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A mixed bag for the European Green Deal

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As the flagship measure of the von der Leyen Commission, the European Green Deal adopted in 2019, comprising almost 160 legislative acts, was intended to create the largest shock wave since the creation of the single market in 1986 by turning the European Union (EU) into the first decarbonised and circular economy in the world (achieving carbon neutrality by 2050). [1] This reform, which was both ambitious and unprecedented, was triggered by alarming reports from the IPCC, climate demonstrations as well as a new geopolitical vision seeking to free the EU from its dependence on energy (89% of the energy concerned in the EU in 2019 originated from fossil fuels) and natural resources. Moreover, this strategy was only further vindicated by the subsequent spike in energy prices in 2022 following the invasion of Ukraine. Three years after its adoption, and one month out from European elections with the potential to deliver a political earthquake, one might ask whether this Deal is likely to create a new economic model, or whether it amounts to little more than "greenwashing" of the internal market, transport, energy, and common commercial policy. Whilst the answer to this question will inevitably be qualified, we shall see that traditional economic interests have largely prevailed over the fight against pollution and the ecosystemic approach, whereas the social pillar of sustainable development risks being the big loser of the green transition. Finally, all of a sudden nature protection has become a scapegoat for some agricultural lobbies.

A bold reform in all respects

The Green Deal is unprecedented in the history of public policy. The legislative forms that it has entailed have been above all pluricentric. The energy transition will go hand in hand with the emergence of a circular economy, pollution absorption, the expansion of organic farming, as well as an ecosystemic approach. It is dependent on complex normative processes involving the intersection of directives, regulations, decisions and communications reflecting a plethora of policies, competence over which can vary, which in turn means that institutions act as guarantors of divergent if not antagonistic interests. It is ambitious, with all sectors of society being mobilised in the push to achieve carbon neutrality by 2050. It is costly on account of the major scale of the investments that will need to be made, by both public authorities and the private sector. Finally, it has a global vocation, with the Union seeking to externalise, or even globalise, its environmental and climate ambitions.

Without presenting an endless inventory of the numerous individual measures – which would take up many pages, given the technical complexity of the measures concerned – we shall take stock of the achievements of the Green Deal by focusing on a selection of emblematic regulatory measures. A number of these were adopted urgently,[2] whilst others emerged in response to regimes that had not sufficiently proven their worth.[3] Some are incremental, in particular for instance the extension of the carbon market, which has already been overhauled several times. Others represent a break with the past: carbon neutrality required under the

[1] The author wishes to thank Mr M Fauconnier and G Michiels for their support.
[2] For instance, the European Commission was able to submit to EU lawmakers within a very short space of time the proposal that would later become Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment [2019] OJ L 155/1.
[3] Proposal for a Regulation of the European Parliament and of the Council on packaging and packaging waste, amending Regulation (EU) 2019/1020 and Directive (EU) 2019/904, and repealing Directive 94/62/EC, COM/2022/677 final.

European Climate Law,[4] the border adjustment measures,[5] as well as the future regulation on nature restoration. Given that it is not possible to provide full details here, we will limit ourselves to outlining the interactions between the various components of this reform.

Climate neutrality

Europe is the fastest warming continent.[6] As a result of the climate emergency, environmental crises are piling up one after the other. During Europe's hottest year ever 2022 (which saw a temperature increase of 1.4°C, i.e. 0.3-0.4°C higher than the 2021 summer temperature), climate records were broken at an alarming and unprecedented rate (reduction of river flow for the 6th year in a row, loss of 5 cubic kilometres of Alpine glaciers, unprecedented aridity in the Mediterranean area and more intense wild fires), plunging our continent into the unknown.[7] The EU is already feeling the direct effects of climate change (longer and harsher heatwaves, droughts, water scarcity, wildfires, precipitations, etc.), and at an accelerating pace. Economic losses due to extreme weather and climate in the EU have been estimated at EUR 650 billion between 1980 and 2022, but over EUR 100 billion of losses were concentrated in just the last two years of this period.[8]

However, since the 2019 the European Union has not given up on its efforts. By obliging the 27 Member States to achieve carbon neutrality in stages by the middle of the century (GHG emissions cut of 55% 2030), the European Climate Law, which was adopted in 2021[9] within the ambit of the Deal, requires a drastic reduction in greenhouse gas (GHG) emissions in a variety of sectors such as industry, transport, energy, agriculture and the heating and cooling of buildings. However, despite its merits, the Climate Law does contain no phase out for fossil fuels. Dominant oil and gas producers are still expected to prosper for decades during the transition, due to the volatility of prices and the concentration of production among fewer actors.[10]

Climate change is only part of a larger megatrend of environmental degradation linked to overexploitation of natural resources.[11] Resolving such a crisis requires more than an energy transition and adaptation measures or climate regulations. Aware of the intertwined nature of these issues, the European Commission adopted a number of strategies (biodiversity, agriculture, forests, industry, transport, etc.) that have set ambitious sustainable development

4 Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law') [2018] OJ L 243/1.
5 Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 establishing a carbon border adjustment mechanism [2023] OJ L 130/52.
6 J Rockström et al., 'A safe operating space for humanity', *Nature,* vol. 461, September 2009; J Rockström et al., 'Planetary boundaries: exploring the safe operating space for humanity', *Ecology and Society,* vol. 14, no. 2, 32, December 2009.
7 European Commission and Copernicus, '2023 is the hottest year on record, with global temperatures close to the 1.5°C limit'; https://climate.copernicus.eu/copernicus-2023-hottest-year-record.
8 D Armstrong McKay et al., 'Exceeding 1.5°C global warming could trigger multiple climate tipping points', *Science,* vol. 377, no. 6611, 2022, https://doi. org/10.1126/science.abn7950.
9 Regulation (EU) 2021/1119, supra, note 4.
10 Fusion Industry Association, 'The global fusion industry in 2023: fusion companies survey by the Fusion Industry Association', 2023,
11 ESPAS, *Global Trends to 2040. Choosing Europe's future,* Publications Office of the European Union, Luxembourg, 2024, 23.

targets. Emboldened by these announcements, the European Commission proposed to EU lawmakers the adoption of almost 160 legislative acts, resulting in a legislative reform that is likely to produce the greatest shock wave since the creation of the single market in 1986.

