has had, in sequence with the different jurisprudential pronouncements regarding the nullity of planning instruments, the opportunity to advance in the timely consideration of the elements that affect the qualification of urban sustainability, or enable sustainable urban development. Without prejudice to the examination that must be integrated at the regional level for each of the provisions approved in the field of urban planning, it is worth highlighting the recently approved Law to Promote the Sustainability of the Andalusian Territory (LISTA), which entered into force on December 23, 2021.

To this must be added the legal treatment of nature-based solutions, which the Climate Change Law, Law 7/2021, of May 20, anticipates, within the framework of the National Energy and Climate Plan.³⁴ Without prejudice to the detailed examination of the projection of the National Energy and Climate Plan (PNIEC), the figure that represents the integration of nature-based solutions, as part of a new approach to the fight against climate change, allows its implementation in sectoral areas linked to the territory, such as the field of hydrological planning, or action in the building field.³⁵ The focus on sectoral action to improve sustainability as a precise element in a strategic administrative intervention scenario is particularly consistent with the projection of the Next *Generation EU* recovery instrument.³⁶ Relevant too are the economic policy instruments linked to the Community policy of recovery in the midst of the pandemic, involving the mobilization of an unprecedented sum of economic resources to overcome the devastating effects of the pandemic. These provide financial instruments (whether loans, guarantees or grants) that allow reconstruction of the economy in strategic sectors, such as transport, health, education, infrastructure, energy, industry or housing-residential building sector. In addition, digital acceleration, and the need to operate a change in production model is linked to the sustainable development goals in their territorial projection, and their location and linkage with public policies,³⁷ mediating sustainability through attention to technology. This has resulted in the adoption of a European strategy that advocates digitalization, but without losing sight of the necessary environmental sustainability that this must entail. Thus,

34 Thus, article 17.8 of the standard states: "The PNACC will promote and prioritize ecosystem-based adaptation to climate change, the development of green infrastructures and nature-based solutions".

35 Royal Decree Law 9/2021, of 5 October, introduced urgent measures in relation to the promotion of sustainable rehabilitation.

36 The Next Fund Generation EU, represents the investment of 806,900 million euros. Thus, in the multiannual framework from 2021-to 2027, Spain will be able to receive funds amounting to 71,604 million euros, through two large investment instruments: the Recovery and Resilience Facility, which will total 59, 168 million euros and the React-EU that will add up to 12,436 million euros. Expressions that as Zalba, P, has anticipated are incorporated into the State budget for 2022. <https://www2.deloitte.com/es/es/pages/about-deloitte/articles/fondos-next-generation-eu-pge-2021.html>.

37 On this particular you can see in its projection on governance the collective work: Alonso Ibáñez, R (Dir.); *Urban agendas and city governance: Transformations, challenges and instruments*, Editorial Reus, Madrid, 2021.

the Council of the European Union of December 11, 2020³⁸ approved the enhancement of digitalization for the improvement of the environment. As the Council conclusions point out, the aim was to highlight the interlinkages between the European digitalisation strategy and the objectives of the European Green Deal. This is intended to highlight the importance of the connection between both strategic lines of Community action and how attention to climate change must integrate elements linked to the European digitalization strategy. Along the same lines, the launch of the coalition of countries that are committed to the formation of a joint action scenario in which both aspects of digital transformation and attention to the mitigation of climate change and its effects converge would be approved, among other initiatives.

2.1. Strategy to combat climate change: From the European Climate Law to the new Spanish environmental scenario

In Spain, attention to environmental issues and in relation to climate change have been part of the legislative agenda of the IX legislature.³⁹ The development of public policy on attention to climate change has motivated the translation of community objectives in the field of public policies in a transversal way, both in their regulatory aspects and in the attention derived from the instruments of national and regional strategic planning.⁴⁰ In this regard, instruments of strategic planning and to some extent of a programmatic nature, have come to dominate the public agenda in the definition of the lines of action defined later in the normative field. This has been the case of the approval of the National Plan for Adaptation to Climate Change and the Integrated National Energy and Climate Plan 2021-2030. As pointed out above, both instruments introduce a strategic planning that links not only the climatological aspects but also the adaptation forecast that should allow Spain to become a carbon-neutral country by 2050. The challenge

38 <https://digital-strategy.ec.europa.eu/en/news/eu-countries-commit-leading-green-digital-transformation>, can be seen in the conclusions we outlined of the Council of the European Union.

39 This is being processed in addition to the recently approved Climate Change Law, other relevant regulations in the field such as: The Draft Law on waste and contaminated soils that was presented in Congress on May 20, 2021 and qualified on May 25, 2021 and has planned the implementation of initiatives that develop the European premises of the green deal and administrative action in the field of Sustainable mobility.

40 This is the case of the Andalusian Climate Action Plan approved by Decree 234/2021, of October 13, (BOJA of October 23, 2021), or the forecasts contained in the Transport and Mobility Infrastructure Plan of Andalusia 2021-2030.

adopted in the above-mentioned programme documents is modulated in the intervention in the field of an energy policy that draws its sources from the Community forecasts regarding the improvement of energy efficiency. The legislator's attention to energy planning, linked to the improvement of sustainability, contrasts however in the document with the formulation of derived or nature-based measures. The document addresses four key elements: the water resources sector, forestry, coastal and marine environment, and transport infrastructure.⁴¹ Thus, the energy transition, linked to the need to operate an ecological transition, is aligned with the projections made by the EU, via Directive 2018/2001, which is combined with the promotion of local energy communities.⁴² Be that as it may, the strategic planning instruments that deal with attention to climate change and the fight to mitigate its effects, incorporate forecasts that either meet the need for energy efficiency, or involve incorporating an ecological transition that implies a change of economic model and that affects our way of producing and managing the resources we have.⁴³

2.2 *The projection of the Climate Change Law in urban agendas and urbanism*

In this context, the need to operate a decarbonization in the year 2050 presupposes at national level the taking of sides for the transversal action in the reduction of the emission of CO₂. Thus, the plan raises the need to reduce GHGs, in line with European targets of up to 23 percent. Here, the examination of climate change has been integrated into the forecasts contained in the observatory of environmental policies of the Ministry (OPAM) of the year 2021. At the same time, the pandemic has meant a change of regulatory pace, serving to environmentalize and permeate public policies, as well as producing a significant increase in documents of administrative soft-law. Such documents, albeit without binding normative force, have advanced the lines of the actions that should be defined, implemented and developed in the public sphere. One of these instruments, linked to the achievement of the Sustainable Development Goals, has been the Urban Agendas to define the lines of action in terms of sustainability in territorial policies and the

41 It can be seen in this sense the scheme of areas and relationship with the risks derived from climate change in the energy system, page 50 PNIEC.

