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The European Union's Upcoming Policy and Regulatory Initiatives in the Energy Sector

1 October 2020

Introduction

On 16 September 2020, as part of her State of the European Union address to the European Parliament, President von der Leyen announced her intention to increase the 2030 target for greenhouse gas ("**GHG**") emission reduction from 40% to at least 55%.Achieving this will be an enormous challenge that will require massive investments in renewable energy,clean and innovative technologies as well as energy efficiency — a dimension of climate change mitigationwhere we haven't seen much progress until today. Nonetheless, this challenge is widely acknowledged
as achievable.[1]

Combined with the European Recovery Plan, the investment in capital into the European economy, and particularly into the energy sector, will be unprecedented. The next three to five years therefore represent a once in a lifetime opportunity for businesses to position themselves in the changing European energy sector. There are, however, challenges and threats. Achieving this target will also require the overhaul of many of the financial and regulatory frameworks applicable to energy markets, actors and consumers. Businesses that do not carefully and pre-emptively anticipate and adapt to these changes will be left behind.
The EU Green Deal Strategy, as explained by the president and whose plan was recently published,[2] covers the entire economy and plans a whole set of new initiatives and legislation in the next 18 months (see below), transforming the energy landscape, increasing the economy's circularity through recycling and re-use, aligning financial and fiscal systems and incentives on climate change mitigation and environmental objectives.
The Energy Sector Integration Strategy represents the Commission's foundational framework for transforming the energy system.
The Energy Sector Integration Strategy [3] aspires to integrate all the different energy sectors into a unified and well-functioning internal energy market. By integrating the different sectors, the Commission aims to optimise the energy system: increasing energy efficiency, striving towards more circularity and continuing to decarbonise energy, particularly in the gas sector. In practice, this mainly entails the electrification of most energy-consuming sectors — all for which electrification is technically and economically feasible — and the reliance on new decarbonised gases, especially clean hydrogen, for all others (e.g., energy-intensive industry and transport sector), with an exponential growth in renewable energy and major reforms in infrastructure and traditional market structures.
All companies should plan for this transition and take advantage of the opportunity that the European Recovery Plan and other EU and national funds offer by shaping the future of the European energy system. In this note, we provide an overview of the opportunities and challenges and a guide to these changes.

[1] This was notably the result of the Commission's own impact assessment (see here for **part 1** and **part 2**) and was also the conclusion of the Financial Times in their article "EU climate target is ambitious but feasible," published on the same day as the State of the Union (see **here**).

[2] See the Commission's Communication "Stepping up Europe's 2030 climate ambition: Investing in a climate-neutral future for the benefit of our people," published on 17 September 2020, available **here**.

[3] See the Commission's communication "Powering a climate-neutral economy: An EU Strategy for Energy System Integration," published on 8 July 2020, available **here**.

GREEN DEAL TIMELINE

- Zero-pollution ambition
- Mainstreaming Sustainability
- The EU as a global leader
- Sustainable and Smart Mobility
- 'Farm to Fork'
- Preserving and protecting Biodiversity
- The European Climate Pact
- Climate Ambition
- Clean, affordable and secure energy
- Industrial Strategy for a clean and circular economy

From 2020

- Initiatives stimulating lead markets for climate neutral & circular products for energy intensive
- Initiatives screen & benchmark green budgeting practices
- Funding call for public recharging and refuelling points
- Legislative options assessment to boost sustainable alternative fuels production and supply
- Remedy incoherent legislation
- Strengthen EU Green Deal Diplomacy
- Bilateral efforts on action & policies comparability
- Proposal on legislative waste reforms
- Measures for deforestation-free value chains
- Green Deal Agenda for Western Balkans
- Integration of SDG in European Semester

June 2020

- National Energy and Climate Plans Assessments

Autumn 2020

- Renewed Sustainable Finance Strategy

By Q4 2020

- Building Sector 'Renovation wave' initiative
- Trans-European Network – Energy Regulation Evaluation & Review
- Strategy on offshore wind
- Review of the Non-Financial Reporting Directive
- 8th Environmental Action Programme Proposal
- Smart sector integration Strategy
- Sustainable and smart mobility strategy
- Proposal to support zero- carbon steel-making processes by 2030
- New EU Forest Strategy

June 2021

- Revision of relevant legislation to support increased 2030 budget
- Revision Proposal Energy Taxation Directive

January 2020

- Just Transition Mechanism Proposal
- Sustainable Europe Investment Plan

March 2020

- European Climate Law Proposal
- European Climate Pact Launch
- Biodiversity Strategy 2030
- Farm to Fork Strategy
- Circular Economy Action Plan: sustainable products initiative
- EU Industrial Strategy

Summer 2020

- Chemicals strategy for sustainability
- Plan to increase EU 2030 climate target (50%-55%)

October 2020

- Legislation on batteries supporting Strategic Action Plan on Batteries and circular economy

From 2021

- Measures addressing biodiversity loss
- Initiatives increasing capacity of railways & inland waterways

By Q4 2021

- Examination of draft national strategic plans – F2F, Green Deal
- Review of State aid guidelines
- New EU Climate Change Adaptation Strategy
- Zero Pollution action plan for water, air, soil
- Revision of measures addressing pollution from large industrial installations
- Revised proposal for a Directive on Combined Transport
- Review of Alternative Fuels Infrastructure Directive and the Trans European Network – Transport Regulation
- Proposal for carbon border adjustment mechanism
- Proposal on air pollutant emission standards for combustion-engine vehicles

All dates are indicative-specific initiatives, sequencing and dates to be confirmed throughout 2020

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1. The European Union's Hydrogen Strategy

1.1. Background

European policy makers have increasingly become aware that hydrogen will have to play a key role in the EU energy system if the Green Deal's objective of achieving climate neutrality is to be reached.[4] Indeed, clean[5] hydrogen production can help decarbonise current hydrogen uses and provides a viable sustainability path for hard-to-decarbonise sectors and key mobility segments (such as maritime and heavy-duty transport). It can also provide both flexibility and storage services to the electricity grid, helping with the curtailment of renewable electricity.

Hydrogen's highly interesting properties and prospects are the reasons why current Commission models estimate that clean hydrogen will represent 13-14% of the EU's energy mix by 2050.

1.2. The EU's Hydrogen Strategy in a nutshell

The EU's Hydrogen Strategy[6] sets out financial and regulatory measures to scale up the supply of, and demand for, renewable and low-carbon hydrogen, while boosting the EU economy.

The strategy favours renewable hydrogen, as it is considered the most compatible with the EU's long-term objectives. However, the strategy acknowledges that, in the short and medium term, other forms of low-carbon hydrogen are also needed. Therefore, the Commission intends to develop — and introduce into legislation — "a comprehensive terminology and European-wide criteria for the certification of renewable and low-carbon hydrogen" based on "common low-carbon threshold and standard" that will be used for policy and funding purposes.

In terms of quantitative objectives, the strategy aims to achieve the production of 1 million tonnes of renewable hydrogen and the installation of at least 6 GW of electrolyser capacity by 2024 and 10 million tonnes and 40 GW by 2030.

To achieve this, the Commission will provide support applicable to both renewable and low-carbon hydrogen. Moreover, relevant research and development (R&D), demonstration and commercial projects will also be eligible to receive EU funding under the Next Generation EU (see Section 3), the Innovation Fund and other similar instruments. In addition, the Clean Hydrogen Alliance (a new hydrogen-specific body) will be dedicated to establishing an investment agenda for hydrogen projects.

On the demand side, a series of planned policy initiatives will advance the use of hydrogen. The potential expansion of the scope of the EU emissions trading system ("EU ETS") to sectors that are currently *de facto* shielded from it (because they are considered at risk of carbon leakage) is being considered. Moreover, the introduction of compulsory renewable-hydrogen quotas on industrial companies as a way to urge specific sectors such as fertilisers, chemicals, steel or cement to start using clean hydrogen is also under consideration. Similarly, the Commission's upcoming Sustainable and Smart Mobility Strategy will aim to increase hydrogen uses in the transport sector.

