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Family Businesses

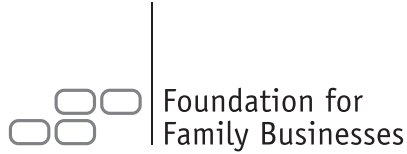
Opportunities and Risks in Green Deal Politics

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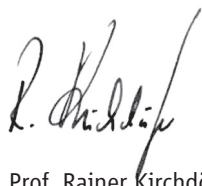
How climate protection can succeed with a market economy and technology

Climate protection is one of the most important issues of our time – a point on which there is clear consensus. Policymakers, society and business alike face the common challenge of meeting the targets set out in the Paris agreement on climate protection. And family businesses play a significant role in this respect. Opinions tend to differ not about the targets, but about the path to their achievement. The Advisory Board of the Foundation for Family Businesses has scrutinised the way in which policymakers are responding to the challenge.

Climate protection cannot mean that we neglect other issues. The coronavirus pandemic has caused massive human and economic damage to the global economy, and it is important for national economies to start growing again.

The European Union intends to achieve both goals by deploying the same means: the Green Deal. Unveiled by the President of the European Commission, *Ursula von der Leyen*, the Green Deal aims to reconcile economic growth and climate protection. A green recovery package of measures has been proposed, on the basis of which billions of euros are to be mobilised. Monetary and fiscal policy are likewise set to focus on green goals ("green finance").

In this Annual Bulletin of the Advisory Board of the Foundation for Family Businesses, we caution against weighing down economic, financial market and competition policy with environmental policy objectives. This would promote a planned economy, fragmentation and mismanagement – none of which make sense from a climate policy or economic point of view.



Prof. Rainer Kirchdörfer
Chair of the Advisory Board and
Executive Board member of the Foundation for Family Businesses

In his article, *Prof. Dr. Dr. h.c. Clemens Fuest*, President of the ifo Institute, warns against the negative consequences of green finance. Using financial market regulation or monetary policy as a means of contributing capital flows to green projects would lead to market distortion. Compartmentalised intervention in industrial and economic policy would hamper the effectiveness of climate measures and harm the economy, analyses *Prof. Gabriel Felbermayr, PhD*, Head of the Kiel Institute for the World Economy. *Prof. Dr. Dr. Udo Di Fabio*, former member of Germany's Constitutional Court, calls for using the principles of the social market economy to combat climate change. According to him, undermining the substance of basic economic rights and thus the performance of an open social market economy would not be a beneficial approach to protecting the climate and achieving ecological sustainability. *Prof. Dr. Kay Windthorst*, Director of the Research Centre for Family Enterprises at the University of Bayreuth, regards the sustainability debate as an opportunity for family businesses. He is a proponent of closely incorporating the next generation of business owners into the sustainability strategy of businesses.

Family businesses play a key role when it comes to applying green technologies. As the biggest taxpayers and employers, they have close ties with the regions in which they operate. They are dependent on reliable local conditions. According to the Advisory Board, policymakers should engender greater trust in market-based instruments instead of favouring government intervention. This would be the best way of transitioning to a climate-friendly society.

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Green recovery: legal standards for the ecological restructuring of the economy

Prepared by Prof. Dr. Dr. Udo Di Fabio

I. Introduction

The ecological transition is in full swing. It is almost impossible to keep track of the vast array of measures at national and European level. Not only are national economies restructuring in a massive undertaking to take due account of climate protection goals, which is challenging enough in terms of control theory, let alone from an economic and social perspective, but this work is combined with the compensatory and support measures currently required as a result of the coronavirus pandemic. Policy-making in the coronavirus crisis has not led to climate protection losing its place on the agenda. After all, economic policies meant to combat the COVID-19 recession tend to go hand-in-hand with new regulatory and legal policies, both at national and European level. Climate protection and green issues should play a clear or even significant role in nearly all planned and adopted policy measures, right up to the monetary policy of the ECB. Consideration for such issues has since come to be understood as a prerequisite for any modern approach to boosting the economy, and measures for this purpose will therefore reflect a fundamental shift towards a sustainable economy. The path to that destination reflects the intention of ascribing significant weight to the notion of sustainability¹ coined in the time of cameralism, for instance by *Hans Carl*

von Carlowitz: prosperity needs to be ensured in a way that is responsible in terms of climate policy and is fair for all generations. This involves considering resource conservation and the creation of prosperity together – or, in other words, disassociating the use of resources from the creation of prosperity.

There is much debate about “sustainable capitalism”², “eco-social market economy”³ or even the “future literacy of the 21st century”⁴, with many protagonists seeking inspiration from *Karl Polanyi’s* concept of the “Great Transformation”⁵. This ambition of managing two crises at the same time has given rise to the new topos of *green recovery*, which calls for navigating our way out of the economic crisis by setting ecological standards. Faced with the fundamental reality of alarming global warming, the solution does not lie in something as obvious as the Secretary-General of the United Nations, *António Guterres*, calling upon governments not to lose sight of climate protection when deciding on aid packages to promote the economy.⁶ It lies in establishing a comprehensive implementation strategy which links subsidies, grants or loans with government requirements based on climate criteria. Such an approach can draw on support from numerous non-governmental

1 See Bundesministerium für Ernährung und Landwirtschaft, Über 300 Jahre forstliche Nachhaltigkeit, 30 September 2019, <https://www.bmel.de/DE/themen/wald/wald-in-deutschland/carlowitz-jahr.html> (last accessed on 6 August 2020).

2 Hennecke, in: Wohlstand für Alle. Klimaschutz & Marktwirtschaft, Ludwig-Erhard-Stiftung, 2020, p. 19.

3 Fücks, in: Wohlstand für Alle. Klimaschutz & Marktwirtschaft, Ludwig-Erhard-Stiftung, 2020, p. 36; Mai, in: Wohlstand für Alle. Klimaschutz & Marktwirtschaft, Ludwig-Erhard-Stiftung, 2020, p. 21.

4 Scheidewind, in: Wohlstand für Alle. Klimaschutz & Marktwirtschaft, Ludwig-Erhard-Stiftung, 2020, p. 32.

5 Polanyi, *The Great Transformation: Politische und ökonomische Ursprünge von Gesellschaften und Wirtschaftssystemen*, 1973.

6 UN doc. SG/SM/20051 dated 20 April 2020, <https://www.un.org/press/en/2020/sgsm20051.doc.htm> (last accessed on 6 August 2020); see also *Green*, For Earth Day, UN chief urges ‘green recovery’ in response to coronavirus, Reuters dated 21 April 2020, <https://www.reuters.com/article/us-earth-day-guterres/for-earth-day-un-chief-urges-green-recovery-in-response-to-coronavirus-idUSKCN223257> (last accessed on 6 August 2020); Keller, Nach der Corona-Krise: So könnte die Politik Klima und Wirtschaft fördern, SWR dated 23 April 2020, <https://www.swr.de/swraktuell/klimaschutz-green-deal-recovery-corona-krise-klimawandel-100.html> (last accessed on 6 August 2020).

organisations.⁷

The Vice-President of the European Commission and European Commissioner for Climate Action, *Frans Timmermans*, also stresses the need for governments not to neglect ecological aspects when considering possible aid measures, despite the economic challenges posed by the coronavirus pandemic.⁸ He pleads for an ecologically sustainable economic policy, even in times of recession, referring to intergenerational justice. The Green Recovery alliance was launched in April 2020 at the initiative of French Member of the European Parliament *Pascal Canfin*.⁹ A good 180 signatories have joined the alliance, including 79 members of the European Parliament (MEPs), ministers from 11 different countries (one of which is the German Minister for the Environment, *Svenja Schulze*) business leaders and civil society organisations. They call for green investment packages to reboot the economy, which has been severely shaken by the COVID-19 crisis. Their stance is primarily based on the argument that climate protection is a key pillar of the economic strategy. By referring to the European Green Deal,¹⁰ they intend to point out that strategies for climate-friendly economic policy are already being pursued and should not be sidelined or abandoned while mitigating the consequences of the pandemic. The economic crisis and climate crisis should not be treated as separate issues, but dealt with together in one process. The special report by the German Advisory

Council on the Environment (Sachverständigenrat für Umweltfragen) likewise calls for the need to “augment the social market economy and constitutional state with an ecological component”.¹¹

One open issue is how to reconcile the meta-goal of climate protection with the interests of economic operators who have been badly affected by the crisis in a number of sectors. Although keen to benefit from economic policies, they are nevertheless also subject to a challenging structural policy, and this creates a unique situation in terms of safeguarding their fundamentally protected economic freedom. Based on fundamental economic rights, it is possible to assert subjective legal positions, which are enshrined in the catalogue of fundamental rights within Germany’s Basic Law (Grundgesetz – GG) as well as in the EU Charter of Fundamental Rights. Any intervention in the market should be measured against the fundamental rights of the freedom to enjoy property rights and the freedom to pursue a trade or profession. In this respect, the fundamental rights – meaning the rights set out in the Basic Law, those laid down in the EU Charter of Fundamental Rights and the rights of the European Convention for the Protection of Human Rights and Fundamental Freedoms – constitute a binding framework for all measures of public power protecting the freedom of economic operators to develop. Even a goal such as climate protection, which occupies such a dominant position in the public eye, is unable to push

7 See for instance *Greenpeace*, Grüner Marshallplan für Deutschland. Wie notwendige Wirtschaftshilfen die Corona-Krise abfedern und die ökologische Transformation beschleunigen können, March 2020, https://www.greenpeace.de/sites/www.greenpeace.de/files/publications/2020-03-foes-wirtschaftshilfen-corona-krise_1.pdf (last accessed on 6 August 2020); *WWF/Germanwatch*, Ziele – Pfade – Transparenz. Mit nachhaltigem Wirtschaftswachstum aus der Krise, May 2020, https://germanwatch.org/sites/germanwatch.org/files/Ziele-Pfade-Transparenz_0.pdf (last accessed on 22 December 2020); *Oxfam*, Oxfam warnt vor Verschärfung der Klimakrise durch Corona-Pandemie. Ministertreffen in Bonn muss gemeinsame Vision für klimakompatible Wirtschaftshilfen entwickeln, April 2020, <https://www.oxfam.de/presse/pressemitteilungen/2020-04-24-oxfam-warnt-verschaerfung-klimakrise-corona-pandemie> (last accessed on 6 August 2020).

8 See for instance *Schmidt/Grytz*, Frans Timmermans im Interview, “Der Green Deal ist unsere Strategie”, ARD dated 8 May 2020, <https://www.tagesschau.de/ausland/timmermans-greendeal-101.html> (last accessed on 6 August 2020).

9 Green Recovery, Reboot & Reboost our economies for a sustainable future, 13 April 2020, <https://drive.google.com/file/d/1j54QxE-QjhrEHjGb5LrKsHuDAKv8LUq/view> (last accessed on 6 August 2020).

10 *European Commission*, 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, The European Green Deal, COM(2019) 640 final dated 11 December 2019, https://ec.europa.eu/info/sites/info/files/european-green-deal-communication-annex-roadmap_de.pdf (last accessed on 6 August 2020). For more details, see below.

11 *Sachverständigenrat für Umweltfragen*, Demokratisch regieren in ökologischen Grenzen – Zur Legitimation von Umweltpolitik, June 2019, p. 5, https://www.umweltrat.de/SharedDocs/Downloads/DE/02_Sondergutachten/2016_2020/2019_06_SG_Legitimation_von_Umweltpolitik_KF.pdf?__blob=publicationFile&v=8 (last accessed on 6 August 2020) [our translation].

fundamental rights and principles aside. When a government grants subsidies, it is not, on the face of it, a matter of fending off the exercise of public power, but of participating in financial benefits, and those hoping to receive funds are not likely to dictate terms to those providing them. And yet, the defence and directive content of fundamental rights is also applicable with respect to subsidies: this legal relationship is not a legal vacuum. A further point with respect to subsidies is that the constitution is committed to “defining and enforcing appropriate limits to restrict the impact on individual

and collective property and to safeguarding economic development to the greatest possible extent”.¹² It is all the more important to remember this now, precisely because governments and the European Union are currently maintaining themselves through the use of a massive, monetary-policy-supported expansion of the fiscal means available to them, i.e. by increasing public debt – even more so than by using subsidies and investments in public services to demand returns with a directive effect on the economy.

II. Political measures

At the end of 2019, both the European Union and the Federal Republic of Germany took decisive steps towards ecologically restructuring the economy. This development was driven forward by the climate protection movement¹³ and joined the increase in private sustainability investments that has emerged over the last few years especially in the financial markets.¹⁴ In 2020, measures were taken to boost the economy in the wake of the coronavirus crisis. The issues involved in policy-making work are dovetailing in a new and specific way: on the one hand, there is a greater focus on climate-related environmental protection; on the other, measures are required to manage the consequences of the pandemic. And the pace of change is being heightened by the Summit decision of 11 December 2020, according to which greenhouse gas emissions are to be reduced by at least 55 percent by 2030 compared with 1990.¹⁵

1. Measures taken by the European Union

The environmental protection measures of the European Union that focus more specifically on the climate are grouped under the banner of the “Green Deal” (a), which was proposed as a framework programme in December 2019. The economic crisis triggered by the coronavirus pandemic has not undermined this political concept; the measures taken by the European Union to manage the consequences of the pandemic (b) follow on from the development trend of the Green Deal. Climate protection and the transition of the economy towards sustainability continue to dominate as guiding political principles and need to be restructured in line with further initiatives, so that – as a bundle of measures – they can simultaneously soften the blow of the current pandemic crisis. In this way, the reconstruction measures, in particular the recovery fund of the

12 Scherzberg, Risikosteuerung durch Verwaltungsrecht: Ermöglichung oder Begrenzung von Innovationen? VVDStRL 63 (2004), p. 214 (240) [our translation].

13 A key example of such movements is the “Fridays for Future” movement. Other groups include “Ende Gelände” (which translates as “here and no further”) and “Extinction Rebellion”. There are also non-governmental organisations with remits based on environmental protection: Greenpeace, Environmental Action Germany (Deutsche Umwelthilfe – DUH), WWF, Nature and Biodiversity Conservation Union (Naturschutzbund Deutschland – NABU), German Federation for the Environment and Nature Conservation (Bund für Umwelt und Naturschutz Deutschland – BUND), German Nature Conservation Association (Deutscher Naturschutzring – DNR) and Robin Wood.

14 For more details, see *BaFin*, Finanzen und Nachhaltigkeit: das Ende des “Weiter so”, Perspektiven 2/2019, https://www.bafin.de/SharedDocs/Veroeffentlichungen/DE/BaFinPerspektiven/2019_02/bp_19_2_Thimann.html (last accessed on 6 August 2020); Heinen, in: Wohlstand für Alle. Klimaschutz & Marktwirtschaft, Ludwig-Erhard-Stiftung, 2020, p. 48; Rajagopalan/Quitza, Nachhaltigkeit: Der Finanzmarkt macht Druck, Capital dated 30 October 2019, <https://www.capital.de/geld-versicherungen/nachhaltigkeit-der-finanzmarkt-macht-druck> (last accessed on 6 August 2020).

15 Conclusions adopted by the European Council dated 10/11 December 2020, EUCO 22/20, <https://www.consilium.europa.eu/media/47346/1011-12-20-euco-conclusions-de.pdf> (last accessed on 23 December 2020).

European Union, should be seen as a means of support for the Green Deal, but under new auspices, i.e. the crisis as a means of accelerating the transition.

a) European environmental protection

When the President of the European Commission, *Ursula von der Leyen*, took office, she set six priorities for the work of the Commission over the coming years.¹⁶ In the process, she focused on the ecological transition of European society as her guiding principle. The decision to appoint the Vice-President of the European Commission, *Frans Timmermans*, as European Commissioner for Climate Action demonstrates the prominent position adopted by climate protection in the work portfolio of this executive arm of the EU. The Green Deal maps the priorities¹⁷ and was presented by the Commission's leadership immediately after taking office on 11 December 2019. The name "Green Deal" is reminiscent of the powerful New Deal with which *Franklin D. Roosevelt* initiated economic policies in the US to bring about economic relief during the Great Depression (1933 to 1938),¹⁸ and seems intended to announce an equally revolutionary project. This is also reflected in *Ursula von der Leyen's* man-on-the-moon statement to the press.¹⁹ The status report published by the European Environment Agency,²⁰ described by some as alarming, likewise helped pave the way for the Green Deal.²¹ The

European Parliament declared a global climate emergency, while the European Council made the following announcement about climate legislation:

*"The Union's and the Member States' climate action aims to protect people and the planet, welfare, prosperity, health, food systems, the integrity of eco-systems and biodiversity against the threat of climate change, in the context of the 2030 agenda for sustainable development and in pursuit of the objectives of the Paris Agreement, and to maximise prosperity within the planetary boundaries and to increase resilience and reduce vulnerability of society to climate change."*²²

In this ambitious and transformational sense, the objective of the Green Deal is for the European Union to develop into a climate-neutral region by 2050, in which year net-zero greenhouse gas emissions are also to be achieved.²³ The milestone of reducing emissions by 55 percent by 2030 compared with 1990 levels has now been set by the European Council, with the EU Parliament having already pushed for a higher target of a 60 percent reduction by 2030. According to political statements, this can only be achieved if all sectors are included and the targets are aimed at operators from all sectors of the economy in an effective manner.

16 See *European Commission*, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Commission Work Programme 2020. A Union that strives for more, COM(2020) 37 final dated 29 January 2020, https://eur-lex.europa.eu/resource.html?uri=cellar:7ae642ea-4340-11ea-b81b-01aa75e-d71a1.0001.02/DOC_1&format=PDF (last accessed on 6 August 2020); see also *von der Leyen*, A Union that strives for more. My agenda for Europe, July 2019, https://ec.europa.eu/info/sites/info/files/political-guidelines-next-commission_de.pdf (last accessed on 6 August 2020).

17 *European Commission*, 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, The European Green Deal, COM(2019) 640 final dated 11 December 2019, https://ec.europa.eu/info/sites/info/files/european-green-deal-communication-annex-roadmap_de.pdf (last accessed on 6 August 2020). For a review of the Green Deal, see *Blanke/Pilz*, EuR 2020, 270 (277 et seq.).

18 *Blanke/Pilz*, EuR 2020, 270 (278).

19 *Von der Leyen*, Press statement on the Green Deal, asserting that "[...] this is Europe's 'man on the moon' moment", 11 December 2019, https://ec.europa.eu/commission/presscorner/detail/en/speech_19_6749 (last accessed on 6 August 2020).

20 *European Environment Agency*, The European environment – state and outlook 2020. Knowledge for transition to a sustainable Europe, December 2019, <https://www.eea.europa.eu/publications/soer-2020> (last accessed on 6 August 2020).

21 *Köck/Markus*, ZUR 2020, 257 (257).

22 *European Council*, Proposal for a Regulation of the European Parliament and of the Council establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law) – Partial general approach, Brussels, 23 October 2020 (OR. en) 12261/20.

23 Net zero emission means that all man-made greenhouse gas emissions must be removed from the atmosphere through reduction measures, thus reducing the Earth's net climate balance – that is, after removal via natural and artificial sink – to zero.

From time to time, they should benefit from significant investment programmes, so that they can contribute to the ecological transition of the economy in return.

In this respect, the Commission has already presented its Sustainable Europe Investment Plan²⁴ together with the Just Transition Mechanism²⁵. The Investment Plan provides for the following three dimensions to enable the transition: (1) funds will be mobilised and increased for sustainable investments, in particular via the InvestEU programme, (2) an enabling framework will be created for private investors and the public sector to pave the way for sustainable investments, and (3) tailored support will be provided to both public and private project sponsors in identifying, structuring and executing sustainable projects. The Just Transition Mechanism is to ensure that regions most affected by the pending structural changes are not disadvantaged. Here as well, the Commission proposes three pillars to address these challenges, namely: (1) a fund providing subsidies for those regions most affected by the transition (Just Transition Fund), (2) a dedicated just transition scheme under InvestEU, generating private investments and supporting the economic diversification of the affected regions, and (3) a new public sector loan facility, providing loans at favourable conditions for investments in energy and transport infrastructure.

With respect to the EU's external borders, the Green Deal is to establish a carbon border adjustment mechanism that will help protect European industry (which

has to meet stringent environmental regulations) by making it more difficult for cheap imported products from environmentally damaging production to access the internal market.²⁶ The essential aim of the Green Deal is not to meet climate targets primarily through constraints on consumption and mobility, but rather to ecologically transform society, and the economy in particular. This is based on the economic realisation that as an economy shrinks, so too do investments and the rate of innovation.²⁷ From the perspective of constitutional or Union law as well and especially in terms of political support, it is assumed that enforced restraints can only be implemented to a very limited extent given our free democratic basic order.

A European Climate Law needs to be adopted in order to implement the Green Deal. The corresponding proposal was presented in March 2020 in accordance with the Commission's previous announcement, and referred to as the "Regulation of the European Parliament and of the Council establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law)".²⁸ The long-term objective of achieving "EU climate neutrality by 2050" is laid down in this document. To help achieve this objective, the proposal goes on to empower the Commission to make decisions with respect to setting the trajectory by 2050 (Art. 3), to regularly assess the consistency of measures taken by the European Union and its Member States towards achieving the objective as expressed by the trajectory (Art. 5 to Art. 7), to issue

24 *European Commission*, 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, COM(2020) 21 final dated 14 January 2020, <https://eur-lex.europa.eu/legal-content/DE/TXT/PDF/?uri=CELEX:52020DC0021&from=EN> (last accessed on 6 August 2020).

25 *European Commission*, Proposal for a Regulation of the European Parliament and of the Council establishing the Just Transition Fund, COM(2020) 22 final dated 14 January 2020, https://eur-lex.europa.eu/resource.html?uri=cellar:b82780d8-3771-11ea-ba6e-01aa75ed71a1.0002.02/DOC_1&format=PDF (last accessed on 6 August 2020).

26 *European Commission*, 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, The European Green Deal, COM(2019) 640 final dated 11 December 2019, https://ec.europa.eu/info/sites/info/files/european-green-deal-communication-annex-roadmap_de.pdf (last accessed on 6 August 2020).

27 Fücks, in: Wohlstand für Alle. Klimaschutz & Marktwirtschaft, Ludwig-Erhard-Stiftung, 2020, p. 36.

28 *European Commission*, Proposal for a Regulation of the European Parliament and of the Council establishing the framework for achieving climate neutrality and the amending Regulation (EU) 2018/1999 (European Climate Law), COM(2020) 80 final dated 4 March 2020, <https://eur-lex.europa.eu/legal-content/DE/TXT/PDF/?uri=CELEX:52020PC0080&from=DE> (last accessed on 6 August 2020). For a review, see Kirchhof, in: Wohlstand für Alle. Klimaschutz & Marktwirtschaft, Ludwig-Erhard-Stiftung, 2020, p. 40 et seq.

recommendations to Member States if their measures are found to be inconsistent with the objective (Art. 6 (2) and (3)), to ensure public participation (Art. 8) and to establish a climate and energy dialogue with local authorities, civil society organisations and the business community (Art. 10).²⁹ The proposed regulation has been criticised for not initially proposing more ambitious targets in the shorter term, particularly for the period until 2030: it contains no plan for raising the European Union's climate target for 2030 – namely, reducing greenhouse gas emissions by at least 50 per cent.³⁰ Based on the Summit decision on 11 December 2020, tangible legislative steps pursuant to this proposal are expected to be taken by mid-2021.³¹

In parallel to the adoption of a European Climate Law, amendments need to be made to relevant EU legislation already in force.³² To determine precisely what needs to be amended, substantively related policy initiatives are being taken and strategic concepts elaborated. They are intended to ensure that the requirement of aligning all Union policies and measures to the guiding principle

of climate neutrality by 2050 is met.³³ The integrated approach of the Green Deal has been praised in literature as crucial and outstanding, as it ensures coherence and consistency in the system of European Union law.³⁴ At the top of the list in this respect is the European Union industrial strategy proposed in March 2020³⁵ – a concept paper focusing on industrial policy to support the ecological and digital transition of industrial companies based in the European Union³⁶ with the intention of sustaining and strengthening their international competitiveness. A particular focus should be placed on helping small and medium-sized enterprises. The envisaged measures include the deployment of dedicated sustainability advisers, the creation of a network of 240 digital innovation hubs, the provision of subsidies, reductions in bureaucracy, improved access to venture capital funds and the establishment of a fund to finance initial public offerings. The EU industrial strategy runs in parallel to Germany's National Industrial Strategy 2030. In November 2019, the Federal Ministry for Economic Affairs and Energy (Bundesministerium für Wirtschaft und Energie) set out strategic guidelines for

29 Köck/Markus, ZUR 2020, 257 (258).

30 See Vorreiter, Langzeitstrategie statt detaillierte Maßnahmen, Deutschlandfunk dated 4 March 2020, https://www.deutschlandfunk.de/eu-klimaschutzgesetz-langzeitstrategie-statt-detaillierte.1773.de.html?dram:article_id=471670 (last accessed on 6 August 2020); Becker/Müller, Mondlandung mit Greta, Spiegel dated 4 March 2020, <https://www.spiegel.de/politik/deutschland/eu-kommission-ursula-von-der-leyen-stellt-erstes-klimaschutzgesetz-vor-a-d8b255f9-741d-4698-85ee-4596058f09b5> (last accessed on 6 August 2020).

31 See earlier *European Commission*, Proposal for a Regulation of the European Parliament and of the Council establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law), COM(2020) 80 final dated 4 March 2020, p. 3, <https://eur-lex.europa.eu/legal-content/DE/TXT/PDF/?uri=CELEX:52020PC0080&from=DE> (last accessed on 6 August 2020); Becker/Müller, Mondlandung mit Greta, Spiegel dated 4 March 2020, <https://www.spiegel.de/politik/deutschland/eu-kommission-ursula-von-der-leyen-stellt-erstes-klimaschutzgesetz-vor-a-d8b255f9-741d-4698-85ee-4596058f09b5> (last accessed on 6 August 2020).

32 Amendments need to be made, for example, to Regulation (EU) No 347/2013 of the European Parliament and of the Council of 17 April 2013 on guidelines for trans-European energy infrastructure and repealing Decision No 1364/2006/EC and amending Regulations (EC) No 713/2009, (EC) No 714/2009 and (EC) No 715/2009, <https://eur-lex.europa.eu/legal-content/DE/TXT/PDF/?uri=CELEX:32013R0347&from=DE> (last accessed on 6 August 2020), Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU, https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=uriserv:OJ.L_.2013.348.01.0001.01.DEU (last accessed on 6 August 2020), Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups, <https://eur-lex.europa.eu/legal-content/DE/TXT/PDF/?uri=CELEX:32014L0095&from=DE> (last accessed on 6 August 2020) and Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure, <https://eur-lex.europa.eu/legal-content/DE/ALL/?uri=celex%3A32014L0094> (last accessed on 6 August 2020).

33 *European Council*, Conclusions dated 12 December 2019, EUCO 29/19, p. 2, <https://www.consilium.europa.eu/media/41779/12-euco-final-conclusions-de.pdf> (last accessed on 6 August 2020).

34 See for instance Becker, EuZW 2020, 441 (441 et seq.).

35 *European Commission*, 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, A New Industrial Strategy for Europe, COM(2020) 102 final dated 10 March 2020, https://ec.europa.eu/info/sites/info/files/communication-eu-industrial-strategy-march-2020_de.pdf (last accessed on 6 August 2020).

36 See also Stöbener de Mora, EuZW 2020, 253 (253).

a German and European industrial policy.³⁷

They identify three central fields of action: improving overall conditions for industrial activities, strengthening new technologies and maintaining Germany's technological sovereignty in international competition. In tandem with the EU's industrial strategy, Germany's National Industrial Strategy is intended to be the decisive programme for safeguarding and regaining commercial and technical expertise, competitiveness and industrial leadership at a national, European and global level in as many sectors as possible, thus securing long-term prosperity and employment. The EU's Circular Economy Action Plan was also published in March 2020.³⁸ In response to statements that developing a robust circular economy is essential for the ecological transition of the

economy, the Action Plan aims to retain the value of products, materials and resources for as long as possible and generate as little waste as possible to promote the development of sustainable products. Particular emphasis is placed on resource-intensive sectors, such as the textiles, construction, electronics and plastics sectors. The Farm to Fork strategy³⁹ and Biodiversity strategy⁴⁰ focus on agriculture. Both provide for ways of improving sustainability in food production and aim to promote ecological farming and a safe supply of affordable and nutritious food. One of the actions involves restricting the use of pesticides, fertilisers and antibiotics. The strategies also aim to fairly distribute income in food manufacturing.⁴¹ Strategies for sustainable and smart mobility⁴², sustainable financing⁴³, offshore renewable energy⁴⁴ as well as a chemicals strategy for

37 *Bundesministerium für Wirtschaft und Energie*, Industriestrategie 2030. Leitlinien für eine deutsche und europäische Industriepolitik, November 2019, https://www.bmwi.de/Redaktion/DE/Publikationen/Industrie/industriestrategie-2030.pdf?__blob=publicationFile&v=20 (last accessed on 6 August 2020). See *Di Fabio*, in: *Industriepolitik in Deutschland und der EU, Jahresheft des Wissenschaftlichen Beirats der Stiftung Familienunternehmen*, 2020, p. 1 et seq., https://www.familienunternehmen.de/media/public/pdf/publikationen-studien/studien/Industriepolitik-in-Deutschland-und-der-EU_Jahresheft_Stiftung-Familienunternehmen.pdf (last accessed on 23 December 2020).

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, A new Circular Economy Action Plan. For a cleaner and more competitive Europe, COM(2020) 98 final dated 11 March 2020, <https://eur-lex.europa.eu/legal-content/DE/TXT/?qid=1594895451494&uri=CELEX:52020DC0098> (last accessed on 6 August 2020).

39 *European Commission*, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system, COM(2020) 381 final dated 20 May 2020, https://eur-lex.europa.eu/resource.html?uri=cellar:ea0f9f73-9ab2-11ea-9d2d-01aa75e-d71a1.0003.02/DOC_1&format=PDF (last accessed on 6 August 2020).

40 *European Commission*, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, EU Biodiversity Strategy for 2030. Bringing nature back into our lives, COM(2020) 380 final dated 20 May 2020, <https://eur-lex.europa.eu/legal-content/DE/TXT/?qid=1590574123338&uri=CELEX%3A52020DC0380> (last accessed on 6 August 2020).

41 For further information, see *European Commission*, Farm to Fork strategy for a fair, healthy and environmentally-friendly food system, https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/actions-being-taken-eu/farm-fork_de (last accessed on 6 August 2020).

42 *European Commission*, 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, The European Green Deal, COM(2019) 640 final dated 11 December 2019, https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_de.pdf (last accessed on 6 August 2020).

43 *European Commission*, 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, The European Green Deal, COM(2019) 640 final dated 11 December 2019, p. 20, https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_de.pdf (last accessed on 6 August 2020).

44 *European Commission*, Communication to from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Green Deal, COM(2019) 640 final dated 11 December 2019, p. 7, https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_de.pdf (last accessed on 6 August 2020); *European Commission*, Renewable energy in Europe, 18 March 2020, p. 2, https://ec.europa.eu/info/sites/info/files/energy_climate_change_environment/events/documents/in_focus_renewable_energy_in_europe_de.pdf (last accessed on 6 August 2020).

sustainability⁴⁵ and a new forest strategy⁴⁶ are expected to follow. In addition, options to support zero carbon steel-making processes are anticipated as part of the Green Deal roadmap.⁴⁷ The Commission also mentions measures to support deforestation-free value chains.⁴⁸ A Green Agenda for the Western Balkans intends to form partnership relations on a more sustainable basis.⁴⁹

b) European crisis management

Barely one hundred days after the new Commission came into office, the European Union was rocked by the coronavirus pandemic. The various institutions of the European Union and euro zone countries had to switch immediately to crisis mode. The European Central Bank (ECB) swiftly launched the Pandemic Emergency Purchase Programme (PEPP) and recently increased the programme volume to 1.35 billion euros at the start of

June.⁵⁰ The European Stability Mechanism (ESM) has set up pandemic credit lines for Member States of the European Union,⁵¹ and the European Investment Bank (EIB) has done the same for small and medium-sized enterprises.⁵² Based on the provisions of Art. 122 of the Treaty on the Functioning of the European Union (TFEU), a decision was taken to provide financial assistance for the financing of national short-time working schemes.⁵³ The European Council intends to respond to the economic calamities caused by the COVID-19 pandemic with a comprehensive Roadmap for Recovery.⁵⁴ The Green Deal should not take a back seat within the process of crisis management. Instead, it needs to be highlighted as one of the new economic challenges ahead.⁵⁵ The comprehensive climate protection concept should be understood as geared to the crisis and should continue to be pursued in line with further crisis

45 *European Commission*, 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, The European Green Deal, COM(2019) 640 final dated 11 December 2019, p. 18, https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_de.pdf (last accessed on 6 August 2020).

46 *European Commission*, 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, The European Green Deal, COM(2019) 640 final dated 11 December 2019, p. 16 et seq., https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_de.pdf (last accessed on 6 August 2020).

47 *European Commission*, 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, The European Green Deal, COM(2019) 640 final dated 11 December 2019, p. 10, https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_de.pdf (last accessed on 6 August 2020).

48 *European Commission*, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Stepping up EU Action to Protect and Restore the World's Forests, COM(2019) 352 final dated 23 July 2019, <https://ec.europa.eu/transparency/regdoc/rep/1/2019/DE/COM-2019-352-F1-DE-MAIN-PART-1.PDF> (last accessed on 6 August 2020).

49 *European Commission*, 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, The European Green Deal, COM(2019) 640 final dated 11 December 2019, p. 25, https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_de.pdf (last accessed on 6 August 2020).

50 *European Central Bank*, Pandemic emergency purchase programme (PEPP), <https://www.ecb.europa.eu/mopo/implement/pepp/html/index.en.html> (last accessed on 6 August 2020). See Schröter, Deutschland will mit Wumms, Europa mit PEPP aus der Krise, DRiZ 2020, 240.

51 *European Stability Mechanism*, ESM Board of Governors backs Pandemic Crisis Support, 15 May 2020, <https://www.esm.europa.eu/press-releases/esm-board-governors-backs-pandemic-crisis-support> (last accessed on 6 August 2020); *European Stability Mechanism*, ESM's role in the European response, <https://www.esm.europa.eu/content/europe-response-corona-crisis> (last accessed on 6 August 2020).

52 *European Investment Bank*, Coronavirus outbreak: EIB Group's response, <https://www.eib.org/de/about/initiatives/covid-19-response/> (last accessed on 6 August 2020).