42 González Ríos, I.: "Local Energy Communities: A New Challenge for Local Entities", RVAP No. 117 (2020, pp. 147-193).

43 This interest may result in reading the work of Prof. Martínez Villar, researcher of the SEJ-650 Group, "Past, present and future of Climate Change Turn or Transition?", *Diario Sur* February 28, 2022.

promotion of specific actions in the urban environment.⁴⁴ It is precisely the examination of these territorial policies that deserve special attention, when we think about the climatic effects on the inhabited environment and the interrelation between the provision of environmental and landscape protection, with the protection of the urban environment in which the activities come to develop.⁴⁵ That attention to climate change must permeate administrative action not only in initiatives directly connected to the environment, but in all activities and actions in the urban environment, is an essential premise of the effectiveness of climate action. The transversality therefore of the attention to the fight against climate change should be projected both in the actions in the field of territorial planning, as well as in the management and urban planning of our cities. In this context, the resilience of territorial planning instruments to climate change is a key element when addressing the problem from the territorial perspective. This is because, as Prof. Aguirre Font reminds us, "planning instruments must be able to identify risks and anticipate changes and respond to many of the challenges posed by society".⁴⁶ This kind of attention to planning as the legal instrument and tool in pursuit of the fight against climate change, contrasts however with the slowness associated with litigation, linked to the management of territorial planning instruments. Here there is a contrast between the territorial model and the synergies derived from the new social needs and occupation of space – which the pandemic has highlighted – among other relevant factors. This provision of territorial governance, and not only of government or custody of the territory, has been integrated in a relevant way in the new Leipzig Charter, in 2020. This new document of programmatic character and international projection in the governance of cities pays attention to the power of these and qualifies them from three di-

44 On the notion of urban agendas and their legal nature, see further: "The Challenges of Artificial Intelligence in urban processes: new premises in the era post-covid and attention to public health in urban planning", in Alonso Ibáñez, R.: *Urban Policy and Localization of the Sustainable Development Goals: Theory and Practice*, Tirant lo Blanch, 2021, pp. 229-255, and in the same sense: Alonso Ibáñez, R (Dir.) "Urban Agendas and the government of Cities: Transformations, challenges and instruments", Editorial REUS, 2021.

45 Order TMA/957/2021, of 7 September, approving the regulatory bases for the granting of aid for the development of pilot projects of local action plans of the Spanish Urban Agenda and the call for the presentation of applications for obtaining subsidies by the procedure of competitive concurrence.

46 See Aguirre Font, "The Resilience of the Territory to Climate Change: Challenges and Legal Tools from Urban Planning", *Catalan Journal of Environmental Law*, no. 2 (2019).

mensions: the just city,⁴⁷ the green city,⁴⁸ and the productive city.^{49 50} Thus, the recent state forecast on climate change had preceded a disparate regional regulation that emphasizes the need to provide legal instruments not only with respect to the fight against climate change, but for the implementation of the energy transition. This is the case, for example, of the Balearic Legislation on climate change, Law 10/2019 of February 22,⁵¹ which, in relation to the effects on sectoral policies of climate change provides, with respect to urban planning, that: "Measures aimed at reducing energy consumption and greenhouse gas emissions will be promoted, in collaboration with the competent public administrations, as well as to reduce vulnerability to the impacts of climate change, and specifically aimed to:

- "Promote green urban spaces to reduce the urban heat island effect and fix carbon in these spaces, as well as tree planting objectives;
- Increase the permeability of soils and the implementation of sustainable urban drainage systems that reduce the risk of flooding and allow water infiltration;
- Adapt urban planning regulations to minimize barriers to the energy rehabilitation of the existing building stock;
- Minimize mobility needs;
- Progressively implement renewable energies".

All of these measures reveal a necessary management of uses, which takes into account the management of sustainable transport in urban environments, or the integration of green spaces, to which we will return below – with a projection of a strategic instrument. In this context, the Autonomous Community of Andalusia has embodied the commitment to sustainability in the scenario of intervention in the field of land and urban planning in the elaboration of the Law of Promotion of the Sustainability of the

47 The Leipzig Charter, initially adopted in 2007, the attention paid by the 2030 Agenda to the need for adaptation to climate change motivated ministers responsible for urban issues to approve the new Leipzig Charter in 2020.

48 On this dimension of the Just City, we have had the opportunity to approximate some ideas in the work *Participatory Urbanism and Urban Governance in Smart Cities: The Queen Red Effect in Administrative Law*, Aranzadi, 2019.

49 In a kind of attention to the environmental dimension of the city, which in our opinion transcends the limit of the urban to qualify as the sustainable city, and ultimately resilient.

50 This notion of productive city, linked to economic aspects, and the qualification of the city as a center of processes of economic content, should also be glimpsed under the forecast of production at the service of the common good, that is, in the field of a circular economy that draws efficiency in the management of public and private resources.

51 BOE of 2 May 2019.

Territory of Andalusia (LISTA).⁵² The preceding regulatory provisions as to an autonomous deployment in the territorial scope around the premises of urban sustainability, highlight the new territorial planning designed to serve as an instrument to mitigate the impact of climate change and to respond to the new questions that post-pandemic society requires, in a kind of resilient urbanism adapted to the new reality.