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[4] While not producing GHG when used, hydrogen, as energy vector, may be processed to produce "hydrogen-based fuels," that are easier to handle and can be used as feedstocks in industry.

[5] Hydrogen's environmental impact depends on how it was produced. Traditionally, different production methods are characterised by different colours, reflecting the amount of (direct) GHG emissions released to the environment. "Green" hydrogen or "renewable hydrogen" refers to hydrogen produced through electrolysis using renewable energy. Yellow hydrogen refers to hydrogen produced using nuclear energy. Turquoise and Blue hydrogen refer to hydrogen produce from natural gas, in the former case through pyrolysis (turning methane into hydrogen and carbon black, without any CO_2) and in the latter case through steam methane reforming using carbon capture and storage (CCS) methods. Lastly, grey hydrogen refers to any hydrogen produced through fossil fuels without any CCS. In this note, "clean hydrogen" refers to all hydrogen besides grey hydrogen.

[6] See the Commission's communication "A hydrogen strategy for a climate-neutral Europe," published on 8 July 2020, available **here**.

Lastly, in terms of infrastructure, the strategy recognises that "a condition for a widespread use of hydrogen as an energy carrier in the EU is the availability of energy infrastructure for connecting supply and demand," a statement that is applied to both transport infrastructure (via pipelines, or potentially ships and trucks) and storage infrastructure. In essence, the Commission considers that infrastructure needs will depend on hydrogen production and demand patterns. It therefore adopts a phase-based approach with, in a first phase, production on-site in industrial clusters, then in a second phase, local hydrogen networks (potentially combined with the refuelling network needed for hydrogen transportation) and, lastly, large-scale cross-border transport of hydrogen through a wide-spanning network. In legislative terms, the creation over time of an evolving hydrogen network will, according to the Commission, entail the need: (i) to revise the Trans-European Networks for Energy (TEN-E) regulations and guidelines and the internal gas market legislation for competitive decarbonised gas markets; but also (ii) to develop over time common quality standards (e.g., for purity and thresholds for contaminants) and/or cross-border operational rules as well as market-based competition rules for access to the hydrogen infrastructure.

1.3. How will this impact your business?

As the cornerstone of the integration of the energy systems, the Hydrogen Strategy represents a turning point for EU energy system.

From a practical standpoint, the production, transportation and use of hydrogen will end up affecting many actors on both the electricity sector (where hydrogen electrolysers and fuel-cells will provide flexibility, storage and production services) and the gas sector. Depending on the specific infrastructure needs and hydrogen integration's phases, the revision of already existing legislation and the introduction of common quality standards and cross-border operational and competition rules will ensure the smooth operation of the next and existing gas market.

Market actors should help shape this new market, both from a project and regulatory standpoint, and take advantage of the EU support measures (current and future) to do so. Indeed, the funds provided by the combined European Recovery Plan (see Section 3) and new EU budget will to go to an unprecedented investments portfolio for research and production and demonstration projects. Billions will be invested in hydrogen projects, directly based on the European Hydrogen Strategy but also on national hydrogen such as that of Germany,[7] France,[8] Portugal[9] and the Netherlands.[10]

Businesses seeking to be future players are presented with a unique chance to set up research, demonstration or even commercial projects and have them funded by public funds. Given the need for transport infrastructure, network companies will also be able to benefit from the funds to adapt and begin the construction of the hydrogen network.

Lastly, as explained below, the Commission plans to ament the EU Emission Trading System to achieve the 55% cut in GHG emissions by 2030. This will be complemented by a Carbon Border Adjustment Mechanism (CBAM, see Section 10). Companies' relying on hydrogen as feedstock or as an energy source will definitely need to plan their approach in terms of being market participant. These companies will have to secure competitive sources of hydrogen through a "Carbon Pricing Hydrogen Agreement" (CPHA), which can be modelled on the existing experiences built up in the power purchasing agreement of renewable electricity (see Section 2.3.4.1).

[7] The German hydrogen strategy is accessible **here**.

[8] The French hydrogen strategy is presented **here** (in French).

[9] The Portuguese hydrogen strategy is accessible **here** (in Portuguese).

[10] The Dutch hydrogen strategy is accessible **here**.

2. Other Renewable Gases and Fuels

2.1. Background

In the context of the Energy System Integration Strategy, the Commission intends to make a more extensive use of other renewable gases and fuels (such as biomethane, biogas, ammonia and other synthetic fuels) in addition to hydrogen.

From a policy perspective, fostering the substitution of natural gas by all decarbonised and renewable gases will require targeted efforts by the EU. As for hydrogen, the Commission will have to incentivise the production and use of renewable gases and to establish a robust, attractive and reliable regulatory framework providing for cross-border trade and the timely and cost-effective integration of the gas infrastructure into the electricity and heating systems would have to be established. However, biogas and biomethane production and cross-border trade rely on a wide range of different EU policies which are currently under revision. and it remains to be seen how they will reconcile to enable harmonisation and upscale of biogases production and use.

2.2. Future regulatory challenges

The Commission is expected to establish a regulatory framework providing full network and market access for renewable gases. In this respect, it will have to review the current rules for market entry. The revision of the TEN-E regulation coupled with a revision of the Ten-Year Network Development Plan (TYNDP) could play an important role in unlocking the network's full potential. The operational framework for the EU energy markets will have to allow such interaction and promote the installation of the necessary technology such as combined heat and power (CHP) plants, gas power plants, hybrid heat pumps and electrolysers. Moreover, policy makers agree that biogas production should be promoted at a local level. A decentralised production based on installations which are directly connected to the distribution grid and of the right size can achieve reduced transport-related costs and emissions.[11]

The increasing volumes of decarbonised gases injected into the system in the future will alter the overall gas quality in the grid. As a consequence, consumers with sensitivity to quality changes and the gas infrastructure could be affected. The Commission will therefore have to harmonise gas-quality standards and establish a regulatory framework that would protect end-users and the smooth operation of the system.

Lastly, the Commission plans to create an internal market for energy that will be based in encouraging cross-border trade for decarbonised gases, mainly by setting in place an effective guarantees of origin system (see Section 4) and a common rules and terminology for the classification of renewable gases (including hydrogen).

2.3. Future Opportunities

Apart from the above regulatory challenges, the Commission will have to stimulate the investments and production of other renewable gases and fuels — besides hydrogen — if it is to reach its climate objectives. As for the Hydrogen Strategy, this will require production and demand support and opportunities for R&D projects for other decarbonised gases. As for the hydrogen opportunity, although to a lesser extent, companies will be able to benefit from the European Recovery Plan and the new EU budget, which creates unprecedented financial opportunities for actors interested in investing in decarbonised and renewable gases. Companies already active in the field who wish to maintain their place in the market will also need to exploit these opportunities to develop new technologies and adapt to a more sustainable market environment.

[11] See, for example, "**The future of biogas in Europe: it's a local affair**," Euractive, 30 September 2019.

3. Guarantees of Origins for hydrogen and renewable gases

3.1. Background

In order to promote renewable and low-carbon hydrogen as well as renewable gases, the EU will have to establish an efficient system of guarantees (or certificates) of origin (GOOs) for renewable and low-carbon hydrogen as well as for the other renewable gases. Indeed, just like electrons for electricity, renewable hydrogen and the other renewable and low-carbon gases are, at the point of use, indistinguishable from their CO_2 emitting equivalent.

In general, GOO are aimed at rendering transparent the relevant characteristics of energy purchased, and can be used for different purposes. In terms of the information that they render transparent, they may be used to identify the geographic source of energy (relevant for example, in the case of biofuels), whether it originates from a renewable source and, most relevant for renewable hydrogen and the other renewable and low-carbon gases, the GHG that they contain on combustion, the GHG relevant to their production and supply on a life-cycle analysis, and other relevant externalities.