The energy transition: a drastic remedy

First of all, the energy component of the 2020 Green Deal (referred to under the acronym FF55, standing for “fit for 55”, due to the target of reducing GHG emissions by 2030) surpassed the expectations of its framers. The solidarity among the Member States that still remained following the pandemic helped to further the objective of carbon neutrality. The EU institutions achieved a historic breakthrough on a budgetary level in enabling the Union to borrow on the international markets. The post-Covid recovery plan (NextGenerationEU) enabled significant financial resources (180 billion euros) to be freed up to boost national investments in the green transition (estimated at 40 billion euros per year). In addition, 300 billion euros were allocated under the REPowerEU plan in 2022, adopted following the invasion of Ukraine with the aim of accelerating the rollout of renewable energies such as green hydrogen, etc.[12] In an attempt to free itself from its dependence on Russian hydrocarbons, with the adoption of the RED III Directive the Union has stepped up its ambitions in the field of energy and in particular the development of renewable energy. Accordingly, the proportion of energy produced from renewable sources (wind, solar, geothermal, hydroelectric, biomass, etc.) will have to reach at least 42.5% , and ideally 45%, of the energy mix by 2030.[13] However, one train may hide another. In order to prevent the acceleration of the energy transition from increasing the Union’s dependence on critical raw materials (rare earth metals, lithium, manganese, etc.) – of which it does not have any deposits, but which are essential in producing key technology – the 2023 Green Deal Industrial Plan, as the final plank of this reform, is set to reinforce its strategic autonomy through the development of a net-zero emissions industry and regulation of critical raw materials.

Accordingly, as the following table demonstrates, external factors (such as the pandemic and the invasion of Ukraine) have made it possible to square this circle: carbon neutrality, the energy transition, strategic autonomy and the circular economy.

Crises	**EU responses**	**Legal instruments**
2021–COVID-19 pandemic	2021 NextGenerationEU	Recovery and Resilience Facility (RRF) - *Regulation* (EU) No 2021/24
2022–Energy vulnerability	2022 REPowerEU	RED III, Energy Efficiency Directive, chapters REPowerRRF
2022–Supply from clean technologies	2023 Green Deal Industrial Plan	Critical Raw Materials Act; Net-Zero Industry Act

[12] European Commission Communication, *REPowerEU Plan*, COM (2022) 230 final.

[13] Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652 [2023] OJ L 243/1-77, Article 3 (1).

Within the space of three years, the EU energy policy has not only become more European but also more sustainable.

In addition, the carbon market, which at present only covers 45% of GHG emissions in the EU, is set to become the spearhead of its climate policy. Within a few years, it will end up covering 80% of the EU's GHG emissions. Thanks to the carbon border adjustment measures (CBAM),[14] which will be fully applied from 2026, undertakings that are competing with third country undertakings will have to purchase their GHG allowances at auctions (at a an average auction price of 83.24 euro (2023)) whilst importers of competitor products (steel, cement, nickel, electricity, etc.) will have to cover the emissions embodied in their imported products by purchasing certificates with the same value. Similarly, airlines will no longer be able to obtain their allowances free of charge for internal European flights. Finally, as the icing on the cake, undertakings marketing hydrocarbons for the transport and building sectors will operate on a parallel carbon market (42% reduction compared to 2005 to be achieved by 2030)[15]. As they will not be obliged to contribute to the public finances in the form of increased excise duty on energy products due to the failure of efforts to revise the directive harmonising these duties,[16] they will be confronted with an increase in the price of hydrocarbons from 2027 within the ambit of the new carbon market (ETS2).[17] These two carbon markets will be complemented by the ban on selling vehicles with internal combustion engines by 2035 as well as the obligation to construct passive buildings,[18] coupled with the reinforcement of polluting emissions standards, known as Euro 7.[19] The obligation to use renewable and low-carbon fuels in maritime and air transport should help to reduce their environmental footprint.[20] That being said, ban on the sale of internal combustion vehicles gives rise to palpable tensions with China. The imposition by the European Commission, under Regulation (EU) 2022/2560 of the European Parliament and of the Council of 14 December 2022 on foreign subsidies distorting the internal market, of provisional countervailing duties from 4 July 2024 up to a rate of 17.4% to 38.1% should eliminate the competitive advantage enjoyed by Chinese battery electric vehicle producers.

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[14] Regulation (EU) 2023/956, supra, note 5.

[15] Directive (EU) 2023/959 of the European Parliament and of the Council of 10 May 2023 amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union and Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading system [2023] OJ L 130/134-202.

[16] Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity [2003] OJ L 238/1-51.

[17]In effect, ETS2 will cover GHG emissions upstream. As a result, fuel suppliers, rather than end consumers (households or car drivers) will be required to purchase the allowances covering their downstream emissions.