3. National Strategy for Green and „Blue” Infrastructures

One of the relevant elements, in the attention to biodiversity, is the definition of legal tools that safeguard it and guarantee its survival for future generations. Thus, the impact of climate change on the environment forces attention to the environmental elements present in urban intervention, which as we saw involve the recognition and protection of these in safeguarding biodiversity in both rural and urban spaces. In this context, green infrastructures play an important role. This is reflected in Article 51 of Royal Decree 106/18, of March 9, which regulated the State Housing Plan 2018-2021,⁵³ which contemplates among the eligible actions in the Program for the promotion of Urban and Rural Regeneration, and in relation to the protection of biodiversity to green infrastructures, the proposals for "connectivity of green spaces, facilities, services and water supply, sanitation, electricity supply, lighting, collection, separation and waste management, telecommunications and use of the subsoil". Green infrastructures, their definition and recognition, are therefore a core element in order to preserve ecosystems. It should be borne in mind that the first reference to green infrastructure is to be found within the framework of European environmental policy. Thus, the European Union's strategy on Biodiversity until 2020, set among its objectives "the maintenance and improvement of ecosystems and ecosystem services no later than 2020, through the creation of green infrastructure and the degradation of at least 15 percent of degraded ecosystems".⁵⁴ The EU's 2030 Biodiversity Strategy has been formulated in the same vein. In succession of continuity in the same direction, the Action Plan for the Environment for Nature was approved in April 2017.⁵⁵ Further documents of Community administrative soft-law have followed with the same idea of recognizing –

52 The Law to promote the Sustainability of the Territory of Andalusia hereinafter LIST).

53 BOE of 11 March 2018.

54 Thus, in the National Strategy on Green Infrastructure, p. 30.

55 It can be viewed and consulted at: <https://op.europa.eu/es/publication-detail/-/publication/58d58aa7-5c78-11e7-954d-01aa75ed71a1>.

beyond protected natural areas, ecological corridors and the definition of a European green infrastructure network. This integration of green infrastructure as systematic structuring elements of planning processes identifies them as investment priorities at European level.

In the Spanish context, Law 42/2007, of December 13, on natural heritage and biodiversity, as amended by Law 33/2015, of September 21, introduced the notion of green infrastructure, calling on the Government to develop within three years, a National Strategy for green infrastructure and connectivity and ecological restoration. Thus, Article 15 of the norm seeks to integrate the obligation of approval not only of the State strategy but of the autonomic strategies, within the framework of the State regulation.⁵⁶ The precursor standard of Order PCM/735/2021 on the National Strategy for Green Infrastructure and Ecological Connectivity and Restoration, highlights the value of having a green infrastructure that, in addition to being applied to urban spaces and rural environments, also includes marine ecosystems. This inclusion is relevant in order to address environmental problems holistically as the standard indicates, taking into consideration all areas in which nature is projected. The sea, as we will see below, is a space that requires attention beyond what can be foreseen and alternative forms of attention. Here, as Prof. Ortiz García, has suggested, adequate attention to 'blue development' may require an ecological transition from anthropocentrism to bio-centrism, in which man sees himself as part of na-

56 Thus, the rule states:

"...2. The State Strategy for Green Infrastructure and Ecological Connectivity and Restoration will aim to set the guidelines for the identification and conservation of the elements of the territory that make up the green infrastructure of the Spanish territory, terrestrial and marine, and for the territorial and sectoral planning carried out by the Public Administrations to allow and ensure the ecological connectivity and functionality of the ecosystems, mitigation and adaptation to the effects of climate change, defragmentation of strategic areas for connectivity and restoration of degraded ecosystems.

3. The State Green Infrastructure Strategy shall take special consideration, *inter alia*, of protected areas, habitats in danger of disappearing and endangered species, mountain areas, river courses, wetlands, livestock routes, ocean currents, submarine canyons, migratory routes that facilitate connectivity, and systems of high natural value originated as a result of good practices applied by the different economic sectors, as well as the priority habitats to be restored, the lands affected by the nature conservation banks and the instruments used by the competent administrations in the application of the European Landscape Convention, done in Florence on October 20, 2000.

4. On the basis of the guidelines of the State Strategy, the Autonomous Communities shall develop, within a maximum period of three years from the approval of said State Strategy, their own strategies, which shall include, at least, the objectives contained in the State Strategy."

ture, rather than it simply being at his service.⁵⁷ This holistic vision connects logically with the circularity of the cycles and with the necessary interaction of the ecosystems that begin to be discovered precise, from elements such as the qualification of "one health" approach, to which we referred, and that reports such as the VI prepared by *The Lancet* show once again.⁵⁸

In this context, in addition, the projection of green infrastructures in urban planning is reflected in the building scale in the so-called bioclimatic architecture,⁵⁹ which integrates attention to environmental protection into the building parameters. Thus, the draft Law on the quality of architecture, presently passing through the Spanish parliament, aims at the integration of European initiatives to promote energy efficiency, renewable energies and the fight against energy poverty, in accordance with the provisions of Commission Recommendation (EU) 2021/1749 of September 28, 2021. The interrelation, therefore, between the environmental conditions present in green infrastructures and building and urban forecasts, must be present to allow coordinated action that results in an efficient fight against climate change. It is true that the effects of this, as we pointed out, are far from being mitigated, but administrative actions and regulatory provisions must be oriented in a coordinated manner in that direction.⁶⁰

4. Energy and Care of the Sea: A Treasure of our Planet that requires Attention, Premises from the Blue Development

It was *Gunter Pauli*, who highlighted the need to turn our gaze to the oceans and remember that our blue planet demands special care towards ecosystems in a systemic way that pays attention to their biodiversity, and wealth by valuing policies that not only allow their protection against the impact of climate change, but that allow it to become a means to reduce the effects of this, as a regulating and rebalancing effect. Brief and succinct

57 See Prof. Ortiz García, M., Paper presented at the XVI Congress of the Spanish Association of Professors of Administrative Law, held in Oviedo in February 2022.

58 The report Report Lancet 2020 Countdown on Health and Climate Change, proclaims the need to apprehend the connection between caring for the environment, and the fight against climate change and how it is incide directly in our own health.