There are three main general uses of GOOs in practice:

- Enabling consumers that wish (or are legally obliged) to purchase a specific type of energy to be certain — and to prove — that the acquired source/vector meets the required characteristics.[12]
- Accounting for the purposes of national renewable energy objectives, especially if the renewable energy at stake involves cross-border trade.
- Facilitating trading and the uptake of a specific form of energy by enabling virtual trade and, hence, the "renewable" aspect of the product to be used by the customer that values it.

3.2. Current EU law on GOOs

Currently, under EU energy-related law:

i. A certification system/requirement exists for biofuels (certain types of biofuels may be sold in the EU but cannot qualify in order to meet EU targets or fuel blending obligations on suppliers).

ii. Guarantees of origin are provided for in Article 19 of the EU's Renewable Energy Directive 2018/2001.[13]

The Renewable Energy Directive requires Member States to issue GOOs to producers of renewable energy "For the purposes of demonstrating to final customers the share or quantity of energy from renewable sources in an energy supplier's energy mix and in the energy supplied to consumers under contracts marketed with reference to the consumption of energy from renewable sources." The aim, therefore, is to enable renewable energy producers to monetise the value of their energy to consumers willing to pay a premium for it, on the basis of its renewable nature. In this light, Member States may decide not to issue such certificates to a producer that receives financial support from a support scheme, "to prevent double counting."

The directive also provides that "Member States may arrange for guarantees of origin to be issued for energy from non-renewable sources". However, in practice we are not aware of any cases where, for example, natural gas is certified and provides a GOO.

[12] This is particularly pertinent for customers wishing to pay a premium for renewable electricity (RES-E), or fuel suppliers that are obliged to blend a minimum percentage of accredited biofuels into the petrol/diesel that they sell. In the future, they will be important for the hydrogen sector, so that companies can demonstrate the GHG/other externalities of the hydrogen they consume.

[13] **https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L2001&from=EN.**

It should be noted that under Article 19(7) (b) of the Renewable Energy Directive, the possibility for a hydrogen GOOs may already exist. However, given that this directive focuses in reality on renewable electricity, and contains no technical provisions regarding the nature of a possible hydrogen GOO, this will need to be significantly revised and updated to introduce hydrogen-related GOOs.

3.3. Possible Commission initiatives regarding hydrogen and the role of GOOs.

As mentioned above, as part of its Hydrogen Strategy, the Commission has announced a number of specific and concrete objectives and targets that will drive the need for GOOs. Guarantees of origin are not required per se for the proof of attainment of these objectives. Indeed, GOOs are not needed to demonstrate attainment of national hydrogen objectives; national governments can simply require hydrogen producers to report the quantities of clean hydrogen sold, which are then aggregated in national statistics. In a similar manner, Member State declarations regarding renewable energy with respect to national targets are not based on GOOs.

However, as explained above, GOOs will be needed: (i) to enable customers to be certain of the nature of the hydrogen they are purchasing (either to meet personal preferences or legal obligations); (ii) to facilitate the trans-boundary accounting of hydrogen production and use; and (iii) to facilitate the development of the market through "virtual trade," especially during the start-up phase of the clean hydrogen market, where infrastructure may (not yet) be sufficiently developed to (always) link supply and demand efficiently.

Initially only targeted to renewable hydrogen, in its final version of the strategy the Commission announces a more technology-neutral approach for the GOOs, which reads as follows:

> In order to tailor a supportive policy framework in function of the carbon emission reduction benefits of hydrogen in a transitional phase, and to inform customers, the Commission will work to swiftly introduce, based on impact assessments, EU-wide instruments. This would include a common low-carbon threshold/standard for the promotion of hydrogen production installations based on their full life-cycle greenhouse gas performance, which could be defined relative to the existing ETS benchmark for hydrogen production.
>
> In addition, it would include a comprehensive terminology and European-wide criteria for the certification of renewable and low-carbon hydrogen possibly building on the existing ETS monitoring, reporting and verification and the provisions set out in the Renewable Energy Directive. This framework could be based on the full life-cycle greenhouse gas emissions, considering the already existing CertifHy methodologies developed by industry initiatives, in consistency with the EU taxonomy for sustainable investments. The specific, complementary functions that guarantees of origin (GOOs) and sustainability certificates already play in the Renewable Energy Directive can facilitate the most cost-effective production and EU-wide trading.

Whilst this statement is open to interpretation, it appears that the Commission is intending to implement a certification approach based on the following criteria:

- The Commission recognises the need for GOOs for both renewables and low carbon hydrogen.
- The anticipated approach is to assign standard reference values for GHG content depending on the technology in question.
- A standard approach to defining the criteria that any certification body must respect, based on the approach adopted regarding ETS certification/renewable energy GOOs,

will be implemented. CertifHy is an existing industry driven pilot initiative project to certify both clean hydrogen that has already issued certificates[14]. This may act as a model for future certificates.

- Whilst the context is currently unclear, there is a predisposition for the Commission to base certificates, or any qualifying requirements, on EU Taxonomy criteria (i.e., whether the hydrogen purchased is compatible with the EU Taxonomy compliant requirements for hydrogen).

An additional observation that may be drawn from this paragraph quoted from the Hydrogen Strategy, is that the Commission's thinking is at an early stage, as little detailed consideration is given to the role and function that such GOOs may make. For example, it does not address the question of whether GOOs would be used to facilitate "virtual trading." This reflects a wider lack of developed thinking on the topic. The Florence School of Regulation has been tasked by DG Energy to produce a first reflection paper for the Commission on this issue.

3.4. How does this impact your business

All businesses interested in shaping or investing in the hydrogen market, as well as consumers of hydrogen, should carefully monitor the Commission's thinking on this issue and understand how the different possible GOO scheme would influence their existing business or the business case for any given project or investment.

4. The Offshore Renewables Strategy[15]

4.1. Background

The significant upscaling of the offshore renewable energy sector (offshore wind, tidal and ocean energy) is necessary to achieve the EU's ambitious climate objectives of a 55% cut in GHG emissions by 2030. According to the Commissions' long-term strategy 2050, offshore wind capacity will increase, from the current 20 GW[16] to almost between 240 and 440 GW by 2050 with about half of this located in the North Sea.[17] To that end, massive financial support from EU funds will be provided for large-scale offshore installations,[18] storage and conversion facilities. The sector has great potential for creating new jobs while supporting the EU's efforts against climate change, making offshore renewable projects ideal candidates for receiving financial support under the European Recovery Plan.

The Commission plans to present its Offshore Renewable Strategy well before the end of 2020. The strategy will form part of the Commission's broader effort to transform the energy sector and will be closely associated with the revision of the TEN-E Regulation, the ESI Strategy and the Hydrogen Strategy, notably as hydrogen production from offshore wind farm is expected to be an important way to maximize offshore energy exploitation and avoid wasteful curtailments.

4.2. Hybrid Projects: the EU's tool for a successful upscale of the offshore wind production

Achieving the desirable capacity of offshore wind requires moving wind farms away further offshore, where winds are stronger. However, the limited maritime space availability suitable for such installations and the significant construction costs associated with these remote offshore wind farms make a purely national approach unattractive. Solving this in the most

[14] **https://www.certifhy.eu/**

[15] Previously named the "Offshore Wind Communication".

[16] About 90% of which is generated in the North Sea, see the Commission's long-term strategy, "A Clean planet for all COM(2018) 773 final," as well as the in-depth analysis in support of the Commission's communication.

[17] Moreover, according to the Commission, electricity will represent at least 50% of the total energy mix in 2050 and 30% of the future electricity demand will be supplied by offshore wind. See, European Commission's **website.**

[18] Such as floating wind farms, infrastructure using waves, tides, salinity gradient, those that convert ocean thermal energy or even floating photovoltaic.

cost-effective and sustainable way, requires a (trans)national approach and regional coordination on behalf of the Member States.

To solve this issue, the Commission wishes to promote more "hybrid assets." By contrast to traditional offshore wind farms, "hybrid" ones combine generation, storage and transmission assets that conventionally operate as separate entities. These assets may even belong to different Member States (and biding zones), reducing the way the space is used for the wind farm and the construction costs. The aim of this is, by promoting these "hybrid assets," to promote the cooperation between adjacent Member States and accelerate the integration of the energy system.