53 Council Regulation (EU) 2020/672 of 19 May 2020 on the establishment of a European instrument for temporary support to mitigate unemployment risks in an emergency (SURE) following the COVID-19 outbreak, <https://eur-lex.europa.eu/legal-content/DE/TXT/PDF/?uri=CELEX:32020R0672&from=DE> (last accessed on 6 August 2020).

54 *European Council*, A Roadmap for Recovery. Towards a more resilient, sustainable and fair Europe, 018411/EU dated 22 April 2020, https://www.parlament.gv.at/PAKT/EU/XXVII/EU/01/84/EU_18411/imfname_10974127.pdf (last accessed on 6 August 2020).

55 Consenting view: Köck/Markus, ZUR 2020, 257 (258); Becker, EuZW 2020, 441 (442); Potočník, in: Wohlstand für Alle. Klimaschutz & Marktwirtschaft, Ludwig-Erhard-Stiftung, 2020, p. 58.

management measures. For instance, more monies should be made available for the Just Transition Mechanism than originally planned.⁵⁶ In addition, the budgetary funds for the European agricultural fund is to be increased to 15 billion euros.⁵⁷ A reconstruction fund or package should be the additional key element to support a lasting economic recovery. The Commission submitted its proposal for such a package based on the joint statement of the Members of the European Council dated 26 March 2020.^{58,59} The proposal was first discussed at a summit meeting held in June, but a breakthrough could not be reached. The President of the European Council, *Charles Michel*, presented his revised proposal in July,⁶⁰ and a solution was eventually agreed at a further summit meeting.⁶¹ The recovery package, NextGenerationEU, with a financial volume of 750 billion euros, is intended to create an instrument for growth to be used to help finance and support the recovery of the European economy. To initially finance the investment fund, the Commission intends to issue bonds on the international finance markets on behalf of the European Union and guarantee repayment from

the EU budget by 2058. Repayments are to begin before 2028; it is not yet clear whether this will be enabled by increasing national contributions to the EU budget, reducing future EU budgets or seeking new European Union income sources.⁶² The issued bonds will be guaranteed by the Member States. In principle, this entails a shared debt arrangement – with economists talking about a far-reaching change in the union of states and the decision in favour of a fiscal union.⁶³

However, categorising the borrowing arrangements in this way should not obscure the fact that the instrument of Community borrowing has been an exception in the past. Still, it is not unprecedented: it was deployed as early as 1973 to manage the first oil price crisis as a means of strengthening the economy in a very similar way. The first European Community bond was issued in 1976, with funds lent to Italy and Ireland as a response to the economic shock triggered by the oil crisis. In the 1980s and 1990s, further bonds were issued to France, Greece and Portugal, and after 2008 also to Hungary, Latvia and Romania.⁶⁴ In this respect, there are powerful

56 Under the Just Transition Mechanism, a total of 150 billion euros is now expected to be mobilised instead of the originally planned 100 billion euros. See *European Commission*, Amended proposal for a Regulation of the European Parliament and of the Council establishing the Just Transition Fund, COM(2020) 460 final dated 28 May 2020, <https://eur-lex.europa.eu/legal-content/DE/TXT/?qid=1594895956700&uri=CELEX:52020PC0460> (last accessed on 6 August 2020).

57 *Representation of the European Commission in Germany*, Kommission will Mittel für Landwirtschaft aufstocken, um grünen Übergang zu erleichtern, 2 June 2020, https://ec.europa.eu/germany/news/20200602-kommission-will-mittel-fuer-landwirtschaft-aufstocken_de (last accessed on 6 August 2020).

58 Joint statement of the Members of the European Council dated 26 March 2020, <https://www.consilium.europa.eu/de/press/press-releases/2020/03/26/joint-statement-of-the-members-of-the-european-council-26-march-2020/> (last accessed on 6 August 2020). See also *Representation of the European Commission in Germany*, Europäischer Rat bittet Kommission um Vorschlag für Corona-Wiederaufbau mithilfe des EU-Haushalts, 24 April 2020, https://ec.europa.eu/germany/news/20200424-corona-wiederaufbau_de (last accessed on 6 August 2020).

59 *Representation of the European Commission in Germany*, Die Stunde Europas: von der Leyen stellt Aufbauplan und langfristigen EU-Haushalt für die nächste Generation vor, 27 May 2020, https://ec.europa.eu/germany/news/20200527-aufbauplan-eu-haushalt-corona_de (last accessed on 6 August 2020).

60 *European Council*, President Charles Michel presents his proposal for the MFF and the recovery package, Press release of 10 July 2020, <https://www.consilium.europa.eu/de/press/press-releases/2020/07/10/president-charles-michel-presents-his-proposal-for-the-mff-and-the-recovery-package/> (last accessed on 6 August 2020).

61 See *Kafsack/Mussler*, Was Sie über die Gipfel-Ergebnisse wissen müssen, FAZ dated 21 July 2020, <https://www.faz.net/aktuell/wirtschaft/eu-gipfel-was-sie-ueber-die-ergebnisse-wissen-muessen-16870571.html> (last accessed on 6 August 2020).

62 Various options are being discussed, such as a tax on plastics, a carbon border tax, a digital levy and a financial transaction tax. Consideration is also being given to extending European carbon emissions trading to the maritime sector.

63 See *Mussler*, "EU geht klar Richtung Fiskalunion", FAZ dated 22 July 2020; *Centeno*, "Schritt hin zu Fiskalunion", FAZ dated 24 May 2020. In connection with the euro crisis, see also *Issing*, Die Währungsunion auf dem Weg zur Fiskalunion? FAZ dated 6 Jan. 2012.

64 *Kieler Institut für Weltwirtschaft*, Europäische Gemeinschaftsanleihen seit der Ölkrise: Lehren für heute? Kiel Policy Brief No. 136, April 2020, <https://www.econstor.eu/bitstream/10419/215823/1/1694425932.pdf> (last accessed on 6 August 2020).

voices in favour of adopting such a solution for the current situation too.⁶⁵ Germany is willing to enter into liabilities of around 200 billion euros. With 390 billion euros, this means that just over half of the funds will be allocated to recipients as subsidies, while 360 billion euros will be provided as loans. The funds will be paid out within the next three years, allocated on the basis of the unemployment rate (70 percent) and economic development in 2020 and 2021 (30 percent). Because this can effectively be seen as borrowing from future generations, it is necessary to use these resources not only as a means of boosting the economy, but in particular as a means of safeguarding the future⁶⁶ – and this is where the forward-looking focus of the Green Deal will play a role. Up to 30 percent of the funds received must therefore be used to protect the climate. Digitalisation is also to be furthered. This should all be mapped in national reform plans. The NextGenerationEU concept has yet to be approved by the EU Parliament and the national parliaments of the Member States. The need to amend the concept has been reported from various sides, especially in view of the impact the programme would have on structural policy,⁶⁷ but the common objective is for the initial monies to be made available by the start of 2021.

2. Measures taken by the Federal Republic of Germany

National trends are following trends at European Union level. The year 2019 heralded an increased focus on climate-related environmental protection (a). Since March 2020, attention has shifted to national economic crisis management that continues to reflect green issues (b).

a) National environmental protection

The years 2030 and 2050 also form key milestones in national environmental protection policies with a growing slant towards climate issues. This was the orientation of the Climate Action Programme 2030⁶⁸ and Climate Action Plan 2050, presented by the federal government.⁶⁹ The targets set out in these plans have been incorporated into the Federal Climate Protection Act (Bundesklimaschutzgesetz – KSG), which entered into force on 18 December 2019.⁷⁰ This Act formalises the goal of climate neutrality by 2050 on the one hand, and the goal of reducing greenhouse gas emissions by at least 55 percent by 2030 on the other. It also defines annual carbon emission reduction targets applicable for each sector (energy, trade and industry, buildings, transport, agriculture and forestry, and waste) and assigns responsibility for meeting these targets to the respective federal ministries. If a sector fails to meet its legally binding targets, adjustments must be made: the federal government decides on the basis of an

65 *Südekum*, Mit Corona-Bonds retten wir auch die deutsche Wirtschaft, *Welt* dated 5 April 2020, <https://www.welt.de/debatte/kommentare/plus207032731/Jens-Suedekum-Mit-Corona-Bonds-retten-wir-auch-die-deutsche-Wirtschaft.html> (last accessed on 6 August 2020).

66 *Schmidt/Grytz*, Frans Timmermans im Interview, “Der Green Deal ist unsere Strategie”, *ARD* dated 8 May 2020, <https://www.tagesschau.de/ausland/timmermans-greendeal-101.html> (last accessed on 6 August 2020).

67 *European Parliament*, Resolution on the conclusions of the extraordinary European Council meeting of 17-21 July 2020 (2020/2732(RSP)), P9_TA(2020)0206 dated 23 July 2020, https://www.europarl.europa.eu/doceo/document/TA-9-2020-0206_DE.html (last accessed on 6 August 2020).

68 *Bundesregierung*, Klimaschutzprogramm 2030 der Bundesregierung zur Umsetzung des Klimaschutzplans 2050, <https://www.bundesregierung.de/resource/blob/975226/1679914/e01d6bd855f09bf05cf7498e06d0a3ff/2019-10-09-klima-massnahmen-data.pdf?download=1> (last accessed on 6 August 2020). See also *Bundesregierung*, Überblick Klimaschutzprogramm 2030, 9 Oct. 2019, <https://www.bundesregierung.de/breg-de/themen/klimaschutz/klimaschutzprogramm-2030-1673578> (last accessed on 6 August 2020).

69 *Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit*, Klimaschutzplan 2050. Klimaschutzpolitische Grundsätze und Ziele der Bundesregierung, November 2016, https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Klimaschutz/klimaschutzplan_2050_bf.pdf (last accessed on 6 August 2020). See also *Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit*, Der Klimaschutzplan 2050 – Die deutsche Klimaschutzlangfriststrategie, <https://www.bmu.de/themen/klima-energie/klimaschutz/nationale-klimapolitik/klimaschutzplan-2050/> (last accessed on 6 August 2020).

70 Gesetz zur Einführung eines Bundes-Klimaschutzgesetzes und zur Änderung weiterer Vorschriften dated 12 December 2019 (BGBl. 2019 I p. 2513).

emergency programme prepared by the relevant ministry which measures it will take to achieve a reduction in emissions in the sector in question. The Climate Protection Act also provides for the federal government to take the greenhouse gas reduction targets into consideration in future for all investment and procurement processes. The overarching goal is for the federal administration to be organised in such a way that it is climate-neutral by 2030. The Climate Protection Act is accompanied by the establishment of a Council of Experts on Climate Change, although this Council does not possess the same level of powers enjoyed by its UK counterpart (Committee on Climate): unlike the latter, the German Council of Experts does not have the right to make proposals for adjusting measures so that targets are reached – in other words, it is not intended to make any policy recommendations. There is a further legislative measure worth mentioning in addition to the Climate Protection Act, and that is the national carbon pricing system. The German emissions trading system, set to launch in 2021, is geared to the heating and transport sectors, which are not (yet) included in the European Union emissions trading system.

b) National crisis management

When COVID-19 started to spread to the European continent, economists recommended a national economic stimulus package.⁷¹ The Federal Republic of Germany's comprehensive programme was agreed as the pandemic continued, setting out 57 targeted measures and covering a volume of 130 billion euros.⁷² In addition to tax relief (e.g. reducing the VAT rate, postponing the due date of import turnover tax, and extending the tax loss

carry-back relief), bonus payments (e.g. a per-child children's bonus or an increase in support for child-care for single parents) and interim aid for small and medium-sized enterprises, the future package forms a key component of the programme. An amount of 50 billion euros of the programme financing is earmarked for this package and is intended to help drive forward the modernisation of the country. Measures financed with these funds relate to the areas of transport, energy, digitalisation, pandemic protection, education and research. All the measures are considered in the light of climate protection, which is not to take a back seat to relief for families, consumers, businesses and local authorities. As *Olaf Scholz* explained it, the intention is to bring Germany out of the crisis "with a ka-boom", while implementing structural changes facilitating an ecological reorganisation of German society.⁷³

The key measures in the Future Package in the transport sector include state funding of 6,000 euros when purchasing an electric vehicle⁷⁴ with a list price of up to 40,000 euros by 31 December 2021, expanding the charging point infrastructure, promoting research and development in the field of electromobility and battery cell production, introducing a bonus programme for specific investments by manufacturers and suppliers in the automotive industry, gearing car tax more to carbon emissions, increasing the federal government equity received by Deutsche Bahn, and finally subsidising local public transport. In the energy sector, the federal government is granting subsidies to lower the surcharge under the German Renewable Energy Act (EEG), increase the CO₂ building renovation programme, promote

71 *Heinemann*, Diese zwei Prozentpunkte retten Deutschland vor der Corona-Rezession, *Welt* dated 2 March 2020, <https://www.welt.de/finanzen/article206257991/Coronavirus-Mehrwertsteuersenkung-bewahrt-die-deutsche-Wirtschaft-vor-Rezession.html> (last accessed on 6 August 2020); *Hüther*, Konjunktur stützen ja, aber wie? *Handelsblatt* dated 2 June 2020, <https://www.handelsblatt.com/meinung/gastbeitraege/kolumne-coronomics-konjunktur-stuetzen-ja-aber-wie/25872052.html?ticket=ST-986391-sMZRyrnt5XzXlIdDtX71-ap5> (last accessed on 6 August 2020).

72 See Ergebnis Koalitionsausschuss, Corona-Folgen bekämpfen, Wohlstand sichern, Zukunftsfähigkeit stärken, 3 June 2020, https://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Schlaglichter/Konjunkturpaket/2020-06-03-eckpunktepapier.pdf?__blob=publicationFile&v=10 (last accessed on 6 August 2020).

73 *Bundesregierung*, "Wir wollen mit Wumms aus der Krise kommen", 3 June 2020, <https://www.bundesregierung.de/breg-de/themen/coronavirus/-wir-wollen-mit-wumms-aus-der-krise-kommen--1757510> (last accessed on 6 August 2020) [our translation].

74 The funding includes battery-powered electric vehicles, plug-in hybrid vehicles, fuel-cell vehicles and the corresponding used vehicles, see *Bundesamt für Wirtschaft und Ausfuhrkontrolle*, Erhöhter Umweltbonus für E-Autos, 10 June 2020, https://www.bafa.de/SharedDocs/Kurzmeldungen/DE/Energie/Elektromobilitaet/2020_erhoehter_umweltbonus.html (last accessed on 6 August 2020).

hydrogen technology and raise the expansion target for offshore wind energy.

Measures to promote the EU as a favourable location for digitalisation include increasing the funding currently available for the development of artificial intelligence and the expansion of a corresponding European network. The federal government is also providing the necessary funds for the construction of at least two quantum computers by suitable consortia. The new mobile communications infrastructure company will be funded with 5 billion euros to roll out a nationwide 5G network by 2025. Funding is also directed towards the digitalisation of public administration so that administrative services can be provided online.

The economic stimulus package includes funding under the Public Health Pact, with the aim of supporting

health authorities in upgrading their technology and digital systems and recruiting suitable personnel. Funding is likewise provided to stimulate necessary investments in hospitals. The federal government is additionally providing funding for the Coalition for Epidemic Preparedness Innovations (CEPI), which is focusing on developing a vaccine to stop the coronavirus and lay the foundations for production in Germany. In the education and research sector, subsidies are provided to increase the number of full-day schools and full-day childcare; the same applies with respect to increasing capacity for nursery school, daycare centre and crèche facilities. Provision is also made to increase the tax research allowance basis. With respect to application-oriented research, the Future Package reduces the joint financing obligations incumbent on companies that have been particularly financially affected by the coronavirus crisis.

III. Legal standards

The measures taken to manage the coronavirus crisis must observe the fundamental rights and a decision under constitutional law and Union law in favour of a social market economy system. Furthermore, the set objectives form a legal standard and justification for the possible infringement of fundamental rights. After all, the ecological transition of the economy driven at national and supranational level means that the principle of equal treatment will have to be observed, particularly in the form of institutional protection of the open market and fair competition.

1. Decision in favour of a social market economy system

a) Open social market economy as a consequence of a set of values based on fundamental rights

Based on the individual provisions of Germany's Basic Law and the primary law of the European Union, a decision has been made in favour of a social market economy system.⁷⁵ Both (the German and EU) legal systems are founded on this economic system and call for each economic policy measure to be classified as coherent with this decision. The open, social market economy of the European treaties is not a target that can be changed at will, but reflects both sets of fundamental values set out in the EU Charter of Fundamental Rights as well as the German catalogue of fundamental rights. If the individual person with his or her freedom of will and freedom of contract forms the centrepiece

75 For more information, see *Di Fabio*, in: *Industriepolitik in Deutschland und der EU, Jahresheft des Wissenschaftlichen Beirats der Stiftung Familienunternehmen*, 2020, p. 1 et seq., https://www.familienunternehmen.de/media/public/pdf/publikationen-studien/studien/Industriepolitik-in-Deutschland-und-der-EU_Jahresheft_Stiftung-Familienunternehmen.pdf (last accessed on 23 December 2020).

of the legal system, then the entire economy must also always be able to evolve in free coordination of entities in society, irrespective of any tasks entrusted to the state.⁷⁶ Private autonomy, freedom to exercise a trade or profession, protection of private ownership and law of succession, equality before the law and the right to social existence and protection are the individual constitutional components used to create the competitively neutral and social market economy as an institution in a consistent and inevitable way – in other words, without any system alternative.⁷⁷ Each economic policy – even an ambitious ecological transition policy for greater sustainability and effective climate protection – is required to fall within this framework and may not exceed it. This is based on the core understanding of any rule of law: “The constitutional right is open in government tasks, but is binding in the means of government action.”⁷⁸

The social market economy is primarily built on competitively neutral regulatory policy which provides a general framework. State regulation of markets is only regarded as compatible with the system where there are oligopolies or monopolies which distort the market; the effectiveness of such structures can be restricted or impeded by means of state control and intervention.⁷⁹ Market participants need to have a reliable and defined framework in which they can operate, so that they can enjoy planning certainty with a view to evolving their own fundamental economic rights. However, regulatory stability also involves making investments in the medium and long term and is therefore crucial in order to protect acquired property and future freedom to operate from the perspective of ensuring confidence in the rule of law. Specific control instruments, such as an

appropriately structured emissions trading system, justifiably claim to be based on a market economy rather than planned economy. Regulatory law tolerates the social market economy especially in areas where there are concrete dangers, calculable risks or institutional challenges, as with anti-competitive practices.

b) Poor benchmark quality of a market system decision, but guiding basis for an examination of fundamental rights

Infringements of an economic system decision under constitutional or EU law can barely be detected in everyday legal rulings. The situation is comparable with a thinly sliced salami – the sausage does not disappear after removing one thin slice, but the removal of a large number of slices makes a big difference. Constitutional law is practised to consider the individual case, but finds it difficult to precisely define manageable thresholds for changes in the system that are inadmissible under constitutional law. A state that is overly interventionist as the economic system gradually develops or a European Union that is too interventionist could at some point lead to a change in the system – and, in the worst case scenario, to a market economy largely controlled in political terms in a similar way to the Chinese model. A politically controlled market economy does not create a freedom-protecting and incentivising framework for economic operators and does not set clearly defined limits of what is not permitted in regulatory terms. Instead, it imposes a political focus on the design of products, distribution, corporate structures and the entire value-added process, which are all directed at sectoral level, with the economy becoming increasingly dependent on state planning decisions, including the

76 How this applies to the individual legal subject can be deduced from natural law, but under positive law it corresponds to the fundamental decision in favour of a social market economy under the Basic Law; for a clear review of the subject from an economic perspective, see *Vanberg*, *Privatrechtsgesellschaft und ökonomische Theorie*, in: Karl Riesenhuber (ed.), *Privatrechtsgesellschaft* 2007, p. 131 (149 et seq.).

77 *Di Fabio*, in: *Industriepolitik in Deutschland und der EU*, Jahresheft des Wissenschaftlichen Beirats der Stiftung Familienunternehmen 2020, p. 1 (10 et seq.). https://www.familienunternehmen.de/media/public/pdf/publikationen-studien/studien/Industriepolitik-in-Deutschland-und-der-EU_Jahresheft_Stiftung-Familienunternehmen.pdf (last accessed on 23 December 2020).

78 *Kirchhof*, *Verfassungsrechtliche Grundlagen der “Privatrechtsgesellschaft”*, in: Karl Riesenhuber (ed.), *Privatrechtsgesellschaft* 2007, p. 83 (87) [our translation].

79 Competition is the normal situation. *Fetzer*, *Staat und Wettbewerb in dynamischen Märkten. Eine juristisch-ökonomische Untersuchung unter besonderer Berücksichtigung der sektorspezifischen Telekommunikationsregulierung in Deutschland und den USA*, 2013, p. 15.

control of investment funds.

The measures envisaged by the Federal Republic of Germany and the European Union within the spirit of the *Green Recovery* could – if they are wrongly implemented in terms of the instruments deployed – create a breeding ground in which economic operators become increasingly dependent on public financial assistance, affecting the dynamic of their innovation and production efficiency to an extent never seen before. If this is to be avoided, the way in which the measures are implemented must meet the requirement of emphasising open innovation processes and technological diversity in all sectors.⁸⁰ For example, in the energy sector, funding is granted for specific technologies – i.e. the generation of wind energy – while at the same time preferential treatment is given to the new and as yet less widespread method for extracting geothermal heat.⁸¹ Another example is the expansion of the charging infrastructure for battery-powered electric vehicles, while at the same time extending the far smaller filling station network for hydrogen-powered electric vehicles.⁸² Although the *Green Recovery* measures do not abstain from funding alternative fuels, such as compressed natural gas (CNG), rapeseed oil, biodiesel or bioethanol,⁸³ the vehemently preferential treatment of electromobility with the myth of zero emissions, combined with rigid EU emission standards, is driving combustion engines

more markedly in a different direction. In any event, extending carbon emissions trading to sectors that have not yet been included fulfils the demands of representatives from various disciplines.⁸⁴ In market economy terms, this instrument has an advantage over other control instruments and therefore aligns with the economic system decision under constitutional and Union law. To date, corresponding steps have only been taken at national level, with agreement yet to be reached at EU level.

Even though the decision in favour of a social market economy system appears to be less justifiable, it nevertheless provides a normative basis for applying fundamental rights.

2. Obligations to act arising from government targets and fundamental rights

Fundamental rights are in place not only to fight government intervention, but in some cases even to call for such intervention. Obligations to take action can sometimes be based on set targets and fundamental rights, if certain circumstances are met and certain restrictions are observed.⁸⁵ Examples relating to climate and environmental protection can be found in the Basic Law, primarily article 20a of the GG on the one hand and article 2 (2) GG on the other. In terms of primary law

80 This was also the federal government's response to a Brief Inquiry on funding for hydrogen- and fuel-cell technologies, BT-Drucksache 19/12582 dated 22 August 2019, <https://dip21.bundestag.de/dip21/btd/19/125/1912582.pdf> (last accessed on 6 August 2020).

81 Response given by the federal government to a Brief Inquiry for an efficient climate policy relating to e-fuels and synthetic fuels, BT-Drucksache 19/16829 dated 28 January 2020, <https://dip21.bundestag.de/dip21/btd/19/168/1916829.pdf> (last accessed on 6 August 2020).

82 See the federal government's response to a Brief Inquiry about funding for hydrogen- and fuel-cell technologies, BT-Drucksache 19/12582 dated 22 August 2019, <https://dip21.bundestag.de/dip21/btd/19/125/1912582.pdf> (last accessed on 6 August 2020).

83 See *European Commission*, Boosting the EU's Green Recovery: EU invests over EUR 2 billion in 140 key transport projects to jump-start the economy, Press release of 16 July 2020, https://ec.europa.eu/commission/presscorner/detail/de/ip_20_1336 (last accessed on 6 August 2020).

84 See for example *Warneke*, in: *Wohlstand für Alle. Klimaschutz & Marktwirtschaft*, Ludwig-Erhard-Stiftung, 2020, p. 52 et seq.; *Weimann*, in: *Wohlstand für Alle. Klimaschutz & Marktwirtschaft*, Ludwig-Erhard-Stiftung, 2020, p. 74 et seq.; *Schmidt*, in: *Wohlstand für Alle. Klimaschutz & Marktwirtschaft*, Ludwig-Erhard-Stiftung, 2020, p. 82 et seq.; *Blum/de Britto Schiller/Löschel/Pfeiffer/Pittel/Potrafke/Schmitt*, Zur Bepreisung von CO₂-Emissionen, ifo-Schnelldienst 16/2019, p. 60 et seq., <https://www.ifo.de/DocDL/sd-2019-16-blum-et-al-oekonomienpanel-co2-bespreisung-2019-08-22.pdf> (last accessed on 6 August 2020); *Mihm*, FDP will Emissionshandel ausweiten, FAZ dated 3 July 2019, <https://www.faz.net/aktuell/wirtschaft/co2-steuer-fdp-will-emissionshandel-ausweiten-16267113.html> (last accessed on 6 August 2020); *Science Media Center Germany*, CO₂-Steuer oder Ausweitung des Emissionshandels? 6 May 2019, <https://www.sciencemediacenter.de/alle-angebote/rapid-reaction/details/news/co2-steuer-oder-ausweitung-des-emissionshandels/> (last accessed on 6 August 2020).

85 For more details, see *Sachs*, in: *Sachs* (ed.), *Kommentar GG, Vorbemerkungen zu Abschnitt I (Art. 1 to Art. 19)*, m.n. 35 et seq.

of the European Union, the provisions to be complied with are Article 3 (3) subparagraph 1 TEU, Article 191 TFEU, Article 114 (3) TFEU and Article 37 CFREU for environmental protection, and Article 4 (2) (k) TFEU, Article 6 (a) TFEU, Article 9 TFEU, Article 114 (3) TFEU, Article 168 TFEU, Article 2 CFREU, Article 3 CFREU, Article 31 CFREU and Article 35 CFREU for health protection.⁸⁶ The question of whether these legal standards constitute subjective rights has not been resolved in relation to each individual provision.⁸⁷ Whatever the circumstances, the above provisions protect high-level rights⁸⁸ and form the basis for justifying measures taken by the authorities in favour of an ecological transition of the economy. The Federal Constitutional Court has even clarified the constitutional mandate with regard to the sustained reduction in greenhouse gas emissions.⁸⁹ This

means that requirements to take action can be assumed in relation to climate protection and the protection of the health and life of the population.⁹⁰ This practical effect has received a boost from climate cases that, following a trend in both the global⁹¹ and European⁹² context, were brought before the Federal Constitutional Court by individuals with the support of environmental organisations.⁹³ So far, the Federal Constitutional Court has determined that the constitutional responsibility of German jurisdiction ends at the point where the main course that proceedings take depends on the will of foreign states.⁹⁴ Climate system inertia and the long-term nature of the damage perspective are other factors rendering the assessment and evaluation more difficult. As a result, the obligation under the constitution and EU law to take action in favour of protecting the climate,

86 The legal provisions on environmental protection and the protection of life and health are those that apply *prima facie*. In addition, special constitutional guarantees, such as those on the protection of property, could be relevant.

87 See BVerfG decision of 10 November 2009 – 1 BvR 1178/07; BVerfG decision of 10 May 2001 – 1 BvR 481/01 and 1 BvR 518/01.

88 See BVerfG decision of 17 January 1996, 2 BvR 589/92; BVerfGE 143, 246.

89 See BVerfGE 118, 79.

90 See BVerfG decision of 25 July 2007 – 1 BvR 1031/07; BVerfGE 128, 1; BVerfG decision of 9 August 2011 – 2 BvR 280/11; BVerfGE 118, 79.

91 More and more climate cases are being brought worldwide. The case brought in the Netherlands by the Dutch environmental group Urgenda in 2015 drew particular attention. The action taken against the government due to its insufficient measures to protect the climate was successful before the Supreme Court (Hoge Raad) of the Netherlands. As a result, Europe's sixth largest economy was obliged to reduce carbon emissions by at least 25% compared with 1990 levels by the end of 2020. The judgement was based on the UN Climate Change Conference and the legal obligation on the state to protect the lives and well-being of its citizens. The court took these legally protected rights from the European Convention on Human Rights (Articles 2 and 8 ECHR), which has precedence over national constitutional law in the Netherlands. *Hoge Raad* – judgement of 20 December 2019 – case ref. 19/00135 (English), <https://www.urgenda.nl/wp-content/uploads/ENG-Dutch-Supreme-Court-Urgenda-v-Netherlands-20-12-2019.pdf> (last accessed on 6 August 2020). For more details on this issue as a whole, see Wegener, ZUR 2019, 3 et seq.; Graser, ZUR 2019, 271 et seq.

92 Because of the risks posed to them by climate change, several private individuals from European Union countries, Kenya and Fiji brought an action for annulment (Article 263 TFEU) before the Court of the European Union against the European Parliament and the Council of the European Union (<http://curia.europa.eu/juris/document/document.jsf?text=&docid=214164&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=6834428> (last accessed on 6 August 2020)). It was mooted that the European Union's institutions were failing to guarantee adequate protection against the risks of greenhouse gas emissions. The action was directed at Directive (EU) 2018/410 to enhance cost-effective emission reductions and low-carbon investments, Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by member states from 2021 to 2030 and 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. Although the European Court found that climate change affected each individual in one way or another, it went on to reject the plea due to a lack of evidence that individual fundamental rights were affected (<https://www.lto.de/recht/nachrichten/n/eug-klage-klimaziele-peoples-climate-case-unzulaessig/> (last accessed on 6 August 2020); <https://peoplesclimatecase.caneurope.org/de/informieren/recht-hintergruende/> (last accessed on 6 August 2020)). The European Court of Justice has confirmed the narrow first-instance interpretation of the requirement of direct and individual concern (<https://peoplesclimatecase.caneurope.org/de/2019/07/familien-der-eu-klimaklage-gehen-in-zweite-instanz/> (last accessed on 6 August 2020)).

93 The Federal Constitutional Court has combined the constitutional complaints in proceedings recorded under case ref. 1 BvR 2656/18. The complainant individuals maintain that the German Climate Protection Act (Klimaschutzgesetz), which was enacted on 12 December 2019, is inadequate and violates the right to life and physical integrity (article 2 (2) GG) and property (article 14 (1) GG) guaranteed in the constitution. For information on the constitutional complaint, see e.g. Steinmetz *et al* of 13 January 2020, https://www.duh.de/fileadmin/user_upload/download/Pressemitteilungen/Umweltpolitik/Klimaschutz/Verfassungsbeschwerde_Klimaklage_Linus_Steinmetz_et_al_final_geschw%rzt-Anhang_01.pdf (last accessed on 6 August 2020). The supporting environmental groups are Greenpeace, Environmental Action Germany (Deutsche Umwelthilfe – DUH) and Germanwatch.

94 BVerfGE 66, 39 (62).

life and health must instead be interpreted as requiring the sovereign bodies to make efforts to set an example at the national and European level and to campaign for a global solution at the international level. In this context, they will determine the measures that are the most effective for the environment, especially in discussions with representatives of the scientific community, and employ the potency of market forces to solve any problems that arise.⁹⁵ Given that the level of knowledge in environmental and climate research has not yet been determined with any finality, there can be no straight correlation between science and politics in the assessment of the long-term consequences of greenhouse gas emissions. This is confirmed by the creative freedoms in the choice of tools, which are contrary to the very specific performance of obligations to take action arising from articles 20a and 2 (2) of the GG, or Article 3 (3) subparagraph 1 TEU, Article 191 TFEU, Article 114 (3) TFEU, Article 37 CFREU and Article 4 (2) (k) TFEU, Article 6 (a) TFEU, Article 9 TFEU, Article 114 (3) TFEU, Article 168 TFEU, Article 2 CFREU, Article 3 CFREU, Article 31 CFREU, Article 35 CFREU. This means that, despite the heavily weighted objectives, the assessment of measures taken to implement the Green Deal will in future also crucially have to consider individual measures from a sober constitutional perspective, because creative freedom continues to apply and case law must not succumb to the temptation to treat the imposition of certain individual measures as binding merely because of the preponderance of climate protection. Otherwise this would result in failure to maintain not only the system of the separation of powers, but also the effective protection of fundamental rights.⁹⁶

3. Directive financial support

The Green Deal will be implemented under regulatory law by imposing prohibitions and restrictions; however, especially because of its connections to economic, support and compensation measures, it will to a considerable extent be linked to directive investments, raising the question of the ties that exist in legal relationships arising from subsidies. The classic function of the rights to freedom – their defence dimension – and, inversely, the limitation of state powers are the relevant tests when legally classifying directive *green recovery* measures. For economic players, the essential foundations of business activity are primarily the freedom to exercise a trade or profession, the freedom of ownership, private autonomy and freedom of contract. Interventions in fundamental rights by government require special justification.⁹⁷ This does not, however, apply only to regulatory law or the curtailment by government of production possibilities by imposing emission limits, but also to measures taking the form of directive subsidies.

The fact that legal relationships arising from subsidies granted by public authorities provide more scope to manoeuvre for directive measures than regulatory law does not mean that the area of constitutional protection of the guarantee of freedom can be disregarded.⁹⁸ As soon as the government gives a company money without imposing conditions, the principle of equality prompts the question as to why the same is not provided to a competitor. "Any subsidy intervenes in the competitive relationship and in this way changes the competition in terms of trading power. If a public authority is allowed to exercise the power to influence structural policy by granting subsidies, this automatically leads to an intervention in the freedom to exercise a trade or profession of those not receiving that financial benefit".⁹⁹ If major

95 As argued by *Murswiek*, in: *Wohlstand für Alle. Klimaschutz & Marktwirtschaft*, Ludwig-Erhard-Stiftung, 2020, p. 12 et seq.

96 For information on the risk situation relating to a systemic shift, see *Di Fabio*, JZ 2020, 1073 et seq.

97 *Mann*, in: *Sachs* (ed.), *Kommentar GG*, Art. 12, m.n. 125 et seq.; *Wendt*, in: *Sachs* (ed.), *Kommentar GG*, Art. 14, m.n. 85 et seq.

98 *Kluth*, *Öffentliches Wirtschaftsrecht*, 2019, Section 14.

99 *Schorkopf*, *Subventionen*, in: *Kirchhof, Korte, Magen* (eds.), *Öffentliches Wettbewerbsrecht*, 2014, p. 385 (395) [our translation].

market leaders receive support, this raises the question of how this affects the competitiveness and ability to do business of small and medium-sized enterprises or the market entry opportunities of newcomers.