[18] Revision of the Energy Performance of Buildings Directive (EPBD) Press Release – *Commission welcomes political agreement on new rules to boost energy performance of buildings across the EU.* IP/23/6423. Adoption by the European Parliament of a negotiated text on March 12th, 2024.

[19] Regulation (EU) 2018/858 of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC [2018] OJ L 151/1-218. On December 18, 2023, the European Parliament and the Council reached a provisional agreement on the amending regulation.

[20] Regulation (EU) 2023/1805 of the European Parliament and of the Council of 13 September 2023 on the use of renewable and low-carbon fuels in maritime transport, and amending Directive 2009/16/EC, OJ L 234/48; Regulation (EU) 2023/2405 of the European Parliament and of the Council oof 18 October 2023 on ensuring a level playing field for sustainable air transport (ReFuelEU Aviation), OJ L 2405/1.

A global target of cutting 2005 emissions levels by 40% will have to be met by 2030 throughout the EU for those sectors of the economy that do not fall within the scope of the two carbon markets (construction, agriculture, etc.).[21] The following table highlights the different legal measures adopted for the main sectors emitting GHG.

Sectors	Instruments
Carbon market	ETS1 ⇔CBAM ETS1 ⇔Social Climate Fund (pooling revenues from the auctioning of allowances from the ETS2 as well as 50 million allowances from the existing EU ETS)
Products	Energy Efficiency Directive, prohibition of combustion vehicles
Buildings	RED III, Effort Sharing Regulation, Directive 2010/31/EU on the energy performance of buildings

However, there are glaring inadequacies. It is clear that airlines operating inter-European flights[22] and shipping companies that sail ships from one European port to another will have to purchase allowances at auctions in order to cover their GHG emissions. However, flights into or out of Europe will fall under an as yet untested global scheme for offsetting CO2 emissions (CORSIA), whilst offshore ships will be covered partially and belatedly by the carbon market. In addition, a derogation from the requirement starting in 2035 to market zero-carbon-emission vehicles has been established for combustion vehicles produced in small quantities that are powered by synthetic fuel (the so-called "Ferrari" amendment).[23] The 27 finance ministers have been unable to reach agreement on the increase in the minimum excise duty levied on energy products used as fuels and within transportation, as well as on electricity.[24] As a symbol of energy independence, green hydrogen, which is set to replace natural gas,[25] continues to have Holy Grail status as production and distribution costs are still very high. The methane strategy does not address the mains sources of its emissions : agriculture and the waste sector. In addition, there is a widespread conviction that, to the delight of investors, the acceleration of investments in renewable energy will require a "predictable and simplified regulatory environment",[26] which could lead to a decline in the level of environmental protection granted

[21] Regulation (EU) 2023/857 of the European Parliament and of the Council of 19 April 2023 amending Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement, and Regulation (EU) 2018/1999 [2018] OJ L 111/1.

[22] Directive (EU) 2023/958 of the European Parliament and of the Council of 10 May 2023 amending Directive 2003/87/EC as regards aviation's contribution to the Union's economy-wide emission reduction target and the appropriate implementation of a global market-based measure [2023] OJ L 130/115.

[23] Regulation (EU) 2023/851 of the European Parliament and of the Council of 19 April 2023 amending Regulation (EU) 2019/631 as regards strengthening the CO2 emission performance standards for new passenger cars and new light commercial vehicles in line with the Union's increased climate ambition [2023] OJ L 110/5, preamble, para 28.

[24] Proposal for a Council Directive restructuring the Union framework for the taxation of energy products and electricity (recast), COM/2021/563 final.

[25] European Commission Communication, *A hydrogen strategy for a climate-neutral Europe*, COM/2020/301 final.

[26] European Commission Press release, IP/23/510, *The Green Deal Industrial Plan.*

to people living near renewable energy installations as well as wild animals (bats,[27] migratory birds,[28] etc.). For example, the strict time limits applicable to the issue of administrative authorisations provided for under the new RED III Directive do not take account of the fact that an extended period of time is required in order to assess the impact of wind turbines on migratory birds[29] or of hydroelectric installations on ichthyofauna. Finally, by moving the emphasis away from energy conservation practices, the energy pillar reflects an unshakable faith in infinite energy resource growth, decoupled from its impacts on the environment and the climate.

The last piece of the puzzle, the Green Deal Industrial Plan

Considered in abstract terms, the Green Deal should open up major opportunities for undertakings, with the prospect of a trillion euros of investment in the energy transition over the coming years. However, the energy transition will require massive use of clean technologies, the related components and rare materials (lithium, graphite, cobalt, nickel, manganese, etc.), which will have the effect of exacerbating the vulnerability of an EU that is already highly dependent on external markets. If the world is to reach net zero by 2050, demand for minerals for clean energy technologies will grow six-fold by 2040 compared to 2020, driven especially by electric vehicles and battery storage.[30] As such, demand for batteries for storing electricity and for sustainable transport is set to increase fourfold by 2030, and sevenfold by 2035.[31] Moreover, the International Energy Agency anticipates an explosion in global demand for copper by 40% by 2040. Supply will be unable to keep up with demand, and prices will rise accordingly. The energy transition, which will be indispensable in order to achieve carbon neutrality by 2050, will thus have to deal with geo-strategic and geo-economic tensions. Moreover, the growing exploitation of minerals and rare earth metals outside Europe will heighten environmental pressure, with mining companies having to extract increasingly large quantities in order to obtain the same quantities of metal.