59 Bioclimatic architecture has been included among the measures to be financed within projects described in Royal Decree Law 25/2020, of July 3, on urgent measures to support economic reactivation and employment (BOE of July 6, 2020).

60 This is the case, for example, of the Waste and Contaminated Soil Bill approved in Congress on December 23, 2021, and sent to the Senate for processing, after having obtained the Opinion of the Commission on Ecological Transition and Demographic Challenge.

lines can be dedicated in this place, to reflect the meaning of our seas, not only in our history, shaping of cities and economic development, but in the richness of life, and biodiversity that they contain. That is why we cannot finish this reflective review on the different strategies and regulatory instruments aimed at caring for our planet, without incorporating mention of the potential that the sea offers in the very qualification of our cities. The sea is not only a generator of life, but of clean energy, and a space that deserves special protection. This entails returning with a different look to nature, in a kind of recovery of that ecological justice,⁶¹ and not only climatic. Some promising developments in this direction in Spain are apparent. Thus, on November 6, 2020, the announcement of the start of the procedures for the cataloguing of the Cala en Mijas area as a ZEC, Special Area of Conservation, was made public. Framed in the Sustainable Tourism Plan of the Seabed of Mijas, the area to be preserved would complete a very incipient - to date - map of underwater natural parks such as the one that holds the denomination in Isla de Hierro (Canary Islands), Medes Islands (Catalonia) and Isla de Ons (Galicia). The figure unexplored for the rest of the national territory, becomes in our opinion of enormous relevance for the preservation of the marine environment and biodiversity, in response to a constitutional obligation of attention and preservation of the environment. But, no matter how much we advance and explore different sectoral approaches, it is clear further legislation is necessary, including a focus on the implementation and applicability of the standard. This issue is linked to the behavioral sciences and that in its hybridization with law, highlight the importance of generating sustainable attitudes.

The oceans provide almost 50 percent of the oxygen humanity needs. The biodiversity in them, as well as the fragility manifested in the verification of devastating effects linked to human action, including plastic, pollution, and over-exploitation and the effects linked to climate change, reveal that the time has come to place them at the center of the debate and look at the sea. This requires a global, holistic and ecosystem perspective that incorporates the integrated reading of the common good that it represents for humanity, and the biological "jewel" that it represents. How we act in relation to marine ecosystems, and their territorial projection, will impact on our opportunities to resist and reduce to a greater or lesser extent the effects of climate change. It is therefore welcome that, in February 2022, a global alliance "High Ambition Coalition Biodiversity Beyond National Ju-

61 Vicente Gimenez, T. (2020): "From climate justice to ecological justice: the rights of nature", *Revista Catalana de Right Environmental*, Vol. XI, #1 2, pp. 1-42.

isdiction (hereinafter BBNJ)⁶²" was launched. This Coalition comprises, in addition to the Member States of the European Union, 22 further countries from five continents.⁶³ The immeasurable value of this international alliance is understandable if one takes into account that 95 percent of the oceans are made up of areas that exceed the national jurisdiction of countries. The data reveals the need for careful action because the pollution of our oceans and their biodiversity will affect the provision of future food,⁶⁴ and the conformation of our territorial map in its port projection.

4.1. *The blurred metamorphosis of the subjects, from object to living ecosystems and subjects of rights: the case of the Mar Menor.*

The measures for the protection of marine environments are also beginning to make use of new protective figures, which arguably reflect the transition noted as part of the blue development from anthropocentrism to ecocentrism. The ecosystem mission, then, begins to permeate regulatory strategies, with the potential to offer valuable protection for the spaces that are at extreme environmental risk. A good example is the popular legislative initiative that took as its object the recognition and legal personality of the lagoon of the Mar Menor and its basin.⁶⁵ The relevant provision in parliamentary proceedings reflects the awareness of a proactive and not merely protective action as a passive subject or object of attention by the legislator. This resulted in Law 19/22, of September 30, for the recognition of the legal personality of the lagoon of the Mar Menor and its basin.⁶⁶ The innovation introduced through the recognition of legal personality

62 The alliance's founding document can be found at: https://oceans-and-fisheries.ec.europa.eu/ocean/international-ocean-governance/protecting-ocean-time-action_en.

63 Australia, Canada, Chile, Colombia*, ComorosCosta Rica Egypt, Iceland, India, Mexico, Monaco, Morocco, Namibia, New Zealand, NorwayPalace Peru, the Republic of the Congo, Singapore, Switzerland, Togo, the United Kingdom, the EU and its 27 Member States (Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, FinlandFrance Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden.

64 The sea has the capacity to feed a quarter of the world's population by 2050, as it points out.

65 Official Gazette of the Cortes Generales of 2 September 2022.

66 BOE de October 3, 2022.

enables the conferral of a catalogue of rights,⁶⁷ which are projected in the possibilities of environmental defense of this marine space.

4.2. *City and port space, disagreements and opportunities for territorial intelligence*

It will be the 2030 Agenda, which may mark, the line of action in linking actions towards the achievement of the sustainable development goals, in synergy with the projection in the port area of the new culture of respect for the environment in the port space (green port).⁶⁸ The aim of this is to counteract the tendency of cities to turn their backs on their ports, and instead integrate port infrastructure into the urban ecosystem. This integration goes beyond the mere strategic operation aimed at improving port traffic and maritime space management to integrate the so-called port megacities. The intention is that the strategic projection of the port of a city should become a key part of the projection of the city itself,⁶⁹ integrating spaces for coexistence in synergy with the use of uses that allow both cruise tourism and port activity. In the Spanish context, the reform of the Regulation of the Coastal Law, Royal Decree 668/2022, of August 1, which modifies the General Coastal Regulation, approved by Royal Decree 876/2014, of October 10,⁷⁰ proposes that modifications aimed at minimizing the effects of the rise in average sea level as a result of climate change, should be integrated, without detriment to the socio-economic effects of the reform.⁷¹ The realisation of

67 The standard comes to indicate the recognition of rights: to exist; protection, conservation and restoration. (Sic article 2 of the Act).