In order to make sure they are used for their intended purpose, subsidies are invariably granted subject to conditions, and these conditions may constitute an infringement of fundamental rights for the recipient of the subsidies, irrespective of the “voluntary” nature of their acceptance – which may sometimes be regarded as acceptance only to a limited extent. Where directive conditions are attached to subsidies, the two fundamental rights – the freedom to exercise a trade or profession and the freedom of ownership – require that the constitutional substance of freedom is maintained. Although obligations and conditions are at the discretion of the public sector, they cannot be chosen at random. The fact that a company accepts a subsidy voluntarily does not mean that all conditions can be deemed compliant with the constitution because they are justified merely because the company agrees to them. The principles of proportionality and consistency (its equivalent under equality law) also have to be complied with. If, for example, the objective of reducing carbon emissions is being pursued, both the subsidy itself and the conditions to which its granting is tied will have to be suitable and necessary. This applies in particular to subsidy conditions, which must not be disproportionate to the objective being pursued.¹⁰⁰

Problems in connection with the fundamental right to equality arise not only where market participants considered equal in the legal sense receive unequal treatment when in direct competition. The special challenge for *green recovery* measures is to avoid a situation in which, by subsidising supposedly powerful large companies with considerable market power and therefore influence, the field of small and medium-sized companies is cut off from opportunities to advance in the area of climate protection through market dry-up, or sees its previous investment activity devalued. The market has long since started to move toward sustainability. Environmental interests are rapidly combining in innovative ways with self-interest in long-term success, especially in smaller, agile family-managed companies. Examples include Neumarkter Lammsbräu Gebr. Ehrnsperger KG¹⁰¹, Vaude GmbH & Co. KG¹⁰² or Treude & Metz GmbH & Co. KG¹⁰³, to name but a few. They are considered pioneers of systemic approaches in their fields, aiming to achieve efficiency and resilience in equal measure.¹⁰⁴ New sustainable business concepts, which are more common than the public may realise, correlate with a new development that has arisen in the financial markets in recent years, producing asset classes such as environmental, social and governance (ESG) investments with corresponding sustainability indices.¹⁰⁵ Many investors attach increasing importance to maintaining intangible reputational assets, which invariably require sustainable business conduct. This trend is also benefiting consulting firms that advise small and medium-sized companies, in particular on

100 Wernsmann, *Verhaltenslenkung in einem rationalen Steuersystem*, 2005, p. 238 et seq. including a summary of case law of the Federal Constitutional Court.

101 See *Neumarkter Lammsbräu Gebr. Ehrnsperger KG*, Umweltbericht 2019, <https://www.lammsbraeu.de/ueber-uns/nachhaltigkeitsbericht-2019?hsCtaTracking=3b71540b-121e-4a4b-9f19-63a3bbe4f211%7C62fc383-a9ad-445a-9d44-afe1a00511fc> (last accessed on 6 August 2020).

102 See *Vaude GmbH & Co. KG*, Nachhaltigkeitsbericht 2018, <https://nachhaltigkeitsbericht.vaude.com> (last accessed on 6 August 2020).

103 See *Metz*, Nachhaltigkeit als Dynamik, *Siegener Zeitung* of 20 July 2019, <https://www.volksbank-wittgenstein.de/content/dam/f4405-0/Dokumente/Firmenportraits/2019-Treude%20und%20Metz.pdf> (last accessed on 6 August 2020).

104 See for example *Braungart*, in: *Wohlstand für Alle. Klimaschutz & Marktwirtschaft*, Ludwig-Erhard-Stiftung, 2020, p. 62 et seq. for a discussion of the systemic cradle-to-cradle approach adopted by certain family businesses.

105 Examples include the STOXX ESG & Sustainability Indices and Dow Jones Sustainability World Index. For more details, see *Escrig-Olmedo/Munoz-Torres/Fernandez-Izquierdo*, Socially responsible investing: sustainability indices, ESG rating and information provider agencies, *International Journal of Sustainable Economy* 2 (2010), 442 et seq.

issues of the circular economy¹⁰⁶ or ways to ensure a fair supply chain¹⁰⁷. Under constitutional law, these kinds of initiatives enjoy subsidiarity protection and the protection of legitimate expectations, especially if they receive government support. Companies that

have adopted and implemented sustainable business conduct¹⁰⁸, a trend that has become a particular political necessity since 2019, are therefore justified in taking a critical stance with respect to the erosion of sustainability targets.

IV. Outlook

The creation of a legal system and the benchmarking of individual measures and concepts are only in their infancy, as are the implementation of the *Green Deal* and the *green recovery* themselves. But the review of the interwoven ambitious targets set under the European multilevel system and existing approaches along the European Union's road towards implementing climate neutrality require vigilance – especially towards improved sustainability combined with increased competitiveness of the European Union. This is because

undermining the substance of basic economic rights and thus the performance of an open social market economy – whether by imposing bans or quotas, ordering a withdrawal or granting directive subsidies – is not a beneficial approach to protecting the climate and achieving ecological sustainability. It will depend to a large extent on the direction the European Union takes and how economic entities and citizens will react: with understanding and the will to adapt, or with resistance and calls for legal protection through the courts.

106 See, for example, Effizienz-Agentur NRW, <https://www.ressourceneffizienz.de/ressourceneffizienz/startpage-en> (last accessed on 6 August 2020).

107 See, for example, the RCS Global Group, <https://www.rcsglobal.com/> (last accessed on 6 August 2020).

108 See above.

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Subsidies as part of the policy mix of the European Green Deal: the good, the bad and the ugly

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I. Introduction

With the European Green Deal, the EU has set out a roadmap towards a sustainable EU economy in 2050. In essence, the aim is for the EU to become GHG-neutral by 2050, whilst ensuring that economic growth is achieved through resource efficiency in line with the three pillars of sustainability (economic, environmental, social), without leaving people or regions behind. The pivotal question is what government measures should be taken to achieve these goals effectively, efficiently and with due regard to questions of distribution. This article will analyse the role of subsidies, which are the EU's second key climate policy instrument alongside carbon pricing in the European Union Emissions Trading System (EU ETS). Before determining the optimal mix of subsidies and pricing, it is important to understand the scale of the challenge and to classify these two key instruments.

Greenhouse gas (GHG) neutrality by 2050 is an ambitious goal. Given that the EU-28 only reduced GHG emissions by just under 22 percent between 1990 and 2017, the rate of reduction will have to roughly double if we are to neutralise the rest of the emissions in the remaining 30 years. This problem is compounded by the fact that the most cost-effective abatement options have already been implemented; the remaining reduction in emissions therefore requires large-scale structural and technological change. But what does an optimal mix between reducing emissions in individual sectors and

offsetting the remaining emissions look like? And what regulatory conditions ought to be put in place for this purpose? The Green Deal framework document says very little about this, but refers to a multitude of laws, action plans and strategies that need to be created, as well as to reforms and amendments of numerous existing regulations.

In terms of an optimal mix of instruments, there is now widespread agreement – not only in the scientific community² but increasingly also among policymakers – that comprehensive, long-term pricing models for GHG emissions should be the main climate policy instrument. Pricing provides a technologically neutral incentive for structural adjustments, changes in behaviour and necessary investments, without the need to know the optimal technology and reduction mix in advance. At the same time, it ensures that emissions are avoided where it is most cost-effective. A departure from uniform pricing only makes sense in special circumstances, for example if strict EU climate policy might lead to an emission leakage.³ Carbon pricing can be used not only for mitigation measures, but also for the integration of negative emission technologies (NETs).⁴ Ever since the EU Emissions Trading System (EU ETS) for CO₂ and certain other greenhouse gases was established in 2005, the EU has relied heavily on the instrument of pricing. It defines the number of certificates to be issued, and their trade then results in a carbon price. The EU ETS

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2 See, for example, Stiglitz et al. (2017) or Akerlof et al. (2019).

3 See Böhringer et al. (2014).

4 NETs remove CO₂ from the atmosphere by artificially enhancing or mimicking naturally occurring biological, chemical and physical processes in the global carbon cycle. The CO₂ is subsequently enriched in the ocean or terrestrial biosphere or is stored geologically. Rickels et al. (2020) discuss how NETs could be integrated into the EU ETS.

has been expanded several times and currently covers about 45 percent of all GHG emissions in the EU. The Green Deal includes provisions for a further refinement of the targets and their extension to buildings as well as the maritime sector. In addition, an extension to the transport sector is already being discussed. Another important reform consisted in establishing a Market Stability Reserve (MSR), which withdraws certificates from the market on the basis of defined rules in the event of a surplus. This has an effect similar to that of a price floor, which would be difficult to enforce politically, though useful in order to ensure reliable planning and a certain minimum reduction level. The Green Deal also envisages a reform of the Energy Tax Directive, which is crucial for uniform and consistent pricing based on the GHG content of fuels, as well as the introduction of a border adjustment mechanism to ensure international competitiveness by charging a price for the CO₂ content of imports. Finally, international CO₂ markets are to be established. All in all, it is fair to say that the EU is making recognisable progress towards comprehensive pricing, even if it has not yet reached its goal. Felbermayr et al. (2019) outline a path to this goal.

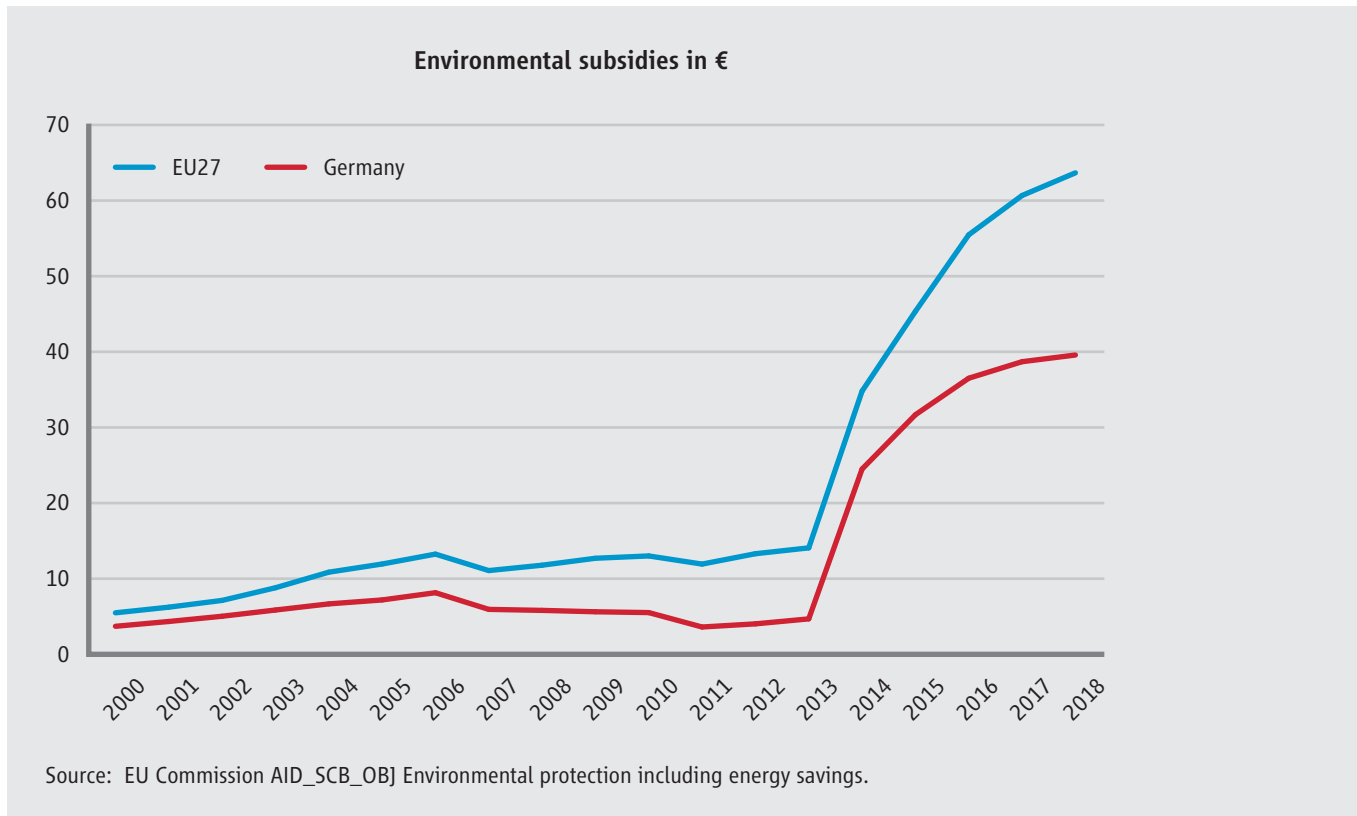
What is not so clear, however, is which other instruments should complement the lead instrument of carbon pricing, for example to promote technology, eliminate information deficits and asymmetries, avoid carbon leakage or achieve social equilibrium. Here economists point rather vaguely to positive spillovers from new technologies that justify subsidies for research and development (R&D), at the same time they reject much of what sounds like distorting subsidies reflexively. Often this reflex is warranted, because even when subsidies are well-justified, there can be doubts about their effectiveness and purposefulness. In addition, there is frequently no discernible need to depart from the key instruments of carbon pricing, R&D funding and perhaps additional infrastructure measures. Policymakers,

on the other hand, tend to be less hesitant, creating a multitude of funding programmes, support measures and exemptions that are often difficult to navigate, while ideally trying to link climate policy with other goals such as creating jobs or promoting domestic future technologies on the global markets. In doing so, they ignore the Tinbergen Rule, which states that each target requires its own instrument because some targets may conflict with each other. For instance, linking climate and industrial policy to promote national champions in new technologies can quickly create monopolistic structures that drive up the prices of these technologies and delay the adaptation of new technologies. When low-carbon processes are subsidised, as with the German EEG levy that promotes renewable electricity, this lowers the carbon prices in the EU ETS, reducing the incentives and leading to additional costs. According to the EU Commission, environmental subsidies have increased sharply overall, as shown in figure 1. In Germany, they soared from around five billion euros in 2013 to 40 billion euros in 2018, already making up 1.2 percent of the country's gross domestic product (GDP). Germany is thus the clear leader in Europe, accounting for 62 percent of the subsidies paid in the EU.

This subsidy mentality also shines through in the Green Deal. It is illustrated, for example, by the discussions on how much of the funding provided to address the coronavirus crisis should be used to achieve the Green Deal targets. These debates are not necessarily about investing a significant part of the money in green measures, but rather about the exact share and the way in which it should be invested. To encourage green investments, an EU taxonomy is also being developed that will classify economic activities by their sustainability, so that companies, investors and possibly also the European Central Bank can use it as a point of reference.⁵ Its primary purpose is to make financial and capital investments readily comparable; a secondary purpose is to channel EU funds towards green causes.

5 According to the EU Commission, the technical screening criteria are intended to classify economic activities that can make a significant contribution to mitigating or adapting to climate change without seriously compromising the four other environmental objectives: sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and the protection and restoration of biodiversity and ecosystems. See, for example, https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en.

Figure 1: Development of environmental subsidies in the EU27 and in Germany since 2000



The Commission estimates that additional annual investments of 260 billion euros – about 1.5 percent of GDP in 2018 – will be needed to achieve the European Green Deal targets set for 2030. Both public and private funds are to be raised for this purpose. The EU initially proposed that 25 percent of the budget be used to achieve the Green Deal,⁶ now even higher shares are discussed.

Against this background, this article attempts to shed light on what kind of investments and subsidies (commonly referred to as government financial support) can and should complement the guiding principle of carbon pricing – or perhaps should not do so – and for what reasons. To this end, section II will outline

the most important theoretical approaches: on the one hand, the concept of a Pigouvian subsidy as a substitute for emissions pricing, and on the other, the ideal mix of pricing and subsidies theoretically required to achieve the emissions targets. We will also explore the need for industrial policy – a topic that is being hotly debated – as it too provides various justifications for promoting low-emission technologies. From these considerations, section III derives criteria for assessing the appropriateness of government support. Section IV then presents the main support measures in connection with the Green Deal and assesses them against the identified criteria in order to determine which investments and subsidies are appropriate in this context. Finally, section V concludes.

6 See EC (2019), section 2.2.1.

II. The role of government investment and subsidies in climate policy

Most forms of direct or indirect financial support by the government are typically seen as distortionary and negative. The line of argument here is that economic activities are steered and coordinated via relative prices and “thus, in principle, anything that impairs the information, steering and incentive function of relative prices is harmful to the welfare of the economy as a whole.”⁷ Such distortionary effects are also relevant in the context of climate policy. For example, the international consensus is that subsidies for fossil fuels should be abolished because they have the effect of negative carbon prices and thus work against effective and efficient climate policy. As early as 2009, the G20 committed to phasing out inefficient fossil-fuel subsidies, and the G7 pledged to abolish such subsidies completely by 2025.⁸ The European Green Deal has also set the target of putting an end to these subsidies. Nevertheless, fossil fuels are still widely subsidised through tax rebates (especially in industrialised countries) or direct financial support (especially in developing countries and emerging economies). The OECD, for example, uses an inventory approach to track fossil fuel subsidies for the 44 most-developed countries and puts the amount in 2019 at 178 billion US dollars.⁹ According to this approach, the amount of the corresponding subsidies is about 3.7 billion euros in Germany and about 50 billion euros in the entire EU. Figure 2 shows how the subsidies are developing relative to GDP in Germany as well as selected other countries. As we can see, Germany is in the lower midfield. However, because these subsidies primarily take the form of tax rebates in the EU, it is less a matter of reducing subsidies in the classical sense than of creating a uniform and consistent energy taxation system – this, too, is a goal of the Green Deal.

Shapiro (2020) argues that in addition to these visible

and well-documented subsidies, there are other indirect subsidies in the climate sector through the current structure of trade tariffs. The study shows that tariffs on CO₂-intensive goods are systematically lower than on goods with a low CO₂ content, and calculates an implicit, in most countries, negative carbon price. In Germany (and most other EU countries) this price is lower than EUR -150/tCO₂, with Norway leading at around EUR -475/tCO₂. The only countries where the price is between EUR -3 and EUR -25/tCO₂ are the three Baltic states as well as the Czech Republic, and only in Romania and parts of the Middle East do the tariffs imply a positive carbon price. Thus, most countries effectively subsidise CO₂-intensive production abroad. The EU could put an end to these subsidies immediately by lowering import tariffs on low-carbon products, preferably all the way to zero.

However, this article aims to address the more general question of when direct or indirect government support is justified. Practically all such support measures can be defined as subsidies, since they involve payments or concessions granted outside the actual government sector.¹⁰ In making an assessment, we can therefore refer to existing literature that evaluates subsidies, and in particular to the Kiel Subsidy Report,¹¹ which, however, due to its broad scope, does not accurately reflect the climate policy discussions.

Financial aid or tax concessions are justifiable in particular when markets are not functioning properly because of a market failure. Two types of market failure exist in the context of climate change. Firstly, emissions lead to climate damage. If emissions are not subject to pricing, they have negative external effects that are not borne by the emitters (or at least borne only to a very

7 Laaser and Rosenschon (2020), annex 2 [our translation].

8 See G20 (2009) and G7 (2016).

9 See OECD (2020).

10 This is the definition of subsidies used by Switzerland’s Federal Finance Administration, see for example FFA (2020).

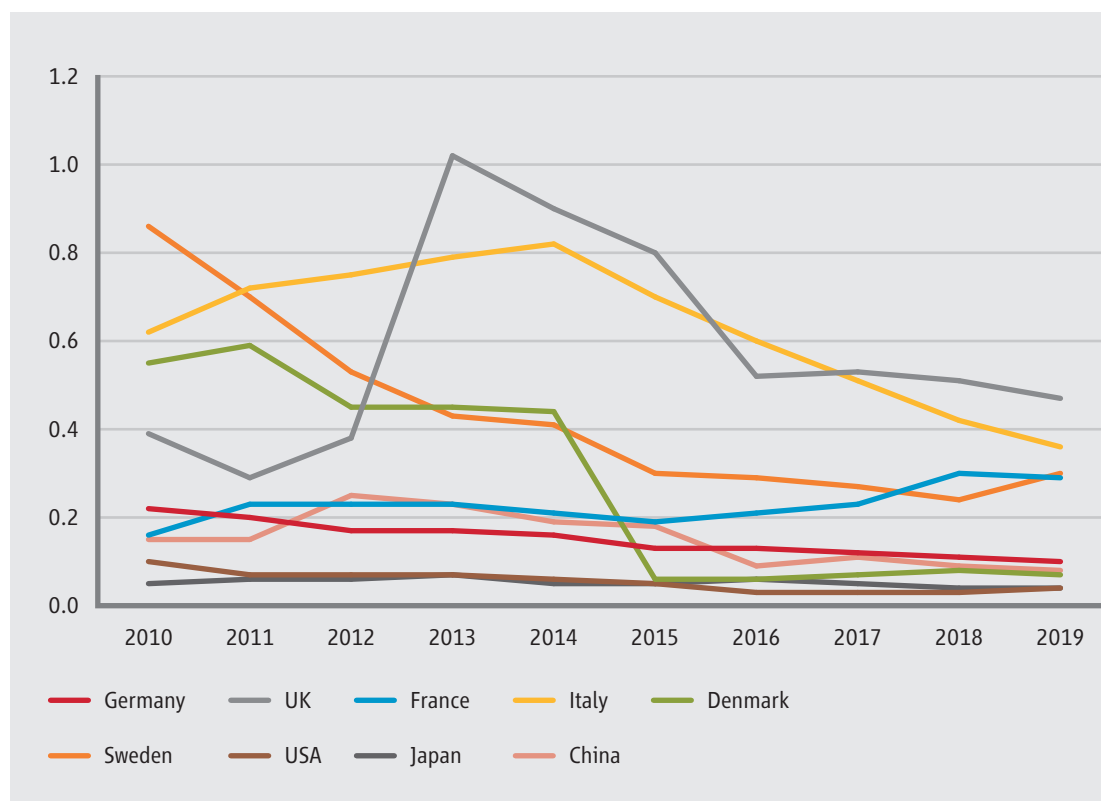
11 See Laaser and Rosenschon (2020).

small extent) and are therefore not taken into account in their decision-making. Secondly, emission levels are closely linked to the technologies used and thus also to the speed of technological progress. A whole range of positive external effects arises in this context.¹² These market failures can therefore justify government support or subsidies and will be examined in more detail below. In the process, it is also important to consider whether government support is the most appropriate

instrument or whether other instruments would be more suitable.

In addition, the current debate on industrial policy will be addressed. It likewise calls for government support for certain industries in order to enable them to maintain their competitiveness and prosperity in an international context. In many places, reference will be made to low-GHG technologies.

Figure 2: Fossil fuel subsidies relative to GDP in selected countries according to the OECD inventory approach



1. Pigouvian subsidies as a pricing instrument

The concept of putting a price on emissions in order to achieve a cost-effective mix of abatement options was first developed around 100 years ago by Arthur Pigou (1920). When we try to optimise the amount of pollution by imposing a price on its source that takes

its external costs into account, we therefore speak of a Pigouvian tax. What tends to be forgotten in this context is that we can achieve the same result – at least from a static point of view – by means of a Pigouvian subsidy for abatement. The mechanisms involved are the same. In the case of a tax, players calculate whether it is cheaper to avoid pollution or to pay the tax, and they reduce pollution until the cost of the next

¹² The effects of economic decisions on uninvolved parties (that is, decisions nobody pays or receives compensation for) are generally referred to as external effects or externalities. In the case of technological developments, these effects are positive.

pollution reduction is higher than the tax. To put it in economic terms, they reduce pollution until the marginal abatement cost is equal to the tax. Since all actors do so, marginal abatement costs equalize and it is not possible to achieve the same amount of abatement at a lower cost. This is considered efficient. Similarly, where subsidies are concerned, the actors compare whether the subsidy they would receive for abatement is higher than the costs of abatement. If this is the case, it makes sense to avoid more pollution. Ultimately, the marginal abatement costs correspond to the subsidy for all actors.

Applied to climate policy, it would therefore be just as efficient to pay a subsidy for every tonne of CO₂ that is avoided as it is to tax every tonne of CO₂ that is emitted. However, a system develops dynamically differently under a tax and a subsidy. In the case of a tax, businesses incur additional costs, and some will lose their competitiveness and leave the market. A subsidy, on the other hand, provides businesses with additional financial resources. As a result, more businesses will remain in the market than under a tax, which means that the total emissions will generally be higher. Moreover, subsidies result in additional costs for the state; they have to be financed through higher taxes elsewhere and cause additional distortions in the overall system. A tax, by contrast, can be derived directly from the accepted “polluter pays” principle and therefore enjoys great political support. Moreover, subsidies may be viewed by trading partners as a distortion of competition to their disadvantage – a view they do not apply to carbon prices. Overall, it therefore makes sense for climate policy to implement carbon pricing through CO₂ taxes or emissions trading (to which all arguments apply in the same way as for taxes) rather than through broad subsidies for abatement measures.

However, the Pigouvian argument could be applied to subsidise the use of certain technologies such as green electricity, since ultimately every kilowatt-hour of green

electricity replaces a kilowatt-hour of coal- or gas-fired electricity and thus saves emissions. So instead of imposing a price on coal-fired electricity and thus making it more expensive, as the EU ETS does, this would make green electricity more affordable. Either option will result in green electricity becoming cheaper than fossil-based electricity and being in greater demand. In practice, both options are used and interact with each other. Subsidising green electricity lowers the price in the EU ETS and does not lead to additional abatement in our line of argument. While there may be politico-economic reasons for combining both instruments¹³ – because in tandem they can lead to the introduction of a fixed emissions target in the EU ETS and gain political acceptance – the Tinbergen Rule suggests that it makes no sense to combine them if only the negative external effects of emissions are to be internalised. Moreover, the interactions described could, in the worst case, render the EU ETS redundant – or, if the certificate price is bolstered, for example by the MSR or a real price floor, overlapping subsidies like those resulting from the Renewable Energy Sources Act could lead to a stronger-than-desired reduction in emissions. Another problem of the parallel use of different instruments is that there is a loss of transparency: it is no longer clear which price signals policymakers are working with. The described principle of achieving a uniform carbon price through subsidies is thus likely to be undermined just as much as direct and indirect carbon pricing. Only when positive external effects, which we will discuss below, come into play in such situations is it possible to justify subsidies in addition to a carbon price.

There are also scenarios in which uniform carbon prices are only made possible through subsidies. A good example would be the integration of NETs, as mentioned above, or of carbon capture and storage (CCS) in the EU ETS. These technologies are essential if we are to achieve GHG neutrality. Standardised pricing is possible by issuing EU ETS certificates for the stored emissions

13 There is anecdotal evidence, for instance, that the EU ETS could only be politically enforced because green electricity was already subsidised. Moreover, lower certificate prices as a result of subsidies can help avoid negative competitive effects for Europe’s industry in the event that it is not possible to implement a border adjustment mechanism.

– a form of subsidy that is consistent with the EU ETS system.

2. Technology support in the climate policy mix

Besides the concept of a Pigouvian subsidy, much of the economic justification for government investment and subsidies as climate policy instruments is related to technology support. The rationale is that developers of new technologies are not fully compensated for the positive social effects they produce. While patents and other instruments attempt to protect ownership of innovations, they never fully succeed. For this reason, private investment into research and development of emissions-saving technologies is lower than it ought to be from a macroeconomic point of view. The positive impacts or external effects are many and varied.¹⁴ They include, first of all, the ongoing further development and successive quality improvements of existing technologies, which benefit from previously gained insights through knowledge spillovers. In the context of climate policy, technologies such as the internal combustion engine or wind and solar power systems, for example, are thus continuously enhanced in what is referred to as an innovation ladder.¹⁵ Secondly, imitating successful applications of new technologies and gaining first-hand experience can produce learning effects – a process referred to as “learning by doing” or “learning by using”. Thirdly, there are often positive network effects when a particular technology is increasingly used. One example is a larger network of charging stations for electric mobility. However, without an in-depth technical and economic analysis, it is unclear whether network effects always justify government subsidies (as with the expansion of the electricity grid, for example), or whether private incentives are sufficient (as with the

filling station system).

To ensure that an optimal amount of research and development is carried out, it is generally economically justified to promote the positive effects – and this is traditionally done by means of government support. However, at this stage it is still unclear whether there is a specific need to promote technologies that reduce GHG emissions or are GHG-neutral. The effects mentioned above fundamentally apply to all types of technologies, and we cannot say for certain that the effects are particularly large for GHG-saving technologies. Nevertheless, there are good arguments for technology promotion to focus specifically on the energy and environmental sectors,¹⁶ given that the environment and the atmosphere are public goods. Some people argue that there are practical limitations to environmental policy and that technology promotion is therefore akin to a second-best solution. We will discuss this point in more detail below.

Overall, there is general agreement in the economic literature that, in addition to pricing of CO₂ emissions, which internalises the negative external effects of climate damage, climate policy should also introduce further instruments that address the positive external effects of technology development in this area. Theory suggests that this should include subsidies for research and the development of GHG-saving or GHG-neutral technologies in order to internalise knowledge spillovers as well as production subsidies for these technologies in order to strengthen the learning-by-doing effect.¹⁷ To achieve an optimal technology mix, it is also necessary to consider high fixed market entry costs, which arise, for example, due to the increased need for research and development in the field of renewable energies. Hence, a carbon price is not sufficient to achieve the

14 See, for example, Jaffe et al. (2005).

15 The innovation ladder is discussed by Aghion and Howitt (1992) as well as Grossman and Helpman (1991).

16 For more information, see Jaffe et al. (2005), for example.

17 See, for example, Fischer and Preonas (2010), Fischer and Newell (2008) or Acemoglu et al. (2012).

macroeconomic optimum; instead, it has to be combined with a fixed subsidy.¹⁸ Overall, an optimal policy mix therefore comprises additional technology promotion measures alongside carbon pricing.

As far as the internalisation of climate damage is concerned, the role of CO₂ emissions as the cause of negative external effects is undisputed, and it is clear that these emissions must be priced accordingly. Policymakers have agreed on a relatively clearly defined temperature target based on scientific findings.¹⁹ From this we can directly deduce how carbon pricing can work. The situation is, however, more complicated when it comes to technology promotion. There is no doubt that technology openness is important and that we should not be too hasty in committing to a particular technology. Accordingly, there should be very general support for research and development – something that is possible through general funding programmes at the EU or national level, for example. From this perspective, special funding programmes only for selected technologies are not advisable. It is hard to say, however, how much funding should be provided. Theoretically, the amount would have to correspond to the expected knowledge spillover, but that is extremely difficult to estimate. The same applies to the cost-cutting potential of positive learning-by-doing effects. Depending on how much cost-cutting potential exists, it might then also make sense to more strongly support a technology that is still comparatively expensive.²⁰ When it comes to production subsidies or subsidies for market entry costs, it can be difficult to remain technology-neutral in practice, and we may quickly end up promoting certain technologies. Even if we succeed in subsidising market entry costs and production costs in a technology-neutral way, the question of the scope of the subsidies remains. Moreover, the positive consequences of technology development are not only very difficult to assess in general, but also manifest themselves over a very long

period of time – or indeed only in the distant future – which complicates the assessment even further. All in all, it is hardly surprising that even the specific nature of technology support is controversial, both in the economic literature and in the political arena. One thing is clear, however: It does not make sense that subsidies and other instruments contradict each other, such as subsidies for the installation of solar systems and tariffs on imports of such systems.

Technology policy and carbon pricing interact with each other in complex ways. For example, the necessary level of carbon prices depends on the available technologies and their costs; at the same time, carbon pricing positively influences private incentives for innovation. Ideally, such technologies will lead to carbon prices falling all the way to zero, because greenhouse-gas-neutral technologies are cheaper than their alternatives. The electricity sector is well on the way to this scenario. What is more, in everyday politics, emissions targets and politically implementable climate policies are rarely independent from the available technologies. As already mentioned, there are indications that the European Emissions Trading System could only be implemented because the development of renewable energies had been subsidised previously and these technologies were therefore already on hand.

This brings us to what we call second-best policies. The question here is which policy is most appropriate if the first-best policy cannot be implemented due to certain restrictions (e.g. political or social barriers). If comprehensive carbon pricing cannot be enforced at the required level, technology promotion can be regarded as the second-best policy. It is thus a substitute for pricing. And while carbon pricing has often only been introduced against considerable resistance – or is still encountering great resistance, as in Australia and the USA, for example – there is usually widespread backing

18 See Antoniou and Strausz (2017).

19 The Paris Agreement states that global warming must be kept well below 2 °C and that further efforts should be made to limit the temperature increase to 1.5 °C.

20 Bramoulle and Olson (2005) demonstrate this theoretically in the context of pollution prevention technologies.

for the instrument of technology support. We can only speculate about the reasons for this regrettable phenomenon. Jaffe et al. (2005) argue that the benefits of subsidies are highly focused and visible, while the additional costs are broadly distributed among the wider community. Moreover, debt-financed subsidies allow policymakers to forego tax increases for the time being and postpone them to the future.

However, second-best policies always lead to additional economic costs compared to first-best policies. What is more, as we can see from renewable energies,²¹ carbon pricing through taxation or emissions trading is by far the most important instrument for the innovation process, because it simultaneously creates incentives to reduce CO₂ intensity during the production process, expand the production of renewable energies, invest in cost-cutting technologies and save CO₂ as a consumer. At the same time, there is no denying the effectiveness of start-up support such as that provided by the German Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz, EEG), which has made it possible for companies to overcome high market entry costs by providing them with investment security. So the problem is not so much the existence of this start-up funding, but the fact that it was not adjusted and reduced quickly enough once green electricity became more competitive.

3. Industrial policy rationale for promoting low-GHG technologies, international competitiveness, financing problems and technological sovereignty

In view of the increasingly uncertain and fragile global economic and geopolitical environment as well as the profound technological disruptions that are imminent as a result of digitalisation and climate change, we

must ask ourselves to what extent it is in the national (or even European) interest to provide targeted support to selected industrial sectors. Whilst Germany has been very cautious in this regard compared with other countries, the Federal Ministry for Economic Affairs and Energy presented its Industrial Strategy 2030 in 2019. This strategy is based on three pillars: improving the framework conditions for Germany as an industrial location, strengthening new technologies and mobilising private capital, and preserving technological sovereignty. Climate policy considerations play a central role in this context.

With regard to the first pillar, the Industrial Strategy mentions improved framework conditions, competitive electricity costs, the avoidance of carbon leakage and the expansion of traffic and transport infrastructures as important factors for a successful German industry. In the absence of globally uniform climate policy, unilateral carbon pricing in the EU would pose the very real risk of production activities and emissions being relocated to other countries – a phenomenon referred to as carbon leakage. Apart from shifting value creation abroad (which is why this point is dealt with in the Industrial Strategy), this would also mean a reduction in the effectiveness of domestic climate policy with regard to global emission reductions.