Considering the investment planning that will be required to achieve the energy transition, which generally covers periods longer than ten years, industry federations anticipate that their members will be unable to keep up with such a fast pace of reforms, in particular as regards the target of reducing GHG emissions by 90% by 2040.[32] In their Antwerp Declaration, 916 signatories including industrial giants Ineos and Bayer called for action to be taken to combat “over-regulation” in ten urgent steps.[33] These steps include in particular the creation of a transition fund for investment projects in energy-intense industries, along with calls for security of energy supply. The signatory undertakings and associations thus hope that the Green Deal Industrial Plan will feature prominently in the next legislature (2024-2029). Will their calls be answered? Will the Union be able to act on this shopping list of demands? Will it be feasible to

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[27] R Barclay, E F Baerwald, J C Gruver, ‘Variation in bat and bird fatalities at wind energy facilities: Assessing the effects of rotor size and tower height’ (2007) 85 *Canadian Journal of Zoology* 381- 387.
[28] C-144/14 *Commission v Bulgaria* [2016] EU:C:2016:8.
[29] Ligue pour la protection des oiseaux and Birdlife International, *Le parc éolien français et ses impacts sur la vie fond. Étude de suivi de mortalité réalisé en France de 1997 à 2015.*
[30] R Way et al., ‘Empirically grounded technology forecasts and the energy transition’, *Joule,* vol. 6, no. 9, pp. 2057-2082, 2022,
[31] IEA, *Clean energy supply chain vulnerabilities* (Energy Techology Perspectives 2023).
[32] European Commission Communication*, Securing our future Europe's 2040 climate target and path to climate neutrality by 2050 building a sustainable, just and prosperous society*, COM/2024/63 final.
[33] Antwerp Declaration for a European Industrial Green Deal.

provide European financial support to major industrial factories that is not conditioned by environmental and social requirements?

So far, the "industrial" pillar of the Green Deal will be implemented through two unprecedented Acts designed to counter the risk of shortages in the supply of certain raw materials and technological products, and to reduce price volatility. These two Acts should enable the EU to implement both the climate transition as well as the digital transition. First of all, taking account of the primary importance of critical raw materials - non-energy and non-agricultural raw materials - for the climate and digital transitions, which are largely imported (97% of magnesium is imported from China, and 63% of cobalt used in batteries throughout the world is extracted in the DRC), the future Critical Raw Materials Act should enable the EU to reduce its dependence,[34] diversify its imports and reinforce its strategic autonomy.[35] Secondly, the future Net-Zero Industry Act[36] will aim to secure supply chains and the production of those technologies where the Chinese economy plays a major role.[37]

Finally, as far as "strategic projects" for the raw materials sectors[38] and the net-zero sectors[39] are concerned, which have "priority status", the EU as a whole – and not Member States individually – must achieve, according to the two proposals, a range of key targets by 2030.

Sectors	***Targets to be achieved by 2030***
Mineral extraction capacity	10% of annual consumption of strategic minerals
Mineral transformation capacity	40% of annual consumption of strategic minerals
Mineral recycling capacity	25% of annual consumption of strategic minerals

[34] The obligations in terms of circularity and recovery of raw materials set out in articles 25 to 28 of the critical materials regulation will not succeed in reversing the trend towards greater dependence on materials extracted outside the EU.
[35] Regulation (EU) 2024/125 of the European Parliament and of the Council establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) 168/2013, (EU) 2018/858, 2018/1724 and (EU) 2019/1020, OJ L 1252/1.
[36] Proposal for a regulation of the European Parliament and of the Council on establishing a framework of measures for strengthening Europe's net-zero technology products manufacturing ecosystem (Net Zero Industry Act), COM/2023/161 final.
[37] China controls 90% of the solar panel components market. See Goldman Sachs, *China may reach energy self-sufficiency by 2060,* 2023.
[38] Regulation on critical raw material, supra, note 35, Article 10.
[39] Proposal for a Net Zero Industry Act, supra, note 36, Articles 10 to 12.

Last, in order to facilitate the fulfilment of these targets, the two Acts will "rationalise" authorisation procedures by setting mandatory time limits,[40] that will come in for considerable environmental NGOs criticisms.

Finance to the rescue of carbon neutrality

With a trillion euros set to be invested in the green transition, which will be particularly costly in the energy sector, a financial pillar will interact with the energy pillar. Here too, progress has been spectacular. The 2022 Corporate Sustainability Reporting Directive,[41] which from 2025 will regulate reporting on non-financial performance by more than 50,000 European companies, should make undertakings that have adapted to a low-carbon world more attractive, whilst rendering access to capital more complicated for the others. The reliability, comparability and transparency of environmental, social and governance (ESG) investment ratings will be improved.[42] Adopted with the aim of bringing order to the sustainable investment sector, the 2021 Taxonomy Regulation[43] defines eligible investments ("construction and real estate", "energy", "manufacturing industry") with reference to six environmental objectives. The future Corporate Sustainability Due Diligence Directive (CSDD) will oblige within a three-year period businesses with a workforce exceeding 5,000 individuals and turnover of €1.5b[44]to ensure that their value chains are compliant with international obligations in the area of fundamental rights and environmental law.[45] The following table sets out the main information requirements under these new acts.

Acts	**Scope**	**Sustainability reporting**
Amending Directive 2022/2464 as regards corporate sustainability reporting	Large EU companies and all listed companies	Retrospective and prospective information on the company's impact on sustainability issues
Regulation 2019/2088 on sustainability-related disclosures in the financial services sector	Financial market players offering investment products, and financial advisers	Information on sustainability risks and main negative impacts

[40] Regulation on critical raw material, supra, note 35, Article 10 (1) and (4).
[41] Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting [2022] OJ L 322/15.
[42]Proposal of a regulation of the European Parliament and of the Council on the transparency and integrity of Environmental, Social and Governance (ESG) rating activities, COM(2023) 314 final. Approved vt tge EP on April 24 2024.
[43] 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 [2020] OJ L 198/13.
[44] Thresholds will be progressively reduced in order to apply to undertakings with a workforce more than 1,000 individuals and turnover of €450m, within a five-year period.
[45] Proposal for a directive of the European Parliament and of the Council on Corporate Sustainability Due Diligence and amending Directive (EU) 2019/1937, COM/2022/71 final. Political agreement reached on March 15, 2024. Approved by the Council on March 19, 2024.