68 ESTEPA MONTERO, M: *Analysis of public policy on ports of general interest*, Marcial Pons, Madrid, 2021.p. 611.

69 Examples of the above we have in the international context when examining the case of the decline of global metropolises linked to the decay of their port spaces. This is the case of Bruges, Genoa, London, Lisbon, New York, Venice, Amsterdam, New York, among others, which contrasts with the case of cities that have been able to project themselves thanks to the strategic functioning of their ports, as is the case of Singapore.

70 BOE 184/2022, the 2nd August Nov 2022 Ref. Bulletin: A-2022-12932.

71 Thus, he has made it clear ORIOL TORRES, NATHALIE KLEFISCH since Marimon Abogaos, extension://ieepebpjnkhaiioojkepfniodjmjjihl/data/pdf.js/web/viewer.html?file=https%3A%2F%2F, www.marimon-abogados.com%2Fwp-content%2Fuploads%2F2022%2F09%2FNewsletter-novedades-en-el-Reglamento-de-Costas.pdf.

these synergies, as yet not adequately resolved in the integration of port spaces in urban dynamics, has been the object of academic attention.⁷²

5. The Projection of the SDGs in the Port Space

The debate on the UN Sustainable Development Goals continues to fill pages of the legal literature today.⁷³ Beyond the definition in the international scenario, their translation into projects and activities that allow them to be achieved and contribute to a more equitable and sustainable international order remains problematic. This has also created difficulties for the various sectors of administrative activity covered by the strategic and implementation measures in relation to the Strategic Framework of the Port System of General Interest, as approved in October 2022. The Strategic Framework of the port system aims to define which ports we want for the year 2030. In this context, it is not surprising that the strategic actions defined must be linked to the fulfillment of the SDGs, which more directly affect port activity. These include: SDG6 on water sanitation; SDG 7 on affordable and clean energy; SDG 9 on the innovation and infrastructure industry; SDG 11 in the area of sustainable cities and communities; SDG 12 on responsible production and consumption; and SDG 14 on life below water. Below, without going into the detailed dynamics developed for the fulfillment of each of the objectives listed, we summarise their respective essential characteristics.

5.1. SDG 6: Clean water and sanitation

The first of the objectives related to management in the port system is the one that refers to the optimization of the management and use of water in ports. To this end, measures linked to the control of water consumpti-

72 LESTA COUPLE, E: The integration between port and city, University of La Coruña, Thesis; ESTEPA MONTERO, M: Analysis of Public Policy on Ports of General Interest, Marcial Pons, Madrid, 2021.

73 ALONSO IBÁÑEZ, R: *Urban policies and localization of sustainable development goals*. Tirant lo Blanch, 2021; TORRES FERNÁNDEZ, C; JEREZ RIBERO, W; CHEERFUL ARASCO: *Policies Publications and SDGs. Interventions for Social Transformation*, Dykinson 2022; Pensado Lejías, A: Implementation of the SDGs from Urbanism, *Consultant of the City Councils and Courts. Technical Journal specialized in Local Administration and municipal justice*, No. 2, 2022.

on have been foreseen, through the installation of meters of the level of said consumption, in the previous definition of consumption indicators. In addition, as foreseen in the linked goal,⁷⁴ and for its achievement, the progressive regularization of water distribution and marketing services in ports is foreseen, as well as the installation of an efficient irrigation system, collection and storage of rainwater and installation of non-permeable pipes with greater resistance to ground deformations.

5.2. SDG 7: Affordable and clean energy

In the same sense, and once the goal has been defined in the strategic document,⁷⁵ the achievement of objective 7 is guided through the definition of objectives linked to the reduction of energy consumption, and emissions, in buildings and services provided by the port authority,⁷⁶ as well as measures linked to the control and actual measurement at all points of consumption: the level of distribution and transformation of the port is also enhanced; further measures are linked to the lighting of port spaces, as well as air conditioning.⁷⁷

5.3. SDG 9: Industry Innovation and Infrastructure

The attention to infrastructures materializes at this point in the promotion of rail transport to and from ports.⁷⁸ At this point, the assistance

74 This is described as: "By 2030, significantly increase the efficient use of water resources in all sectors" and ensure the sustainability of freshwater abstraction and supply to address water scarcity and significantly reduce the number of people suffering from water deprivation".

75 As follows: "By 2030, significantly increase the share of renewable energy in the energy mix; Target 7.3: By 2030, double the global rate of improvement in energy efficiency".

76 Consideration should be given to the adoption of related guidance documents such as the "Port Energy Management Guide".

77 This is foreseen in the strategic documentation among the measures the air conditioning by pump of heat, and Geothermal energy is explored in some ports (sic, strategic document).

78 Thus the goal is defined as: "By 2030, 'modernize infrastructure' and reconvert industries to be sustainable, "using resources more effectively and promoting the adoption of clean and environmentally sound industrial technologies and processes", and getting "all countries to take action according to their respective capabilities".

derived from the Financial Fund for port accessibility is relevant.⁷⁹ In Spain, the improvement of the guidelines governing the 17 connection agreements signed between Puertos del Estado, the port authorities and ADIF, is foreseen.⁸⁰ In this context, reform is being implemented by Order TMA/822/2022, of 29 July, amending Annex III of the Consolidated Text of the Law on State Ports and the Merchant Marine, approved by Royal Legislative Decree 2/2011, of 5 September.⁸¹

5.4. SDG 11: Sustainable cities and communities

With regard to sustainable cities and communities, the link between the port system and the urban fabric is pursued under the provisions of the Strategy derived from the 2030 Agenda, for ports: "improvement of the mobility of heavy vehicles in the port environment: control of diffuse emissions in the handling of solid and liquid bulks; and the promotion of alternative energies in transport".⁸² Equally relevant among the planned measures is the review of the framework that regulates tolls for the use of the Spanish gas network: this aims to introduce modifications "that allow to make more competitive the services of supply of liquefied Natural Gas as fuel". However, we understand the initiatives foreseen in the linked strategic documents, which still require an urban-port city integration strategy that involves not only an improvement in the efficiency of infrastructures in the port environment, but also involves providing the city with "walkable" spaces". Thus, uses that do not alter those foreseen in the port system, must still respect the landscape and the parameters of urban sustainability.