So far, there is little evidence that EU climate policy has caused carbon leakage to any great extent,²² but this may also have been due to the relatively low carbon prices over a long period of time as well as the policies implemented to prevent carbon leakage. To avoid the relocation of economic activities and emissions, energy- and trade-intensive sectors receive a free allocation of certificates in the EU ETS. Moreover, Germany, for example, also offers electricity price compensation to offset the higher electricity prices resulting from the EU ETS

²¹ See Fischer and Newell (2008).

²² See, for example, Dechezlepretre and Sato (2017) for an overview. Sato and Dechezlepretre (2015) report, for instance, that in 95% of all European manufacturing sectors, the costs imposed by the EU ETS represent less than 0.65% of the material costs. Even in CO₂-intensive sectors, there is hardly any evidence of leakage. Boutabba and Lardic (2017) and Branger et al. (2017) examine the effects of the EU ETS on the cement and steel sectors and find no or only negligible leakage effects.

compared to other EU countries, as well as an exemption from the EEG levy, which all electricity customers would otherwise have to pay to finance renewable energies.

The free allocation of certificates and the tax and duty concessions are considered subsidies in the current Kiel Subsidy Report, for example, but as with technology subsidies, there is some theoretical justification for them. For example, Böhringer et al. (2014) illustrate that under unilateral climate policy it is efficient for energy- and trade-intensive sectors to pay lower carbon prices. The concept of a border adjustment mechanism, which is likewise under discussion in the EU in connection with the Green Deal, also aims to create a level playing field by exempting European exports from carbon pricing while imports into the EU are subject to pricing based on their CO₂ content.²³ In principle, these industrial policy goals can be regarded as justified because they improve the effectiveness of unilateral climate policy. However, their justification depends strongly on the form this will take.

The provision of infrastructure by the state can also be theoretically justified, provided that the aforementioned network effects arise and that they have the character of a natural monopoly. Powerful electricity grids and the infrastructure needed to import and export fuels (e.g. ports) have such a character and can therefore be justified. But even when it comes to something like charging stations for electric vehicles, we have to ask ourselves whether the network effects are strong enough to justify government funding. After all, the filling stations have been provided privately without problems up to now. It is difficult to give a definite answer here, but at least it is better to subsidise the charging infrastructure than

the purchase of vehicles.²⁴

The second pillar of the Industrial Strategy – strengthening new technologies and mobilising private capital – identifies sustainable mobility, low-carbon industrial production, carbon capture and storage/utilisation (CCS/CCU) and bioeconomy as key fields of technology, and addresses the issue that the financing of risky new technologies (such as hydrogen technology) also suffers from market imperfections which prevent sufficient private capital from being invested.

Distortions on the capital market²⁵ arise because borrowers have more information about a project's prospects of success and it is costly to reduce these information asymmetries. Accordingly, the cost of financing may increase²⁶ or there may be no liquid market for long-term financing.²⁷ In such a setting, there is no guarantee that capital will be allocated in a socially optimal way.²⁸ Especially young and innovative enterprises, which face greater uncertainties and do not have established relationships with lenders, have problems obtaining outside financing.²⁹ Financing costs are particularly relevant for capital-intensive technologies such as renewable energies. We can see that financing costs also have a strong influence on the market entry costs discussed in the last section; in addition, the financing structure and risk preferences have an impact on the composition of investment portfolios.³⁰ Frictions on the capital market thus have an impact on technological development, which in turn is not optimal for society as a whole. This is a problem in more areas than just climate policy, but here it could mean that we will have difficulties achieving decarbonisation in a timely manner and that we may make many costly misinvestments

23 See, for example, Böhringer et al. (2012).

24 See also Rickels et al. (2018).

25 The discussion that follows is based strongly on Rickels et al. (2020), section 2.4.

26 See Jaffee and Stiglitz (1990).

27 See Stiglitz (1993).

28 See Kempa and Moslener (2017).

29 See Carpenter and Petersen (2002) on young high-tech enterprises as well as Berger and Udell (2002) on lenders to start-ups.

30 See Bahr et al. (2012) and Mazzucato and Semieniuk (2017).

along the way. Unclear long-term reduction targets and climate policies as well as fluctuating CO₂ certificate prices are increasingly leading to an uncertain investment environment in the EU, where – due to cultural factors – there is moreover less risk capital available than in the USA, for example.

In the context of climate policy, Kempa and Moslener (2017) therefore argue that instruments to promote

investment, especially in new technologies, are economically justified to mitigate capital market imperfections. Because interest subsidies and guarantees are less expensive than investment subsidies, they conclude that the former should be preferred. They also illustrate that directly subsidised loans should be used where public lenders are better able to appraise and monitor them than private lenders or where no long-term capital market is available.

Table 1: Justification for subsidies and government investment as climate policy instruments

General justification	Application to climate policy	Assessment
Negative external effects of GHG emissions (climate damage)	Pigouvian subsidies that subsidise abatement measures, such as green electricity	Efficient instrument, but with practical problems. Carbon pricing is preferable: emission targets and prices can be derived from the targets of the Paris Agreement. Additional subsidies for green technologies reduce prices in the EU ETS and do not lead to greater abatement.
Positive external effects of innovation and technology development (knowledge spillover, learning by doing)	Subsidising general research and development of low-emission technologies to address knowledge spillovers; subsidising production using low-emission technologies to address learning by doing	Part of an efficient policy mix, precise design unclear; appropriate subsidy amount is difficult to quantify. Interactions with the EU ETS must be taken into account.
Negative international competitiveness effects and avoidance of carbon leakage	Carbon price differentiation depending on energy and competition intensity	As long as there is no (optimal) globally uniform climate policy: justified, provided it is properly designed and no other distortions are generated.
High market entry costs due to R&D or high financing costs	General subsidies for new technologies (as shown for renewable energies) are theoretically optimal.	Market entry costs and optimal subsidies are difficult to quantify.
Market imperfections in the financing sector	Interest subsidies and guarantees, loans, purchase guarantees (EEG), investment subsidies	Part of an efficient policy mix, precise design unclear; amount and type of support difficult to specify
World market leadership and sovereignty	Targeted promotion of low-emission technologies considered to have a promising future	Does not hold up as a stand-alone justification

In addition, as already discussed in the previous section, there are further reasons to promote research and development of low-GHG technologies in particular. All fields of technology mentioned in the Industrial Strategy will most likely have to play an important role in achieving decarbonisation. However, there is some doubt as to whether the desire for technological sovereignty that underlies the third pillar of Germany's Industrial Strategy holds any justification.³¹ The notion that the government can predict which technologies require special support has mostly proved wrong in the past.

Germany is one of the biggest beneficiaries of globalisation, and efforts to strive for self-sufficiency under the heading of technological sovereignty will therefore come at a high price. Moreover, the cautious industrial

policy pursued so far has successfully produced 1,300 hidden champions. Opting to subsidise national champions instead would deprive small and medium-sized enterprises of scarce capital and human resources.

First and foremost, the debate on industrial policy is a good opportunity to talk about (economic) policy responses to current challenges, including decarbonisation. As the aim is to achieve decarbonisation in an economically compatible way – in the spirit of the Green Deal – industrial policy will always play a role in climate policy as well. But industrial policy should not be used as a stand-alone justification for promoting technology.

Table 1 summarises the various justifications for government support discussed as well as their assessment.

III. Government support and its practical justification: a colour-coded rating system

Against the background that there may well be reasons in favour of government support, as discussed in section II, it makes sense to move away from a general rejection of government support and towards a view that is more attuned to the problems of climate policy. To this end, the Kiel Subsidy Report, for example, attempts to categorise the recorded subsidies on the basis of how useful they are. For this purpose, they are assigned to various categories that correlate closely with their usefulness, with the option of individual subsidies appearing in more than one category. These categories can be broadly applied to government support in the climate policy context, or can be adapted in such a way that they are helpful in this context. Drawing on the Subsidy Report, we have defined the following categories:³²

Red

■ Distortion: "V"

According to the original definition, this category pertains to distortions of competition between recipients and non-recipients – something that applies to most subsidies. In the context of climate policy, it makes more sense to describe government support as distortionary if it results in an inefficient abatement mix in the longer term (and not just in the early development phase of technologies), such as tax cuts for certain businesses.

■ Benefit of alternative regulatory measures: "O"

This category includes measures whose desired market outcomes can be better achieved through regulatory measures. One example is a broad carbon price instead of promoting a specific technology. A price floor in EU emissions trading, for example, would have eliminated

31 For the discussion to follow, see Dohse et al. (2019).

32 See Laaser and Rosenschon (2018). We have not included the categories "Grotesque subsidies" and "Unavoidable subsidies" as we have not identified any measures in these categories.

the need for large compensation payments to German energy suppliers in connection with the coal phase-out.

Yellow

■ Lack of technology openness: “T”

In the Subsidy Report, this category is called “Pretence of knowledge according to Hayek”. In essence, however, it is about only certain technologies being promoted, “while alternatives that might have produced a better result in the ex-post view are not promoted”.³³ This may also be an issue with respect to climate policy – and can be expressed more succinctly in this context as “lack of technology openness”.

■ Questionable effect or side effect: “Z”

There are many climate policy support measures whose effectiveness is highly doubtful or which have undesirable side effects. One example would be the subsidies in the German climate package of 2018 to be used for replacing oil-fired heating systems. They lead to windfall effects amongst households that had planned to replace their heating systems even without the subsidy, and are not very effective if used to invest in gas-fired heating systems, which are similarly unsuited to achieving full decarbonisation.

■ Contradictory support measures: “W”

As an example, the Kiel Subsidy Report mentions the energy tax introduced to reduce energy consumption, which is contradicted by tax breaks for energy-intensive industries, for example.

■ Preservation support: “E”

This category includes government support granted to emission-intensive industries or structures unable to survive over the long term in a decarbonised economy. Coal subsidies are one example.

Green

■ Adjustment support: “A”

Adjustment subsidies are another category of the official Subsidy Report. They are intended to help economic sectors or enterprises adjust to new framework conditions. The question here is whether the support is temporary or whether it greatly delays or even prevents a necessary structural change. Where this is the case, the corresponding measure would have to be assigned to the categories “T” or “E”.

■ Infrastructure subsidy: “I”

Infrastructure investments are often a necessary requirement for a functioning market economy. For example, investments in local public transport are routinely seen as sensible climate policy measures. However, not all infrastructure investments are useful, either because the investment is made in the wrong place or in the wrong amount. In the categorisation of the Kiel Subsidy Report, the Stuttgart 21 railway station project is cited as an example of bad planning and waste of funds, showing what can happen when different targets (acceleration of rail transport and land for urban development) are combined. The result is that it becomes considerably more expensive to achieve one of the targets.

Four categories have been added, derived directly from section II of this article:

■ Technology promotion as the second-best solution: “2”

Whether a solution that is optimal from an economic point of view, i.e. the first-best solution, really cannot be implemented is often difficult to answer objectively. In light of the importance of the climate issue, however, technology promotion may be a substitute (if incomplete) for, say, expanded carbon pricing, and can thus be justified. Such an argument can be made if the reason for not achieving the best solution is rooted in technology rather than in the political process. For example, implementing efficient pricing of CO₂ emissions

³³ Laaser and Rosenschon (2018), p. 19 [our translation].

in the agricultural sector is very difficult. However, the dimension of time plays a role, because the reasons preventing implementation may diminish or even disappear entirely over time. A provisional solution should not become permanent or cause us to forget the path to the first-best solution. This suggests that a regular review of technology support measures is warranted, with the option to discontinue them if the reasons no longer apply. Against this background, and also because there may be overlaps with category “T”, it is unlikely that a corresponding subsidy can receive an unqualified positive assessment.

- Addressing knowledge spillover and learning by doing as a positive external effect in technology development: “X”³⁴

As shown in section II, the use of subsidies to address knowledge spillovers and learning by doing is justified by economic theory. In practice, however, there can be overlaps, especially with category “T”, so that it is often difficult to assess a corresponding subsidy unreservedly as positive.

- Addressing further barriers and external effects that lead to market failure: “B”

As explained, these can be network effects, high market entry costs, information asymmetries and high financing costs due to uncertainties.

- Prevention of carbon leakage: “L”

As described in section II.3, carbon leakage leads to emissions being shifted abroad, thus defeating the actual purpose of climate policy. To avoid this, government measures that are classified as subsidies, such as tax breaks or free allocation of certificates, can be justified, although it is important to consider whether there might be better measures (category O).

In the Kiel Subsidy Report, individual subsidies are assigned to the appropriate categories to provide a point of reference for an overarching categorisation based on the traffic light principle. According to this principle, subsidies that should be abolished without replacement are categorised as red, subsidies whose macroeconomic benefit is justifiable but disputed or whose goals could be better achieved in other ways and which therefore could potentially be reduced are categorised as yellow, and finally those subsidies that should not be cut for various reasons are categorised as green. On this basis, the available subsidies and other forms of government funding discussed in this article will be rated as red = “not useful”, yellow = “justifiable and thus useful to a limited extent”³⁵ or green = “useful”. Categories V and O clearly point to a red rating, categories T, Z, W and E point to a yellow rating and categories A, I, 2, X, B and L point to a green rating. In the process, individual cases require the weighing of different arguments.

IV. Assessment of subsidies and support measures in the context of climate policy and the Green Deal

As already indicated in the introduction, subsidies play a central role in climate policy practice. Both the EU and individual member states have many investment and support programmes as well as conventional subsidies that are intended to help decarbonise the economy by financing infrastructure or directly or indirectly promoting the development and use of low-GHG technologies.

Particularly at the national level, these measures are sometimes very compartmentalised, with a number of measures in Germany organised at the municipal or at least state level, for example.

The Green Deal is a European project involving support measures at the European level in addition to regional

34 In the Kiel Subsidy Report, research funding is listed separately and assessed as not harmful. Accordingly, no positive categorisation is provided for this type of government support.

35 In the sense that we must always take a look at the amounts of money that could be lost in the case of unconditional support.

and national subsidies. At the same time, the overarching goal of accelerated GHG neutrality requires further measures at the national level. The existing European framework is likely to be retained in essence, in that only some of the GHG emissions (currently just under half) will be regulated by the EU Emissions Trading System in an effort to achieve the EU-wide reduction target in these sectors, while the remaining emissions are covered by national targets to be achieved through instruments at this level. In parallel, there are other overarching EU targets and measures, such as defined fleet limits or targets for the share of renewable electricity, as well as national climate policy measures that are motivated by industrial policy and affect the sectors in the EU ETS. The Green Deal calls for the EU Emissions Trading System to be extended (presumably to the maritime sector in the next step, and later to the transport and heating sectors), although it will not cover all GHG emissions in the foreseeable future, notably those from the agricultural sector. National support measures will therefore remain part of the Green Deal. In view of the cross-border external effect, however, it would be helpful to establish carbon pricing as widely as possible throughout Europe. Nevertheless, national measures will never lose their justification completely due to the principle of subsidiarity and the need to take national circumstances into account.

Providing an overview of all financial aid measures and subsidies available in Europe and the individual member states would go beyond the scope of this article. We will therefore limit ourselves to an overview of the existing European measures set out in the Green Deal and – by way of example – the central measures in Germany, including those envisaged in the German climate package of 2018 and the coronavirus aid package of 2020.³⁶ Given the large number of individual measures and approaches, this is likely to cover the most important types of support available. It is also worth noting that the Green Deal itself is very general and vague, so

that it is often unclear what form the support referred to is supposed to take.

An analysis of the measures considered shows that they can be divided into five major categories – research programmes, infrastructure measures, tax breaks, investment subsidies and financing conditions – which we will deal with one by one below. Support is provided primarily in the areas of mobility, new forms of energy, industrial production with few or no GHG emissions, energy efficiency and agriculture.

1. Research programmes

There are research programmes, both at the EU level and at the national level in Germany, that promote applied and sometimes also basic research on new technologies.

At the EU level, research is funded through framework programmes for research and innovation. The 8th framework programme Horizon 2020, which ran from 2014 to 2020 with a budget of 80 billion euros, was recently completed. It is now being followed by the 9th framework programme Horizon Europe, for which 95.5 billion euros have been earmarked between 2021 and 2027. At least 35 percent of the Horizon Europe budget will be used to finance new climate protection solutions that are relevant to the implementation of the Green Deal.³⁷

In general, this European research funding is based on three pillars. The first pillar – Excellent Science – will account for about a quarter of the budget. It provides classic research funding that is not restricted in terms of content and focuses on promoting scientific excellence and strengthening the EU's science base. How much of the funding will go to research relevant to climate policy is not explicitly defined. The second pillar – Global Challenges and European Industrial Competitiveness

³⁶ See BMF (2020), Bundestag (2019), Tagesspiegel (2019) for all measures cited below from these packages.

³⁷ See EC (2019), section 2.2.3.

– accounts for about half of the budget and supports six clusters “that cover the entire range of the United Nations’ Sustainable Development Goals (SDGs) and are intersectoral and inter-/transdisciplinary in their orientation (including the humanities, social sciences and cultural studies).”³⁸ The calls for proposals for these framework programmes specifically list certain research topics and technologies that are considered to be particularly promising for the future. While this means that there is no complete technology openness, the programmes still fund a broad spectrum of technologies (under the most recent Horizon 2020 programme, funding in the area of low-GHG technologies covered such fields as photovoltaics, concentrated solar power, wind energy, ocean energy, hydropower, geothermal energy, renewable heating and cooling systems, energy storage, biofuels and alternative fuels as well as carbon capture and storage). The third pillar – Innovative Europe – will receive just under 15 percent of the total budget and aims to support technologies that are considered to have great potential by providing flexible grants and mixed financing (grants/loans/equity). This is being organised by the European Innovation Council and falls into our categories of grants and enhanced financing options.

The EU sees its research programme as a central component of implementing the Green Deal.³⁹ The InvestEU programme,⁴⁰ which brings together various investment support programmes with the aim of mobilising private capital, is also concerned with research and innovation activities. A total of 38 billion euros will be made available from 2021 to 2027 under this programme. Of this, 11 billion euros will go to each of the areas of “Sustainable infrastructure”, “Research, innovation and digitalization” and “SMEs”, and 4 billion euros to the area of “Social investments and skills”. At least 30 percent of the funds will be used to help combat climate

change. The Green Deal itself mentions research and innovation in various places, though rather generally and in relation to different technologies. For example, it refers to partnerships with industry and member states that support research and innovation in the areas of transport (including batteries), clean hydrogen, low-carbon steel production, circular biobased sectors and the built environment, and elsewhere to increased support for decarbonised gases.

Germany also has national research funding programmes that are similar to the EU framework programme: the DFG (Deutsche Forschungsgemeinschaft – German Research Association) provides traditional research funding that is not restricted to specific topics, while the Federal Ministry of Education and Research provides subject-specific funding under its FONA framework programme (Forschung für Nachhaltige Entwicklungen – Research for Sustainable Development). The latter has funded almost 10,000 projects since 2005, with the budget under the new programme to be doubled to 4 billion euros over the next five years to fund research on climate protection, zero-emission mobility, resource-efficient circular economy and structural change in coal regions.⁴¹ This will be supplemented by more specific calls for proposals from line ministries at the federal and state levels (such as the Federal Ministry of Economic Affairs and Energy). In addition, research institutions also receive considerable funding at the national level. According to the Kiel Subsidy Report, federal subsidies for research activities conducted outside of companies totalled 13.1 billion euros in 2020. More than 70 percent of this funding originated from the Federal Ministry of Education and Research.

Overall, the research programmes described are quite clearly oriented towards the identified positive external effects of research and development in the form of

38 See fact sheet on Horizon Europe: https://www.ffg.at/sites/default/files/downloads/HORIZON-EUROPE_FactSheet_20052020.pdf [our translation].

39 See, for example, https://ec.europa.eu/info/research-and-innovation/strategy/european-green-deal_de, accessed 20 November 2020.

40 See https://europa.eu/investeu/projects_de, accessed 20 November 2020.

41 See Tagesspiegel Background Energie dated 26 November 2020, “Mehr Geld für Klima- und Nachhaltigkeitsforschung”.

knowledge spillovers and therefore fall into category “X”. There is no complete technology openness due to some of the calls for proposals being very specific (hence category “T” in some cases), but the broad-based technology funding provided means that the programmes are at least not fully fixated on specific technologies. Moreover, there is a certain logic to splitting the funding into what is in fact completely open research funding, thus also supporting research on technologies that are not yet in the spotlight, and more specific funding of technologies that are thereby brought into the spotlight. Given the enormity of the challenge of complete decarbonisation, it seems justifiable to direct some of the research funds towards technologies that can contribute to achieving this goal. After all, it is unclear whether the research funds will be used in their entirety at all if the programmes focus on technologies that are not very promising. Overall, this category of government support is therefore given a green rating.

2. Infrastructure funding

Another type of government support is infrastructure funding. This is one of the focal points of the aforementioned InvestEU programme, which finances projects in the areas of sustainable energy, transportation and waste disposal, among others. As part of the Green Deal, the EU plans to provide support for the installation of public charging stations for electric vehicles in places where there are still shortages, as well as financial resources to make school buildings and operations more sustainable.

In 2018, around 6.9 billion euros in financial aid were provided for the maintenance and expansion of the rail network and local public transport in Germany.⁴² The 2018 climate package furthermore stipulates investments of 86 billion euros in the rail network by 2030. Another approximately 190 million euros went into local

public transport and the digitalisation of municipal transport systems in 2018. In the same year, the federal government paid 8.8 billion euros in regionalisation funds to the federal states as indirect financial aid, which they are using to pay for regional rail transport services provided by railway operators. The coronavirus aid package also supports local public transport, for example by compensating transport companies for lost fare revenue. And the climate package contains further unquantified grants for the expansion of regional transport, with public funds also provided at the municipal level. For this item, the Kiel Subsidy Report lists 155 million euros each for 2019 and 2020, with the first coronavirus aid package including additional subsidies for charging station infrastructure. Public buildings also count as infrastructure, and there are a number of programmes to help make them more energy-efficient.

In general, infrastructure investments are viewed positively in the economic literature, and are highlighted as particularly useful in the context of decarbonisation. For example, in its special report on climate policy (2019), the German Council of Economic Experts deems “infrastructure investments, such as in local public transport or network and storage infrastructure” to be a necessary targeted measure to accompany carbon pricing. According to the report, this infrastructure is needed “to create substitution opportunities”.⁴³ The report mentions the expansion of local public transport, long-distance transport and bicycle and pedestrian infrastructure, as well as the enlargement of the service station network (charging stations) for other types of drive systems. The insufficient electric charging station infrastructure is identified as an important factor preventing a higher market penetration of electric vehicles. However, this infrastructure does not necessarily have to be state-financed – the electricity grid in Germany, for example, is financed through a grid levy that all electricity consumers have to pay. In the Kiel Subsidy Report,

42 See Laaser and Rosenschon (2020).

43 See SVR (2019), no. 252, p. 135 [our translation].

infrastructure investments are therefore generally rated yellow, because here, too, we have to ask ourselves to what extent infrastructure actually has to be funded by the government and where such investments can be left to market forces (as in the case of filling stations). Infrastructure investments in the rail network, local public transport and charging infrastructure for electric vehicles are therefore also rated yellow.

From the specific perspective of climate policy and in view of the fact that, at least as far as the rail network and local public transport are concerned, no decarbonisation scenario can do without a significant shift in the modal split towards rail and public transport, this assessment seems somewhat harsh – though it is certainly true that the amount of the subsidies is up for questioning and that the subsidisation of Deutsche Bahn, for example, was often not efficient enough in the past. Here, we are therefore rating these investments as green to yellow, meaning “well-justified, but the amount and design are problematic”. As far as electric mobility is concerned, it is still uncertain how great a share it will have in a sustainable mobility mix compared with other drive concepts (such as hydrogen vehicles or synthetic fuels) or where there might be crucial shortages in this context. However, the great effectiveness of battery-powered vehicles, the consistent focus of some manufacturers, such as VW, on electric cars, the high overall market maturity and the trends in other countries, above all in China, suggest that e-mobility will play a noticeable role. Investments in charging infrastructure therefore also appear justified, at least in the early stages of the transformation process, due to positive network external effects. We therefore rate this type of infrastructure investment as yellow to green, although other instruments will have to ensure technology openness here, and it is also worth considering whether there are any other instruments, such as higher carbon prices and lower electricity prices, that might make private investments in such a charging network profitable.

As for promoting energy efficiency in public buildings,

the target of full decarbonisation necessarily includes all such buildings, with the government being responsible for this as the owner. This type of investment must therefore be rated green.

3. Tax and levy privileges

Another means of indirect government support that is widely used in the environmental sector is tax and levy privileges. The EU itself has not imposed taxes and levies so far, hence there are no privileges here. However, one subsidy that does fall into this category is the free allocation of certificates under the EU ETS to energy-intensive and trade-intensive companies, intended to reduce the problem of carbon leakage. With increasing decarbonisation, however, the availability of free certificates decreases, which is why other carbon leakage measures in the form of a border adjustment mechanism are already being discussed. The optimal solution would be global climate policy in the form of a uniform global carbon price (or at least a price floor), which would make carbon leakage measures superfluous. As long this is not the case, it makes sense to establish a border adjustment system that reduces the free allocation of certificates. Because such a policy is not easy to establish and free allocation at least has a viable justification, we assign a yellow rating overall, just as the Kiel Subsidy Report does.

In addition, the EU has laid down that, in order to address distorted competitive conditions caused by indirect effects, member states can pay electricity-intensive production companies some – albeit not full – compensation for an increase in electricity prices caused by the EU ETS (electricity price compensation). In Germany, energy-intensive industries are additionally exempt from the EEG levy and are subject to reduced electricity taxes. Although imposing different tax rates on different electricity consumers causes some distortion, electricity price compensation has a certain justification, as electricity – in the EU and even more so in Germany – is very expensive by international standards. This not only leads to negative competitiveness effects and thus to

carbon leakage, but also hinders the establishment of electricity-based low- or zero-emission technologies such as heat pumps, electric vehicles and green hydrogen. Given that the energy taxation system as a whole is highly distorted because it is not based on CO₂ content and contains numerous privileges that are less justifiable, there is an urgent need for a reform of the entire system⁴⁴ and a lower tax on electricity. In the Kiel Subsidy Report, the measures are rated individually – generally as yellow to orange or even red for electricity price compensation. When we add the abovementioned climate policy arguments to the equation, which must also be considered in a tax reform, we rate the electricity price reduction measures as yellow.

Overall, tax breaks play a major role at the national level. They account for a large share of fossil energy subsidies in the EU. If we look at the OECD compilation on subsidies for fossil energy, for example, the majority of the subsidies recorded are tax breaks that, in individual countries such as the United Kingdom, France, Italy or Sweden, may even reach 100 percent. In Germany, the figure was just under 75 percent in 2017, with the share set to rise as coal subsidies are phased out.⁴⁵ The Kiel Subsidy Report puts the tax breaks for electricity and energy taxes in 2018 at around 8.1 billion euros. In addition, another 5 billion euros was slated for the commuting allowance, which was raised once again in the climate package, 470 million euros for motor vehicle tax exemptions and just under 1.5 billion euros for VAT reductions for local public transport.

Besides the aforementioned measures to reduce the price of electricity, Germany has also introduced numerous other tax concessions and incentives in the energy and mobility sectors. These include, for example, the mineral oil tax exemption for agricultural diesel, the energy tax exemptions in aviation and inland shipping, the motor vehicle tax exemption for tractors, the VAT exemption for local public transport and the

commuting allowance. They are joined by various tax incentives for electric vehicles, such as special write-offs for commercial e-vehicles and cargo bikes, a reduced assessment basis for the taxation of electric company cars and a tax exemption when charging private cars at the employer's premises. The climate package also includes a VAT reduction for rail travel and a subsidy paid from budgetary funds to bring down the EEG levy, which has been lowered even further by the coronavirus aid package. In addition, it contains a tax incentive for energy-saving renovation measures on owner-occupied residential property, in that the costs of such measures are eligible for tax relief, with energy consultations likewise promoted through tax incentives.

The Kiel Subsidy Report rates the tax exemptions and tax breaks in the energy sector anywhere from yellow through orange or even red on the grounds of their distortionary, dubious or contradictory effects. In fact, different tax rates for different fuels and consumers, which are moreover not linked to the CO₂ content, lead to multiple inefficiencies and contradictory effects, and are not a useful instrument to efficiently achieve climate policy targets. The main instrument here should be carbon pricing. An energy tax, which primarily aims to generate revenue and which could be regarded as a means of financing infrastructure in the transport sector, should not counteract carbon pricing and make low-GHG technologies more expensive in the same way as a high electricity tax. Moreover, the many measures listed show that unintended side effects and interactions between the instruments are possible and that it is difficult to achieve the required transparency. All in all, we therefore also rate these measures as yellow to red; only where the carbon leakage argument applies is a yellow rating appropriate.

A similar argument can be made for value-added tax. This is a system that differentiates strongly between products, services and sectors, is in many places unjustifiably

44 Agora Energiewende (2018) offers ideas on this and highlights the problems.

45 OECD (2019), OECD (2020) and own calculations.

inconsistent and should therefore also be reformed. Instead of promoting local public transport and rail transport through a VAT reduction (and a multitude of other programmes) – a measure that leaves out long-distance buses and is rated red in the Kiel Subsidy Report – it would be better to work with inverse auctions, as has proven successful in the subsidisation of wind farms.

4. Financing grants

Direct investment grants are another form of government support. In the EU, such grants are financed in particular through the InvestEU Fund and the Innovation Fund⁴⁶ within the framework of project financing.

The InvestEU Fund comprises 38 billion euros, with at least 30 percent to be used to support climate-relevant projects. A total of 22 billion euros is earmarked for the areas of “Research, innovation and digitalization” and “Small and medium-sized enterprises”. This includes, in particular, financing grants, which can cover up to 100 percent of the project costs. In the area of energy efficiency, for instance, the projects funded include a free renovation consultation in the small town of Emmendingen (285,000 euros), and in the field of mobility, a direct grant of 17 million euros for a biorefinery that produces plastics, lubricating oils and pesticides from vegetable oils.

The Innovation Fund holds ten billion euros and provides financing grants that fund up to 60 percent of the capital and operating costs of a project, focusing on the areas of energy storage, carbon capture and utilisation or storage, low-carbon technologies and processes in energy-intensive industries, and renewable energy generation. Examples of projects financed by the predecessor fund include a plant for the production of biodiesel and bionaphta in Finland (88 million euros), a solar power plant in Spain (70 million euros) and a

floating wind farm in Portugal (30 million euros).

In Germany, too, there are numerous programmes that provide financing grants for projects – and in some cases also for individual measures such as the purchase of an electric car, the replacement of an oil-fired heating system or the installation of a fuel cell – for example under the building renovation programme, the market launch programme for renewable energies, the fleet replacement programme, the innovation promotion programme in the shipping industry or the bonus programme for future-oriented investments by vehicle manufacturers and the supply industry from the coronavirus aid package.

Evaluating these very diverse and differently structured subsidies in detail would go beyond the scope of this article. Generally speaking, compartmentalised subsidies for individual measures must be viewed critically, and there is often no discernible need to diverge from the main instruments of carbon pricing, R&D funding and infrastructure measures. For example, buyer’s premiums for electric cars – for which the German government provided 600 million euros between 2018 and 2020 alone – are not the right instrument to promote e-mobility, since what is important here is not the ownership of an electric vehicle, but its use. If we need additional support beyond a carbon price in this context, it should be in the areas of R&D and infrastructure.⁴⁷ A premium for replacing oil-fired heating systems is also not expedient as this generates windfall effects, and a switch to gas-fired heating systems could lead to a technology lock-in if we are to achieve greenhouse gas neutrality as early as 2050. Both measures would have to be given a red rating, citing a lack of technology openness as well as alternative instruments, unintended side effects and distortions. When it comes to project funding, it is harder to make a general assessment, and distinguishing it from R&D funding and the intended elimination

46 See https://ec.europa.eu/commission/presscorner/detail/en/MEMO_12_999 and https://ec.europa.eu/clima/policies/innovation-fund_en#tab-0-1, accessed 20 November 2020.

47 See Rickels et al. (2018).

of market imperfections is almost impossible, certainly in general terms and presumably also at the level of individual projects. There is likely to be a danger of windfall effects and distortions in many places; on the other hand, it can make sense to promote pure research and development in order to bring technologies to market, for example as a way of dealing with high market entry costs. Overall, a rating of yellow to orange seems appropriate in these areas.

5. Provision of financing and special financing options

Another promotional instrument is the provision of credit, loans or borrowed capital, in some cases at concessional and thus subsidised conditions.

In the EU, for example, 1.5 billion euros of the EU Transition Fund⁴⁸ are earmarked for concessional loans to public institutions, for example for energy and transport infrastructure, district heating networks or energy efficiency measures (renovation of buildings), enabling loans of up to 10 billion euros to be granted. The InvestEU Fund provides for loans or guarantees as promotional instruments as well. One example is a loan for a wind farm. In Germany, the largest single item of financial assistance is the KfW building financing programme, totalling two billion euros per year. The bulk of this amount – 1.7 billion euros – is made available for low-interest loans. Energy-efficient renovations (several measures, such as insulation and heating systems), for example, are eligible for a promotional loan of up to 120,000 euros, including a repayment subsidy of up to 48,000 euros. KfW also provides low-interest loans and repayment subsidies in its market launch programme for renewable energies. The Kiel Subsidy Report rates all of these measures as yellow, arguing that alternative regulatory instruments are available (carbon pricing).

What speaks in favour of these instruments is the empirical evidence described in section II.3 that financing hurdles and limitations are an important factor hindering the adoption of low-GHG technologies.

Table 2 (page 44) gives a rough overview of the measures identified and examples given across the various sectors and instruments.⁴⁹ Table 3 (pages 45-46) then summarises the assessments of key measures.

48 See https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/actions-being-taken-eu/just-transition-mechanism/just-transition-funding-sources_de#frderungswrdigkeit, accessed 20 November 2020.

49 Not exhaustive, as no complete overview exists at EU level that is comparable to the Kiel Subsidy Report, and it would go beyond the scope of this article to analyse and categorise all funded projects and all measures.