To this day, there has been regulatory and legislative uncertainty regarding hybrid projects that have discouraged investors — and the wind industry generally — for undertaking them, slowing down the development of these projects. Firstly, in some Member States, permitting processes have also been a major obstacle to renewable energy projects in general, and to onshore and offshore wind power in particular. This issue was already addressed by the revision of the Renewable Energy Directive (Directive 2018/2001/EU) and, in particular, Article 16[19] thereof that includes provisions that simplify the permitting processes. Although Article 16 should already help speed up the uptake of offshore energy projects, while taking into account legitimate concerns of citizens and respecting environmental standards, one cannot exclude that the Offshore Renewable Strategy may include specific measures to lower permitting barriers for offshore renewables, potentially to be adopted as part of the expected review of the Renewable Energy Directive. Additional uncertainties include discrepancies in: (i) national legislations regarding power-to-gas systems; (ii) market arrangements for hybrid offshore wind assets; (iii) the rules providing access to the maritime location; and (iv) subsidy schemes and tender design.

After an in-depth assessment of these issues and how to solve them, the Commission will therefore strive to plan an efficient offshore electricity grid, supported by carefully-designed onshore landing-points. Furthermore, it will adopt an appropriate regulatory framework to remove uncertainties regarding access to maritime space (location selection, site pre-investigation, tender execution), tender design, responsibility for project development and power-to-gas legislation that are due to discrepancies between national systems. That way, it will avoid granting derogations for individual projects — as in the Kriegers Flak hybrid project case — that could lead to competition distortions and to regulatory uncertainty for investments. Lastly, the Commission could also increase the clarity of the existing regulatory framework by adopted official guidelines.

Over the next decade, it is expected that five hybrid projects will be developed.[20] Through these projects, the Commission will kick-start offshore wind capacity while following a bottom-up approach, providing it with practical information and useful experience on the future creation of a powerful and interconnected offshore grid.

4.3. Rising opportunities

Hybrid projects can qualify as Projects of Common interest (PCIs),[21] under the TEN-E regulation, as they promote the EU's climate objectives while creating economic growth and enforcing market integration and security of supply. These pilot hybrid projects bear more risks compared to traditional offshore installations. Market operators could receive significant

[19] In particular, Article 16 (4) and (5) state: "**4.** Without prejudice to paragraph 7, the permit-granting process referred to in paragraph 1 **shall not exceed two years** for power plants, including all relevant procedures of competent authorities. Where duly justified on the grounds of extraordinary circumstances, that two-year period may be extended by up to one year. **5.** Without prejudice to paragraph 7, the permit-granting process **shall not exceed one year** for installations with an electrical capacity of less than 150 kW. Where duly justified on the grounds of extraordinary circumstances, that one-year period may be extended by up to one year."

[20] Please see the study "Hybrid projects: how to reduce costs and space of offshore development" page on the Commission's **website**.

[21] According to the "**Hybrid projects: How to reduce costs and space of offshore developments-North Seas Offshore Energy Clusters study**" by Roland Berger, prepared for the European Commission.

financial support from the EU with regards to the connection and operation of hybrid offshore PV and wind farms. Under the Connecting Europe Facility that provides financial support for PCIs, EUR 900 million is considered to be distributed for renewable cross-border projects.[22] Companies active in developing technologies for floating offshore wind and solar farms could receive significant financial support for research and development or demonstration projects. Furthermore, until achieving an internal energy market, Member States' national energy policies could significantly slow down the development of hybrid projects. The Commission could establish and implement "Hybrid Asset Network Support Agreements," i.e., project-specific, enforceable legal agreements between countries that provide security for developers.[23] This will address regulatory barriers in the short term and prepare for a future legal framework.

5. Renewable Energy Generation

5.1. Corporate PPAs

5.1.1. Overview

The purchase of electricity by large customers is being transformed by the growth of corporate renewable power purchase agreements (PPAs). Though captive power and industrial power supply arrangements have long been a feature of the conventional power sector, the last few years have seen the growth of this phenomenon in the renewable energy sector, led by non-industrial corporate purchasers.

In terms of numbers, Bloomberg New Energy Finance reported that corporations bought a record amount of clean energy through PPAs[24]. Specifically, 19.5 GW of clean energy contracts were signed by more than 100 corporations in 23 different countries in 2019. In the last twelve months, we have seen a transformation of the market in Europe. This has picked up on trends in North America and parts of Latin America, originally led by the global IT companies looking to source renewable energy to power their energy-hungry data centres. These transactions have shaped the market and driven innovation. Whilst the single biggest group of buyers continue to be technology companies, such as Google, Facebook and Microsoft, the market as a whole includes a much more balanced group of purchasers including retailers, healthcare and life science companies, financial institutions and industrials entering into corporate PPAs. Many of these are members of the RE100, a group of companies that has committed to source 100% of its electricity needs from renewable sources.[25]

5.1.2. What is behind this trend and how is it shaping the market?

i. Drivers on the demand side

With the majority of global corporations committed to ambitious GHG reduction emissions across their businesses and supply chain, many have looked to procure their electricity demand from renewable energy as a key part of those commitments. In parallel, increasingly volatile electricity market prices and long-term upward price curves in many markets have increased the attractiveness of long-term price predictability and the ability to hedge against future price increases.

Whilst some of the corporate goals, particularly in terms of green sourcing of power, could be met through entering into a green tariff with a local utility, corporate PPAs give buyers far greater visibility and control over their electricity supply than has historically been the case. This ties in with increasing buyer control over other parts of their supply chain, both to meet cost reduction and sustainability objectives.

[22] *Ibid.*

[23] *Ibid.*

[24] **https://about.bnef.com/blog/corporate-clean-energy-buying-leapt-44-in-2019-sets-new-record/**.

[25] See this website: **www.there100.org**.

ii. Drivers on the supply side

On the supply side in Europe, the reduction or elimination of public support mechanisms for renewable energy is leading to project developers facing increased merchant price exposure, making the investment case more challenging. Obtaining revenue price certainty for at least the first ten years of the life of the project makes the overall return more predictable, which facilitates the commitment of equity capital as well as third-party debt. Whilst many utilities are able to offer power purchase agreements, the growth in investment in renewable energy generation capacity outstrips utility demand and indeed many utilities themselves are entering into corporate PPAs for their new generation assets.

5.1.3. The shape of the market and the rise of the Virtual Power Purchase Agreement

In Europe, the majority of transactions to date have been conventional, physical power purchase arrangements in which the buyer (or a consortium of buyers) is contracted with a renewable energy project for all or a portion of the energy generated by that project. The energy will either be supplied directly over a private wire connection (primarily in the case of solar projects) or "sleeved" through the electricity grid so that the buyer would offtake an equivalent volume at its connection point and a third party would manage the interface with the electricity transmission system. The buyer also obtains the renewable energy GOOs associated with the energy purchased.

This has limited the growth of the market in Europe, where the best renewable energy resources are often on the edges of the region, notably solar in the south and wind in the north, with demand centres in the centre or spread across several counties. As a result, corporate buyers and sellers have been turning to the "virtual" or "synthetic" power purchase agreement, which is the market norm in the United States and Australia and used in pool markets such as Nordpool in Europe. Under virtual PPA, there is no physical sale of electricity, but the buyer provides a form of power price hedge for all or a portion of the electricity generated by the project and obtains the GOOs associated with that electricity. The developer sells electricity in the wholesale market and the buyer continues to purchase physical electricity at the point of consumption. However, the buyer is able to match its demand with GOOs from a known and verifiable source and certify that demand as having been met from renewable energy. The project obtains price certainty and is able to build its investment case accordingly.

Virtual PPAs are now enabling cross border projects for companies with electricity demand spread across multiple countries to "source" renewable energy from regions like the Nordics (wind) or Spain (wind/solar) with excellent resources and competitive power prices.

We are seeing very significant growth in this market in Europe at present, which has not been adversely affected by COVID-19. Indeed, the current drop in power prices as a result of COVID-19 disruption has made power prices particularly attractive for buyers to lock in a long-term contract.