Regulation on the transparency and integrity of Environmental, Social and Governance (ESG) rating activitie	Investment funds	Transparency of ESG rating characteristics
Amending Regulation 2020/852 on taxonomy	Companies subject to the CSRD	Information on environmental sustainability

As these new obligations are procedural rather than substantive, investors are not subject to a rigid regulatory straitjacket imposing a gradual reduction in their polluting activities. New consumer protection rules are set to be adopted in order to counter the risk of greenwashing,[46] or even fraud as occurred in the Dieselgate scandal,[47] which is omnipresent and likely to manifest itself owing to the fluid nature of concepts such as “sustainable development”, “carbon neutrality” and “net zero”.

Are European funds up to the task?

Public and private investments in the environmental transition, whether focusing on infrastructure (storage, interconnection, etc.) or the modernisation of the industrial base (decarbonisation of steelworks, paper mills, etc.) represent a massive challenge. According to a report by the Institute for Climate Economics, in 2022 the existing funds accounted for some 407 billion euros, or 2.5% of EU’s GDP, and according to this report the level of investment will need to be doubled in order to achieve the -55% GHG reduction objective set for 2030. In addition, high interest rates, high energy costs and the shortage of qualified workers are also exerting a chilling effect on private investment in the energy transition. Whereas the Lisbon Strategy adopted in 2000 was unable to achieve its objectives due to the failure to establish a specific financial programme alongside it, the EU institutions have set up various financial schemes for implementing the Green Deal. These funds should encourage private investors to jump on the bandwagon, but also to avoid a social divide. It is therefore necessary to juggle different funds with varying objectives that seek to reinforce solidarity among the Member States, their regions and their citizens.

[46] Directive (EU) 2024/825 of the European Parliament and of the Council of 28 February 2024 amending Directives 2005/29/EC and 2011/83/EU as regards empowering consumers for the green transition through better protection against unfair practices and through better information (“Greenwashing Directive”) [2021] OJ L 825/16.
[47] C–100/21 *Mercedes–Benz Group* [2023] EU:C:2023:22.

Fund	Objectives	Beneficiaries	Amounts
Recovery and Resilience Facility - Regulation (EU) No 2021/24	Solidarity - Covid-19 pandemic	MS - depending upon the impact of the pandemic	Climate change component 37% 2021-27: 72.3 billion euros
Just Transition Regulation (EU) No 2021/1056	Inter-regional solidarity	Regions dependent on heavy industry and coal	2021-27: 7.5 billion euros
Social Climate Fund Regulation (EU) No 2023/955	Citizen solidarity	Disadvantaged households - SMEs	2026-32: revenues from the auctioning of allowances from the ETS2 and 50 million allowances from the existing EU ETS
Modernisation fund ETS Directive 2023/87	Inter-state solidarity	10 MS with the lowest revenue levels	60 billion euros, although variable as dependent on ETS (2% of total amounts allocated over 2021-2030)
Strategic Technologies for Europe Platform (STEP) Regulation (EU) No 2024/795	Support for clean technologies	Enterprises	10 billion euros
Life Regulation (EU) No 2021/1783	Support for the protection of ecosystems	NGOs, public authorities	2021/2027: 5.45 billion euros

As these funds appear to be insufficient to successfully complete the energy transition, let alone to secure the protection of natural habitats, the Member States will have to supplement them. They will thus operate alongside State aid schemes,[48] which will undoubtedly lead the EU to loosen the budgetary constraints of the Stability and Growth Pact that are now applicable once again[49] and which calls in principle for fiscal austerity. So far, the European Commission is

[48] Proposal for a regulation establishing a framework for ensuring a secure and sustainable supply of critical raw materials, COM/2023/160 final, Article 14 (1).
[49] Council Regulation (EC) No 1467/97 of 7 July 1997 on speeding up and clarifying the implementation of the excessive deficit procedure whose derogation clause has been activated until January 1, 2024, due to the pandemic and the COVID crisis. OJ [1997] L209/6. The amended version of the Stability and Growth Pact maintains the debt (60% of GDP) and public deficit (3% of GDP) ceilings. However, it provides for periods of 4 years, which may be extended by 3 years, to reach these ceilings if they are exceeded. States placed under the excessive deficit procedure could nevertheless continue to invest in the EU's priorities, notably the environment and defence. The measures that each country would put in place would thus be better adapted to its own situation. Under the Council agreement, all countries in the excessive deficit procedure (with deficits in excess of 3% of GDP) would nevertheless have to reduce their structural budget balance by 0.5 points of GDP per year (with flexibility from 2025 to 2027 to take account of the recent rise in the cost of debt linked to higher interest rates). Those whose debt exceeds

willing to be more flexible when it comes to State aid, [50] at the risk of fragmenting the internal market.

What role for social justice?