79 Fund that was created by Royal Decree-Law 18/2014, of July 4 and that has been modified by: Royal decree 901/2022, of 25 October, which modifies the Royal decree 707/2015, of 24 July, which regulates the Financial Fund of Terrestrial Port Accessibility.

80 Sic, strategic document, which can be viewed in: extension://ieepebjpkhahiiiojkepfniod-jmjihl/data/pdf.js/web/viewer.html?file=https%3A%2F%2Fwww.puertos.es%2Fes-es%2Fmedioambiente%2FDocuments%2FODS%252009%2520-%2520Ferrocarril.pdf.

81 BOE of 27 August 2022.

82 Thus, the related target states: "By 2030, reduce the negative environmental impact per capita of cities, including by paying special attention to air quality" and municipal and other waste management.

5.5. SDG 12: Responsible production and consumption

Linked to the above is SDG 12, which addresses issues such as the recovery of construction waste. Without prejudice to the need to value waste management within the framework of the circular bio-economy, specific measures are provided for in the strategic documents, with respect to the contracting of work projects in which the use of these materials – waste – in the construction of port landfills is included as a condition. At this point we understand that the principles and measures are to be reviewed in the light of Law 7/2022, of April 8, on waste and contaminated soils for a circular economy,⁸³ and this because its provisions regarding the improvement of traceability will need to be taken into account, in order to avoid the abandonment of waste in ports. This will help to improve the implementation of environmental management systems in the port space. As for the measures provided for in the strategic documents – from the administrative point of view, it affects the regulation that impose conditions on licenses, authorizations and concessions aimed at guaranteeing the segregation, collection, storage and delivery to the authorized manager of the waste produced.⁸⁴

5.6 SDG 14: Life below water

Finally, the connection of actions in the port system with respect to their impact on underwater life is relevant. The goal at this point is defined as preventing and reducing marine pollution, optimizing the response to marine pollution emergencies. In this context, provision is made for the tendering of service contracts to provide schemes to act quickly in the event of an emergency.⁸⁵ The attention to underwater life is also manifested in the goal linked to the improvement of the quality of water and sediments of the ports.⁸⁶ This foresees the implementation of the Recommendation for maritime works 5.1 developed by state ports to contribute to achieving better management of the "quality of coastal waters in port areas".⁸⁷ To this end,

83 BOE of 9 April 2022.

84 Sic Strategy Agenda 2030 Portu Systemair.

85 At this point, surveillance, cleaning, maintenance, simulation, waste management and research measures are foreseen.

86 Thus the goal is formulated: "By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution".

87 Sic. ROME 5.1.

the introduction of operational and technical conditions is foreseen in the administrative regulation of licenses, authorizations and concessions aimed at giving adequate treatment to wastewater and rainwater and minimizing diffuse discharges. In addition, measures aimed at supervising operations by port police are incorporated into the strategies. With regard to wastewater, this also addresses the expansion of the coverage of the wastewater and industrial water network. In the case of runoff water, this includes the development and treatment for the treatment of those waters susceptible to being contaminated, and in the case of maintenance waters, the development of surfaces prepared for the maintenance of machinery equipped with separative networks and water treatment.⁸⁸ Finally, within the framework of this objective, initiatives are defined to prevent the dumping of waste from ships at sea.⁸⁹

6. Right behavior and sustainable attitudes, approaching sustainable nudging

Finding a way to make the population aware of the need to act responsibly and sustainably, implies not only an intervention in the field of education for sustainability but in the field of public policy or in the behavioral sciences, as has recently been explored as part of the administrativist doctrine, in the form of so-called "nudging" ", or spurs. This recognises that the rational action that is expected from an assumption of the responsibility that as citizens we have for our environment, may require not only administrative promotion measures, but an adequate nudging policy,⁹⁰ or small incentives that contribute to the improvement of actions and the preservation of the environment. The definition of a public policy is based on the recognizable elements that make it necessary, from the socio-economic

88 Sic, strategy 2030.

89 "By 2025, prevent and significantly reduce marine pollution of all kinds".

90 About the "nudging" and its application to Spanish administrative law, Prof. Ponce Solé has been a pioneer in the administrativist doctrine, by extrapolating some of the ideas derived from the initial formulation of the theory and its legal-administrative repercussion, from the works of Prof. Sunstein, with whom we had the opportunity to agree on related research at the University of Harvard. See for all: Juli Ponce Solé, Star, Montolío Durán, José Andrés, Rozas Valdes, "Behavioral Law and nudges: legal implications and linguistics", *Management and analysis of public policies*, ISSN 1134-6035, No. 25, 2021, pp. 58-72, and our latest work on the subject Gómez Jiménez, M.L *Procedural automation and electronic bias: the administrative procedure before artificial intelligence*, Aranzadi, 2021, in which we dedicate a chapter to nudging (Chapter V).

perspective. In this context, behavioral sciences have a prominent impact not only on the forecast of the precise behavioral attitudes to encourage the making of certain decisions, but also on the way in which the markets will react to it. They are relevant elements when formulating a public policy, so as to ensure its implementation reaches optimal levels of effectiveness. Therefore, a way to approach the improvement of sustainability and the ecosystem integration of elements of circular economy in cities, will involve a kind of sustainable "nudging" in the style of what has been happening in other branches of the legal system to motivate attitudes of recycling waste or improvement in environmental education actions.