Some of the legal and regulatory challenges with virtual PPAs include their treatment as a derivative, subject to reporting under the European Market Infrastructure Regulation (EMIR). This reporting obligation can be managed, whilst pricing structures have been evolving considerably so that buyers with less of an appetite for entering into derivative transactions can limit both the downside and upside and therefore address the way in which the instrument is treated for accounting purposes.

5.1.4. How we can help

Baker McKenzie is currently working on a number of significant transactions in the market, working with corporate buyers and their advisers, as well as developers, project investors and lenders. We are helping to shape the market, not just advising clients how to put deals together but also bringing buyers and sellers together and assisting clients more broadly and holistically where they may be struggling with how best to implement their carbon reduction goals across their supply chains.

5.2. How to draft a Carbon Contract for Difference (CCfD)

5.2.1. Overview

The ETS is a principle aspect of the EU's policy to combat climate change. By utilising a "cap and trade" system, the EU-ETS imposes emissions caps on companies in certain industries and allows companies to offset their emissions by trading in emissions credits (i.e., companies that are below their cap can sell their reduced emissions on the EU ETS to companies which are exceeding their cap). However, the moderate price level of carbon on the EU ETS and the uncertain price development does not provide sufficient incentive for significant investment into innovative, climate-friendly technologies.

5.2.2. A new instrument for new technologies

Carbon contracts for difference (CCfD's) offer governments the opportunity to guarantee investors in innovative climate-friendly technologies and practices a fixed price that rewards carbon emissions reductions. A CCfD is effectively a derivative contracts between a beneficiary and a public body that would pay the difference between the carbon price on the EU ETS and an agreed "strike price," therefore guaranteeing: (i) a higher carbon price than that on the EU ETS; and (ii) pricing certainty for investors into low-carbon technologies. It is a potential support mechanism that could be used by governments to promote and develop low-carbon technologies well beyond renewable energy generation. In particular, it could be crucial in kick-starting the hydrogen economy, which the EU and many national governments and think tanks consider vital to enable all of the power, heating, industrial and transportation sectors to decarbonise. It could also be used for supporting energy efficiency investments on a much larger scale than has been the case to date.

5.2.3. Motivation — Economic

Reducing carbon emissions is an important policy objective across the EU requiring action from governments and the private sector. Despite the high technology potential for carbon reduction processes, companies struggle to commercialise and develop low-carbon technologies as, ultimately, no market is willing to pay the higher production cost associated with the goods or service produced by such projects. CCfDs address this by providing a sufficiently viable "investible" carbon price that is not subject to market changes, therefore stabilising revenue streams and lowering finance costs whilst providing certainty to investors. CCfD's aim is to ensure that deep decarbonisation projects become commercially viable immediately and can therefore be used to scale up and support innovative, first-of-their-kind decarbonisation projects which would, over time, attract more investment into similar projects and therefore lower technology costs as the markets continue to develop.

Motivation — Incentives for continuous operation of innovative projects

Innovative technologies are often characterised not just by high investment costs but also by high operating costs. In the case of traditional funding schemes such as investment grants, there is a risk that low carbon costs the operation of an already constructed plant will not be commercially viable and become a stranded asset. The prospect alone of such an outcome can be a major deterrent or innovative investments. CCfDs address this concern as the payment under the CCfD is linked to the emissions reductions of a particular project and incentives for long-term success are already set at the investment stage and remain in operation through the lifetime of the project.

5.2.4. Motivation — Clear signalling of government's commitment to long-term policy goals

CCfDs serve as a tool to make long-term policy goals visible and achievable and represent a credible voluntary commitment to climate policy. As governments incur higher costs for CCfDs if CO2 prices remain low or even fall over the long term, these agreements are an incentive for policymakers to contribute to a strong European emissions trading framework. On the other hand, rising CO2 prices would allow governments to recuperate costs of CCfDs over time. Companies that have invested through CCfD's are also incentivised to ensure that

emissions trading remains strong, therefore promoting further investment into climate-friendly technologies.

5.2.5. CCfD's future

The EU has announced plans to more actively create and reshape markets so as to enable low-carbon investors to invest into novel low-carbon technologies for industrial processes and carbon capture and storage. As part of this support, the EU is looking at market-based solutions to lower costs and accelerate transformation to a low carbon economy. Such mechanisms will no doubt include carbon CCfDs, which will most likely be structured in a similar way to renewable energy competitive auction processes where bidders will compete for a pool of CCfD-based government support to be awarded in respect of specific low carbon projects. Carbon CCfDs remain the most promising policy instrument to commercialise low emission projects, which will most likely, in the near future, be formalised and adopted by the EU Member States therefore providing ample commercial opportunities for low-carbon investors.

5.2.6. How we can help

Baker McKenzie's European energy regulatory practice, deep experience in global carbon markets since the implementation of the Kyoto Protocol in 2005, world-leading climate change practice and experience advising on technological disruption and across the clean energy sector mean that we are well placed to work with clients in shaping this new market.

6. The European Recovery Plan: Next Generation EU

6.1. What is the European Recovery Plan?

On 27 May 2020, in order to mitigate the severe economic consequences of the COVID-19 outbreak, the Commission proposed the European Recovery Plan, with a new recovery instrument alongside the new 2021–2027 EU budget, which aims to boost the economy while, at the same time, delivering on the EU's green and digital objectives.

This new recovery instrument would amount to EUR 750 billion of financial firepower and is called "Next Generation EU." It will be added to the proposed enhanced EUR 1.1 trillion EU budget, resulting in a total spending potential of EUR 1.85 trillion over the next seven years.

Next Generation EU will be spent in different ways: (i) to support Member States recover and emerge stronger from the COVID-19 crisis; (ii) to boost private investment and kick-start the economy; and (iii) to learn the lessons from the health crisis and increase the resilience of the EU while accelerating the green and digital transitions.

6.2. How is Next Generation EU linked to the green transition?

Despite the pandemic, the Commission remains fully committed to its climate-neutrality goal. To that end, an unprecedented level of investment dedicated to green technologies and projects will be unlocked over a short period. Funding opportunities will be presented for a wide range of sustainability projects such as renewable energy and hydrogen projects, sustainable heating and mobility.

In fact, sustainability will have to run through most of the actions supported by Next Generation EU (and the new EU budget) as the European Council's compromise agreeing to the Commission's proposal sets an overall climate target of 30%, which will apply to the total amount of expenditure from the next EU budget and Next Generation EU. This amounts to EUR 555 billion of climate-related spending up to 2027, which will have to rely heavily on spending from Next Generation EU and, hence, largely be front-loaded.

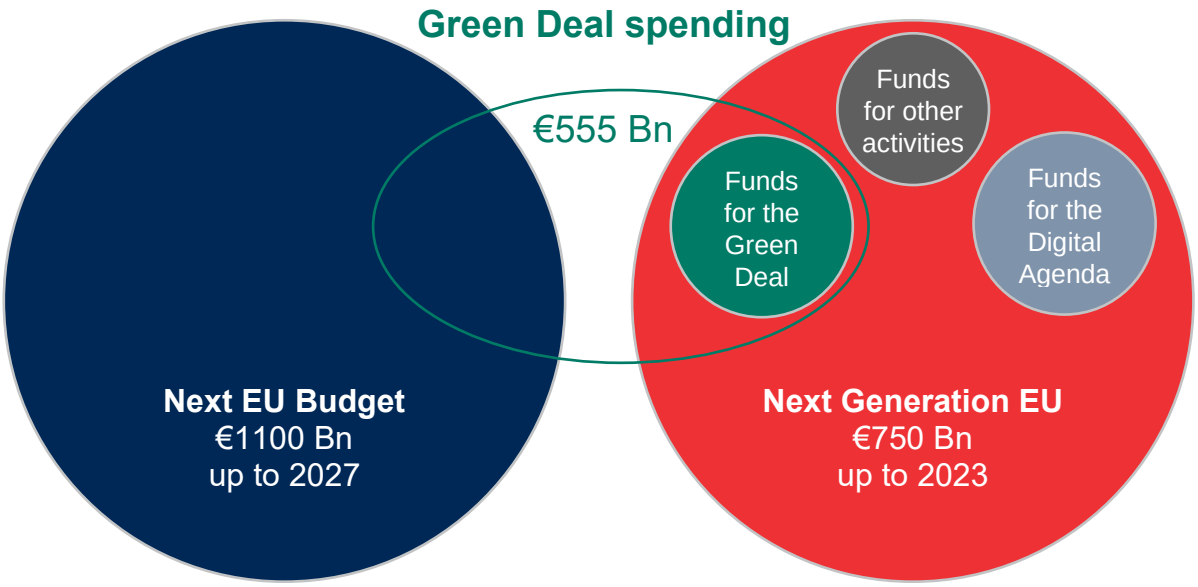

Figure 1. Climate spending for Next Generation EU and the next EU budget.