Table 2: Examples of support measures in the EU and Germany in various fields of technology

	Research programmes	Infrastructure financing	Tax breaks	Financing grants	Improved financing options
Mobility	EU research framework programmes and comparable national programmes, some of which promote R&D across an open range of topics, while others focus on specific subject areas. The latter usually covers a broad portfolio of technologies	Charging stations for electric vehicles Rail network Local public transport	Electricity tax reduction for rail transport, energy tax reduction for liquefied gases, reduced VAT for public transport, reduced energy tax for aviation and inland shipping, tax incentives for electric vehicles, VAT reduction for rail transport	Purchase of electric and hybrid vehicles	Concessional loans for transport infrastructure
Energy			Reduction of EEG levy	On a project basis, e.g. in InvestEU	Concessional loans for energy infrastructure and district heating networks; guarantees, loans and repayment subsidies for renewable energy systems
Agriculture			Energy tax reduction, mineral oil tax concessions for agricultural diesel fuel		
Industrial production			Energy tax reduction, electricity price reduction for manufacturing industry, tax incentives for electric company cars, free allocation of certificates in the EU ETS	On a project basis, e.g. in InvestEU	Loans and guarantees, e.g. from the InvestEU programme
Buildings sector		Energy efficiency of public buildings	Tax incentives for energy-efficient renovation measures and energy consulting	Subsidy for the replacement of oil-fired heating systems	Concessional loans for energy efficiency measures
Carbon sinks				On a project basis, e.g. in Innovation Fund	

Table 3: Categorisation and assessment of key measures

Description of measure	Categories	Comments	Overall assessment	Scope of selected measures
Research funding through EU framework programmes and comparable national programmes	X, T	No complete technological openness due to specific calls for proposals	Green	EU: Horizon Europe (2021-27): EUR 95.5 bill.; Horizon 2020 (2014-20): EUR 80 bill. DE: Funding of research activities outside of companies totalling EUR 13.1 bill. in 2020
Investment in low-GHG public buildings	I	Decarbonisation includes public buildings	Green	In several programmes
Investment in rail network/ local public transport	I, T	In practice, partially inefficient funding, no technological openness	Green to yellow	EU: EUInvest (2021-27) contains EUR 11 bill. for infrastructure measures; 30% of the total fund to be climate-relevant. DE: just under EUR 7 bill. + EUR 8.8 bill. regionalisation funds in 2018
Investments in charging infrastructure for electric vehicles	B, I, T	Network effects of charging point density; private financing possible, no technological openness	Yellow to green	DE: EUR 145 mill. 2019 EU: from EUInvest
Free allocation of certificates	V, L, O, 2	Temporarily useful to reduce carbon leakage, not possible in the long term, creation of border adjustment mechanism advisable	Yellow	EU: approx. EUR 11.3 bill. 2019 DE: approx. EUR 2.2 bill. 2019
Various tax breaks for energy and electricity taxes	V, O, T, W, Z, 2	Energy tax reform necessary; electricity price reduction is important for electricity-based decarbonisation, here a yellow rating is more appropriate	Yellow to red	DE: approx. EUR 8.1 bill. 2018
Of which tax breaks for energy-intensive and trade-intensive industry	V, L, A, O, 2	Here, too, energy tax reform is necessary, although carbon leakage justifies a certain degree of price differentiation	Yellow	DE: approx. EUR 4.1 bill. 2018
Grants for individual measures (electric cars, oil-fired heating, fuel cells)	V, T, O	Generally windfall effects and distortions	Orange to red	DE: Many subsidy programmes contain individual measures, e.g. buyer's premium for electric cars, for which EUR 600 million were provided from 2018 to 2020

Description of measure	Categories	Comments	Overall assessment	Scope of selected measures
Financing grants for projects	V, T, O, B	Only to be evaluated in individual cases, carbon pricing should remain key instrument, high market entry or financing costs can serve as justification	Yellow	EUR 22 bill. in EUInvest (2021-27) for "Research, innovation and digitalization" and "Small and medium-sized enterprises"; additionally funds from EU research funding; EUR 10 bill. in Innovation Fund (2020-30) DE, 2018: EE funding approx. EUR 0.7 bill., 2020 increase planned to approx. EUR 2.5 bill.
Financing options: loans, concessional interest rates	X, B, T	High financing costs can serve as justification	Yellow	EU Transition Fund (2021-24): EUR 1.5 bill. for concessional loans of EUR 10 mill.; DE: low-interest loans from building refurbishment programme of EUR 1.7 bill. in 2019

Sources: Unless indicated otherwise, the figures for Germany are taken from the Kiel Subsidy Report (Laaser and Rosenschon 2020), which covers subsidies at the federal level.

Budget Horizon 2020: https://ec.europa.eu/research/horizon2020/pdf/press/fact_sheet_on_horizon2020_budget.pdf

Budget Horizon Europe: <https://www.consilium.europa.eu/en/press/press-releases/2020/12/18/justice-programme-council-presidency-and-european-parliament-reach-provisional-agreement/>

Budget InvestEU: <https://ec.europa.eu/clima/policies/innovation-fund>

Budget EU Transition Fund: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/actions-being-taken-eu/just-transition-mechanism/just-transition-funding-sources_de#frderungswrdigkeit

Freely allocated certificates by the EU: Based on an average price of EUR 15.71 in 2019, 719 million free certificates; <https://www.eea.europa.eu/data-and-maps/dashboards/emissions-trading-viewer-1>

Buyer's premium: <https://www.bundesregierung.de/breg-de/themen/klimaschutz/umweltbonus-1692646>

V. Conclusions

In this paper, we have attempted to provide an overview of climate policy subsidies, assess their impact, and provide an evaluation in the context of climate policy. This seems especially now of utmost importance. Subsidies are already a very important element of climate policy today. According to the EU Commission, Germany spends at least 40 billion euros – or 1.2 percent of its GDP – on green subsidies, with a strong upward trend. Yet the EU's subsidy statistics do not even include all

subsidies. What is more, the climate package and the EU's Green Deal will significantly increase spending on subsidies.

In contrast to carbon pricing, climate subsidies come as a labyrinth of different measures that is difficult to navigate in its entirety, lacks transparency and sometimes even contains contradictory measures. It is reasonable to assume that the existing subsidy landscape reflects

the lobbying efforts of various players, but also the desire of policy makers to intervene with concrete projects in a creative (or even entrepreneurial) way. Economists are therefore traditionally very sceptical about subsidies, and the Kiel Subsidy Report reflects this.

In times of ambitious climate policy targets and what seems like an endless range of public funding options, policymakers are taking more and more direct control. The regulatory framework, especially the practice of imposing a price on CO₂ emissions, is thus being undermined. Moreover, the risk of crowding out private investment is mounting. That said, not all climate policy subsidies are harmful from the perspective of welfare economics. The ideal policy mix includes subsidies in those areas where there are positive external effects, such as research and development or infrastructure investments. Subsidies may also be necessary as a second-best measure when the best measure – which is often to put a price on emissions – is not feasible for political or technical reasons. The problem, however, is that it is not easy to determine what exactly should be subsidised and by how much. In view of the widespread practice of granting subsidies, we therefore consider it important at least to draw up guidelines.

This is why we have examined both existing instruments and new ones envisaged in the various programmes, and have used a colour-coded system to assess them. Only very few subsidies have been given a clear green rating; this applies to research funding that is open to all technologies as well as selected infrastructure measures. Most of the subsidies are rated yellow. This is true in particular for measures to avoid carbon leakage, for improved financing measures and more generally for infrastructure measures. Implementing consistent carbon pricing – transparent, plannable in the long term and including a price floor – as the key instrument would render many of these measures superfluous or at least drastically reduce the need for them. While it is true that there are political hurdles to consistent carbon pricing, this should not be used as an excuse to rely more and more heavily on subsidies. Instead, we should work on eliminating

these hurdles. The current coronavirus crisis is putting constraints on the government's medium-term financial capacities; this also speaks in favour of reducing subsidies and focusing more strongly on carbon pricing. In any case, using subsidies to combine long-term climate policy with short-term economic policy is problematic, if only because two independent targets – stabilising the economy in a recession and decarbonisation – cannot be achieved with one and the same instrument (Tinbergen Rule). Nor can climate policy subsidies usually be justified from a distribution policy point of view. It is more efficient to rely on price signals and counteract undesirable distribution effects by means of direct transfers to the affected population groups. However, we must probably concede that if subsidies are to be a part of the short-term policy mix, it is better – in keeping with the do-no-harm principle – to use them where it also makes sense from a climate policy perspective, such as for infrastructure projects or energy efficiency.

In addition to expanding explicit carbon pricing, we urgently need to reform the inconsistent energy taxation system (not only in Germany) and the customs structure in order to achieve the most uniform carbon pricing model possible. These types of subsidies have been given a red rating. The only possible exceptions are where there is a significant risk of carbon leakage. Other red subsidies include very compartmentalised financing grants for certain technologies (such as electric cars or specific heating systems).

For these reasons, two key measures should be urgently put on the German and European climate policy agenda: Firstly, the subsidies flagged as red in our colour-coded rating system should be avoided and phased out. And secondly, carbon pricing should be strengthened, in particular by expanding the EU Emissions Trading System, instituting a price floor for CO₂ emission certificates and undertaking a comprehensive energy price reform that above all makes clean electricity cheaper. This would allow us to cut back on many of the measures marked as yellow in our assessment.

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The European Green Deal and economic policy: bureaucracy should be limited and overregulation avoided

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I. Introduction

The coronavirus pandemic has triggered a deep economic crisis and led to a debate about the future orientation of economic policy. In the process, sustainability plays a central role, particularly climate protection. At issue are two opposing positions: the first argues that climate policy aims must take a back seat in view of the high costs of the crisis; economic recovery needs to take precedence. Opponents to this position say the crisis demands greater commitment to sustainability, not less, particularly for climate and environmental protection. They believe that the growing pressure to transform structurally is an opportunity to orient the economy more quickly than before toward environmental protection and climate neutrality.

This second position dominates among political decision-makers in Europe and Germany. President of the European Commission Ursula von der Leyen has, for instance, placed the Green Deal, with its goal of a climate-neutral European economy by the year 2050, at the centre of the political agenda for her term of office. In her State of the Union speech in September 2020, she announced that the EU even plans to reduce its CO₂ emissions by 55 percent by the year 2030, not just 40 percent.

The governments of EU member states likewise share the position that the economic losses incurred during the coronavirus crisis cannot be allowed to endanger climate policy goals or the general aim of achieving greater sustainability, or result in their being abandoned.

However, the consensus ends at the question of how climate protection and greater sustainability should be achieved and which instruments should be used for

this. These differences of opinion apply to the choice of instruments themselves; that is, the question of which climate policy instruments – such as certificates or environmental taxes – are most suitable, but the range of instruments is itself also controversial. Should solely or mainly environmental policy instruments be implemented to achieve climate policy aims, or should other policy areas – economic policy, financial market regulation or competition policy are some examples – likewise be oriented toward climate protection goals? This article will concentrate on the second question: the debate about the orientation of other policy areas toward climate protection and further sustainability goals.

Economic policy theory makes frequent reference to the Tinbergen Rule, according to which every economic policy goal should be pursued with an instrument suitable to achieving it. Thus, for instance, it would be counterproductive to pursue environmental aims with instruments intended for financial market regulation. However, current economic policy does precisely that: environmental and sustainability goals are becoming central concerns in a growing number of policy areas. Examples include the current economic policy to stabilise the economy during the coronavirus crisis, the Sustainable Finance or Green Finance initiatives or Green Deal competition policy.

The debate about economic stimulus packages to support and revitalise the economy during the coronavirus recession has featured repeated demands that the goals of sustainability and especially climate protection take centre stage. Climate policy and green investments are also the focus of the European Union's Next Generation EU (NGEU) fund, which is intended to support economic

recovery in Europe, especially in those countries hit hardest by the crisis.

Sustainable finance aims to redesign the basic conditions of the financial sector such that sustainability goals can be supported by directing capital flows. This includes a variety of developments such as the orientation of banking and financial market regulation toward sustainability aims, the issue of green bonds, the requirement that the investment policies of funds and pension fund assets be tied to sustainability criteria, an emphasis on green public investments, the creation of green instruments for corporate financing and even the “greening” of monetary policy.

Similar developments can be seen in competition policy.

Sustainable competition policy relativises competition policy principles such as the ban on collusion such that, for instance, agreements between companies should be permitted if they serve the aims of sustainability.

This article is structured as follows: Section II briefly explains several terms that are central to the topic, such as sustainability, the Green Deal and the ESG. Section III discusses the demand that economic programmes feature a green orientation. Section IV describes and analyses the Sustainable Finance initiative. Section V takes up the idea of tying the orientation of monetary policy to sustainability goals, and Section VI considers the concept of sustainability-oriented competition policy. Finally, Section VII presents the conclusions and economic policy implications of this analysis.

II. Sustainability, the Green Deal and ESG

For some time now, there has been an emphasis on the importance of sustainability for our social and economic development. A frequently used definition of sustainability can be found in “Our Common Future”, the report of the United Nations Brundtland Commission (1987). According to this definition, a development is sustainable if it “meets the needs of the present without compromising the ability of future generations to meet their own needs”.¹

This definition is very general. Besides being used to address environmental questions, it is applied to many areas of policy such as public or private finance and social systems. In its Agenda 2030, the UN defined 17 Sustainable Development Goals that reflect a variety of environmental targets, but also take up topics such as education, health, equality between men and women, and peace.

The European Green Deal was influenced by the Agenda 2030 and is aligned with it, but it has a narrower orientation toward economic matters. The idea of speaking

of a Green Deal within the context of environmental and climate protection efforts in order to conjure the spirit of the 1930s’ New Deal is not new: as early as the financial crisis of 2008 and 2009, a variety of authors called for a reorientation of economic policy under the term Green Deal (see, for instance, French et al., 2009). Now the EU has taken up this term and moved it into the centre of its politics. It understands the European Green Deal as follows:

“The European Green Deal [...] is a new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use.”

Here, climate protection plays a central role, but classical economic policy aims – growth, competitiveness and fair distribution – are also listed. Ultimately, the European Green Deal pursues the goal of reconciling

1 United Nations Brundtland Commission (1987), no. 27.

economic growth with climate and environmental protection. Of central importance in the process is the idea that economic growth can be decoupled from the consumption of resources. Growth critics disagree. They believe this kind of decoupling cannot succeed and that we should therefore abandon economic growth as a goal (Paech, 2012).

Above and beyond the use of economic and environmental policy instruments in any narrow sense, ESG (Environmental, Social, and Corporate Governance) criteria are crucial for the implementation of the Green

Deal and are often used as a yardstick for sustainability in companies and other private organisations.

It is obvious that the Green Deal requires a far-reaching transformation of the economy, if only for its ambitious climate policy goals. This transformation entails considerable burdens and risks to prosperity, but it also opens up new opportunities. The success of the Green Deal will depend upon whether the measures of the various policy areas mesh usefully, are consistent and avoid unnecessary burdens.

III. The Green Deal and economic policy for recovering from the coronavirus recession

The coronavirus pandemic led to a massive economic collapse in Germany as well as elsewhere in Europe and the world. Governments in many countries reacted with extensive stabilisation measures. Among the instruments used are interim aid in the form of loans and operating subsidies as well as tax reductions and government spending programmes to stimulate the economy. The European Union also resolved to create a debt-financed fund – Next Generation EU or NGEU – to support economic recovery.

Debates about the design of these economic programmes have repeatedly included demands to gear them toward sustainability and especially climate protection goals, and calls such as these come not only from political parties, but from the scientific community as well. For instance, Pittel et al. (2020) says: “In view of the importance of climate and environmental protection, every programme for the recovery of the German economy must be ecologically oriented.”² This demand is not fundamentally new; it was raised when economic programmes were developed in response to the financial crisis of 2008 and 2009, for example. It has simply appeared again during the coronavirus crisis – and not only in Germany: the Next Generation

EU fund is to assign priority to green spending, and in their applications for money from the fund, member states are requested to indicate which projects can be regarded as green and to what extent (European Commission, 2020a, p. 41).

What should we think when policy that is intended to support this recovery is geared to green criteria? If we follow the Tinbergen Rule described above, we have to be sceptical. Economic stimulus and climate protection are two separate goals that accordingly require two instruments. And while this observation initially seems rather abstract, it has substantial practical relevance, as can be seen by a simple example. According to current opinion, climate protection requires a CO₂ price that increases step by step independently of whether it is collected as a tax or by using other instruments. However, under the aspect of short-term economic recovery, an increase in the price of CO₂ is problematic. If both goals are pursued with just this one instrument, one of those goals will founder, possibly both of them.

It does not follow from this that economic policy which aims at supporting the recovery and climate protection policy should be designed completely independently of

2 <https://www.energie-klimaschutz.de/klima-check-konjunkturprogramme/> [our translation]

one another; it is important to consider the side effects of political measures of any kind. But it should always be clear what the main goal is. In economic policy, there are projects that promote environmental policy goals as well. For instance, investments in railway infrastructure can stimulate the economy and simultaneously reduce the environmental burden created by car and truck traffic. A similar effect can be assumed with investments to refurbish buildings to improve their energy efficiency. These examples speak for prioritising such investments in economic stimulus packages. However, other aspects also play a role. It must be determined, for instance, whether the construction industry has sufficient free capacity; otherwise, stimulus measures will only lead to price increases. In the present crisis, there is free capacity in the travel sector, hospitality and the auto industry, but less in the construction industry.

Moreover, a consideration of ecological aspects in economic policy measures does not always lead to simple conclusions. One example of this is the debate about the introduction of a buyer's premium for vehicles with internal combustion engines. This suggestion was discussed in particular against the backdrop of environmental policy considerations according to which internal combustion engines are an environmentally harmful, outdated technology that should not be promoted through buyer's premiums. What deserves promotion instead is the transformation of the automobile industry toward electric drives. That appears plausible at first glance, but upon close examination, replacing old vehicles with new ones that have significantly more fuel-efficient internal combustion engines can also reduce the environmental burden created by auto exhaust and lead to fewer CO₂ emissions, if we assume that without the premium, old cars with internal combustion

engines would be driven longer. Thus, including ecological concerns in economic programmes can lead to very different conclusions.

As a rule, one difficulty in orienting economic policy toward environmental and climate goals is that these policy areas have different temporal perspectives and requirements when it comes to the instruments used (see Techert und Demary, 2012). Economic policy needs instruments that are fast, targeted and have a time-limited effect. Examples include time-limited tax rate reductions, accelerated depreciation, or one-time monetary transfers such as the child bonus in Germany's most recent economic programme. Environmental policy, by contrast, ultimately involves lasting change with a large-scale effect. It can make sense, and is sometimes even necessary, to introduce environmental measures step by step with considerable lead time. Time-limited measures – such as the investments in transport infrastructure or building refurbishment mentioned above – that simultaneously support both economic and environmental policy aims tend to be the exception. The difficulty with such measures is that precisely investments in transport infrastructures generally require a long lead time for planning and approval; the economic effect thus often sets in much too late or is limited to expectation effects.

All this should not be taken to mean that environmental aspects should be ignored when economic programmes are designed; it is both correct and necessary to take account of the secondary effects of economic policy on environmental and other policy goals. However, it does not make sense to demand that environmental or climate policy aspects be the central focus of economic programmes or that such programs mainly be oriented toward their goals.

IV. Sustainable finance

Sustainable finance is frequently named as an important policy area that should in future be green; that is, be oriented toward climate protection. This term is sometimes defined narrowly with reference to the

regulation of financial markets and institutions, and sometimes more broadly, involving monetary policy and public finances. From the point of view of the Tinbergen Rule, sustainable finance should be regarded

sceptically. Climate policy goals should mainly be pursued with climate policy instruments, not with tools used to regulate the financial sector. And in fact, the situation is quite complex. This becomes clear when we take a closer look at what is discussed under the rubric of sustainable finance.

According to the European Commission, “Sustainable finance generally refers to the process of taking due account of environmental, social and governance (ESG) considerations when making investment decisions in the financial sector, leading to increased longer-term investments into sustainable economic activities and projects.”³

The EU’s Technical expert group on sustainable finance (TEG), set up in 2018, described the focus of sustainable finance as follows in its concluding report:

“For the Group, sustainable finance is about two imperatives. The first is to improve the contribution of finance to sustainable and inclusive growth as well as the mitigation of climate change. The second is to strengthen financial stability by incorporating environmental, social and governance (ESG) factors into investment decision-making.”⁴

The task of regulating and supervising financial markets and financial institutions such as banks and insurance companies consists mainly in ensuring that financial markets function efficiently and that capital flows to the most productive uses. As part of this, financial institutions and markets should be stable and all relevant risks should be recognised and priced as appropriately as possible. One important aim of sustainable finance lies in making sure that risks related to sustainability topics are recognised and considered in pricing and risk provisions. Understood this way, sustainable finance is not a fundamentally new task for financial policy, and

is particularly not an orientation toward supporting climate protection policy or any other aims outside the financial sector. Rather, it is the requirement of appropriately taking account of risks to financial stability whose significance has increased in recent years.

This should be distinguished from aspects of sustainable finance which, above and beyond the classical tasks of financial policy, seek to steer capital flows in the direction of specific aims independently of questions of financial stability.

1. Sustainable finance as attention to the role of sustainability risks for financial stability

Sustainability risks entail a variety of threats to the stability of financial markets. In the case of climate change, three sources of risks to financial stability should be named (Carney, 2015):

Physical risks: Climate change is leading to a growing number of extreme weather conditions and floods that can cause substantial damage. Insurance companies and banks that finance real estate investments are thus exposed to sizable risks of losses, which can affect the stability of the financial sector.

Liability risks: Damage caused by climate change could lead those who suffer losses to make legal claims for damages against those who cause climate change, such as big CO₂ emitters or companies that produce fossil fuels.

Transitional risks: These are risks that arise from the transition to a decarbonised economy. Changes in politically determined basic conditions, technological transformation or physical risks can lead to a sudden revaluation of assets, which could likewise impair financial stability.

3 European Commission, Overview of Sustainable Finance, https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/what-sustainable-finance_en.

4 Technical expert group on sustainable finance (2018), p. 6.

Similar risks are visible for other sustainability problems. One can believe that it is self-evident to take account of these risks; the task requires no special initiative for sustainable finance. But in actuality, risks that relate to climate change, for instance, have special characteristics that can lead to their not being fully considered in the regulatory and supervisory mechanisms of the financial sector to date. Let us examine this more closely.

2. The theory of the “tragedy of the horizon”

One of the classical problems of environmental economics is the tragedy of the commons. Studies in economic history confirm that the common ownership of grazing lands (commons) so widespread during the Middle Ages led to overuse of those lands. The individual accrued the benefits of using the grazing land, but its costs were shifted to the community, with the result that overuse was individually rational but collectively irrational and inefficient. The classical solution to this problem lies in negotiating the use or allocation of private rights of ownership. Modern environmental problems such as overfishing and marine pollution or climate change can be regarded as problems of the commons to the degree that here as well, the costs created by users are only partly allocated to them, or not at all.

Yet in the case of climate change, there is another aspect that renders the problem more acute. It can be described as the tragedy of the horizon (see Carney, 2015). What is meant by this is that the consequences of greenhouse gas emissions – and thus the costs of climate change – only make themselves felt in the medium to long term, far beyond the time horizon commonly considered by most of the decision-makers in politics and business. Time horizons typically underlying many decisions are terms of office, economic cycles or the horizons of technocratic organisations such as central banks that are tied by their mandates and thus

tend to concentrate on the development of inflation and other political goals to be realized during the next two or three years.⁵ The time horizon of financial stability typically extends for one economic cycle, and the focus of its attention is generally the resilience of the financial sector during the next recession.

These horizons are not appropriate for adequately considering the risks that arise from climate change, which depend especially on cumulative emissions. When policymakers focus on such a short time horizon, the costs of today’s emissions remain, in part, unaccounted for – and yet decisions with climate policy relevance that are made today can have consequences that last for decades.

In principle it is one of the fundamental tasks of governments and parliaments to respond to long-term risks as well, and to act correspondingly, but there are signs that long-term concerns tend to be neglected in the political process in the face of short election cycles. One much-discussed example of this is the politics of government debt. In the short term, access to government debt enables distribution conflicts to be defused, and seems in this way to eliminate problems. However, in the long term growing levels of government debt can do considerable damage and jeopardise the financial stability of both the public and private sectors. In many countries, government finances reveal substantial sustainability gaps, and here as well, one could speak of a tragedy of the horizon. Many countries try to prevent or forestall short term debt policies by constitutionally limiting budget deficits.

In the private sector as well, decision-makers in companies and other organisations principally have a duty to take account of long term risks and ensure the sustainability of their business dealings. However, the corporate governance of many companies is either not or not adequately oriented toward this aim. Capital

⁵ At the moment, longer-term developments and sustainability problems are the subject of intense discussions at central banks, as will be explained more closely below.

market-oriented companies in particular repeatedly face the criticism that management places too much value on short-term developments in share prices and profits at the expense of sustainability. Where shortsighted decisions violate the long-term interests of shareholders, the latter have incentives to change the management's compensation system and contracts and orient them toward long-term results – and initiatives to accomplish this can be found again and again. Yet ultimately it is difficult to adequately harmonise the interests of a manager employed for five years or even less with the long-term interests of a company.

The consequences for the financial sector of decision-makers oriented toward a short-term time horizon is that the risks of climate change are not appropriately mirrored in political and entrepreneurial decisions. In the process, we should bear in mind that political and private business decisions interact when it comes to climate change: if companies observe that political decision-makers ignore sustainability risks such as climate change when creating conditions for economic activity, they will base their entrepreneurial decisions correspondingly. For instance, they will continue to rely on CO₂-intensive technologies if they assume that moving to other technologies will result in competitive disadvantages. This, in its turn, has consequences for future political decisions that take account of the costs of converting to low-CO₂ technologies. The transformation to a decarbonised economy can thus be seen to a great degree as a problem of coordination, in which it is crucial that all the decision-makers in politics and business have sufficiently long-term horizons. On this terrain, incidentally, family businesses can play to their strengths: in their case, the ties between ownership and management are closer and cross-generational thinking is more widespread.

3. A lack of transparency about sustainability risks

An appropriate consideration of sustainability risks in the financial sector requires not only that decision-

makers have a sufficiently long time horizon, it also requires that enough information be available. In the case of climate change, the shares of a company can only be appropriately valued with respect to the corresponding risks if statements are available that describe the degree to which the company's business model is based on CO₂-intensive technologies, whether measures are being taken to re-orient that business model, which changes in climate policy conditions have been factored into the company's earnings forecasts, and much more.

It is certainly not the case that no information on these topics is available. First of all, investors with a long-term orientation have a substantial interest in correctly assessing all the relevant risks, including those related to climate change. Moreover, there is a variety of initiatives to document and categorise sustainability risks in different contexts. As a result, many companies have significantly expanded their reporting in this area. However, critics see the danger that this plethora of initiatives is more likely to create confusion than transparency (Carney, 2015).

In addition to questions about identifying and taking account of sustainability risks, sustainable finance also includes the idea of diverting capital flows to specific uses or projects classified as sustainable. As already explained, this objective actually has no place in financial sector regulation. The following section takes a closer look at this approach in the context of the political measures planned or taken for it.

4. Political measures in sustainable finance

At both European and national levels, politicians have initiated various measures to anchor sustainability goals more strongly in the financial sector. The European Commission, for instance, developed the "Action Plan: Financing Sustainable Growth" (European Commission, 2018). It pursues three goals:

“1. reorient capital flows towards sustainable investment in order to achieve sustainable and inclusive growth;

2. manage financial risks stemming from climate change, resource depletion, environmental degradation and social issues; and

3. foster transparency and long-termism in financial and economic activity.”⁶

These goals appear, taken by themselves, to be sensible. But it is important to ask to what degree they can be usefully pursued within the scope of regulating the financial sector. This affects in particular the first goal. Reorienting capital toward sustainable investment is not a classical function of financial market regulation. Rather, it is mainly the task of climate policy to ensure that climate protection goals are met through the introduction of environmental policy instruments such as taxes or trading in CO₂ emissions certificates. When these instruments are used properly, capital flows automatically into investments for climate protection as far as this is necessary and makes sense – at least if opportunities and risks are weighed correctly within the context of climate change. Yet ensuring that opportunities and risks are correctly assessed by financial market players is not a trivial matter, as we have seen in the preceding paragraphs, and this problem is the subject of the second and third goals. However, it raises the question of whether the reorientation of capital described in the first goal should apply when goals two and three have been achieved.

The advisability of using financial regulation tools to direct capital flows to investments related to sustainability such as climate protection investments depends on their interplay with other policy areas, especially environmental policy. To the degree that, for instance, a functioning system for pricing CO₂ ensures that all CO₂ emitters pay the same prices, then CO₂ savings

will be optimally spread across the various sectors. An additional differentiation using financial regulation tools between activities classified as sustainable and those classified as not sustainable would worsen the efficiency of climate protection. Whether CO₂ emissions would drop at all as a result of such measures depends on whether the price of CO₂ is collected through certificate trading or taxes. If capital flows are directed toward investments related to sustainability, certificate trading with a set volume of total certificates would make the certificates cheaper but have no effect on CO₂ emissions and thus no effect on climate protection. If the CO₂ price is collected using a tax that sets the price but not the total volume of emissions, the directive effect of financial regulation produces a reduction in CO₂ emissions. However, it would be possible to achieve the same reduction at lower cost if the CO₂ tax were simply increased. What happens is therefore climate policy overregulation that results in unnecessary increases in costs.

These analyses show that it is generally not efficient to pursue climate protection aims with the tools used to regulate the financial markets. Environmental policy instruments are a better choice: they are more targeted. One could object that owing to functional deficits in the political decision-making process, environmental policy instruments are not used appropriately – and therefore indirect intervention is necessary, including intervention via financial market regulation. This argument is justifiable from a theoretical point of view: this is the realm of what are called second-best instruments. However, it raises the question of why the political process should fail in the area of environmental policy, yet not only function in financial market regulation but even be able to allay the shortcomings of environmental policy.

Moreover, it is certainly possible that environmental policy instruments aim to take effect broadly and even generally achieve this, but have no effect in some areas – because, for instance, price mechanisms there have

⁶ Europäische Kommission (2018), p. 2.

been offset by other regulations. One example of this is the insulation of residential buildings. Increases in the costs of heating oil occasioned by CO₂ pricing create incentives to insulate buildings more effectively. Yet rents are strongly regulated, and rent regulations in many countries specify that while heating costs must be borne by tenants, the costs of renovation and thus the costs of better building insulation must be borne entirely or in part by landlords. In this case, higher CO₂ prices lead only partly or not at all to greater incentives to insulate buildings. Even so, gaps in effectiveness like these should be closed with targeted instruments, such as subsidies for insulating residential rental property; it is doubtful whether financial market regulation, which is likewise broad and has an unspecific effect, is the right instrument here.

From an economic point of view, it can be said about goals two and three that a complete identification of risks, transparency as regards risks and revenue and a consideration of long-term opportunities, costs and risks as well as short-term ones should be a matter for financial sector regulation – completely independently of environmental or social policy goals. If the current sustainability debate contributes to meeting these goals, that can certainly be useful, but it is questionable whether that is likely with the measures presently under discussion or already implemented. This becomes clear with a closer look at the EU taxonomy for sustainable activities.

5. EU taxonomy

The effects of the EU Sustainable Finance initiative depend crucially on the instruments used. Among them, the taxonomy plays a central role. It is a system for classifying activities as related to climate change and sustainable from environmental and social policy perspectives – or as not sustainable. The aim is to define the economic activities that are classified as sustainable and are to be correspondingly encouraged or privileged over other activities.

The Regulation (EU) 2020/852 (Taxonomy) on the establishment of a framework to facilitate sustainable investment concentrates on ecological aspects of sustainability. Article 9 of the Regulation stipulates that economic activities that pursue the following environmental aims are to be classified ecologically as sustainable:

“For the purposes of this Regulation, the following shall be environmental objectives:

- a) climate change mitigation;*
- b) climate change adaptation;*
- c) the sustainable use and protection of water and marine resources;*
- d) the transition to a circular economy;*
- e) pollution prevention and control;*
- f) the protection and restoration of biodiversity and ecosystems.”*

The Regulation considerably extends companies' reporting obligations on the question of whether and to what extent their activities serve these environmental objectives, and moreover contains definitions of the activities that are regarded as serving these objectives. They are, above all, activities that make a substantial contribution to realising the objectives or at least do not counteract their realisation. Which activities these are is then regulated more closely, leading to a long and highly complex catalogue of criteria that, in turn, require interpretation. This can be seen, for instance, in the example of the delimitation of the economic activities that make a contribution to the first objective: climate change mitigation. According to Article 10, this includes the following activities:

“a) generating, transmitting, storing, distributing or using renewable energy in line with Directive (EU)

2018/2001, including through using innovative technology with a potential for significant future savings or through necessary reinforcement or extension of the grid;

b) improving energy efficiency, except for power generation activities as referred to in Article 19(3);

c) increasing clean or climate-neutral mobility;

d) switching to the use of sustainably sourced renewable materials;

e) increasing the use of environmentally safe carbon capture and utilisation (CCU) and carbon capture and storage (CCS) technologies that deliver a net reduction in greenhouse gas emissions;

f) strengthening land carbon sinks, including through avoiding deforestation and forest degradation, restoration of forests, sustainable management and restoration of croplands, grasslands and wetlands, afforestation, and regenerative agriculture;

g) establishing energy infrastructure required for enabling the decarbonisation of energy systems;

h) producing clean and efficient fuels from renewable or carbon-neutral sources; or

i) enabling any of the activities listed in points (a) to (h) of this paragraph in accordance with Article 16.”

There follows a description of other activities which are associated with the emission of greenhouse gases but have no economically or technically feasible alternatives that meet the state of the art in terms of limiting emissions, and that can have various other characteristics. These activities are likewise classified as those that make a contribution to climate protection, and this applies as well to activities that enable other activities with a climate protection effect.

Company reporting obligations encompass not only a qualitative classification as ecologically sustainable, but also a quantitative assignment to the various goals. It is easy to imagine that this allocation and reporting practice is both highly subject to dispute and the source of a considerable bureaucratisation of business. It can also easily give rise to greenwashing – that is, the arbitrary or even improper classification of economic activities as sustainable. At the same time, it opens up a vast sphere of activity for those lobbying for specific interests. The same applies of course to other complex technical regulations. However, we have to ask whether the benefits of this classification activity justify the high costs. Moreover, it is questionable in view of the great margin of discretion associated with this process whether the information emerging from it is truly so substantial and reliable that it enables market players and the financial markets to assess sustainability risks with an ecological point of reference better than they could before.