7. Some Concluding Reflections

The need to address the climate emergency on our planet demands decisive responses from public officials, governance measures (or co-governance), and effective guidelines that can be applied by the population. The definition of the instruments provided for in the Climate Change Law 7/2021, represents a step forward in the definition of climate objectives, and orders the developments that must occur, initially in order to meet the temporary targets applicable until the year 2030. There are many administrative soft law instruments approved at both state and regional level, aimed at carbon neutrality. But none of these can be fully implemented unless "hard-law" normative mechanisms are available for it. In this context, nature-based solutions become important as an innovation mechanism that incorporates the cycle of ecosystems and natural resources, for the achievement of climate change mitigation and adaptation objectives. The policy proposals around Nature-Based Solutions have been important to date, but not been sufficiently applied, as they advocate either the financing of new implementation projects at the local or regional level or lack a specific normative reference beyond the generic framework provided by climate change regulations. The attention to the environment in the urban environment, addressing the conditions for promoting green infrastructures, including ecosystem integration that values the natural resources present in cities (green spaces, or facilities that allow sustainable connection with the environment), now needs to be matched by efforts towards the integration of the still incipient legal instruments linked to blue development. Perhaps the problem is not so much the lack of resources, or ultimately the lack of awareness, as the need for an ecosystem projection, lacking in the legal statements. While we struggle to approve new sectoral regulations, our marine ecosystem, especially, continues to suffer the effects of degradation that is increasingly

difficult to repair. Blue development, and the nudging strategies linked to its promotion can be at the basis of the response, if we can transcend the spirit of administrative soft-law to make it effective as a new form of ecological justice. As part of this process, our port system offers opportunities for the development of sustainable strategies, which in respect of the SDGs promote integrated ecosystems to safeguard the most valuable asset of our blue planet.

Bibliography

- Aguirre Font, "The Resilience of the Territory to Climate Change: Challenges and Legal Tools from Urban Planning", *Catalan Journal of Environmental Law*, no. 2 (2019).
- Alonso Ibáñez, R (Dir.): *Urban Policies and Localization of the Sustainable Development Goals. Theory and Practice*. Tirant Lo Blanch, Valencia, 2021.
- o*Urban agendas and city governance. Transformations, challenges and instruments*, Madrid, 2020.
- Álvarez Carreño, Santiago: "In the shadow of the pandemic: the climate crisis as a backdrop to the transformations of environmental law, in *Electronic Journal of Environmental Law*, CLIMALEX, no.37, 2020.
- Arauz, C, and March, M: "Nature-Based Solutions as tools to mitigate climate change", *Ambienta, La Revista del Ministerio de Medio Ambiente*, no. 127, 2021.
- Blasco Hedo, E: "Legal Regime of the use of scrub for energy purposes in private forests", in 7th Spanish Forestry Congress, "Renewable energy from biomass and its contribution to the mitigation of climate change de lege ferenda", in *Local Climate and Energy Policies*, INAP, 2018.
- Canó López, M.T: "Green infrastructure as a basis for urban planning", in *The right to the environment and the instruments of administrative tutelage. Book tribute to the master Martín Mateo*, coord. Zegarra, 2015.
- Conde Antequera, J: "El Régimen Jurídico-administrativo del aprovechamiento energética de los residuos", González Rios, I: *Estudios Jurídicos Hispano-Lusos de los servicios en Red* (energy, Telecommunications, transport), 2015.
- Cots, Elizabeth; Esteve Irene "Climate change and the energy transition, in the focus of European and Spanish legislative activity", *Actualidad Jurídica Aranzadi*, no. 978/2021.
- Estepa Montero, M: "Analysis of Public Policy on ports of general interest", Marcial Pons, Madrid, 2021.
- Feldman, Yulval, *The Law of Good People: Challenging States' Ability to Regulate Human Behavior* Cambridge University Press 2018).
- Fernández de Gata, D: "The new European Union strategy on rural areas: green deal, long-term vision and new Bauhaus", Wolters Kluwer, the Law, December 2021.
- Hernández González, F: *El Derecho ante el desafío climático*, Aranzadi.

- Galera Rodríguez, S: "Local climate policies: an (additional) reason to renew (local?) planning in Spain", in *Derecho de la Ciudad y el Territorio. Estudios Homenaje a Manuel Ballbé Prunes*, INAP, Madrid, 2017, pp. 475-498.
- García Alvarez, G; Jordano Fraga, J; Lozano Cutanda, B; Nogueira López, B: *Observatory of Environmental Policies*, 2021, Madrid.
- García Cáceres, V: *International Legal Perspective for the conservation of marine protected areas of the Mediterranean Sea of Spain*, Tirant Lo Blanch, Valencia, 2018.
- Gleick, James. *Chaos: Making a new science*. Random House, 1997.
- Gómez-Ferrer Rincón; *Linkage as a regulatory technique. From urban development transfers to emissions trading*, Thomson, Civitas, 2018.
- Gómez Jiménez, María Luisa:
- o *Legal Report and Diagnosis. Steps Towards Carbon Neutrality of the Junta de Andalucía. Strategy for Carbon Neutrality of the Junta de Andalucía*, IHEPA. Junta de Andalucía, 2020.
 - o *Observatory of Environmental Policies*, 2018, Air Quality.
 - o "Lights and shadows around the technological integration of cities", in ALONSO IBAÑEZ, R; *Challenges of Sustainable and Integrated Urban Development*, Madrid 2018, p. 91-106. Madrid.
 - o *Participatory Urbanism and Urban Governance in Smart Cities: The Red Queen Effect in Administrative Law*, Aranzadi, 2019.
- Lafortune, *Sustainable Development Report*, 2020, Junio, Cambridge. Cambridge University Press, 2020.
- López Ramón, F: El Lobo: percepción social y régimen jurídico, *Revista Aranzadi de Derecho Ambiental*, December 22, 2021, Aranzadi.
- o *Conserving natural heritage*, Reus, Madrid 2019.
- Margalef, Ramón *The biosphere, between thermodynamics and play*. Barcelona: Ediciones Omega, 1980.
- Martín Mateo, R: "The green energy of biomass".
- Mata Torres, Cynthia I: "Condicionantes territorial y urbanísticos en la legislación andaluza para la construcción de una planta de biomasa: la estratégica energética de Andalucía 2020", in *Actualidad Jurídica Ambiental*, December 7, 2020.
- Matson P, Clark William, Anderson K: *Pursuing Sustainability, A guide to the science and Practice*, Princeton University Press, 2016.
- Moreu Carbonell, E: *Integration of Nudges in Environmental Policies*, *Revista Aragonesa de Administración Pública*, no. 19, 2018.
- Navarro Cardoso, Fernando. *The crime of noise pollution*. Valencia: Tirant lo Blanch, 2021, p. 165.
- Nogueira López, alba (dir.); WIN DEZA, Xavier (dir.). *Rounding out the circular economy: from official discourse to necessary policies*. Cizur Menor (Navarra): Aranzadi – Thomson Reuters, 2021, p. 396.
- o "Rethinking the relationship of the environment with COVID and facing the climate challenge", in OPAM, 2021.
- Núñez Sarompas, Adolfo. *Manual of biomass and biofuel: use and energy exploitation (2nd ed.)*. Madrid: Centro de Estudios Financieros, 2022. p. 289.