6.3. A EUR 672.5 billion boost

The Recovery and Resilience Facility, a newly established instrument that forms part of Next Generation EU, is by far the biggest of this initiative and is a real "game changer." It will provide EUR 672.5 billion-312.5 billion through grants and the rest through loans, in the form of large-scale financial support to reforms and investments undertaken by Member States to prepare their national economies to undergo the green and digital transitions while mitigating the economic and social impact of COVID-19.

These funds will be made available quickly: 70% of the grants (i.e., EUR 218.75 billion) to be provided under the facility must be committed to the Member States in the years 2021 and 2022. The maximum grants are to be provided to a particular Member State. The remaining 30% (i.e., 93.75 billion) must be committed by the end of 2023. The allocation of the first 70% between Member States has already been determined and is illustrated in the diagram below.

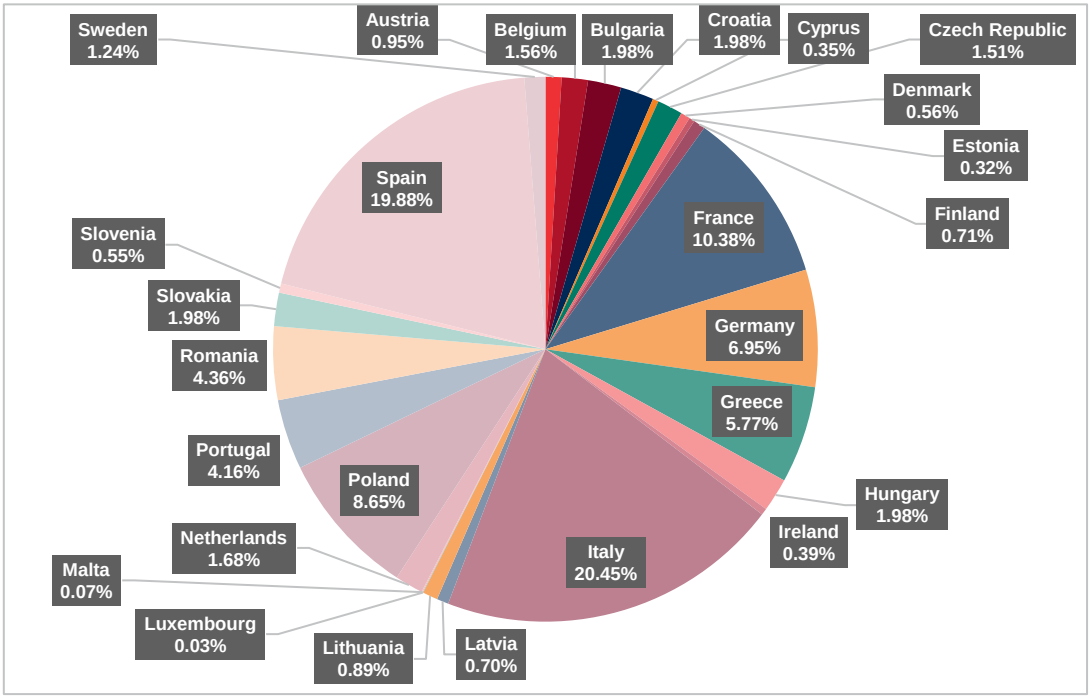

Figure 2. Share of the maximum grant allocation of the Recovery & Resilience Facility for 2021–2022.

In terms of actual numbers, the following table shows the amount of grant, in millions, that each Member State can receive from the Recovery and Resilience Facility as well as an estimate of the amount likely to be spent on Green-Deal-related projects from these funds.

Financial and regulatory initiative

Country	Maximum grant for 2021–2022, in millions	Maximum grant for 2023 (estimate[26]), in millions	Amount for the Green Deal 2021–2023,[27] in millions
Austria	EUR 2,081.65	EUR 892.14	EUR 1,760.48
Belgium	EUR 3,401.92	EUR 1,457.96	EUR 2,877.05
Bulgaria	EUR 4,326.31	EUR 1,854.13	EUR 3,658.82
Croatia	EUR 4,322.08	EUR 1,852.32	EUR 3,655.24
Cyprus	EUR 763.51	EUR 327.22	EUR 645.71
Czech Republic	EUR 3,301.01	EUR 1,414.72	EUR 2,791.71
Denmark	EUR 1,215.83	EUR 521.07	EUR 1,028.24
Estonia	EUR 708.47	EUR 303.63	EUR 599.16
Finland	EUR 1,549.60	EUR 664.11	EUR 1,310.52
France	EUR 22,698.49	EUR 9,727.92	EUR 19,196.44
Germany	EUR 15,203.13	EUR 6,515.63	EUR 12,857.50
Greece	EUR 12,612.70	EUR 5,405.44	EUR 10,666.74
Hungary	EUR 4,329.84	EUR 1,855.65	EUR 3,661.81
Ireland	EUR 853.13	EUR 365.63	EUR 721.50
Italy	EUR 44,723.79	EUR 19,167.34	EUR 37,823.55
Latvia	EUR 1,531.25	EUR 656.25	EUR 1,295.00
Lithuania	EUR 1,951.81	EUR 836.49	EUR 1,650.68
Luxembourg	EUR 71.27	EUR 30.54	EUR 60.27
Malta	EUR 159.48	EUR 68.35	EUR 134.87
Netherlands	EUR 3,667.24	EUR 1,571.67	EUR 3,101.44
Poland	EUR 18,916.94	EUR 8,107.26	EUR 15,998.32
Portugal	EUR 9,106.35	EUR 3,902.72	EUR 7,701.37
Romania	EUR 9,529.74	EUR 4,084.17	EUR 8,059.44
Slovakia	EUR 4,332.66	EUR 1,856.85	EUR 3,664.19
Slovenia	EUR 1,194.66	EUR 512.00	EUR 1,010.34
Spain	EUR 43,480.44	EUR 18,634.48	EUR 36,772.03
Sweden	EUR 2,716.03	EUR 1,164.01	EUR 2,296.98

[26] Based on the Commission's allocation key accepted by the Europe Council 2021–2022.

[27] Assuming that 80% of the total amount of climate-related spending from both Next Generation EU and the next EU budget will be supported by Next Generation EU.

6.4. How does this impact your business

Funds from the Recovery and Resilience Facility will be provided to Member States based on their National Recovery and Resilience Plans (to be submitted to the Commission). These plans' significant contribution to the Green Deal and digital agenda is a prerequisite for receiving funding. They must thus contain a sufficient number projects that are compatible with the Green Deal and digital agenda, of sufficient scope and size, to spend EU funds on. As illustrated below, for many Member States, the European funds will complement and be used as part of national recovery plans.

This provides to EU companies an invaluable window of opportunity to assist their national governments with the preparation (or revision) of their plans by designing valuable job-creating decarbonisation and digitalisation projects that are compatible with the Green Deal and the digital agenda. These companies would then benefit from the recovery plan funds for adapting their business to the new green and digital economy.