These problems of classification can be explained by once again using the example of the production of internal combustion engines. Independently of the question of how much electric vehicles contribute to global warming through the electricity production required to power them, we could nonetheless argue on the basis of the classification criteria that the production of modern internal combustion engines contributes to climate protection. It is clearly not economically or technically possible today or in the coming years to replace internal combustion engines completely with electric vehicles. If cars with new and more fuel-efficient internal combustion engines can replace old ones, the volume of greenhouse gas exhaust will drop. One can dispute the question of whether new internal combustion engines generate lock-in effects. Even more controversial is the debate about hybrid vehicles.

But ultimately, the attempt to measure and control all economic activity with respect to its sustainability effects calls the control mechanisms of planned economies strongly to mind. It is more convincing to aim

directly at the core of the problem – which, in the case of climate protection, is emissions. Above and beyond this, companies should and must already report on the risks for their business that result from climate change. Demanding a longer-term perspective appears legitimate, but does not necessarily mean that a large part of the economy⁷ should be subject to highly complex reporting requirements whose benefit in the form of improved risk assessment and transparency is, in any case, unclear. It is especially problematic in this context that the difficulties of recognising and disclosing longer-term risks for business models that arise from climate change or other environmental problems can scarcely be resolved by reporting that refers to ongoing contributions to environmental protection. The latter are namely not identical with the long-term risks mentioned here, and are certainly not reliable indicators of them.

However, the taxonomy is not intended merely as the basis of reporting obligations; it also contains a number of further measures:

- The introduction of an EU label for green financial products.
- Obligations related to sustainability for asset managers and institutional investors.
- The introduction of a “green supporting factor” in the rules for supervising insurance companies and banks.

The approach of privileging activities that are classified as green or sustainable in the regulation and supervision of financial institutions is definitely fraught with risks. The mere fact that an activity is beneficial to the achievement of certain ecological goals does not mean that threats to financial stability associated with that activity are lower than for other activities. If capital flows are actually increasingly directed to these activities,

asset prices in this area could rise, entailing further risks to financial market stability. With some instruments, it is questionable whether they would have any effect at all. If countries or companies issue green bonds, this is no assurance that they will expand their ecologically oriented activities. For instance, it is conceivable that activities classified as sustainable that have hitherto not been financed with green bonds could be financed with them in future, with existing sources of capital used for other activities. Ultimately, there is no direct connection between individual liabilities in a company’s balance sheet and individual assets. What is more, there is the danger that small and mid-sized companies, for whom increased reporting obligations would be unreasonable, face greater difficulty than before in financing their activities – of whatever kind – because they have not been granted a green supporting factor.

In summary, it can be said that the Sustainable Finance initiative can result in economic advantages if it actually achieves the goal of revealing long-term risks in the financial sector that are associated with sustainability problems and ensures that they are taken account of appropriately by decision-makers in politics and business. However, the measures that are currently planned and, in some cases, already resolved are not all suited to accomplishing this. In many points, they focus not on long-term sustainability risks but on classifying current economic activities and directing capital flows into projects that are classified as green or sustainable. Since these measures are not coordinated with environmental policy instruments, over-regulation threatens, ultimately with increases in the costs of environmental and climate protection and a loss in prosperity through additional and superfluous bureaucracy. Owing to its complexity alone, a highly detailed classification policy designed like a planned economy is extremely susceptible to influence by special interests.

7 Small and mid-sized companies are exempt from the reporting obligations.

V. Green monetary policy

In addition to orienting financial sector regulation to ecological goals, the financial system is also expected to make a contribution to environmental and especially climate protection through green monetary policy, at least according to the declared intentions of a variety of monetary policy decision-makers (Schnabel, 2020). Among other things, this project is the object of the current overhaul of the European Central Bank's (ECB) monetary policy strategy. In this context, discussions are being held about whether the ECB should strive for an ecological orientation with its monetary policy instruments. For instance, it could overweight green bonds from private or government issuers in bond purchase programmes or apply a lower "haircut" when calculating deposit guarantees, thus reducing the issuers' capital costs.

The arguments offered for this kind of green monetary policy orientation are not very convincing: Firstly, proponents claim that climate change can cause economic shocks that impair growth and price stability. That being the case, the central banks cannot simply look on as others take action against climate change; they must also take part. This is implausible: there are many policy areas that have an influence on future economic shocks and crises. Educational and labour market policies influence economic resilience to shocks, but so far no one has hit upon the idea that the central banks must therefore become involved in shaping educational and labour market policies. The same can be said of security and defence policies.

Secondly, they argue that monetary policy would lose effectiveness in the face of an interest rate level of zero, and that global warming could worsen crises and drive down interest rates even further. That may well be true, but it is likewise no reason for central banks to become directly involved in the fight against climate change.

One important objection to green monetary policy is surely the fact that the ECB in particular would exceed its mandate: Article 127 (1) of the Treaty on the Functioning of the European Union says: "Without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Union [...]", but that does not mean that the ECB should pursue its own environmental or climate policy. Such intervention is associated with policy decisions of great significance which must be subject to democratic control. For instance, the question of whether the ECB should promote investments in nuclear energy through its monetary policy because that serves the interests of climate protection cannot be put to the technocratic decision-making bodies of the ECB separately from democratic control. One could otherwise also justify the ECB's direct involvement in the promotion or research of social policy with a reference to Article 127 (1). The immense power of the ECB that is associated with its independence demands restraint in the exercise of that power and in the bank's interpretation of the limits of its mandate.

In addition, from an economic point of view monetary policy does not truly expand the total available bandwidth of instruments for climate policy. Even so, if it made sense to promote financing instruments classified as green, this could easily be achieved using tax policy instruments, for instance. This would ensure democratic control through the parliaments. But even that is doubtful: just as in other policy areas, in climate policy targeted instruments are necessary. Environmental instruments that aim directly at CO₂ emissions are targeted, but support for the financing of activities that are administratively classified as sustainable or compatible with climate protection is not.

VI. Sustainability and competition policy

Another area in which an orientation toward sustainability and especially ecological goals is discussed is competition policy. It has the task of ensuring that competition is not limited through the formation of monopolies or cartels and that companies that dominate the market do not abuse their market power. Competition policy in the EU also includes the task of supervising state aid: one of the rules governing the European internal market is that member states agree not to distort competition through subsidies. Naturally subsidy controls restrict the scope of the economic policy of member states, and there is ongoing debate about which restrictions are necessary in the interests of avoiding the distortion of competition and which interventions at the national economic policy level are justified. However, the basic idea that the internal market needs subsidy control enjoys widespread support.

Calls to orient government action more strongly toward sustainability goals have reached competition policy as well. Principally, competition policy should take account of complex trade-offs between disparate economic policy objectives when evaluating cooperations between companies, company fusions and general business practices. For example, it is certainly possible that the fusion of two companies leads to a dominant position on the market and thus hinders competition, but produces substantial synergies, which can have the effect of compensating market-power-related price increases through price reductions – so that consumers ultimately benefit. Synergies or the necessity of introducing technical standards can also be an argument for permitting specific cooperations between companies even if this might entail slight restrictions in competition.

The introduction of sustainability criteria in competition policy could take place such that in addition to the cost savings just mentioned, contributions to climate protection could, for instance, be considered a reason for allowing restrictions in competition (Hellenic Competition Commission, 2020). Principally, it is also conceivable to defend restrictions on competition in,

for example, the petroleum industry with the argument that higher prices in this segment would lead to less petroleum being burned and thus less CO₂ being emitted. And in reverse it would be possible to crack down on restrictions on competition more rigorously than before among products that make a positive ecological contribution in order to keep prices down and promote the spread of these products.

The weakness of all these approaches – just as with the introduction of sustainability considerations in other policy areas – lies in insufficient regard for their interaction with other policy instruments, especially environmental policy instruments. Economic activities that unfold external effects, for instance because they contribute to climate protection, should be supported using environmental policy instruments such as environmental taxes or subsidies. Insufficient protection of animals or the use of hazardous chemicals or medications in farming should be prohibited through corresponding regulations. The result does indeed restrict competition, but it is then no longer possible to undercut legal standards to achieve cost advantages and eliminate competitors from the running. Permitting companies to work together and agree on corresponding standards within the scope of competition policy could lead to similar results, but can also produce stronger restrictions on competition. In any case, however, the already high complexity of competition policy would increase yet again to the detriment of transparency.

If the point is to permit restrictions on competition as part of achieving sustainability goals, one must also bear in mind that market dominance and, with it, higher consumer prices are gaining ground anyway, and that competitive intensity has declined in recent years in many countries (Philippon, 2019). This adversely affects growth and employment, hinders innovation and leads to greater economic inequality, because, for instance, monopoly profits are achieved at the expense of consumers. It would be wrong to accelerate this process under the rubrics of sustainability or ecology.

This is why the view of the European Commission's Commissioner for Competition, Margarethe Vestager, in 2020 should be endorsed when she describes the role of competition policy in the Green Deal:

"But we have to be realistic. Competition policy is not, and it cannot be, in the lead when it comes to making Europe green."

At the same time, competition policy has an important role when it comes to the Green Deal: given the diversity of green market interventions and subsidies, EU State aid control must ensure that there are no unnecessary distortions and restrictions on competition in the European internal market – and here is definitely an opportunity. It would be desirable, for instance, to use funds from EU State aid control to ensure that environmental

policy more strongly implements the polluter-pays principle, which assigns the costs of environmentally damaging behaviour to the polluter instead of subsidising the avoidance of environmental damage by means of tax money. The environmental policy considerations of EU member states are frequently accompanied by industrial policy concerns. To this degree, EU State aid control certainly does have the task of distinguishing between national policies that are actually justified by environmental policy and opposing those that are claimed on environmental policy grounds but are ultimately motivated by industrial policy and subsidies that distort competition. Free-market competition is an important driver, and not just for innovations that are necessary so that the Green Deal in Europe can be successful.

VII. Conclusions

The consequences of the Green Deal on prosperity in Europe depend crucially on whether there is success in moving toward goals such as a reduction in CO₂ emissions and other environmental policy concerns in an economically viable way. In the process, it is not useful to orient every area of economic policy toward the aims of sustainability. What is needed instead is a consistent environmental and economic policy strategy that takes account of interactions between various policy areas without losing sight of their accountabilities and primary objectives. It is helpful to consider environmental and climate policy side effects of the instruments used when designing economic programmes in order to take advantage of possible synergies and to avoid setting courses that are counterproductive over the long run, but it is not helpful when economic policies with other primary objectives are mainly geared towards environmental policy aims.

It is important for the functionality and stability of the financial markets that risks resulting from climate change be appropriately recognised, priced and taken account of by both private players and supervisory

authorities. For this reason, the efforts of central banks and financial supervisory authorities to develop concepts to meet these goals are very welcome. However, it is counterproductive to design financial market regulation or monetary policy in such a way that capital flows are directed to specific activities classified as sustainable. In both cases, there is the danger of overregulation through insufficient coordination with environmental policy instruments and, as a result, losses in the efficiency and effectiveness of environmental and climate policy. Moreover, when it comes to monetary policy there is the problem that mandates may be stretched excessively and that central banks become active in policy areas in which democratically elected politicians should be acting instead of the technocratic decision-making bodies of the central banks.

The same is true of competition policy, whose main task is to prevent the creation of harmful market power. This task alone means a high level of complexity even without considering sustainability aspects, because it means weighing efficiency gains through fusions or other changes that might potentially restrict competition

against their individual disadvantages. Introducing goals such as climate protection increases complexity further and demands precise coordination with existing and future environmental policy interventions. The chances are low that the advantages of pursuing environmental objectives or other sustainability goals will outweigh the unavoidable weakening of an orientation toward the primary aim of competition policy: the protection of competition. At the same time, competition policy and especially state aid control at the European level must commit itself more strongly to protecting competition and preventing its distortion in the European internal market given increasing market intervention that justifies itself on the basis of sustainability goals.

In all the policy areas addressed here, there is the risk of a lack of coordination with environmental policy instruments, and thus of overregulation that unnecessarily

increases the costs of meeting environmental goals. It is therefore important – even given the importance of sustainability goals and especially climate protection efforts – not to lose sight of the primary accountability of the policy areas discussed here, and the goals that this entails. Climate policy considerations should only be pursued in these policy areas if it emerges that environmental policy instruments do not achieve their aims and that intervention by other policy areas would mean clear improvements. The penetration of sustainability aims into all policy areas brings with it the danger that the general burden of bureaucracy increases, as does the political marketing of sustainability topics, and that transparency decreases, accountabilities are blurred and obscured, and sustainability goals are achieved only at exorbitant cost – if at all.

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The environmental transformation of the economy from the perspective of family businesses: from policy goal to practice

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I. Introduction

The environmental transformation – a reshaping of the economy with the goal of preserving natural resources and protecting the environment – ranks alongside overcoming the COVID-19 pandemic as one of the central challenges of our time.¹ Despite the dramatic slump inflicted on many EU economies by COVID-19,² policymakers have resisted calls to ease this double burden on business by cancelling or suspending plans to make European economies more environmentally sustainable.³ Instead, they have further accelerated the transformation process with a coordinated European package of investment and other measures designed to create sustainable structures. Far from slowing the environmental transformation, then, the coronavirus pandemic has given it fresh impetus.

This article begins in section II with a look at the European environmental transformation initiative centred on the *Green Deal*, which is to be further boosted by the provision of funding as part of the post-COVID Recovery Plan. The far-reaching economic implications of this environmental transformation programme raise a fundamental question, which is explored in section III: how compatible is this sustainability-led economic policy with the hallmarks of a successful open market

economy – entrepreneurial freedom, competitiveness, growth and profit generation?

This development is of particular interest from the perspective of family businesses, whose very existence is predicated on the idea of preserving valuable resources – in this case, shares in the family company – and passing them on to the next generations of the entrepreneurial family.⁴ Section IV asks whether this family-centric idea of sustainability is a bridge to environmental sustainability, and whether it puts family businesses in a strong position to participate in the environmental transformation and achieve a competitive advantage in the process. As is explored in section V, this depends first and foremost on whether environmental sustainability makes sense as a strategy for family businesses, and in particular on whether it benefits the entrepreneurial family as well as the firm. Finally, section VI looks at how family businesses might go about putting an environmental sustainability strategy into practice.

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1 For more detail, see IV below.

2 Economically speaking, Germany has so far weathered this crisis relatively well, see *K. Wohlrabe/F. Heinemann/et al*, *Die Widerstandsfähigkeit der deutschen Wirtschaft in der Corona-Pandemie*, 2020, pp. 13 et seq., 28 et seq.

3 Member of the European Parliament *Markus Pieper*, for example, has vehemently argued that the Green Deal (see II.2 below) is no longer financially feasible given the economic impact of the COVID-19 pandemic, <https://www.tagesschau.de/wirtschaft/eu-klimaschutz-corona-101.html> (accessed 28 December 2020). Some in industry argue similarly that strict climate rules would have a poisonous effect on the economic upturn in Europe, loc. cit. In contrast, the Vice-President of the European Commission *Frans Timmermans* takes the view that the Green Deal is the lifeline that will pull the economy out of the crisis, loc. cit. However, it should not be underestimated that, with Europe facing many different challenges at once (protecting people's health, the climate and the environment, rebuilding parts of the economy, high levels of government debt, the digital transition, disruption in various industries), there is a risk of overload that can only be addressed through prioritisation in terms of timing.

4 See IV.1. below.

II. European programmes for an environmental transformation of the economy

The environmental transformation of the economy is taking shape at national and supranational level through various partially interlinked programmes and measures (see 1 below). The EU is a major player in this context and has set important milestones in the form of the Green Deal (see 2 below) and green recovery – the part of Recovery Plan funding earmarked for a more sustainable economy (see 3 below).

1. National and international initiatives

a) Sustainable Development Goals of the United Nations

The European Union's environmental transformation programmes tie into broader international agendas, resolutions and agreements. Among the most important of these are the United Nations Sustainable Development Goals (SDGs) adopted on 25 September 2015, which form part of the 2030 Agenda for Sustainable Development.⁵ The SDGs are not limited to protecting the climate and environment, however; they also encompass other areas such as poverty, education, diversity, energy and transport.⁶ The action areas of the UN sustainability programme therefore cover a broader field than those of the European Green Deal.

b) Paris Agreement

The Paris Climate Accords of 12 December 2015 and the implementation rules agreed in the Katowice Climate Package on 15 December 2018 have a more singular

focus on the environment than the UN SDGs. Their central ambition is to limit the rise in global average temperature to well below 2° Celsius, and preferably to 1.5° Celsius, above pre-industrial levels.

c) Climate protection objectives and measures in the EU

Various measures have been taken, or are being planned, at European level to implement this climate target. The most notable are the Climate Action Regulation of 30 May 2018,⁷ the EU Climate Law⁸ and the European Green Deal (see II.2.c) below). To reduce greenhouse gases, the Green Deal promises an overhaul of the Emissions Trading System and its expansion to new sectors along with further decarbonisation of the energy system.⁹ In past months the EU has further redoubled its climate protection efforts: on 11 December 2020, the European Council endorsed the binding target of reducing net greenhouse gas emissions within the EU by at least 50 percent by 2030 compared with 1990 levels. This is designed to meet the objective of a climate-neutral EU by 2050 in line with the Paris Agreement.¹⁰

d) Federal Climate Change Act and emissions trading system

In Germany, the European climate protection programme is being implemented through the Federal Climate Change Act (Bundes-Klimaschutzgesetz KSG) of 12 December 2019,¹¹ which contains tighter protections

⁵ See the resolution of the United Nations General Assembly A/70/1.

⁶ See Goals 1, 4, 5, 7 and 9 of the UN SDGs, A/Res/70/1.

⁷ Regulation (EU) 2018/842 (OJ EU No L 156/26).

⁸ See the amended proposal of the European Commission on 17 September 2020 for the regulation on a European climate law (COM[2020] 563 final); the original proposal of the European Commission was published on 4 March 2020 (COM[2020] 80 final) A. C. Becker, Green Deal, EuZW 2020, 441 (442); on the bottlenecks in climate protection at EU level S. Schlacke, Klimaschutz im Mehrebenensystem, EnWZ 2020, 355 (358 et seq.).

⁹ Communication from the European Commission, 11 December 2019: The European Green Deal (COM[2019] 640 final), pp. 4 et seq.

¹⁰ As per no. 12 in the conclusions of the meeting of the European Council on 10 and 11 December 2020, EUCO 22/20 CO EUR 17 CON-CL 8, <https://www.consilium.europa.eu/media/47296/1011-12-20-euco-conclusions-en.pdf> (accessed 29 December 2020).

¹¹ BGBl. I p. 2513; the Federal Climate Change Act was enacted as Art. 1 of the Gesetz zur Einführung eines Bundes-Klimaschutzgesetzes und zur Änderung weiterer Vorschriften and entered into force on 18 December 2019 in accordance with Art. 4; see M. Kment, Klimaschutzziele und Jahresemissionsmengen – Kernelemente des neuen Bundes-Klimaschutzgesetzes, NVwZ 2020, 1537 (1540 et seq.).

than those required by the EU. Section 3 (1) of the Federal Climate Change Act requires a gradual reduction in greenhouse gas emissions of at least 55 percent by 2030 compared with 1990 levels. Alongside energy and large-scale industry, annual emissions budgets have been widened to include sectors such as transport and buildings.¹² Companies in much of the economy are therefore required to participate in the European CO₂ Emissions Trading System (EU ETS) or the new national emissions trading system. Emissions trading means that emitters of greenhouse gases must acquire a certificate in order to do so. An EU-wide emissions ceiling has also been set, which is lowered annually in line with climate protection targets while the prices for certificates gradually rise.¹³ This is an important step in reducing CO₂ emissions, but one that generates considerable additional costs for affected businesses.¹⁴

2. Green Deal

Announced on 11 December 2019 by the President of the European Commission *Ursula von der Leyen*,¹⁵ the Green Deal is a broad-based plan to transform the European economy for a sustainable future. Instead of restricting itself to targeted energy and environmental policy initiatives, this inclusive programme extends to

a wide range of actors and action areas and prescribes sustainability goals for them.¹⁶

a) Definition and goals

The Green Deal is a “growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use. It also aims to protect, conserve and enhance the EU’s natural capital, and protect the health and well-being of citizens from environment-related risks and impacts.”¹⁷ Despite what the name implies, however, the Green Deal is not an agreement struck between policymakers and the affected stakeholders, such as businesses,¹⁸ but rather a political construct through which the EU and its Member States hope to regulate and incentivise the transformation process (see c) below).

b) Action areas

The Green Deal’s objectives are to be implemented through various, partially interconnected action areas.¹⁹ For family businesses, the most relevant of these are climate and environmental protection (see II.1.c) and d) above) along with energy supplies and the circular economy.

12 Art. 4 (1) Federal Climate Change Act in conjunction with Annex 1; on the significance of the goal of greenhouse gas reduction in all the German government’s investment and procurement processes, see *U. Di Fabio*, Green Recovery: Rechtsmaßstäbe für den ökologischen Umbau der Wirtschaft, 2021, II.2.a).

13 See Art. 4 (1) in conjunction with Annex I of Regulation (EU) 2018/842 of 30 May 2018 (OJ EU No L 156/26); see also Regulation (EU) 525/2013 of 21 May 2013 (OJ EU No L 165/13) and Section 4 (1), Section 9 of the Fuel Emissions Trading Act (Brennstoffemissionshandelsgesetz BEHG) of 12 December 2019 (BGBl. I p. 2768).

14 On legal concerns about the Federal Climate Change Act, for example its lack of specific measures that could form part of an immediate programme and the possibility of seeking to offset excess annual emission volumes in other sectors, see *M. Kment* (footnote 11), pp. 1542 et seq.; *C. Fuest*, The Advantages of the Division of Labor also Apply to Economic Policy: The Green New Deal, ifo Viewpoint 221 (2020), pp. 1 et seq., considers CO₂ pricing to be preferable to the Green New Deal; *U. Di Fabio* (footnote 12), III.1.b) agrees; a new approach is called for in *H.-J. Blanke/S. Pilz*, Europa 2019 bis 2024 – Wohin trägt uns der Stier? – Sieben Thesen zu den Herausforderungen der Europäischen Union –, pp. 279 et seq.; on the CO₂ tax, see *A. Leisner-Egensperger*, CO₂-Steuer als Klimaschutzinstrument, NJW 2019, 2218 et seq.; on bottlenecks in German climate protection law, see *S. Schlacke* (footnote 8), pp. 361 et seq.

15 Communication from the European Commission, 11 December 2019 (footnote 9).

16 Communication from the European Commission, 11 December 2019 (footnote 9), pp. 3 et seq.; *A. C. Becker* (footnote 8), pp. 441 et seq.; *C. Fuest* (footnote 14), p. 1, is critical of this comprehensive approach.

17 The wording of the European Commission communication of 11 December 2019 (footnote 9), p. 2.

18 *G. Kirchhof*, Neuanfang: der „Green Deal“ und die Kraft der Zivilgesellschaften, in: Ludwig-Erhard-Stiftung (ed.), Wohlstand für Alle: Klimaschutz & Marktwirtschaft, 2020, p. 40 (41).

19 On the various action areas, see the communication from the European Commission, 11 December 2019 (footnote 9), p. 3; interdependencies exist particularly in climate protection, e.g. between “supplying clean, affordable and secure energy”, “building and renovating in an energy and resource efficient way” and “accelerating the shift to sustainable and smart mobility”, European Commission communication of 11 December 2019 (footnote 9), pp. 6 et seq.

aa) Energy supply

The European Commission notes that 75 percent of the EU's greenhouse gas emissions arise from the production and use of energy across all economic sectors. In the Green Deal, it therefore calls for a clean, affordable and secure energy supply, in which energy efficiency should take centre stage. A sustainable energy supply is to be achieved by rapidly phasing out coal, decarbonising gas and, most importantly, making greater use of renewable energy sources, particularly offshore wind.²⁰ Energy efficiency, decarbonisation and a secure energy supply are key objectives of the Energy Union, to which Member States are required to contribute under Regulation (EU) 2018/1999,²¹ for instance in the form of revised integrated energy and climate plans.²²

At least until a fully a functional Energy Union is in place, however, the implementation of these objectives contains potential for conflicting goals, which will necessitate either the prioritisation of objectives or a compromise between them. One such conflict in the case of renewable energy, for example, is between security of supply and affordability. Germany now has the most expensive electricity in Europe,²³ with prices around 50 percent above the EU average. The reallocation charge under the Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz, EEG) is almost as high as the costs of power generation.²⁴ This particularly affects

industries that rely on large amounts of energy to manufacture their products. These industries also tend to emit large volumes of greenhouse gases and thus incur an additional financial burden in the CO₂ emissions trading system (see II.1.d) above). An example is the steel industry (energy intensive, high CO₂ emissions), which is now barely competitive in Germany. This points to a key question in the environmental transformation process: the relationship between sustainability and profitability (see III.2 below).

bb) Circular economy

The period from 1970 to 2017 saw the volume of annual raw materials extraction triple, leading to greenhouse gas emissions, loss of biodiversity and water scarcity. The European Commission regards this development as a threat to the entire planet and seeks in its Green Deal to mobilise every sector of industry in order to create a climate-neutral, circular economy. This transformation will be a protracted process, however.²⁵ Today's economy, and especially the industrial sector, still works largely to a *linear model* that relies on "a throughput of new materials extracted, traded and processed into goods, and finally disposed of as waste or emissions. Only 12 percent of the materials it uses come from recycling."²⁶

The envisaged *circular economy*, in contrast, would

20 Communication from the European Commission, 11 December 2019 (footnote 9), pp. 6 et seq.

21 Regulation of the European Parliament and of the Council of 18 December 2018 on the Governance of the Energy Union and Climate Action (OJ EU No L 328/1).

22 Other objectives of the Energy Union include an internal energy market, particularly the interconnectivity of power grids, and the promotion of research, innovation and competitiveness in relation to energy generation and supply, Annex 1 section A number 2 Regulation (EU) 2018/1999 (footnote 21).

23 According to information from the Federal Statistical Office, private households in Germany paid an average of 31.94 euro cents per kilowatt-hour of electricity in the first half of 2020; this represented a 6.8 percent rise in electricity prices compared with the second half of 2019, press release no. 417, 20 October 2020, https://www.destatis.de/DE/Presse/Pressemitteilungen/2020/10/PD20_417_61243.html;jsessionid=46A531137A7E48ECD86C7A94349126CB.internet8742 (accessed 23 January 2021).

24 Figures from the Federal Network Agency (Bundesnetzagentur) put the average household electricity price in 2019 at 30.5 euro cents; of this, 7.61 cents was for procurement, distribution and profit margins, while 6.41 cents was for the EEG reallocation charge, <https://www.bundesnetzagentur.de/DE/Sachgebiete/ElektrizitaetundGas/Verbraucher/PreiseRechnTarife/preiseundRechnungen-node.html> (accessed 23 January 2021).

25 In the view of the European Commission, it takes 25 years, i.e. a whole generation, to transform an industrial sector and all the value chains, Communication from the European Commission, 11 December 2019 (footnote 9), p. 7.

26 Communication from the European Commission, 11 December 2019 (footnote 9), p. 7 Recycling involves reusing waste products for either their original or other purposes. Reusing products that are not yet waste products is not recycling in the true sense of the word, but is sometimes described as such.

avoid the use of new resources and the ongoing need to manage new waste. Instead, it reuses resources in a closed cycle, decoupling economic growth from resource consumption.²⁷ One way of conceptualising this is the *cradle-to-cradle approach*,²⁸ in which materials circulate in either a biological cycle or technical cycle, depending on whether they belong to the biosphere (materials that can be broken back down in nature) or technosphere (products such as consumer goods).²⁹

Unlike climate and environmental protections,³⁰ however, concrete measures to transform the linear economy into a circular economy are only gradually taking shape. The EU's new Circular Economy Action Plan is thus an important step in this direction.³¹ It emphasises the necessity to scale up the circular economy to mainstream economic players so as to achieve climate neutrality by 2050, decouple economic growth from resource use and ensure the long-term competitiveness of the EU. The main levers proposed to achieve these objectives are the design of sustainable products, the greater use of circularity in key product value chains (e.g. electronics, batteries, vehicles, textiles and packaging) and greater avoidance of waste.³² In the context of the new EU industrial strategy, which seeks to make European

industry more competitive, the Circular Economy Action Plan provides some concrete ideas for an environmental transformation of industry.³³

Implementing the circularity concept across the board and in an economically appealing way³⁴ would be a major step towards an environmental transformation of the economy. However, a "pure" circular economy is currently realistic in only a few industries. In the meantime, improving *resource efficiency* would be an appropriate measure to improve sustainability under the linear economic model. This involves reducing resource consumption and the associated environmental impact so that the use of resources to provide products and services is kept to a minimum.³⁵ In particular, this can include recycling and upcycling of materials.³⁶ Other measures, though less preferable from an environmental perspective, consist of the downcycling of materials³⁷ and financial offsetting of environmental impacts.³⁸

c) Measures

The EU and its Member States have various mechanisms and tools at their disposal with which to realise the environmental transformation. The most significant

27 See T. Weber/M. Stuchtey (ed.), *Deutschland auf dem Weg zur Circular Economy*, 2019, p. 12, which further distinguishes between *relative* decoupling, in which the economy grows faster than the associated environmental impacts, and *absolute* decoupling, which is only achieved when resource use and externalities are reduced despite continued economic growth.

28 On the cradle-to-cradle approach, see M. Braungart, *Cradle to Cradle als Innovationsplattform für die Industrie in der digitalen Welt*, in: Ludwig-Erhard-Stiftung (ed.), *Wohlstand für Alle: Klimaschutz & Marktwirtschaft*, 2020, pp. 62 (63 et seq.); see also footnote 105 below.

29 The butterfly diagram provides a useful illustration, see *Ellen Mac Arthur Foundation*, *Circular economy systems diagram*, 2019, <https://www.ellenmacarthurfoundation.org/explore/the-circular-economy-in-detail> (accessed 29 December 2020); the methodological and conceptual foundations are laid by the models of a green economy and ecolonomy, see S. Berger-Douce, *Sustainable Management and Performance in SMEs: A French Case Study*, 2014, p. 9.

30 For more details, see II.1.c) and d) above.

31 Communication from the European Commission, 11 March 2020: A New Circular Economy Action Plan For a Cleaner and More Competitive Europe (COM[2020] 98 final).

32 See Communication from the European Commission, 11 March 2020 (footnote 31), pp. 2, 3 et seq., 7 et seq. and 12 et seq.

33 See Communication from the European Commission, 10 March 2020: A New Industrial Strategy for Europe (COM[2020] 102 final).

34 See T. Weber/M. Stuchtey (footnote 27), pp. 12 et seq.

35 See T. Weber/M. Stuchtey (footnote 27), pp. 11 et seq., on recycling see footnote 26 above.

36 Upcycling means recycling waste into higher-quality products.

37 In downcycling, the recycled material has a reduced quality or functionality compared with the original product; M. Braungart (footnote 28), pp. 62 et seq. is critical of this.

38 This includes the pricing of CO₂ emissions under the European CO₂ Emissions Trading System (EU ETS), see II.1.d) above. A weakness of this mechanism is that the funds raised from the trading of emissions certificates only partially flow into energy and climate funds that are used to finance measures for cutting CO₂ emissions.

of these is *regulation*, which comprises state-imposed requirements or restrictions and rules on (technical) harmonisation and standardisation. Regulation is generally aimed less at bolstering competitiveness than at achieving sustainability targets, particularly in relation to climate and environmental protection. As this type of intervention limits companies' economic freedoms, it must always take place on a solid legal footing.³⁹ Another option is *incentivisation* through financial subsidy or other measures intended to induce environmentally sustainable behaviour. This also requires a sound legal basis if the subsidy interferes with the basic rights of unsubsidised competitors or distorts competition. It must also be borne in mind that the public good of environmental sustainability, though important, does not automatically justify such measures.⁴⁰ Proportionality must always remain the guiding principle behind any legal framework for economic incentives. In Germany, decisions that touch on essentials of individual freedom and equality are constitutionally reserved for the legislature and do not lie at the discretion of the executive.⁴¹ This also applies to the provision of subsidies.⁴²

The EU's *Green Deal* envisages the use of a range of different instruments, from regulation and standardisation to investments, international cooperation and dialogue with social partners (businesses and trade unions).⁴³ The measures and plans at European and national level draw on or modify existing legal and

economic tools or create new ones. Some of these are primarily regulatory in nature⁴⁴ while others take a more incentive-based approach.⁴⁵ Given the broad scope of the Green Deal's action areas and agendas, prioritising these programmes and measures is key, and this is why the annex to the Green Deal contains a timetable for key actions in the various action areas.⁴⁶ In terms of climate ambitions, these key actions consist first and foremost of the planned European Climate Law⁴⁷ to enshrine the goal of greenhouse gas neutrality in the EU by 2050, and a Climate Pact for society and the economy.⁴⁸

3. Green recovery

Not long after the announcement of the Green Deal in December 2019, the term "green recovery" increasingly began to enter political debate in Europe, starting with the coronavirus pandemic that arrived in February 2020.

a) Background

The trigger for the green recovery was the dramatic economic crisis precipitated by government restrictions imposed to tackle the COVID-19 pandemic. The EU responded to this situation with a Recovery Plan designed to pursue two related objectives: firstly, to deal with the economic damage caused by the pandemic and promote a collective, cohesive economic recovery; and secondly, to accelerate the green and digital

39 More detail in *U. Di Fabio* (footnote 12), III.3.

40 *W. F. Spieth/N. Hellermann*, Not kennt nicht nur ein Gebot – Verfassungsrechtliche Gewährleistungen im Zeichen von Corona-Pandemie und Klimawandel, NVwZ 2020, 1405 (1406), make this argument explicitly in relation to climate change and the coronavirus pandemic; see also *U. Di Fabio* (footnote 12), III.1.a).

41 See BVerfGE 40, 237 (249); 49, 89 (127); 83, 130 (152); 98, 218 (251 et seq.); 108, 282 (311 et seq.).

42 On the applicability of basic rights in Germany in relation to subsidies, see *U. Di Fabio* (footnote 12), III.3.

43 Communication from the European Commission, 11 December 2019 (footnote 9), p. 4.

44 This regulatory nature is particularly clear in the case of the Act to Reduce and End Coal-Fired Power Generation (Kohleversorgungsbeendigungsgesetz KVBG), which was issued as Art. 1 of the German Coal Phase-Out Act (Kohleausstiegsgesetz) of 8 August 2020 (BGBl. I p. 1818), see especially sections 4 et seq., 27 et seq. and 40 et seq. KVBG.