- Olivares, A: *New law of the oceans, Tirant lo Blanc*, 2022.
- Ortiz García, M: "La Ley de protección del Medio Marino: hacia la gobernanza marítima", *Revista Catalana de Derecho Ambiental*, Vol.2, num. 2, 2011.
- oPublic policies to foster a participatory economy and sustainability (Dir.), Tirant Lo Blanch, 2021.
- oThe "blue Iberia" and its governance within the framework of the ecosystem planning of maritime space as a common good", *legal-administrative instruments of cooperation between Spain and Portugal in the management of natural resources. Proceedings of the XIII Luso-Spanish Colloquium of Professors of Administrative Law: [held at the University of Santiago de Compostela, October 26, 2018, University of A Coruña, October 27, 2018 / Luis Míguez Macho (dir.), Francisco Javier Sanz Larruga (aut.), 2020, ISBN 9788412188165, pp. 55-83.*
- oMarine protected areas: healing and resilient strategies in the current key decade, *Environmental Policy Observatory*, OPAM, 2021.p. 736-
- Pallarés Serrano, A: "Análisis del Proyecto de Ley de Cambio Climático y Transición Energética: luces y sombras", *Revista Catalana de Derecho Ambiental*, Vol. XI.No. 1, 2020.
- Palomo et al., Assessing nature-based solutions for transformative change, *One Earth* (2021), <https://doi.org/10.1016/j.oneear.2021.04.013>.
- Parra Santiago, J.I: *Proposal of a new model of Port Governance of the Spanish port system based on efficiency and competitiveness*, Doctoral thesis 2021.
- Petel, Matthias; Nudging Towards Sustainability? A Critical Perspective on Behavioral Economics, *Environ: Environmental Law and Policy Journal*, 43 *Environ Env'tl. L. & Pol'y J.* 223 (Spring, 2020).
- Ponce Solé and Agustí Cerrillo i Martínez, (Coord.), *Innovation e n e l Field of Good Regulatory Governance: Behavioral Sciences, Transparency and Prevention of Corruption on the Purpose of Good Regulation andn las Spanish Laws 39/2015, of October 1, 2015, d e Common Administrative Procedure and 40/2015, d e 1 October, dtbe Public Sector*, INAP, Madrid, 2017.
- o"Administrative Law, behavioral sciences and "nudging" in public management", *Basque Journal of Management of People and Public Organizations*, no.15, 2018.
- o"Artificial Intelligence, Administrative Law and Reservation
- Puentes Cociña, B; and Quintia Pastrana, A: *The right to digital transformation. Opportunities risks and guarantees*, Atelier, 2020.
- Quintia Pastrana Andrei, Cociña Beltrán: *Law in the face of digital transformation. Opportunities, risks and guarantees*, Atelier, 2020.
- Real Ferrer, G: "LaSolidaridad en el Derecho Administrativo", *Revista de Administración Pública*, No. 161, 2003,
- Rodríguez Chávez Mimbrero, Blanca: "New Green Deal, Next Generation EU and the CAP 2021-2027, Europe counts on our forests, do we act accordingly?", *Observatory of Environmental Policies*, Madrid, 2021.
- Ronquillo, L; Irigoyen, V: "The Observatory of Nature-based Solutions", *Ambienta, the magazine of the Ministry of the Environment*, no. 127, 2021.
- Sanz Larruga, F. J: "The Mar Menor: subject of rights some proposals for the improvement of environmental law, Congress of the Spanish Association of professors of administrative law, Oviedo February 2022.

- Sandel, M: *The tyranny of merit. What has become of the common good?*
- Sánvhez Saenz, A.J.: "The latest challenges of natural heritage: sinks, sustainability and compatible implementation of renewable energies, *General Journal of Administrative Law*, no. 60, May 2022.
- Stephenson, P. "Twenty years of multi-level governance: 'Where Does It Come From? What Is It? Where Is It Going?'," *Journal of European Public Policy*, 20(6), pp. 817-837, 2013.
- Soro Mateo, Jordana Fraga et alii: *Environmental vulnerability and climate vulnerability in times of pandemic*, Tirant Lo Blanch, 2020.
- Terol Gómez, "A brief note on the much-needed and complex Law 7/2021, of May 20", *Vlex Journal of Administrative Law*.
- Uriarte Ricote, Maite: Planning Green Infrastructure, *Basque Journal of Public Administration*, 99-100, May – December 2014, special issue pp. 2873-2895.
- Vicente Giménez, T. (2020): "From climate justice to ecological justice: the rights of nature", *Revista Catalana de Dret Ambiental*, Vol. XI, nº 2, pp. 1-42.
- VV.AA. Roadmap offshore wind and marine energy in Spain. Madrid: Ministry for the Ecological Transition and the Demographic Challenge, 2021. p. 123 available in: <https://www.lam.oncloa.gob.es/consejodeministros/resumenes/Documents/2021/101221-Hoja-ruta-eolica-marina.pdf>.
- Zamora Roselló, R: The Governance of maritime decarbonization: initiatives from ports, *Catalan Journal of Environmental Law*, Vol IX.RCDA no. 1 (2018).
- Zloves Santa Brigid*, Ignatius. The regulation of the self-consumption of electricity in Spain: adapted Royal Decree 244/2019, of April 5. Cizur Menor (Navarra): Aranzadi – Thomson, 2021, p. 224.