In addition, the green transition could fall foul of other pitfalls. First all, the gains achieved on the energy efficiency[51] and technological progress fronts could be cancelled out by unrestrained consumption of cheaper products (rebound effect) and the energy divide arising due to artificial intelligence (data storage, servers, etc.). In addition, the Green Deal could further exacerbate the polarisation between an urban population (85% of Europeans in 2050) that is more attuned to the objective of carbon neutrality and rural populations that feel that they are not understood by urban elites. Will the "social" pillar of the Deal, which is based on an estimated 86.7 billion euro Social Climate Fund for the period 2026–2032, be sufficient to mitigate the socio-economic impact of the energy transition on the most vulnerable households and on small and medium-sized enterprises? It is clear that this fund will not be sufficient to provide retraining for the 180,000 workers who, according to the European Commission, are set to be made redundant in the mining sector by 2030. Moreover, it would have to be quintupled in order to cover the renovation of the real estate occupied by the 35 million people comprising the most deprived segment of the population.[52] Similarly, the Just Transition Mechanism, worth 55 billion euros over the period 2021-2027,[53] will not be sufficient to enable regions dependent on fossil fuels to adapt to a decarbonised economy. By way of comparison, the 80 billion euros in transfers to the new Eastern Länder following the reunification of the two Germanies did not enable them to achieve the same level of development. Accordingly, unless there is a strong social dimension, this vast regulatory project risks running aground.

Climate neutrality and globalisation

The EU is currently responsible for only 6.7 % of global GHG emissions, as a result of a long-term decreasing trend. [54] Having refrained from taking on a political–military leadership role, as the largest trading block in the world the Union is seeking to reinforce its credibility by positioning itself at the forefront of the green transition by reducing its carbon footprint, with a particular focus on value chains for products imported from third countries (steel, cement, nickel, cocoa, coffee, beef, etc.). However, the new regulations aimed at limiting its global footprint (regulations on deforestation and due diligence as well as carbon border adjustment measures[55]) have aroused the anger of various trade partners which, considering them to be protectionist measures, may challenge them before the WTO and thus obtain financial compensation, or authorisation to adopt countermeasures.

90% of GDP should ensure an annual reduction of 1 percentage point, and 0.5 points for those whose debt is between 60% and 90%.

[50] European Commission Communication*, Guidelines on State aid for climate, environmental protection and energy for 2022,* COM C/2022/48.

[51] Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955 (recast) [2023] OJ L 231/1.

[52] C. Defard, « Energy Union 2.0. to deliver the EGD: stronger governance, common financing and democratic tools » (2023) 127 *Notre Europe* 95.

[53] Regulation (EU) 2021/1056 of the European Parliament and of the Council of 24 June 2021 establishing the Just Transition Fund [2021] OJ L 231/1.

[54] European Environment Agency, 'Economic losses from weather- and climate-related extremes in Europe', 6 October 2023,

[55] Regulation (EU) 2023/956, supra, note 5.

Circular economy

As it does not have sufficient fossil fuels and mineral resources to ensure its growth, within a world in which natural resources are becoming scarcer, the Union has every interest in becoming self-sufficient as the first decarbonised and circular economy in the world. Accordingly, the "extract–produce–discard" model, of which fast fashion and planned obsolescence are emblematic, will need to be replaced by a circular economy, spelling the end of the wasteful society.[56] This economic model should therefore make it possible to "close the loop" by transforming residual materials into secondary raw materials. If they are forced to innovate, European undertakings will become more competitive as compared to their foreign competitors, which will ultimately fall victim to the poor management of natural resources. The circular economy should thus reinforce the EU's strategic autonomy. A number of advances have been made in recent months in terms of both textile recycling as well as in two sectors that consume large quantities of resources,[57] namely packaging/waste packaging[58] and batteries.[59] Recycling, which is essential for bringing secondary raw materials to market, is set to increase as a result of restrictions on waste exports outside the EU.[60] In addition, new ecodesign requirements are now applicable to sustainable products (political agreement of 5 December 2023).[61] However, will this progress be up to the challenge posed by the transformation from an economy with a profligate approach to natural resources towards a virtuous economy?[62]

[56] European Commission Communication, *A new Circular Economy Action Plan For a cleaner and more competitive Europe*, COM/2020/98 final.

[57] European Parliament legislative resolution of 13 March 2024 on the proposal for a directive of the European Parliament and of the Council amending Directive 2008/98/EC on waste, COM (2023)0420 – C9-0233/2023 – 2023/0234(COD). On March 13th, 2024, the European Parliament raised food waste reduction targets to 20% for the consumption level (retail, distribution, restaurants and food services as well as households) and to 40% for food processing and manufacturing – a 10% increase compared to the Commission's proposal.

[58] Proposal for a regulation of the European Parliament and of the Council on packaging and packaging waste, amending Regulation (EU) 2019/1020 and Directive (EU) 2019/904, and repealing Directive 94/62/EC, COM/2022/677 final.

[59] Regulation (EU) 2023/1542 of the European Parliament and of the Council concerning batteries and waste batteries, repealing Directive 2006/66/EC and amending Regulation (EU) No 2019/1020, OJ L 191/1.

[60] Proposal for a regulation of the European Parliament and of the Council on shipments of waste and amending Regulations (EU) No 1257/2013 and (EU) No 2020/1056, COM/2021/709 final.

[61] Commission Regulation (EU) 2023/826 of 17 April 2023 laying down ecodesign requirements for off mode, standby mode, and networked standby energy consumption of electrical and electronic household and office equipment pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulations (EC) No 1275/2008 and (EC) No 107/2009 [2023] OJ L 103/29-47.

[62] EEA, *Accelerating the circular economy in Europe. State and outlook 2024* (EEA Report 13/2023).