45 The incentives particularly include the green recovery measures, see section II.3.a) below.

46 Communication from the European Commission, 11 December 2019 (footnote 9), Annex final.

47 See II.1.c) above.

48 *C. Calliess/M. Dross*, Umwelt- und Klimaschutz als integraler Bestandteil der Wirtschaftspolitik: Überlegungen im Lichte von European Green Deal und Corona-Recovery Plan, ZUR 2020, 456 (458).

transformation.⁴⁹ The recovery programme itself consists principally of the provision of funding under a growth instrument known as NextGenerationEU.⁵⁰ This financial stimulus is directed at the programme's three pillars.⁵¹

b) Ties to the Green Deal

By connecting them to the objectives of the Green Deal, substantial parts of this recovery programme have been geared towards environmental sustainability.⁵² In this respect, the financially driven recovery programme has been turned into a green recovery programme. Important measures at European level include the provision of funding for environmentally friendly projects, such as the accelerated expansion of renewable energy, and the EU's Taxonomy Regulation.⁵³ The taxonomy sets criteria that can be used to decide which economic activities should be regarded as environmentally sustainable. By helping investors identify green (i.e. environmentally sustainable) investments, it thus aims to create a more sustainable financial system.

c) Green recovery as a political agenda

Beyond these action areas and measures, the term "green recovery" is sometimes used beyond the financial policy context as a broader political agenda. One expression of this is the call to action by the *Green*

Recovery Alliance to build a new European economic model based on green principles (i.e. environmental sustainability), including a transition to a climate-neutral economy.⁵⁴ This European political initiative is supported by at least parts of the German government⁵⁵ as well by major German companies.⁵⁶ For the purposes of this text, however, green recovery will not refer to this broader political agenda but will be used solely in the context of the Green Deal (see II.3.b) above). This comprises the main European plan for the environmental transformation of the economy, accompanied by the primarily financial measures of the recovery programme.

4. Features of the EU plan for the environmental transformation of the economy

Some common characteristics can be identified in the approaches, mechanisms and instruments of the Green Deal and in the elements of the recovery programme aimed at environmental sustainability:

(1) National and international

The environmental transformation programme is not an exclusively national or supranational project. It is multi-

49 See the Communication from the European Commission, 27 May 2020: Europe's moment: Repair and Prepare for the Next Generation (COM[2020] 456 final), pp. 1 et seq.

50 On the components of this recovery instrument, see the information from the European Commission, 11 March 2020, https://ec.europa.eu/info/strategy/recovery-plan-europe_en (accessed 29 December 2020); V. Güßregen, EU-Finzen: Aufbauplan „Next Generation EU“ – Investitionen als politische Maßnahme, EuZW 2020, 636; on accompanying financial support measures by the European Central Bank (ECB) based on the Pandemic Emergency Purchase Programme (PEPP) and by the European Investment Bank (EIB) and European Stability Mechanism (ESM) U. Di Fabio (footnote 12), II.1.b).

51 The three pillars are support to Member States for investment and reforms to address the crisis, particularly through a new Recovery and Resilience Facility, kick-starting the EU economy by incentivising private investment, and learning the lessons of the crisis by creating a new standalone EU4Health programme, see Communication from the European Commission, 27 May 2020 (footnote 49), pp. 4 et seq.

52 On the connection of the two, see C. Calliess/M. Dross (footnote 48), pp. 458 et seq.; A. C. Becker (footnote 8), p. 442; W. Köck/T. Markus, Der europäische „Green Deal“ – Auf dem Weg zu einem EU-„Klimagesetz“, ZUR 2020, 257 (258).

53 Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088, OJ EU No L 198/13; see the recent contribution by C. Fuest (footnote 14), pp. 1 et seq.

54 See the call to action by the Green Recovery Alliance, initiated by Pascal Canfin, Member of the European Parliament, 14 April 2020: "GREENRECOVERY: Reboot & Reboost our economies for a sustainable future".

55 See the announcement by the Federal Ministry for the Environment, 14 April 2020, <https://www.bmu.de/meldung/green-recovery-1> (accessed 28 December 2020); the common statement by the French and German governments on 18 May 2020 on the European Green Deal and a European recovery plan, known as the Meseberg Statement, https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Klimaschutz/declaration_meseberg_2020_bf.pdf (accessed 3 January 2021).

56 The signatories of the call to action include the CEOs of the Volkswagen Group, E.ON SE and Siemens Gamesa, see footnote 54.

layered, with requirements set by both the European Union and its Member States, in Germany's case by the Bundestag and Federal Government. There are also international initiatives such as the UN Sustainable Development Goals and the Paris Agreement (see II.1.a) and b) above). Rather than viewing them in isolation, researchers must examine these different inputs in relation to one another, looking at the ways in which they interact.

(2) *Multilateral and inclusive*

Alongside national governments and EU bodies, the actors involved in the transformation process include companies, consumers, associations and NGOs (non-governmental organisations such as Greenpeace or the World Wildlife Fund (WWF)). This multilateral approach requires the flow of information and communication between the different actors in order that their interests can be considered and any conflicts settled.

(3) *Building on existing instruments*

The Green Deal on which the environmental transformation rests is not a greenfield project. Instead, the deal and its various elements build on existing instruments such as the emissions trading system, underpin them with stricter sustainability targets, and combine these with additional environmental requirements which reinforce existing focus areas or set new ones. One example of this approach is the Circular Economy Action Plan (see II.2.b)bb) above).

(4) *Dirigiste*

The EU's environmental transformation is a move away from the existing open market economy to an environmental and social market economy as a model for reconciling economic, social and environmental interests.⁵⁷

To shape this structural change, the EU and its Member States are relying on a strong directive role for the state through measures that seek to regulate and incentivise behaviour.⁵⁸ However, this approach undervalues opportunities to achieve environmental sustainability goals by engaging and promoting businesses' self-initiative.⁵⁹ This particularly applies to family businesses, for whom sustainable business practices are a major part of their identity.⁶⁰

(5) *Focused*

While the European transformation plan, or Green Deal, is largely programmatic in nature, it is clearly focused on greater environmental sustainability as the objective of reshaping the economy. It identifies potential instruments, rates their suitability for this objective and sets out a timetable for their use. In terms of actual successes, however, this approach has a mixed scorecard to date: while an ambitious system has been put in place to reduce CO₂ emissions, the measures to promote a circular economy are still in their infancy and lack specificity.⁶¹

(6) *Transparent*

The Green Deal is a transparent programme. This applies both to the objectives themselves and the measures considered for their implementation. Potential stakeholders and the public have been provided with comprehensive online access to relevant information from an early stage. This transparency is not an end in itself but is intended to create planning certainty and trust – prerequisites for a successful transformation process. One particular challenge is the identification of widely recognised, clear and objective indicators to enable verifiable measurement of the degree to which the goals have been achieved.⁶²

57 The Green Deal explicitly raises the need to deal with the trade-offs between these objectives. See the Communication from the European Commission, 11 December 2019 (footnote 9), p. 4; on the resulting conflicts and their resolution see III.2 and 3 below.

58 See II.2.c) above.

59 On this criticism, see III.3.e) below.

60 Details in IV.3.a)bb) below.

61 For more detail, see II.2.b)bb) above.

62 See T. Weber/M. Stuchtey (footnote 27), pp. 30 et seq.

(7) *Dynamic*

The dynamic nature of the Green Deal approach can be seen most clearly in the regular evaluation and ongoing development of the measures used to achieve

the sustainability objectives. This creates a dynamic environmental transformation process in which the transformation measures can be adjusted as necessary.

III. Challenges for an environmental transformation

With the December 2019 announcement of the Green Deal still relatively recent, academic debate is only gradually taking clearer shape.⁶³ Many have welcomed this European transformation programme,⁶⁴ but critical voices, too, are unmistakable,⁶⁵ in particular with fundamental questions about the state-directed reconfiguring of the existing economic system to create an environmental market economy.⁶⁶ Their objections are aimed both at environmental sustainability as the goal of the transformation and at the mechanisms envisaged for achieving it (see 1 below). These concerns are tied up with fundamental doubts about whether companies with environmentally sustainable business models are capable of producing successful economies – a critique that assumes a barely resolvable trade-off between environmental sustainability and profit (see 2 below). A further objection is that the state-directed environmental transformation process contains elements of a planned economy that cannot and should not be reconciled with the EU's existing, freely competitive market economy (see 3 below).

1. Environmental transformation – too one-sided?

The criticism that the environmental transformation process is too one-sided is directed partly at the goal of environmental sustainability itself (see a) and b) below) and partly at an alleged overfocus on state control as a means of implementing it (see c) below).

a) Legitimacy of environmental sustainability as an objective

In response to the accusation that environmental sustainability is the wrong objective for the economic transformation,⁶⁷ it should be pointed out that this goal can claim legitimacy from the constitutional foundations of both the European Union and the Federal Republic of Germany. Under Article 191 (1) of the Treaty on the Functioning of the European Union (TFEU), preserving, protecting and improving the quality of the environment, along with the rational utilisation of natural resources, are listed as key aims of Union policy on the environment. Meanwhile, Article 20a of Germany's Basic Law (Grundgesetz) defines protecting the natural foundations of life with responsibility towards future

63 From a legal perspective, see A. C. Becker (footnote 8), pp. 441 et seq.; H.-J. Blanke/S. Pilz (footnote 14), pp. 277 et seq.; C. Calliess/M. Dross (footnote 48), pp. 458 et seq., *ibid.*, p. 460, including on the green recovery approach; for a political perspective on this topic, see M. Jobelius, *Green Recovery and Social Democracy: Programmatic Challenges for a Climate-neutral Europe*, 2020, p. 4.

64 In particular, for example, Vice-President of the European Commission Frans Timmermans (footnote 3); also M. Jobelius (footnote 63), p. 4.

65 H.-J. Blanke/S. Pilz (footnote 14), p. 277, describe the Green Deal as merely a strategy to maintain the *status quo* (emphasis in original); different criticisms come from R. v. Eben-Worlée, *Klimaschutz und Unternehmertum sind natürliche Verbündete*, in: Ludwig-Erhard-Stiftung (ed.), *Wohlstand für Alle: Klimaschutz & Marktwirtschaft*, 2020, p. 38; G. Kirchhof (footnote 18), pp. 40 et seq.; U. Di Fabio (footnote 12), III.1.b), 2., IV.

66 See T. Weber/M. Stuchtey (footnote 27), pp. 30 et seq.; while the Green Deal explicitly commits to the ambitious goal of bringing economic and environmental interests together in the same overall plan, it also recognises that potential trade-offs between economic, environmental and social objectives may arise, Communication from the European Commission, 11 December 2019 (footnote 9), p. 4.

67 M. Braungart (footnote 28), p. 65 argues that sustainability inhibits true innovation; M. Pieper (footnote 3) is critical given the weak position in which businesses find themselves amid the coronavirus pandemic and regards the green transformation as a luxury.

generations as one of the objectives of the German state.⁶⁸

Central objectives of the Green Deal, particularly stronger protections for the climate and environment and the reduction and avoidance of resource consumption, are also supported by a majority of the population and by many companies. There is thus a widespread consensus that existing policies have proven inadequate and that further-reaching steps are needed. The state's decision to tackle this deficit by participating in a European transformation process should be seen as a response to this situation. The state is required here by Article 191 (2) TFEU to act on the precautionary principle. It therefore cannot wait in the hope that climate, environmental and resource problems will resolve themselves, but must, as a priority, rectify environmental damage at source.

b) Legal context

Article 11 TFEU demands that the requirements of environmental protection be integrated into the definition and implementation of the Union's policies and activities, in particular with a view to promoting sustainable development. Should this conflict with other interests, for example that of an open market economy with free competition (Art. 119 (1), 120 TFEU), the conflict cannot be resolved solely to the detriment of environmental protection; instead, due consideration must be given to the environmental goal.⁶⁹ The critique that environmental sustainability is the wrong goal therefore neglects to consider that both the EU and the German state already have a legal duty to pursue this objective.

Implementation of this objective must, however, give due consideration to the principle of an open market

economy with free competition (see III.3.c) below), which is anchored in EU law, and the economic freedoms of businesses and individuals in Germany. These particularly include the free choice of trade or profession (Article 12 (1) of the Basic Law), the protection of property and the right of inheritance (Article 14 (1) of the Basic Law), and individual autonomy (Article 2 (1) of the Basic Law).⁷⁰ Insofar as concrete measures to implement the Green Deal have already been taken, for example in the fields of climate and environmental protection, energy supplies and the circular economy,⁷¹ there is little obvious evidence that this legal framework has been breached.

c) State control

The second criticism concerns the way in which state power at European and national level is brought to bear on economic actors, especially businesses, in order to realise the environmental transformation. Provided economic measures remain within the constitutional constraints described above, the EU and its Member States have a large degree of discretion to act as they see fit. Measures can thus be chosen and designed solely on the basis of expediency and are not subject to judicial oversight.

Looking at the Green Deal from this perspective, the objection that the programme concentrates too heavily on state control of the economy⁷² appears partially justified. In implementing the programme, policymakers should therefore press for stronger cooperation with businesses so as to promote and take full advantage of the private sector's capacity for innovation. This would also weaken the objection that the Green Deal is akin to state planning (see III.3 below). Ultimately, however, constitutional rights already offer adequate protection

68 This includes an obligation to direct the powers of the state towards protecting the environment, see *S. Huster/J. Rux*, in: Epping/Hillgruber (eds.), *BeckOK Grundgesetz*, 45th edition, 15 November 2020, Art. 20a marginal number 6 et seq.

69 On Art. 11 TFEU as a key standard for environmental protection and the minimum protection required *C. Calliess/M. Dross* (footnote 48), pp. 461 et seq.

70 See *U. Di Fabio* (footnote 12), III.1.a).

71 For more details, see I.1.c) and d), 2.b) above.

72 This control can also take the form of state subsidy, see *U. Di Fabio* (footnote 12), III.1.b).

against excessive environmental dirigisme on the part of the state.⁷³

2. Profitability versus environmental sustainability – an unbridgeable conflict?

Economic activity in open, competitive markets is typically directed at increasing net worth and generating profit. Can these aims be reconciled with the goal of environmental sustainability, or is there an inevitable conflict of objectives? Answering this fundamental question must be the starting point not only for any corporate sustainability strategy (see V.1 below) but also for government interventions to transform the economy and make it environmentally friendlier. By aiming to accelerate this transformation and make sustainability a guiding principle of the economic recovery, the Green Deal and green recovery have lent further relevance to this debate.

a) Different objectives

The aim of environmental sustainability is to cut CO₂ emissions and conserve resources. This is a very different decision-making rationale to that of profit maximisation and growth, which steers decisions in an open market economy. There is therefore clear potential for a conflict of objectives. Reducing greenhouse gas emissions through the existing emissions trading system⁷⁴ costs the economy money and hits particularly those businesses whose production processes create high levels of pollution.⁷⁵ In the prevailing linear economy, conserving resources can result in production shortages.⁷⁶

The potential for conflict is increased further if the state takes a dirigiste approach to enforcing environmental sustainability targets – i.e. precisely the approach planned by the Green Deal.⁷⁷ Will this create an unbridgeable conflict of objectives? And if so, should this conflict be resolved to the detriment of sustainability or the economy?

Proponents of green policies often refute such a conflict by arguing that only environmental sustainability can guarantee long-term profits and jobs.⁷⁸ This argument, however, is overly simplistic, at least until a working circular economy has become established in key sectors – a still distant prospect in Germany. Is the only solution, then, to decide that one objective must be prioritised while the other takes a back seat? And in that case, what is more important: the economy or the environment? There are arguments for both positions.

b) Concepts for resolving the conflict

aa) Primacy of profitability

Some argue that it is only commercial success that guarantees the survival of companies and the jobs that depend on them, and that it is therefore only profitability that can create the space for a successful, environmentally sustainable economy in the first place.⁷⁹

Profit-motivated decision making, it is further argued, reflects people's constitutional rights and the freedoms these confer. In economic life, these consist of the free interaction of individuals and businesses under the law.⁸⁰ Article 2 (1) of the German basic law, which protects individual autonomy,⁸¹ and Article 12 (1), which

73 More detail in *U. Di Fabio* (footnote 12), III.1.a).

74 See II.1.c) and d) above.

75 This particularly affects companies in the steel industry, which are also being hit by high energy prices, see II.2.b)aa) above.

76 On the features of a linear economy (in which the emphasis is on maintaining value added, e.g. through longer use of resources) as opposed to a circular economy, see II.2.b)bb) above.

77 See II.2.c) above.

78 As *F. Timmermans* (footnote 3) claims; a similar argument can be found in *C. Hepburn/B. O'Callaghan/N. Stern/J. Stiglitz/D. Zenghelis*, Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change? 2020, p. 13: "Recovery policies can deliver both economic and climate goals".

79 See, in the context of the coronavirus pandemic, *M. Pieper* (footnote 3).

80 *U. Di Fabio* (footnote 12), III.1.a), 3.

81 See BVerfGE 8, 275 (328); 65, 196 (210), 74, 129 (151 et seq.).

protects the freedom to choose an occupation, guarantee companies and entrepreneurs the right to seek profit.

This argument also highlights the link between profit motivation and today's open, competitive market economy, which is characterised by its adaptable and innovative nature.⁸² From this perspective, prioritising fair and efficient competition is the most reliable way to guarantee that optimal solutions will be found, including solutions for challenges relating to environmental sustainability. Proponents for the primacy of profitability thus conclude that policies for the environmental transformation of the economy must respect the profit motive, the free market and the constitutional guarantees that underpin them.⁸³

bb) Primacy of environmental sustainability

Meanwhile, those who advocate that environmental sustainability should take primacy emphasise the importance of the environment to a liveable future in the context of population growth, resource scarcity, global warming, marine pollution and loss of biodiversity. Those on this side of the argument can also invoke legal protections, namely the provisions of EU and German constitutional law concerning environmental protection and resource conservation. These include Articles 11 and 191 (1) TFEU and Article 20a of the German Basic Law.⁸⁴

Moreover, they claim, only environmentally sustainable behaviour can ensure social cohesion. With govern-

ments racking up high levels of financial debt due to the COVID-19 pandemic, which will largely fall on future generations to repay, they also frame this as a matter of intergenerational justice.⁸⁵

cc) Sufficiency and the post-growth economy

The concepts of *sufficiency* and the *post-growth economy*⁸⁶ take this a step further with an exclusive focus on (environmental) sustainability. They call for absolute limits on resource use and a renunciation of economic growth.⁸⁷ This approach is economically questionable⁸⁸ and – in implying that people should forego the use of generally available economic goods – constitutionally problematic. Under the constitutional freedoms that prevail in Germany and similar countries, any decision to forego consumption must be made by individuals voluntarily.

Moreover, the freedom to take such decisions must not be curtailed from the outset by societal expectations, for example in relation to environmental sustainability. The exercise of constitutionally protected freedoms should require no justification, provided it is lawful and does not infringe the rights of others. While the state may impose limits on constitutional freedoms in order to protect and promote the common good, including that of environmental sustainability, it must satisfy the principles of legal certainty and proportionality and is subject, in the German case, to the oversight of the Federal Constitutional Court.⁸⁹ For good reason, the Green Deal eschews this radical concept of environmental transformation, instead favouring a balance of

⁸² See only C. Fuest (footnote 14), p. 2.

⁸³ W. F. Spieth/N. Hellermann (footnote 40), pp. 1405 et seq.; U. Di Fabio (footnote 12), III.1.a), 3.

⁸⁴ See III.1.a) and b), 2.b)aa) above.

⁸⁵ These are central arguments for the Green Deal, see the Communication from the European Commission, 11 December 2019 (footnote 9), p. 1.

⁸⁶ See T. Weber/M. Stuchtey (footnote 27), p. 12.

⁸⁷ See N. Paech, *Befreiung vom Überfluss: Auf dem Weg in die Postwachstumsökonomie*, 2012, pp. 113 et seq.

⁸⁸ For criticism of the post-growth model, see for example K.-H. Paqué, *Wachstum! Die Zukunft des globalen Kapitalismus*, 2010; zum Zusammenhang zwischen Wachstum und persönlicher Freiheit R. Hank, *Wegmarken 2010: Wohlstand ohne Wachstum?* (Teil 3), https://www.deutschlandfunk.de/wegmarken-2010-wohlstand-ohne-wachstum-teil-3.724.de.html?dram:article_id=99695 (accessed 29 December 2020).

⁸⁹ On the significance of foregoing consumption as part of the environmental transformation of the economy, see also U. Di Fabio (footnote 12), II.1.a).

economic and environmental interests.

Along with the concepts of sufficiency and the post-growth economy, the phenomenon of “*greenwashing*” should also be rejected.⁹⁰ Far from being a measure to promote environmental sustainability, greenwashing represents no more than a marketing strategy with which businesses present themselves to the public as environmentally friendlier and more sustainable than they really are.

c) Guidelines for resolving the conflict

Neither the case for prioritising the economy nor that for prioritising environmental sustainability is convincing. The idea that either should have primacy over the other ultimately lacks the nuance and flexibility to resolve the varied and difficult conflicts.

aa) *Practical concordance*

A more promising, less binary approach to resolving conflicting objectives is to apply a principle of German constitutional law known as practical concordance.⁹¹ Here, the aim is to harmonise the principles of profitability and environmental sustainability with one another such that both goals can be realised to the fullest possible degree. The fundamental decisions on such a compromise must be taken by the legislature.⁹² In relation to the economy, however, the legislature generally restricts itself to setting a legal framework within which economic actors may operate and freely coordinate their interests.⁹³ Within this framework, it is primarily the role of companies to decide the weight attached to

profitability and environmental sustainability and how these objectives will be pursued through their business strategies (see V.1 below). This is a complex entrepreneurial decision rather than a political one.

bb) *Entrepreneurial decision making – no stranger to environmental sustainability*

The argument that environmental sustainability is a consideration imposed on entrepreneurial decision-making processes from outside – a foreign body inhibiting entrepreneurial freedom and preventing free market mechanisms from finding an optimal solution – does not do justice to this complexity.⁹⁴ After all, environmental sustainability is already a central part of many a corporate strategy.⁹⁵ This partly reflects the changing attitudes of stakeholders, especially customers, for whom environmental sustainability is often an important factor. Far from being a stranger to corporate decision making, comprise between the profit motive and social and environmental interests is deeply rooted in the social market economy (see III.2.c)cc), 3.c) below).

cc) *Social and environmental market economy*

This view is reinforced by the experience of the social market economy and particularly of employee participation,⁹⁶ which can serve to some extent as a model for reconciling environmental sustainability with the market economy and profitability. Here, fears of an unbridgeable conflict between social and economic interests that will weaken businesses subject to employee participation have proven unfounded. The collective bargaining process has enabled reasonable compromises between

90 On this, see the Communication from the European Commission, 11 December 2019 (footnote 9), p. 8; C. Calliess/M. Dross (footnote 48), pp. 459 et seq.

91 On this principle of constitutional law, see K. Hesse, Grundzüge des Verfassungsrechts der Bundesrepublik Deutschland, 20th edition 1999, marginal note 72; A. Fischer-Lescano, Kritik der praktischen Konkordanz, KJ 2008, 166 et seq. is critical of practical concordance; contrast with M. Schladebach, Praktische Konkordanz als verfassungsrechtliches Kollisionsprinzip. Eine Verteidigung, Der Staat 53 (2014), pp. 263 et seq.

92 See in connection with climate change W. F. Spieth/N. Hellermann (footnote 40), p. 1407.

93 See U. Di Fabio (footnote 12), III.1.a).

94 See U. Di Fabio (footnote 12), III.1.b), 2, 3; a controversial argument by M. Sommer/B. Beaucamp, Ist die soziale Marktwirtschaft ein Widerspruch? ZRP 2007, 115.

95 See R. v. Eben-Worlée (footnote 65), p. 38, who sees entrepreneurialism and climate protection as natural bedfellows; see also U. Di Fabio (footnote 12), III.3.

96 On the fundamentals, see BVerfGE 50, 290 et seq. = BVerfG, NJW 1979, 699 et seq.

employers and employees in the vast majority of cases.⁹⁷ This can also be the case for conflicts between environmental and economic interests if the existing social market economy is turned successfully into a *social and environmental market economy*. Resolving such trade-offs is a central objective of the Green Deal.⁹⁸

3. Environmental transformation and the open market

The primacy of the entrepreneurial rationale when it comes to deciding what an environmental sustainability strategy should look like and how it should be implemented does not rule out an active role for the state in promoting the environmental transformation, as is planned under the Green Deal. Where businesses are adversely impacted, however, the relevant legislation must satisfy the constitutional principle of proportionality, which is required whenever constraints are placed on fundamental rights (see III.1.b) above).

a) Allegation of a planned economy

While one criticism of the Green Deal focuses on its objective (the environmental transformation of the economy), another is directed at the control mechanisms by which it plans to realise this ambition. This second criticism culminates in the allegation that the envisaged measures are akin to a planned economy, which threatens the freedom of individuals, the balance of power and ultimately even democracy.⁹⁹ The objection is thus aimed at the mechanism by which the transformation process is controlled, and questions the compatibility of state intervention with Germany's social market economy.

b) Economic policy neutrality of Germany's Basic Law

It should be remembered that the German constitution permits rather than prescribes a social market economy. Germany's Basic Law does not specify or guarantee any particular economic system but leaves this decision to the legislature. While the legislature must act within the limits of the Basic Law, it still has a large degree of decision-making scope. The neutrality of the Basic Law with regard to economic policy means that the legislature may pursue any economic policy it sees fit, provided it adheres to the Basic Law and especially the fundamental freedoms therein.¹⁰⁰

c) EU law's commitment to an open market economy and environmental sustainability

Unlike the Basic Law in Germany, the EU's founding principles do clearly commit the European Union to an open social market economy with free competition and define a highly competitive economy as one of the EU's objectives.¹⁰¹ However, the same is true when it comes to environmental sustainability. Here, EU law emphasises key elements of sustainability – such as preserving and protecting the environment, tackling climate change and using natural resources sparingly¹⁰² – and requires them to be factored into economic policy.¹⁰³ This necessitates a reasonable compromise between the interests of an open, freely competitive social market economy and those of environmental sustainability. EU law thus imposes no tighter limits than Germany's Basic Law on an environmental transformation of the economy through state control.

97 See more generally *M. Sommer/B. Beaucamp* (footnote 94), p. 115.

98 Communication from the European Commission, 11 December 2019 (footnote 9), p. 4.

99 See *G. Kirchhof* (footnote 18), pp. 40 et seq.

100 BVerfG, NJW 1979, 699 (702).

101 See Art. 3 (3) (1) TEU, Art. 119 (1), 120 TFEU.

102 Art. 191 (1) TFEU; see also III.1.a), II.4.(4) above.

103 Art. 11 TFEU; III.1.b) above.

d) Constitutional limits to an environmental transformation through state control

Constitutional limits arise principally from the basic economic rights of affected parties and the principle of proportionality. Within these constraints, stronger state economic intervention in the process of environmental transformation is perfectly possible in principle, particularly until sufficient climate protections and a working circular economy have been established. Where state intervention is concerned, it should be noted that incentives are generally less harmful to businesses than regulation and are therefore the preferable option wherever

they enable the desired objective to be reached.

e) Demand for greater use of private sector innovation

As suggested earlier,¹⁰⁴ public authorities should do more to stimulate and take advantage of companies' strength in innovation. The private sector is capable of developing effective solutions for environmental sustainability without state compulsion.¹⁰⁵ In particular, new technologies can help to reconcile economic and environmental objectives, generating growth in the process.

IV. Sustainability – a bridge between family businesses and environmental transformation?

The implications of the environmental transformation process for family businesses in Germany are an as yet underexplored topic, despite the obvious point of commonality presented by the theme of sustainability. The objective of environmental sustainability defines the Green Deal, while economic sustainability is regarded by many family businesses as part of their DNA.¹⁰⁶ Is sustainability the key to identifying family businesses as an important player in the environmental transformation and fully leveraging their potential to support this process? Or does the state intervention involved in this transformation present a particular threat to family businesses by undermining their competitive advantages of swift decision-making and flexibility?¹⁰⁷ These questions are the Ariadne's thread that will guide the

remainder of this article. To answer them, it is necessary first to clarify what is meant by a family business (see 1 below) and what features typically characterise these enterprises (see 2 below).

1. Definition and features of family businesses

Although family businesses have no legal definition, they are identifiable by a number of typical characteristics.¹⁰⁸ The most important is that a family must, by virtue of its voting rights or majority share ownership, either manage the company itself through family members or at least oversee its management by non-family members.¹⁰⁹ In contrast, the size of a company, its legal form and whether it or not it is listed on the stock

104 See III.1.c) above.

105 This is emphasised by *S. Berger-Douce* (footnote 29), pp. 4 et seq.; *T. Weber/M. Stuchtey* (footnote 27), pp. 27, 36; for example in the triple bottom line accounting framework, where companies seek to maximise their social and environmental performance in addition to the traditional bottom line of profit; this is distinct from the triple top line, which is related to the cradle-to-cradle approach and focuses not on the profit and loss account but on the products and services used to add value; see *M. Braungart* (footnote 28), p. 63.

106 See *K. Windthorst*, Family Governance als Schnittstelle von Praxis und Wissenschaft, in: idem (ed.), Herausforderungen für Familienunternehmen, 2020, p. 95 (101); on forms of sustainability in family business, e.g. in relation to loyalty to a location and employee loyalty, idem, Die Bedeutung von Familienunternehmen für die Gleichwertigkeit der Lebensverhältnisse in Deutschland, in: U. Di Fabio/G. Felbermayr/C. Fuest/K. Windthorst, Industriepolitik in Deutschland und der EU, 2020, pp. 97 (108 et seq.).

107 See *S. Hipp*, Der ehrbare Kaufmann, in: K. Windthorst (ed.), Herausforderungen für Familienunternehmen, 2020, p. 85 (87); on SMEs (= small and medium-sized enterprises), see *S. Berger-Douce* (footnote 29), p. 1 (4).

108 On family companies, see *M. Habersack*, Gesetzesfolgen für Familienunternehmen abschätzen – Ein Familienunternehmen-Test für Deutschland und die EU, 2020, pp. 7 et seq.

109 On the term family business, see *R. Kirchdörfer*, Lexikon: Familienunternehmen, FuS 2011, 32 and the further references provided there; *T. Schmeing*, Konfliktmanagement in Familienunternehmen, 2018, pp. 193 et seq.

market have no bearing on whether it can be classed as a family business. In practice, however, family businesses in Germany are often non-listed small or medium-sized enterprises with the legal form of a GmbH (limited liability company) or AG (stock company).¹¹⁰

2. Corporate governance and family governance

If there is one major way in which family businesses operate differently to other companies, it is that corporate governance is intrinsically tied together with family governance. A natural consequence of the family's ownership and influence,¹¹¹ this fusion of family governance and corporate governance is both an inherent property of a family business and a source of tension, as these two different spheres of governance represent two different subsystems, each with its own set of rules.¹¹²

a) The family subsystem

This subsystem is based on family ties that are emotional and enduring. The family's rules are not set by third parties; they are developed autonomously or adopted by family members themselves. They have no legal bearing, and their infringement is sanctioned by emotional rather than legal consequences – for instance, the withdrawal of the approval or affection of other family members.¹¹³

b) The business subsystem

Membership of a business, in contrast, is built on legal ties. Business relationships are (at least in theory) rational rather than emotional. Membership is time limited, and most rules are extrinsic to the business,

i.e. imposed from outside. Infringements can result in legal sanctions.¹¹⁴

c) Implications for the understanding and harnessing of sustainability

The distinction between corporate governance and family governance in relation to family businesses is important to a differentiated understanding of sustainability in the context of the environment, the economy and the family and the interplay between these three dimensions of sustainability (see 3 below). At the same time, as will be shown in section V, it opens insights into the possible motivations, from both a corporate governance (see V.1 below) and family (see V.2 below) perspective, for family businesses to adopt an environmental sustainability strategy. This article will then conclude with some ideas for how such a strategy may be developed and implemented (see VI below).

3. Environmental and family business sustainability

The ubiquitous use of the term “sustainability” should not obscure the multitude of different ideas invested in it,¹¹⁵ which depend heavily on the context in which the term is used.

a) Defining sustainability

The defining feature of sustainable behaviour is that it does not simply satisfy the needs of today but also considers future effects and adjusts accordingly. This implies long-term thinking. Sustainability can be applied to various action areas and objectives.

¹¹⁰ See also *M. Habersack* (footnote 108), p. 9.

¹¹¹ Family businesses can be further broken down according to whether they are owner managed, see *ZEW*, *Die volkswirtschaftliche Bedeutung der Familienunternehmen*, 5th edition 2019, pp. 3 et seq.

¹¹² On these different subsystems, see *K. Uffmann*, *Family Business Governance – Rule-Making in the Shadow of Law and Love*, ZIP 2015, 2441(2441).

¹¹³ See *K. Windthorst*, *Family Governance als Schnittstelle von Praxis und Wissenschaft*, in: idem (ed.), *Herausforderungen für Familienunternehmen*, 2020, p. 95 (98).

¹¹⁴ For more detail, see *K. Windthorst* (footnote 113), pp. 99 et seq.

¹¹⁵ On the dimensions of meaning within the term sustainability, see *F. Eckardt*, *Sustainability: Transformation, Governance, Ethics, Law*, 2020.

aa) Environmental sustainability

Environmental sustainability relates to consequences for the climate and environment and for resources. It forms just one part of the spectrum of different sustainability objectives, as is evident not least from the sheer breadth of the UN definition of sustainable development.¹¹⁶ The climate and environment face various threats, and natural resources are not infinite. Environmental sustainability therefore involves conserving them long-term for future generations. For the economy, environmental sustainability means economic activity that helps to protect rather than endanger the climate and environment and that makes careful and sparing use of natural resources.

The economic growth of recent decades and the world's expanding population have inflicted a heavy toll on the climate and environment and have consumed natural resources on a scale beyond their capacity to regenerate themselves. Promoting environmental sustainability is thus the main objective of the environmental transformation of the economy being pursued primarily through the Green Deal. Climate and environmental protection and reducing the consumption of natural resources are both important agendas of this programme, as is reflected particularly in the action areas of greenhouse gas emissions trading and the circular economy.¹¹⁷

bb) Family business sustainability

While the term family business sustainability could be taken to mean environmental sustainability in family businesses, it refers for the purposes of this essay to the ways in which the existence of a family business is sustained over time. There are both corporate governance and family governance dimensions to family business sustainability.¹¹⁸

In terms of *corporate governance*, family business sustainability is characterised by a focus on the company's long-term value rather than short-term profit maximisation, on reinvesting profits, on a high level of equity, strong employee loyalty and strong ties to a place and community – though each of these aspects may vary in importance from company to company.