6.4.1. Germany's recovery plan

For example, Germany proposed a national recovery plan of EUR 130 billion, out of which nearly EUR 35 billion will be dedicated to climate-friendly investments. The development of the hydrogen industry holds a key role in the country's green recovery as a way to decarbonise heavy industries and HGV traffic and subsidise electric vehicles. Notably, the German government plans to invest EUR 7 billion to scale up hydrogen's production to 5 GW by 2030 and 10 GW by 2040. In the same vein, the country has set ambitious goals for solar and offshore wind power production.

Another important pillar of the national recovery strategy refers to the reform of the transport sector. It is worth noting that investments are planned in the industry of electric vehicles when petrol and diesel-powered cars seem to be excluded from the plan. Regarding the public transport sector, the rail system and other forms of travel will be modernised to create less carbon per passenger. Finally, financial support will be targeted to buildings' CO2 renovation and heating performance.

6.4.2. France's recovery plan

The recovery plan and sustainability objectives of the French government resonates, to a large extent, with their German counterpart. France aims to inject EUR 100 billion to restart the French economy focusing mainly on three pillars: sustainability, competitiveness and cohesion. Out of the whole budget, EUR 40 billion will be provided by the EU Recovery and Resilience Facility, of which almost EUR 30 billion will be dedicated to the green transition. The latter is envisaged notably through investments to upscale the production of hydrogen (and biofuels), research and development schemes for new, sustainable technologies and the decarbonisation of the energy-intensive industries.

In particular, France envisages incentivising the production and use of (renewable) hydrogen and biofuels through major research and development schemes and the launch of PCI projects (such as the development of electrolysers for the production of low-carbon hydrogen for the decarbonisation of industrial sites and R&D projects on renewable hydrogen for maritime and aviation purposes). In parallel, the French plan envisages reforms in infrastructure and the mobility sector as well as significant investments for the improvement of buildings' energy performance. The government also plans to support projects that will help these industries switch to renewable and low-carbon sources for their energy needs (e.g., through the replacement, or conversion, of an old coal boiler for heat production with a new carbon-neutral biomass installation).

7. The Sustainable Finance Initiative (investment and financing) and the EU Taxonomy

7.1. What is the Sustainable Finance Initiative and the EU Taxonomy?

The Sustainable Finance Initiative is a set of EU objectives and measures that aim to incentivise businesses to include environmental (and social) considerations when making investment decisions and to re-direct capital flows towards sustainable economic activities. As the foundation of this initiative, the Commission established a classification system for sustainable activities, the so-called EU Taxonomy. This taxonomy was adopted as part of the new Taxonomy Regulation[28] that also includes new disclosure obligations.

7.2. Why should businesses care about the EU Taxonomy?

The Sustainable Finance Initiative aims to reform financial practices of business and financial markets to the core according to what the EU Taxonomy considers sustainable. As the first major legislative action of this initiative, the Taxonomy Regulation "merely" enhances the transparency of the financial systems and the reporting requirements for large EU companies by requiring disclosure of how "aligned" certain companies — or certain financial products — are on the taxonomy, i.e., how "green" they are (see below). At first, this will "only" be translated into societal pressure that will incentivise market players to become more "sustainable." However, in the medium to long-term, the Sustainable Finance Initiative as based on the EU Taxonomy will, in all likelihood,[29] affect the opportunities of businesses to receive public subsidies and as well as the ease with which companies will be able to obtain access to private capital.

The EU Taxonomy is the foundation of this framework, as it determines whether an economic activity qualifiers as environmentally sustainable, i.e., taxonomy-aligned. Whether or not their business activities qualify as taxonomy-compatible will therefore already have consequences in the next few years and will most likely majorly impact businesses' financial positions in the medium to long-term.

7.3. How does the EU Taxonomy work?

7.3.1. What is 'sustainable'?

To be qualified as "Taxonomy-compatible," an economic activity must: (i) contribute substantially to one or more of the environmental objectives (e.g., climate change mitigation, circular economy, etc.); (ii) not cause significant harm to any of the other environmental objectives; and (iii) be carried out in compliance with the minimum safeguards set out by the UN and OECD (mostly covering standards relating to human rights and labour rights). The Commission must still adopt, by December 2020, the technical screening criteria[30] that will help determine, for a given economic activity, whether it can be considered to "contribute substantially" to one of the aforementioned objectives.

The EU Taxonomy does not ex ante exclude any activity, except power generation from solid fossil fuels. Nuclear power was considered for outright exclusion by the European Parliament, but this exclusion was not included in the final text. To assist the Commission to establish a list of environmentally sustainable economic activities, a technical expert group was appointed to provide specialized recommendations for the technical screening criteria. These recommendations have been published and they are highly likely to be followed, at least in substance, by the Commission. Notable economic activities that are considered as "contributing significantly to climate change mitigation" (subject to complying with certain technical — sometimes hard-to-achieve — criteria) include (without limitation): (i) the manufacture of low-carbon technologies, cement, aluminium, steel

[28] 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, available **here**.

[29] In particular because the adoption of the Taxonomy Regulation does not mark the end of the sustainable finance initiative, as this work will continue as the "Renewed Sustainable Finance Strategy" and actions of the Green Deal Investment Plan.

[30] For the "climate change mitigation" and "climate change adaptation objectives." For the other objectives (i.e., sustainable use of water resources, prevention and control of pollution, protection and restauration of bio-diversity and transition to a circular economy), these technical screening criteria shall be published in December 2021.

and hydrogen; (ii) the production of electricity from renewable energy sources (including PV and wind, etc.), from natural gas;[31] (iii) electricity storage; (iv) district heating and cooling and cogeneration; (v) passenger and freight rail, public transport; and (vi) data processing, hosting and related activities.

7.3.2. The introduction of thresholds

In order to demonstrate substantial contribution to climate change mitigation, a threshold of 100g CO2e/kWh on a life-cycle basis will apply to electricity and heat generation activities, as well as cogeneration. Hence, natural gas-fired electricity or heat generation plants will only qualify if they integrate abatement solutions, such as carbon storage.

In order to demonstrate the fulfilment of the "does not significant harm" criterion for the climate change mitigation, a second energy sector threshold of 262 g CO2e/kWh will apply on a life-cycle basis.

Each of these thresholds apply in different cases. For example, a new natural gas plant will be assessed for its contribution to climate change mitigation based on the threshold of 100g CO2e/kWh. However, if an existing natural gas plant considers in investing in resilience measures, it needs to significantly contribute to climate change adaptation as well as fulfil the "does not do harm" criterion for the climate change mitigation objective. Hence, the 262 g CO2e/kWh threshold would need to be complied with in this case.

7.3.3. What are the current obligations for businesses?

As mentioned above, besides the establishment of the EU Taxonomy per se, the Taxonomy Regulation focuses on the review and expansion of corporate sustainability-related reporting, the set-up of sustainability benchmarks and the creation of "green" standards for financial products. Accordingly, it provides for the obligation of investment advisers to take these "green" standards into account and promotes the inclusion of sustainability in credit rating and prudential requirements. It also requires large EU companies subject to the Non-Financial Reporting Directive[32] to publish the proportion of their CAPEX and OPEX that are taxonomy aligned.[33]

7.3.4. How does it impact business?

There is the risk that the threshold of 100g CO2e/kWh on a life-cycle basis will make it practically impossible to invest in new natural gas fired power plants without using the carbon capture usage or storage (CCUS) technology or a high blend of low-emitting fuels. When planning this kind of investment, businesses have to take this into account right at the beginning of the planning.

Furthermore, the threshold of 262g CO2e/kWh will potentially have wide-ranging implications. It will likely be applied to implement the "do not harm" principle of the European Green Deal, including with regard to the upcoming next EU budget.[34] While most of the legislative acts for the financial programs under the 2021-2027 budget, such as the CEF2, are already agreed or close to being agreed by the co-legislators, which limits the scope for additional changes of eligibility, this could be particularly relevant for the Recovery and Resilience Facility, for example. This threshold is also likely to permeate into all delegated acts under the taxonomy.

[31] Subject to the installation meeting less CO_2 than a given (and evolution) threshold.