Dashed hopes

Following the initial euphoria, a feeling of disillusionment is becoming more widespread. The failure of the "zero pollution" action plan[63] will risk leaving Europe stuck between a rock and a hard place. Accordingly, on 6 February the Commission announced the withdrawal of its proposal seeking to reduce the spraying of pesticides by half[64] and the eagerly awaited reform of the law on chemical substances (REACH)[65] was kicked into the long grass. Futhermore, lawmakers significantly weakened the Soil Monitoring Law.[66] The same music was playing last November when the Commission renewed its approval of the active substance Glyphosate,[67] despite the WHO's IARC regarding it as a class 3 carcinogen.[68] Nevertheless, it is impossible to underestimate the importance that the new rules on industrial emissions,[69] urban wastewater treatment[70] and air quality[71], as well as mercury[72] may have on improving ecosystems.

Nature, the big loser

It will be difficult for the "ecosystemic" reform model to pass muster. Indeed, ecosystems are gasping for air, restored and diversified ecosystems could capture significant quantities of carbon, and would be more resilient to extreme climate events (flooding, drought and heatwaves). In virtue of the reformed LULUCF Regulation, for the first time a net carbon absorption target has been set for land, specifically 310 million tonnes of CO2 equivalent by 2030.[73] However, against the backdrop of pre-election tensions of spring 2024, which were

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[63] European Commission Communication, *Pathway to a Healthy Planet for All EU Action Plan: 'Towards Zero Pollution for Air, Water and Soil'*, COM/2021/400 final.

[64] Proposal for a of regulation the European Parliament and of the Council on the sustainable use of plant protection products and amending Regulation (EU) 2021/2115 COM/2022/305 final.

[65] Commission Communication, *Commission work programme 2024*, COM (2023) 638 final**.**

[66] Proposal for a Directive of the European Parliament and of the Council on Soil Monitoring and Resilience, COM/2023/416 final. Approved by the European Parliament on 10 april 2024.

[67] Commission Implementing Regulation (EU) 2023/2660 of 28 November 2023 renewing the approval of the active substance glyphosate in accordance with Regulation (EC) No 1107/2009 of the European Parliament and of the Council and amending Commission Implementing Regulation (EU) No 540/2011, C/2023/8101.

[68] IARC Monographs Vol. 112: Evaluation of five organophosphate insecticides and herbicides, 20 March 2015.

[69] Proposal for a directive of the European Parliament and of the Council amending Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) and Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste, COM/2022/156 final. Approved by the European Parliament plenary on 12 March 2024.

[70] Proposal for a directive of the European Parliament and of the Council concerning urban wastewater treatment (recast), COM/2022/541 final. Provisional agreement by Parliament and Council on January 29, 2024.

[71] Proposal for a directive of the European Parliament and of the Council on ambient air quality and cleaner air for Europe (recast), COM/2022/542 final. Provisional agreement by Parliament and Council on February 20, 2024.

[72] Proposal for a directive of the European Parliament and of the Council amending Regulation (EU) 2017/852 of the European Parliament and of the Council of 17 May 2017 on mercury as regards dental amalgam and other mercury-added products subject to manufacturing, import and export restrictions, COM/2023/395 final.

[73] In order to reduce net GHG emissions by at least 55% compared with 1990 levels, the land use, land-use change and forestry (LULUCF) sector must absorb 310 million tonnes of CO2-equivalent net

particularly heightened in rural areas, a flagship instrument for the "biodiversity" and "farm to table" strategies,[74] the proposal for a regulation on plant protection products has been put on the back burner. As regards protected spaces included within the Natura 2000 network, Member States have been invited, and not being obligated, to increase the surface area of their sites.[75] The "Life Nature" budget is absolutely tiny: 2.14 billions euros dedicated to nature protection.[76] From a more symbolic perspective, with Noah's Ark on the brink of capsizing, as is shown by the acceleration in the rate of extinction of wild animal species, the European Commission has decided to water down the protected status granted to the wolf,[77] a mammal that is emblematic of rewilding. To make things worse, greening will not feature in the Common Agricultural Policy (PAC) for the period 2023-2027,[78] which yet again will continue to favour intensive agriculture. The institutions have caved in as far as environmental conditionality arrangements are concerned.[79]

However, on June 17 2024, the environmental Council finally adopted against all odds the proposal for a regulation on nature restoration.[80] The amended directives on quality of water[81]

removals by 2030 (Regulation (EU) 2023/839), compared with the previous target of 225 million tons in virtue of Regulation (EU) 2018/841.

[74] Proposal for a Regulation of the European Parliament and of the Council on the sustainable use of plant protection products and amending Regulation (EU) 2021/2115, COM/2022/305 final; Proposal for a regulation of the European Parliament and of the Council on nature restoration, COM/2022/304 final.

[75] European Commission Communication, Bringing nature back into our lives EU. 2030 Biodiversity strategy.

[76] Regulation (EU) 2021/783 of the European Parliament and of the Council of 29 April 2021 establishing a Programme for the Environment and Climate Action (LIFE), and repealing Regulation (EU) No 1293/2013 OJ L 172/53.

[77] Proposal for a Council decision on the position to be taken on behalf of the European Union on submitting proposals for amendment of Appendices II and III of the Convention on the Conservation of European wildlife and natural habitats with a view to the meeting of the Standing Committee of the Convention COM/2023/799 final.

[78] Regulation (EU) 2021/2115 of the European Parliament and of the Council of 2 December 2021 establishing rules on support for strategic plans to be drawn up by Member States under the common agricultural policy (CAP Strategic Plans) and financed by the European Agricultural Guarantee Fund (EAGF) and by the European Agricultural Fund for Rural Development (EAFRD) and repealing Regulations (EU) No 1305/2013 and (EU) No 1307/2013 [2021] OJ L 435/1.