In terms of *family governance*, family business sustainability is aimed at ensuring that a family business remains in the entrepreneurial family's hands. Significant prerequisites for this are family support for the business and employees, for example in the form of financial contributions, the family's personal commitment to the business, a consistent policy not to sell shares to investors outside the family and a family strategy that is compatible with the business's corporate strategy. It also relies on keeping the business relevant to future generations of the family, in particular by passing on shares to the next generation, fully integrating each new generation into the entrepreneurial family at an early stage, encouraging them to identify with the family business, avoiding conflict when the business is handed down to a new generation and, most importantly, ensuring family cohesion.

b) Interplay between environmental and family business sustainability

Environmental and family business sustainability both focus on long-term action and responsibility for future generations. However, their objectives diverge: while environmental sustainability aims to protect the climate and environment and conserve resources, family business sustainability is interested in the business's continued existence under the family's ownership. Despite these different focuses, the concept of sustainability can still act as a bridge between family businesses

¹¹⁶ See II.1.a) above.

¹¹⁷ Details in II.2.b)aa) and bb) above.

¹¹⁸ The following insights and ideas are the result of detailed discussions with representatives of large family businesses in Germany on the meaning of sustainability for family companies and entrepreneurial families. I would like to thank them for their support.

or entrepreneurial families on the one side and the environmental transformation of the economy on the other.¹¹⁹

The strength of this bridge depends, however, on whether an environmental sustainability strategy makes sense for the business and entrepreneurial family and, if so, whether it has the support of management and family

members. What, then, are the reasons why an environmental sustainability strategy may be beneficial to a family business? While businesses' individual motivations, as well as their possible objections (see section III above), depend partly on their specific circumstances and can only be explored case by case, the next section identifies some general motivations for adopting a sustainability strategy.

V. Motivations for an environmental sustainability strategy in family businesses

Implementing an environmental sustainability strategy in a family business can make sense from both a corporate governance and family governance perspective. While corporate and family governance are intrinsically linked in any family business,¹²⁰ it is worth considering them separately. After all, the very different circumstances and rules to which the two are subject¹²¹ can cause business strategy and family strategy to diverge unless there are deliberate efforts to align them. This also applies to owner-managed family businesses,¹²² as family members play the roles of both manager and shareholder and must always be conscious of the functions they exercise when taking decisions.

1. Motivations from a corporate governance perspective

From the corporate governance perspective, the reasons for an environmental sustainability strategy may be *extrinsic* or *intrinsic* to the company. The former can include regulations and requirements imposed by the state (see a) below) or social changes (see b) below). The latter may lie in specific problems faced by the individual family business, e.g. its failure to comply

with environmental requirements (see c) below). In the sense that these reasons all relate solely to corporate governance, the fact that a business is family owned plays no role in this context. The family business-specific motivations for the environmental transformation thus relate solely to family governance (see V.2 and VI.2 below).

a) Environmental regulation

The nature and scope of environmental sustainability requirements, whether imposed by the EU or by the German state, depend to a large extent on the impact of the company's activities on the climate, the environment and natural resources. They vary from industry to industry and from business model to business model. Certain economic sectors, such as the steel industry, consume large amounts of energy in manufacturing their products and emit high levels of CO₂. Others, such as the packaging industry, produce large volumes of waste due to the design and function of their products (though packaging also offers major potential for a prosperous circular economy). These sectors therefore find themselves the focus of the EU and Member State transformation programmes – particularly the Green

119 See *R. v. Eben-Worlée* (footnote 65), p. 38, who argues that family-run SMEs live and breathe sustainability at every level; see also *M. Braungart* (footnote 28), p. 65, who sees family businesses with their medium- and long-term thinking as predestined for the cradle-to-cradle approach; on this model of a circular economy, see II.2.b)bb) above.

120 On the resulting need to align the sustainability strategies of the management and entrepreneurial family, see V.3 below.

121 For more detail, see IV.2.a) and b) above.

122 See footnote 111 above on this term.

Deal, which is intended to form the basis of the structural shift to a sustainable economy.¹²³ Implementation is to rest principally on regulation and incentivisation, especially the provision of funding.¹²⁴

Even businesses working in less environmentally sensitive or resource-intensive fields, however, will have to face this environmental transformation process. Regardless of whether they welcome or oppose the idea and the measures planned,¹²⁵ their views of the green economy will not change the reality that this transformation is irreversible and set to accelerate further. Family businesses will have decisions to make principally in those areas in which behaviour is to be directed or at least influenced by state-imposed incentive schemes.¹²⁶

The agency of individual businesses should not be overestimated, however, as state-imposed financial incentives will inevitably affect their competitiveness and market position.¹²⁷ Provided such incentives are legally permissible,¹²⁸ the decision to be taken by company management will be one of carefully weighing up whether to accept this financial support and potentially rejecting it if the disadvantages outweigh the benefits.

b) Social changes

A factor that should not be underestimated in motivating family businesses to adopt environmental sustainability goals is the change in social attitudes over recent years. Environmental sustainability, especially protection of the climate and environment and conservation of natural resources, is increasingly influencing

the views and behaviour of swathes of the public. This is particularly the case for younger generations, who often regard government efforts on climate and environmental protection as insufficient and have mobilised themselves in global protest movements such as Fridays for Future which operate outside party politics.

Environmental NGOs such as Greenpeace or the WWF are also supporting the call for a greater social and economic focus on environmental sustainability goals. Public debate on this issue is morally charged with arguments about intergenerational justice¹²⁹ and powerful slogans such as “we only have one planet”. This emotional resonance boosts the prominence of environmental sustainability but – if economic arguments are dismissed from the outset as second-order or irrelevant problems – can make it more difficult to find nuanced solutions to conflicts, for instance where businesses need to bring financial considerations into play.¹³⁰

This social trend is also affecting companies’ reputations, which are an important factor in their long-term economic success.¹³¹ Acting in an environmentally sustainable manner bolsters a reputation, as companies such as IKEA have found to their benefit. Meanwhile, neglecting environmental concerns tends to inflict reputational damage, as the Volkswagen Group, which circumvented legally prescribed emissions limits, has found to its detriment. A company’s attitude towards environmental sustainability also affects its relationship with various stakeholders, especially lenders, suppliers and customers.

123 On the major action areas of the Green Deal, see II.2 b) above.

124 For more detail, see II.2.c) above.

125 On fundamental objections to this idea of environmental transformation of the economy, see III.1 to 3 above.

126 See II.2.c) above.

127 See *U. Di Fabio* (footnote 12), III.1.b), who, as an additional disadvantage, cites the dependence on public funds as an impediment to innovation.

128 Incentives must adhere to the requirements of European and national competition law, e.g. the state aid provisions of Art. 107 et seq. TFEU.

129 Vice-President of the European Commission *Frans Timmermans* (footnote 3).

130 On the compromise between sustainability and profitability, based on the principle of practical concordance, and the need to turn the existing social market economy into a social and environmental market economy, see III. 2. c) above.

131 On the importance to companies of their reputations, using the example of SMEs, see *S. Berger-Douce* (footnote 29), p. 9.

Social changes in relation to environmental sustainability have a particularly clear impact on a business's strategy, portfolio and performance where they precipitate a change in customer behaviour that threatens the viability of its existing business model or implies a lasting reduction in sales and earnings. The widespread focus of value chains on customers' needs, expectations and wishes (customer centricity) can further reinforce this effect. In this situation, transforming the business to bolster its environmental sustainability and take advantage of the growth potential this offers may represent an obvious strategy.

c) Business-specific situation

A business's current commercial position may also be the trigger for developing a sustainability strategy. A company may, for example, have business models that are unlikely to endure or are already outdated, experience declining competitiveness or face the prospect of a dominant competitor entering the market and absorbing its high-margin business. Non-compliance with environmental regulations or the declining availability of essential natural resources may also necessitate a rethink. If these internal triggers coincide with external factors (see V.1.a) and b) above), their impact is reinforced.

However, the situations that lead businesses to develop a sustainability strategy are not always associated with crisis. In some cases, the decision may be less a response to external or internal challenges than a proactive change of strategy, in which environmental sustainability is treated as an economic success factor in its own right. Here, the goal of the business is to participate in the megatrend of environmental sustainability in a variety of sectors.

2. Motivations from the entrepreneurial family's perspectives

In some cases, an environmental sustainability strategy may be initiated for family reasons, or at least accelerated or reinforced by them. This applies particularly when businesses are handed down to the next generation, a process sometimes associated with the desire for a greater role for environmental sustainability in the family's values and behaviour. However, reputational problems linked to particular business areas or practices may also play a role, leading the company and family to visibly distance themselves from the past with a clear commitment to environmental sustainability. Religious convictions and other personal motives may also lead family businesses in this direction.

a) Reputation of the entrepreneurial family

Environmental sustainability can serve as a focal point for the reputation of a family business and the entrepreneurial family. Members of entrepreneurial families are typically mindful of their public reputation and its impact on their business. Their positive reputation as a family can be highly beneficial to their company. Conversely, if their actions disregard environmental sustainability, the reverse may be true. Moreover, environmentally unsustainable practices by the business may additionally harm the reputation of the family, resulting in a double reputational blow. This also has the potential to impact the family financially, for example by harming sales, earnings and profit distribution to family members.

b) Values of the entrepreneurial family

The entrepreneurial family's values represent an important ethical basis for the behaviour of family members. By influencing the way in which the company is managed, these values also form part of the family business's DNA. The German idea of the *ehrbarer Kaufmann* (honourable businessperson)¹³² serves to visualise the way in which an entrepreneurial family's values are

132 On the concept of the honourable businessperson, S. Hipp (footnote 107), pp. 85 et seq.

expressed through the values of its business. This figure traditionally embodies a set of values and behaviours that historically served to compensate for the lack of legal regulation in business affairs. More recently, the honourable businessperson has evolved to encapsulate the values of the entrepreneurial family and translate them into those of the family business.

Each generation of family members must therefore reflect on the values passed down to them and form their own picture of an honourable businessperson, which may be similar or different to that of their parents. Religious beliefs¹³³ and social changes can play an important role in this process, not only where social issues are concerned but increasingly with respect to the environment, too. From this perspective, honourable businesspersons may be visualised as people who achieve commercial success through honesty, fairness and reliability and meet their responsibility towards society and the environment by considering the social and environmental aspects of their work.¹³⁴

c) Cohesion of the entrepreneurial family

A shared understanding on the part of family members of what is important to them, their personal commitment to these values and their willingness to act accordingly are important elements of family cohesion. Achieving this cohesion is a considerable challenge particularly for dynastic family businesses¹³⁵ where many of the family shareholders have moved away from the family's main base and developed their own lifestyles in geographically dispersed locations. Passing such companies on to the next generation can be a particular strain on family cohesion.

In dynastic family businesses, traditional family ties tend to play a lesser role for more distantly related

members of the family, making it all the more important for family members to share the same set of values if they are to identify with the family business. As well as shared family values, a personal commitment to the family business on the part of family members is an important factor in ensuring cohesion. This in turn relies on the family members identifying with the values of the business and the way in which it behaves.

When it comes to integrating the next generation into the entrepreneurial family and its business, environmentally sustainable activity may be an essential precondition for such identification and cohesion. This reflects the importance that the younger generation attaches to protecting the climate and environment and conserving natural resources, which is evident not least from the resonance that the Fridays for Future climate protest movement has found among Generation Z.¹³⁶ Family businesses that neglect the importance of environmental sustainability can therefore not only damage their reputation and that of the owning family¹³⁷ but also risk undermining family cohesion. After all, the next generation is unlikely to identify with a business that behaves in this way and may drift away from the company and potentially even the family.

3. Aligning business strategy and family strategy

The desire of the entrepreneurial family for greater consideration of environmental sustainability in corporate governance can shape or even create a family strategy. If environmental sustainability is part of the family's value set, this not only influences the family strategy but also, through the figure of the honourable businessperson, shapes corporate governance and the business strategy. In return, the business's sustainability

133 On the significance of Christian values in this context, *S. Hipp* (footnote 107), p. 85 (90).

134 On these aspects of an honourable businessperson, *S. Hipp* (footnote 107), p. 85 (91 et seq.).

135 On this term, see *K. Uffmann* (footnote 112), p. 2442.

136 Generation Z usually refers to people born around the turn of the millennium or later.

137 See V.2.a) above.

strategy can shape the family strategy. Business strategy and family strategy are particularly intertwined when it comes to the reputation of the family business and entrepreneurial family and to the values that characterise corporate governance and the family.¹³⁸

In light of the close ties and interdependencies between the entrepreneurial family and corporate governance in a family business,¹³⁹ it makes sense to align the business strategy and family strategy with respect to environmental sustainability. Doing so can reinforce the transformation process for the family business and provide additional momentum. An environmentally sustainable business strategy that aligns with the family strategy can also help family members to identify with the family business and strengthen family cohesion.

In contrast, problems may arise if there is a lack of coordination or even disagreement on the necessity (why?), content (what?), objective (where to?) or implementation (how?) of an environmental sustainability strategy. If government regulations on the environmental transformation are added into the mix, there is a risk that the different actors will simply obstruct progress rather than supporting each other. This situation can be likened to the Russian fable in which a swan, a pike and a crab all try to pull a loaded cart. The swan wants to fly upwards, the pike to swim forwards and the crab to crawl backwards, with the result that the cart makes no progress at all.

One obstacle to progress in family businesses can be the lack of willingness to change or a sense of urgency about the need for change. When companies cling too long to what has worked in the past, yesterday's success can become a barrier to tomorrow's. To avoid such situations, company management and the entrepreneurial family should agree the main parameters of the environmental sustainability strategy (why, what, where to, how?) at an early stage. A useful starting point for this process may be for representatives from the business and the family to meet and discuss the company's purpose beyond its financial performance.¹⁴⁰ This can also help to ensure the survival of the family business for future generations.¹⁴¹

Finally, the positioning of management on the issue of environmental sustainability can also play an important role. Is environmental sustainability central to the business strategy and corporate culture, and is this reflected in the tone at the top,¹⁴² or is it just a marginal issue for the company and, in management's eyes, a matter of legal compliance rather than genuine conviction? Is sustainability treated as an opportunity or a burden? Are investments in sustainable business models regarded as essential to the company's future success or as an uneconomic cul-de-sac? The answers to these questions indicate the value that a business's management places on environmental sustainability. Their efforts can range all the way from mere greenwashing to treating the environmental transformation as a priority.¹⁴³

138 See V.1.b), 2.a) and b) above.

139 See V.1 and 2 above.

140 More generally on this topic, see *F. Billing/S. Lehmann/J. Perrey*, Purpose: Die Suche nach dem Sinn, in: McKinsey & Company (ed.), *Akzente: Purpose: Die Suche nach dem Sinn*, 2020, pp. 10 et seq.; see also Purpose: So finden Sie den Unternehmenssinn, DUB-Magazin, 23 September 2020, <https://dub-magazin.de/management/purpose-leitlinien-unternehmenssinn> (accessed 31 December 2020); *W. Jennewein/M. Strecker/A.-C. Leisin*, Purpose: Raum für Sinn, Manager Magazin +, 19 December 2020, <https://www.manager-magazin.de/harvard/fuehrung/purpose-warum-fuehrungskraefte-sich-um-sinnstiftung-kueemmern-sollten-a-00000000-0002-0001-0000-000174319600> (accessed 31 December 2020).

141 See *R. v. Eben-Worlée* (footnote 65), p. 38.

142 Examples of this are the triple top line approach and triple bottom line approach, which see the interplay of business, society and the environment as an opportunity, see footnote 105 above.

143 See III.2.b)cc) above.

VI. Guidelines for an environmental sustainability strategy in family businesses

Lastly, it remains to outline what best practice for family businesses might look like when it comes to developing an environmental sustainability strategy. Starting points for this are the perspective of corporate governance, which applies to all businesses (see 1 below), and the perspective of family governance (see 2 below),¹⁴⁴ which applies specifically to family businesses. In the latter, the sustainability strategy may also be indirectly supported by shared assets and non-profit foundations (see 3 below).

1. Corporate governance perspective

In terms of corporate governance, a business's portfolio (see a) below), leadership (see b) below) and culture (see c) below) are useful starting points for focusing the business on sustainability goals.

a) Portfolio

The term portfolio refers to a company's business areas and major investments. The composition of this portfolio has a considerable influence on how well environmental sustainability goals are realised. In most cases, however, these business areas and investments have arisen organically over time, and especially older acquisitions were made for their ability to generate value rather than from a deliberate focus on environmental sustainability. Often, the impact of a business model on the environment was not examined systematically from the perspective of environmental sustainability, but as part of environmental due diligence in terms of its environmental risks. The intent was typically to avoid future liability for the asset to be acquired, for instance for environmental contamination – or at least to be released from that liability by the seller.

A first step in developing an environmental sustain-

ability strategy is therefore to *take stock* of how well the existing portfolio meets the business's expectations in relation to the environmental sustainability of its business areas and business models. This means setting specific sustainability goals and developing a transparent requirements profile for evaluating their achievement based on clear, measurable criteria. As a guide, businesses may use the approach taken by other companies and/or refer to the EU's Taxonomy Regulation, which forms a central piece of legislation for the European transformation programme.¹⁴⁵ This taxonomy helps investors to identify the degree to which an investment should be regarded as environmentally sustainable. Irrespective of assessments of the taxonomy in a financial policy context, it can serve as the basis for a range of *classification systems*. For the purposes of evaluating business portfolios, this article proposes the following classifications:

The lowest level (*level 1*) of the classification system comprises activities that are "black listed", i.e. always undesirable. This may be due to ethical reasons (e.g. arms manufacture) but also to their particularly detrimental environmental impact, e.g. the role of plastics in polluting the oceans.

The next level (*level 2*) consists of business areas that are not automatically rejected for ethical reasons but should generally be excluded from acquisitions or from a permanent place in the portfolio as a result of their detrimental environmental impact. Businesses should only break this general rule if there are overwhelming reasons to do so (and economic attractiveness is not considered sufficient) or if there is substantial potential for environmental sustainability, e.g. an opportunity to reduce or avoid future environmental impact by developing innovative technologies.

¹⁴⁴ Corporate governance in family businesses may have to take special account of the values of the entrepreneurial family and the need to align the business strategy and family strategy, see V.2.b) and 3 above.

¹⁴⁵ For more detail, see II.3.b) above with footnote 53.

Level 3 covers those activities in which environmental sustainability requirements are not yet entirely met but where the environmental impact is tolerable in scale and can be markedly reduced in future. This level is particularly relevant where the product is essential or there is not yet an alternative to the business model in question, especially if the business has the prospect of becoming the best in class in terms of environmental sustainability.

Level 4 relates to business areas that fully satisfy the environmental sustainability profile and also offer attractive business potential. Here, sustainability drives the business model and the business area is a perfect fit for the (desired) portfolio. However, companies in this sweet spot are rare, sought after and expensive.

The scale ends with *level 5*. Companies in this level fully satisfy the environmental sustainability requirements but do not offer attractive business prospects. This may be because their business models are geared towards the common good rather than profit generation.

This requirements profile should be used to review the environmental sustainability of the existing portfolio (sustainability check) and to help decide whether to enter or discontinue a business area or to acquire or sell a business unit (investment and divestment check). The most appealing business areas and models in terms of the company's future economic prospects are those in levels 3 and 4. In contrast, companies should generally avoid acquiring businesses in level 2. However, where these are already in the portfolio and difficult to sell, they may be continued at least in the interim based on regular cost/benefit analyses.

b) Leadership

The company's leadership is another important lever for implementing and updating an environmental sustainability strategy. Management must define and regularly review clear objectives and measurable evaluation criteria for sustainability. It must set an example itself and implement these objectives throughout the

organisation, preferably through incentive systems but if necessary through sanctions of unsustainable behaviour. Setting the right tone at the top does not rule out initiatives from below, which are often a source of practical, creative proposals. Businesses should ensure that they welcome such proposals from their workforce and incorporate them into the overall plan, rather than allowing them to become lost in the company hierarchy.

A wide range of different *tools* are available to implement environmental sustainability objectives. The company may cut its CO₂ emissions by setting limits that reduce over time, and may have its products certified accordingly. A particularly effective measure is to apply recognised binding sustainability criteria in the value chain, for instance when selecting suppliers. Expertise, experience and development potential in the field of environmental sustainability may also be set as key criteria for staff recruitment and training. Businesses may arrange special training workshops on environmental sustainability-related topics. Finally, in order to incentivise managers, sustainability criteria may be integrated into the remuneration system, for instance as a key performance indicator for the short-term incentive. Depending on the company's business model, suitable parameters could include the carbon footprint, for example, or the percentage of products with a particular sustainability certification.

c) Corporate culture

Corporate culture is inseparably bound up with, yet distinct from, the company's leadership. A business's environmental sustainability strategy will only be successful long-term if it is part of a sustainable corporate culture. The hallmarks of this culture are environmentally responsible behaviour, flat hierarchies, teamwork rather than silos and a culture of dealing openly with mistakes and learning from them.

While a sustainable corporate culture affects all employees and stakeholders, creating and maintaining it is principally the task of management. Achieving cultural change takes persistence and requires using

the right levers. Many businesses use a common *mission statement* that clearly and succinctly encapsulates sustainability: “enkelfähig: creating value for future generations”,¹⁴⁶ “Responsible commerce that inspires”¹⁴⁷ and “Sustainability shouldn’t be a luxury”¹⁴⁸ are just three examples of such mission statements.

The design of the workplace can also promote a sustainable corporate culture with features such as open plan spaces, areas for staff to meet and socialise or the use of art objects to promote conversation (e.g. contemporary paintings). Finally, greater dialogue between family businesses with particular commitments to environmental sustainability can be helpful in promoting a sustainable mindset and best practice. As this brief overview shows, a sustainable corporate culture consists of many mosaic pieces.

2. Family governance perspective

The values and sustainability strategy of the entrepreneurial family may provide additional support for the sustainability strategy of the family business and the environmental transformation process. While the exact benefits will vary from company to company, it is possible to identify some general criteria that can be used to help determine the family’s contribution to environmental sustainability.

a) Criteria for the family’s contribution to environmental sustainability

The following criteria can be used to evaluate an entrepreneurial family’s influence on the environmental sustainability of the family business:

- Is environmental sustainability a key part of the family’s value set? Is this value included in the family

charter and/or family strategy? Does the family actually put it into practice?

- Does the family’s commitment to sustainability shape the management and culture of the business? Is the business’s portfolio either compatible with or based on this objective? Are incompatible parts of the portfolio being addressed in a targeted manner?
- Is there a shared understanding in the entrepreneurial family of the importance of environmental sustainability to the development of the business and family, or are there camps with different viewpoints? Is there open dialogue on this issue between the generations? Is this dialogue used to better integrate the next generation and so additionally ensure family cohesion?

b) Role of the family

The potential for the entrepreneurial family to support the business’s environmental transformation can, however, only be realised to its full potential if the family members are visible, i.e. if they not only commit formally to environmental sustainability out of tradition, but also visibly and credibly put it into practice. The importance of this role model function vis-à-vis management, employees, stakeholders (especially suppliers, customers and banks) and the wider public should not be underestimated,¹⁴⁹ as has become particularly clear during the coronavirus pandemic. The behavioural example set by the entrepreneurial family additionally influences its reputation and that of the family business.¹⁵⁰

c) Organisation of the family

Environmental sustainability should also be given appropriate consideration in the organisation of the entrepreneurial family. This applies firstly to the composition of corporate bodies, where environmental sustainability should be recognised as an important field of expertise.

¹⁴⁶ Franz Haniel & Cie. GmbH; “enkelfähig” means “able for grandchildren”.

¹⁴⁷ Otto Group.

¹⁴⁸ IKEA.

¹⁴⁹ See V.1.b) above.

¹⁵⁰ On the importance of this reputation, see V.2.a) above.

At least some members of family bodies should also have appropriate knowledge of the field so that they can contribute this to the family strategy and discuss and reach agreement on sustainability issues with the management.¹⁵¹

Environmental sustainability has particular relevance in relation to the next generation, which often has a heartfelt belief in the importance of protecting the climate, the environment and natural resources. An effort should therefore be made to involve this generation in the sustainability discourse in both the family and the business. Failure to do so risks their emotional disengagement, which could threaten both family cohesion and the future of the family business, and neglects the potential of environmental sustainability as an area in which they can benefit the business. This generation often has existing professional experience in this field and can enrich the discussion with its specific perspective on environmental sustainability issues and its ideas for possible solutions. Finally, involving the younger generation can also improve its understanding of the business strategy and help its members to develop greater professional ownership as future owners of the business.

The next generation can be involved in the environmental sustainability strategy in *various ways*, with different levels of time commitment:

- Occasional informal involvement, for example discussions with staff members at the family business who work on sustainability-related issues;
- Systematic recording of the relevant expertise of family members in a dedicated standardised database that is used regularly as part of the company's business procedures;

- Guest status when family bodies discuss the topic of sustainability;
- Creation of a sustainability committee comprised of representatives from the next generation and from the family and corporate bodies;
- Creation of a next generation committee in which expertise in environmental sustainability plays a central role and which is consulted or otherwise involved in relevant discussions.

3. Shared assets and non-profit foundations

Family businesses' sustainability strategies can also be indirectly supported by *shared assets* that loosely tie into the theme of sustainability. These do not need to be overtly related to the environment. Examples could include an art collection, an orchestra or a museum sponsored or supported by the business and the family. These institutions create opportunities for people to meet and interact, which can have a positive effect on the corporate culture and the way in which the business presents itself in public.¹⁵²

Non-profit foundations created and/or funded by family businesses or their owners to promote environmental sustainability can have a similar impact. Examples include Foundation 2° – German Businesses for Climate Protection and the Haniel Foundation. Given the stringent laws governing non-profit organisations, these have a more direct focus on promoting sustainability. Businesses supporting non-profits can benefit from a positive public perception in relation to environmental sustainability, particularly if they participate in dialogue on this topic with policymakers and NGOs.

151 For more detail, see V.3 above.

152 On the corporate culture, see VI.1.c) above.

VII. Conclusions

Is the political call for a more environmentally sustainable economy a blessing or a curse for family businesses? Are the incentives offered by the European transformation programme – the Green Deal – a valuable support for business, particularly during the coronavirus pandemic, or do they risk fostering dependency on state aid and undermining entrepreneurial activity? This can only be answered for individual businesses, looking in particular at how the changes brought by the environmental transformation will affect their performance and business model. Where industries need to adjust to the environmental transformation, family businesses may have an edge over other companies, as their more direct decision-making processes generally enable them to respond quickly and flexibly to change.¹⁵³

Given the transformation of the economy, which aims to improve environmental sustainability, and the shifts

in social attitudes regarding environmental issues, businesses should carefully and open-mindedly examine whether an environmental sustainability strategy would make sense for them and how it could be implemented. In family businesses, the impetus for this will often come from the values held by the entrepreneurial family itself, particularly if these values already encompass or lean towards environmental sustainability. The family is therefore often a source of support for the environmental transformation process. In return, this process can benefit the family, particularly by helping the next generation to identify with the environmentally sustainable business, thereby strengthening family cohesion. Managers and owners of family businesses should therefore consider seriously and objectively whether the time has now come to take a leap towards greater environmental sustainability.

¹⁵³ In relation to SMEs, see *S. Berger-Douce* (footnote 29), p. 4, who also notes these businesses' financial independence and managers' strong personal engagement with their company.

Summary of main results

1. The environmental transformation of the economy is taking shape at national and supranational level through various partially interlinked programmes and measures. The EU is a major player in this context and has set important milestones in the form of the Green Deal and green recovery – the part of Recovery Plan funding earmarked for a more sustainable economy.
2. The European Green Deal announced on 11 December 2019 is a broad-based plan to transform the European economy for an environmentally sustainable future. It represents the ambitious goal of bringing economic and environmental interests together in the same overall plan.
3. The Green Deal encompasses the key action areas of a lasting reduction in CO₂ emissions to improve climate and environmental protection and the creation of a circular economy. Circular economies, unlike the existing linear economies, reuse resources in a closed cycle, thereby decoupling economic growth from resource consumption.
4. The measures used to implement the environmental transformation programme are multi-layered, taking place at national and supranational (especially European) level. They draw on or modify existing legal and economic tools or create new ones. Some of these are primarily regulatory in nature while others take a more incentive-based approach.
5. During the coronavirus pandemic, the EU has responded to the economic crisis with a Recovery Plan designed to pursue two related objectives: firstly, to deal with the economic damage caused by the pandemic and promote a collective, cohesive economic recovery; and secondly, to accelerate the green and digital transformation. By connecting them to the objectives of the Green Deal, substantial parts of this recovery programme have been geared towards environmental sustainability. In this respect, the financially driven recovery programme has been turned into a green recovery programme.
6. The EU's plan for the environmental transformation of the economy is multi-layered (i.e. national and international), multilateral and inclusive, dirigiste, focused, transparent and dynamic, and builds on existing instruments.
7. Environmental sustainability as a goal of transforming the economy can draw legitimacy from both European Union and German constitutional law. However, the objection that the Green Deal programme concentrates too heavily on state control of the economy is partially justified. In implementing the transformation programme, policymakers should press for stronger cooperation with businesses so as to promote and take full advantage of the private sector's capacity for innovation.
8. Environmental sustainability and business interests have different objectives. The aim of environmental sustainability is to cut CO₂ emissions and conserve resources, which is a very different decision-making rationale to that of profit maximisation and growth, which steers decisions in an open market economy. There is therefore clear potential for a conflict of objectives.
9. These conflicts should not be resolved by attaching primacy to either environmental sustainability or profitability. The concepts of sufficiency and the post-growth economy are similarly unsatisfactory, as they put the sole focus on environmental sustainability by calling for absolute limits on resource use and a renunciation of economic growth. This approach is economically questionable and constitutionally problematic.
10. A more promising, less binary approach to resolving the conflict is to apply a principle of German constitutional law known as practical concordance. Here,

the principles of profitability and environmental sustainability are harmonised with one another such that both goals can be realised to the fullest possible degree. The fundamental decisions on the outlines of such a compromise must be taken by the legislature. Within the framework this provides, however, it is primarily the role of companies to decide the weight attached to profitability and environmental sustainability and how these objectives will be pursued through their business strategies.

11. Entrepreneurial decision-making processes are no stranger to environmental sustainability. Far from being an imposition that inhibits entrepreneurial freedom and prevents free market mechanisms from finding optimal solutions, compromise between the profit motive and social and environmental interests is deeply rooted in the social market economy. Environmental sustainability is therefore already part of many a corporate strategy today. The experience of the social market economy shows that this economic system can successfully evolve into a social and environmental market economy.
12. The measures planned under the Green Deal are not akin to state planning and do not breach the social market economy or free competition principles prescribed by EU law. However, they do require an appropriate compromise to be found with these economic interests. Constitutional limits to state control arise principally from basic economic rights of affected parties (Articles 2 (1), 12 (1) and 14 of the German Basic Law) and the principle of proportionality. Within these constraints, stronger state economic intervention in the process of environmental transformation is perfectly possible in principle.
13. Provided it stays within the constitutional limits, the state is entitled to push for the environmental transformation of the economy even if this imposes new burdens on businesses, at least until sufficient climate protections and a working circular economy have been established. However, the authorities should make greater efforts to engage private sector innovation in order to develop effective sustainability solutions without resorting to state compulsion.
14. The concept of sustainability is an obvious point of commonality between the traditional interests of family businesses and the objectives of the environmental transformation. Whereas environmental sustainability relates to the consequences of economic activity for the climate and environment and for resources, family business sustainability is about sustainable corporate governance and sustainable family governance (ensuring that a family business remains in the entrepreneurial family's hands).
15. Despite these different reference points and objectives, the concept of sustainability can still act as a bridge between family businesses or entrepreneurial families on the one side and the environmental transformation of the economy on the other. This depends, however, on whether an environmental sustainability strategy makes sense for the business and the entrepreneurial family and whether it has the support of management and family members.
16. As far as corporate governance is concerned, the motivations for an environmental sustainability strategy are shared by family businesses and non-family businesses alike. These include the existence of environmental regulation in the form of rules or incentives, and social changes that have already led to greater awareness around issues of environmental sustainability. Alongside these external factors, a business's current commercial position may also be the trigger for developing a sustainability strategy.
17. For family businesses, an environmental sustainability strategy may also make sense from a family governance perspective. Here, motivations include the reputation of the business and entrepreneurial family as well as the family's value set. The family's

values also influence the way in which the company is managed. The traditional figure of the honourable businessperson has evolved to encompass not only general principles such as honesty and fairness but also a consideration of social and environmental interests.

18. Environmental sustainability in family businesses is particularly important in encouraging the next generation to identify with the business and willingly inherit it from their parents. Neglecting environmental interests can undermine family cohesion by reducing the likelihood that the next generation can identify with the family business. Where this happens, younger members can drift away from the company and potentially even the family.
19. In light of the close ties and interdependencies between the entrepreneurial family and corporate governance in a family business, it makes sense to align the business strategy and family strategy with respect to environmental sustainability. Doing so can reinforce the transformation process for the family business. An environmentally sustainable business strategy that aligns with the family strategy can also help family members to identify with the family business and strengthen family cohesion. Environmental sustainability thus has benefits for both the entrepreneurial family and the family business.
20. In seeking to outline what best practice for family businesses might look like when it comes to an environmental sustainability strategy, it is necessary to differentiate between corporate governance and family governance aspects. From a corporate governance perspective, the starting points for focusing the business on sustainability goals primarily include the company's portfolio, leadership and culture.
21. The portfolio – i.e. the company's business areas and major investments – has a considerable influence on the realisation of sustainability goals. In order to review the environmental sustainability of the existing portfolio and to make decisions on future acquisitions, a transparent requirements profile should be developed, based on clear, measurable criteria.
22. The company's leadership is another important lever for implementing and updating an environmental sustainability strategy. Management must define and regularly review the objectives and evaluation criteria for sustainability. It must set an example itself and implement these objectives throughout the organisation, preferably through incentive systems but if necessary through sanctions.
23. A business's environmental sustainability strategy will only be successful long-term if it is part of a sustainable corporate culture. The hallmarks of this culture are environmentally responsible behaviour, flat hierarchies, teamwork rather than silos and a culture of dealing openly with mistakes and learning from them.
24. The entrepreneurial family may provide additional support to the environmental sustainability strategy of the family business. This may come in the form of the family's values, for example, where these include environmental sustainability. The family may also set an example by visibly and credibly putting its commitment to environmental sustainability into practice. In addition, the family's organisation should give appropriate consideration to environmental sustainability by recognising it as an important field of expertise to be represented on corporate and family bodies. Environmental sustainability also offers the opportunity to more closely involve the next generation, which is often highly committed to environmental issues, in the family discourse and the life of the company. This promotes both family cohesion and identification with the family business.

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