[32] Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards the disclosure of non-financial and diversity information by certain large undertakings and groups (available **here**).

[33] The content and presentation of the information to be disclosed pursuant to those paragraphs, including the methodology to be used in order to comply with them shall be adopted by delegated acts by the Commission by 1 June 2021.

[34] The European Council has agreed that the EU expenditure should be consistent with the Paris Agreement objectives and the "do not harm" principle of the European Green Deal.

8. The Reform of the EU Emission Trading System and the Carbon Border Adjustment Mechanism

8.1. The Emission Trading System under review (again)

Companies whose operation emits GHG need no introduction to the EU Emissions Trading System (ETS), the EU's cornerstone instrument for directly combating climate change through a cap and trade system of emission allowance aimed at incentivising investments in renewable energy and energy-efficient technology and covering around 11,000 heavy energy using installations emitting roughly 45% of the EU's total GHG emissions.[35]

A mere two years ago, the ETS was revised to increase the speed of yearly reductions in allowances from 1.74% per year to 2.2% per year, applicable as of 2021. In parallel, the Market Stability Reserve was reinforced (the mechanism aimed at tackling any surplus of emission allowances in the carbon market), to prevent any surplus of allowance — occurring e.g., due to unexpected economic downturns — from undermining the effectiveness of the ETS. Since then, the price of ETS allowances has more than doubled, going from around EUR 10 per allowance in 2018 to around EUR 25 at the time of writing.

Nonetheless, business should be attentive to the upcoming revision of the system combined with the parallel introduction of a new so-called carbon border adjustment mechanism (CBAM). Indeed, as part of the realignment of the ETS on the new objectives of the Green Deal, the Commission is considering revising the ETS again, notably expanding it to new sectors and removing some of the measures currently shielding companies considered as at risk of carbon leakage from the its effect.

8.2. What changes to in the worlds' biggest carbon market?

As mentioned above, the Commission is committed to revising ETS to bring it in line with the more ambitious targets of 55% GHG emissions reduction by 2030 and carbon neutrality by 2050. This can be achieved by: (i) obliging companies already covered by the ETS to reduce emissions even more quickly (i.e., deepening the 2018 reform); and/or (ii) expanding the scope of industrial activity effectively covered by the ETS.

Therefore, the Commission is considering extending the scope of the ETS to sectors currently exempted, such as the airline, maritime and road-transport sectors. Other possible candidates are sectors that are currently receiving free allowances as they are considered at risk of carbon leakage[36] for which the "carbon leakage" measures would thus be abolished or, at least, attenuated. These sectors include, notably, steel, cement, plastic and fertiliser production as well as sugar, pulp, glass and paper production.[37]

The Commission's work programme foresees a proposal for the revision of the ETS in June 2021.

8.3. A new Carbon Border Adjustment Mechanism

Given the above, it follows naturally that the review of the ETS, particularly with respect to sectors at risk of carbon leakage, should be complemented by the introduction of a scheme ensuring that prices of imported products reflect accurately their carbon content so as to protect EU companies from unfair international competition.

This is the principle behind the so-called CBAM, which, according to the Commission, could also generate revenue for the EU[38] in addition to preventing "carbon leakage." The Commission considers that "A carbon border adjustment mechanism could bring additional revenues ranging from about EUR 5 billion to EUR 14 billion, depending on the scope and design." Having published a

[35] OECD, The Joint Impact of the European Union Emissions Trading System on Carbon Emissions and Economic Performance Economics Department Working Papers, No. 1515.

[36] Carbon leakage is defined as the situation where an increase in CO_2 prices (e.g., due to the enforcement of high environmental standards) could cause either: (i) production to be transferred from the EU to countries with less ambitious emission reduction measures; or (ii) EU products to be replaced by more carbon-intensive imports.

[37] The full list for phase 4 of the ETS (i.e., applicable as from 2021) can be found **here**.

[38] Such revenue was considered a way to reimburse the EU debt generated by the implementation of the European Recovery Plan. See the Communication "The EU budget powering the recovery plan for Europe," available **here**, spec. p. 16.

roadmap[39] on the CBAM, the Commission consulted on a list of sectors in which carbon leakage is high, for instance, the production of aluminium, iron and steel. The consultation suggests the CBAM could take one of the following forms:[40]

- Extending the ETS to imports and obliging foreign companies to buy carbon permits at the border.
- Creating a separate pool of ETS allowances for foreign producers.
- Establishing a border tax on imports to be levied on selected carbon intensive products produced in sectors at risk of carbon leakage.
- Creating a carbon tax (VAT or excise duty) at the consumption level on products produced in sectors at risk of carbon leakage (this would apply to EU production, as well as to imports).

However, there is currently little information regarding the future design of this CBAM. A proposal for the CBAM is planned for 2021.

8.4. What are the consequences for your business?

Industries of the transport, aviation and energy-intensive industries are at risk of being subject to (the full effect of) the ETS and need to prepare and analyse the potential ramifications of such a reform. Similarly, European manufacturers with supply chains from outside the EU and importers of product likely to be subject to the CBAM (such as steel, chemicals, etc.) need to consider the consequences and potential workaround (if any).

9. The reform of the TEN-E Regulation and the Connecting Europe Facility

9.1. Background

The TEN-E Regulation[41] establishes the criteria for the identification of projects of common interest (PCI), particularly in the area of energy, i.e., projects relevant to the energy infrastructure (such as interconnector, gas terminals, or in the future hydrogen or carbon dioxide networks). These projects are designated as such because their implementation will, for example, enhance the security of supply and market integration and help the EU meet its climate objectives by promoting a higher uptake of renewable energy.

Qualifying as PCI entails many advantages, most notably: (i) priority and accelerated treatment with respect to permit granting;[42] (ii) the possibility to request that costs for the project are placed under the regulated asset base;[43] (iii) the possibility of being granted incentives;[44] and (iv) the possibility of receiving a grant via the Connecting Europe Facility.[45]

9.2. The revision of the TEN-E Regulation and new funding opportunities

The Commission announced its intention to revise the TEN-E Regulation including, most notably, the eligibility criteria to qualify as PCI and receive CEF funding.

The prospective revision has caused a heated debate among policy makers, market operators and NGOs regarding which projects should remain PCI-eligible, given the ambitious climate objectives under the EU Green Deal. The main discussion centred on whether the following "controversial" projects will be eligible to qualify as PCI and, in the affirmative, the possibility of receiving CEF funding.

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[39] The Roadmap is available **here**.

[40] See the Inception impact assessment (Ares(2020)1350037).

[41] EU Regulation 347/2013 on Guidelines for Trans-European Energy Infrastructure.

[42] See Article 7 of the TEN-E Regulation.

[43] *Ibid* Article 12.

[44] *Ibid* Article 13.

[45] *Ibid* Article 14.

i. traditional natural gas infrastructure (and LNG) projects

ii. projects relating to refit works to modify existing gas grids enabling them to adapt to increasing levels of hydrogen blending

iii. the construction of dedicated hydrogen and/or CO_2 grids, potentially through the conversion of existing natural gas infrastructure

The Commission is currently considering their options regarding the existing gas grids and project under (i). PCI status may continue to be attributed to traditional gas projects but without the possibility to receive CEF funding. Alternative solutions would be, among others, a "geographical differentiation" between projects or even a gradual phase out of gas projects as PCIs by a specified date. It seems likely, however, that PCI status and CEF funding could be granted to projects pertaining to (ii) and (iii), such as modification of gas transmission and distribution networks to transport CO2 or hydrogen and other low-carbon gases, or relating to the repair of existing gas pipelines for the reduction of methane leakage if the pipelines are hydrogen-ready and/or other low-carbon gases-ready.

9.3. What are the consequences for your business

Infrastructure companies, as well as all businesses that heavily rely on infrastructure, should carefully monitor how the review of the TEN-E Regulation is shaping up and how the final shape of this review will impact their business, particularly with respect to the hydrogen and CO2 network and the potential end of traditional gas projects qualifying as PCIs.

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