[79]Regulation (EU) 2024/1468 of the European Parliament and of the Council of 14 May 2024 amending Regulations (EU) 2021/2115 and (EU) 2021/2116 as regards good agricultural and environmental condition standards, schemes for climate, environment and animal welfare, amendment of the CAP Strategic Plans, review of the CAP Strategic Plans and exemptions from controls and penalties, OJ 2024/1468.

[80] The adoption of the Nature Restoration Regulation (COM/2022/304 final) should have been a formality once a trilogue agreement had been reached, especially when it subsequently received a positive vote in Parliament. However, the bill was withdrawn from the agenda of the Environment Council on Monday March 25 at the last minute, following Hungary's surprise withdrawal, which means that a qualified majority is no longer obtainable for its adoption. Subsequently, the proposal was subject to the headwinds of protests from certain farmers, widely relayed by certain political parties on the eve of the European elections.

[81] Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption (recast) [2020] OJ L 435/1.

, soils,[82]and the improvement of ambient air quality[83] certainly represent clear progress for oligotrophic habitats. However, absent a more ambitious regulatory approach, will these improvements be sufficient to reinforce ecosystem resilience? In a sense, the mere fact of asking this question means that we know what the answer is.

Centripetal and centrifugal forces

Ultimately, the centripetal forces should prevail (uniform standards for vehicles and fuels, harmonisation of energy standards, centralisation of the carbon market). This phenomenon is underpinned by the delegated powers vested in the European Commission to define both sustainable investments as well as green hydrogen. The flip side of the coin is that the implementation of complementary yet indissociable strategies in the fields of sustainable mobility, the extensification of agriculture, nature protection, and the elimination of pollution fall under the purview of the Member States due to the simple fact that they fall under competences that have been classified as "shared" in the treaties establishing the Union. Since environmental and climate governance is indeed multilateral, the 27 Member States will be forced to bear the lion's share of the financial costs associated with transition. Accordingly, the decarbonisation of the transport sector will require more than the banning of the marketing of combustion vehicles by 2050; the pursuit of national policies on alternative transportation (alternative transportation, car sharing, speed limits) and land-use planning, both of which fall under Member State competence,[84] will be indispensable. Despite the new obligations relating to environmental offences, law enforcement policy,[85] which is essential for combating burgeoning environmental crime, remains dependent on state resources and the willingness of public prosecutors to prosecute offences. The Union's objectives will not be achieved unless the 27 Member States implement additional measures.

Blind to a paradigm shift?

Although environmental policy came in through the side door of community competence back in 1986 and for several decades was regarded as something of a poor sibling, in 2019 the European Green Deal placed it centre stage within the policies being pursued by the Union. The implementation of the Green Deal will lead in any case to a major change in the history of the EU, involving the progressive incorporation of the negative externalities associated with numerous polluting substances as well as GHG into the prices of numerous goods and services in accordance with the polluter pays principle.[86]

Whereas most of the rules fleshing out the Green Deal simply modify other provisions already in force, it should also be pointed out that new regulatory techniques have been used in recent times (European Social Fund, border adjustment measures, new carbon market (ETS 2)).

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[82] Proposal for a directive of the European Parliament and of the Council on Soil Monitoring and Resilience (Soil Monitoring Law), COM(2023) 416 final.
[83] Proposal for a directive of the European Parliament and of the Council on ambient air quality and cleaner air for Europe (recast), COM/2022/542 final. Provisional agreement by Parliament and Council on February 20, 2024.
[84] Article 192 (2) TFUE.
[85] Directive (EU) 2024/1203 of the European Parliament and of the Council of 11 April 2024 on the protection of the environment through criminal law and replacing Directives 2008/99/EC and 2009/123/EC, OJ *2024/1203.*
[86] Article 191(1) TFEU.

Despite the progress made over the last three years, which is certainly significant, the pathway to achieving carbon neutrality and to restoring ecosystems remains beset with pitfalls. The EU will face the challenge of striking the right balance between acting with others when it can, and reinforcing its capability to act autonomously when it wishes or is obliged to do so.[87] Futhermore, the reform is characterised by its "climate-centrism", with the environmental crisis being reduced to the level of the climate and energy transition. Thanks to the changes made to the directives on "energy efficiency", the "promotion of renewable energies" and the extension of the carbon market to the aviation sector, marine transport and companies trading in hydrocarbons, the "energy" pillar of the reform has delivered on all of its promises. However, this energy transition at an accelerated pace has confronted the EU with a twofold dilemma: on the one hand, it will remain dependent on fossil fuels over the short term, whilst on the other hand over the medium term it will have to secure its supply of critical raw materials and technologies.[88]

By putting its faith in new technologies (carbon capture, large-scale production of green hydrogen, etc.), which should mitigate the impact of climate change – but that have not yet proved their worth – the Union has not called into question the dominant economic paradigm, in spite of the fact that the climate and environmental crises have in part originated from the over-consumption of goods and services.[89] And therein lies the rub, thus fuelling the global uncertainty within the climate balance sheet for future generations.

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[87] ESPAS, *Global Trends to 2040. Choosing Europe's future,* Publications Office of the European Union, Luxembourg, 2024, 5.
[88] C Defard, supra*,* 67.
[89] On June 17 2024, in approving the mid-term review of the 8th environment action programme, the ENVI Council noted that current regulatory instruments will not be enough to reduce unsustainable consumption levels and achieve the objectives of the EAP.