

# 2020–2022: Pivotal Years for European Energy Infrastructure

Francesco Careri \*, Tilemahos Efthimiadis  and Marcelo Masera

Energy Security, Distribution and Markets, European Commission, Joint Research Centre (JRC),  
1755 LE Petten, The Netherlands; tilemahos.efthimiadis@ec.europa.eu (T.E.);  
marcelo.masera@ec.europa.eu (M.M.)

\* Correspondence: francesco.careri@ec.europa.eu

**Abstract:** The development of energy infrastructure is crucial for the fulfilment of multifaceted European Union (EU) policy objectives in the energy field. The EU's support to projects is financial, technical, and political, and explicated through a series of legislative acts. This opinion aims to provide an overview of the main energy policy initiatives introduced in recent years (or soon to be introduced) and their impact on European energy infrastructure development. Examples include the revision of the Trans-European Networks for Energy, funding mechanisms to foster sustainable investments in renewable energies, and the EU taxonomy on sustainable activities. We also discuss possible future improvements of EU policy and regulatory frameworks on energy with the aim of supporting an efficient achievement of the European Green Deal objectives.

**Keywords:** energy policy; infrastructure; investments; regulation; financing



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## 1. Introduction

European Union (EU) support has been indispensable for many major energy infrastructure projects, especially those with cross border benefits. The development of energy infrastructure has been identified as crucial not only for the fulfilment of the economic policy objectives (e.g., the integration of the European market) but also for enabling regional and industrial policies and even aspects related to the EU's security of energy supply. Infrastructure development is a key element in the context of the so-called “4As of energy security” (availability, accessibility, acceptability and affordability) [1], and its role has been extensively investigated in a considerable part of recent energy security literature [2].

The evolution of the energy infrastructure is seen as the main vehicle for the spearheading of environmental and climate policies, as the energy sector (including its upstream and downstream related activities) is a leading source of pollutants and greenhouse gases. Hence, the policies have always emphasised the link between energy, the competitiveness of the European economy, internal and external policy objectives, and sustainability at large. As a result of this approach, energy projects must be evaluated against the multifaceted “energy trilemma” framework [3].

EU support to projects is financial, technical, or political and is codified and implemented through a series of Regulations, Directives, and other means, always considering national and regional needs. The first need is to update and upgrade ageing infrastructure, mostly needed in Eastern Europe. There, the technical rationale was unmistakable and the political will resolute, but the market and regulatory conditions were not always prone to commercially viable projects. This required the provision of financial programmes tuned to addressing investment gaps and mitigating risks.

The aim of this opinion is to provide an overview of important and recent EU energy policy initiatives introduced (or in the course of being introduced) that affect energy infrastructure development from a multifaceted perspective. We also discuss possible future improvements of the EU legislative framework, deemed important for the efficient achievement of EU energy policy objectives.

## 2. Recent European Actions Fostering Sustainable Energy Infrastructure Development

### 2.1. Context

The establishment of the new European Commission at the end of 2019 triggered many concurrent changes such as the fostering of the European Green Deal [4], the decision for the European Investment Bank to gradually stop funding fossil fuels [5], and revisions of the key EU legislation promoting renewables and innovative technologies. Already, the concepts of ‘climate-proofing’ and ‘social-proofing’ of new infrastructures, and ‘climate resilience’ of existing, are prevalent in all new EU policy documents [6], with an array of new initiatives being designed and launched.

### 2.2. The TEN-E Regulation and Its Revision

An example concerns the Trans-European Networks for Energy (TEN-E, Regulation (EU) No. 347/2013), which determines the selection criteria for the energy Projects of Common Interest (PCIs) and aims at expediting the interlink between national energy systems. It is mainly based on identifying priority corridors and thematic areas whose implementation would establish a true European infrastructure.

It has been evident already in 2020 that the focus placed on particular infrastructures was not fully matching the shifting policy landscape, where the importance of climate and the need to decarbonise the economy have been raised to a predominant position, especially in the context of the obligations stemming from the Paris Agreement (COP-21) [7]. In addition, several factors have been evolving at a great pace in recent years: technologies and their relative costs, social attitudes on emissions, externalities and new infrastructure investments, strategic concepts related to the autonomy, sovereignty, and the global positioning of EU countries.

In early 2020, the European Parliament issued a Resolution [8] requiring the Commission to review the TEN-E approach, underlining the necessity to take into consideration all relevant factors for a possible update of the relevant legislative framework. For this, the Commission adopted a proposal to revise the EU rules on the TEN-E Regulation at the end of 2020 [9]. The proposal for the TEN-E revision aims at contributing to the EU emissions reduction objectives by promoting the integration of renewables and new clean energy technologies into the energy system, examples being the inclusion of new infrastructure categories such as electrolyzers and hydrogen, and smart gas grids.

As one can expect, with wide-ranging and rich responses by operators and investors, assimilating the variety of contributions and reaching a balanced position proved to be a great challenge. In June 2021, the European Council reached a general approach on the revision of the TEN-E Regulation [10], while in December 2021, a provisional agreement between the Council and the European Parliament was reached after months of technical meetings and four political ‘trialogues’ between the Council, the Parliament, and the Commission [11].

The text of the provisional agreement on the TEN-E revision (which will be formally adopted by the European legislators in the course of 2022) contains several elements of innovation with respect to the TEN-E in force and includes, among others:

1. The end of support for new oil and natural gas projects, with derogations concerning gas projects interconnecting Cyprus and Malta to the trans-European gas network until both Member States are connected to it (but not later than the end of 2029), as well as other grandfathering rules for permitting of gas projects whose applications have been accepted for examination by a competent authority in previous PCI rounds;
2. The inclusion of new infrastructure categories to enable the clean energy transition such as hydrogen infrastructure, electrolyzers, smart gas grids, etc.
3. Principles of EU cooperation (voluntary and nonbinding) with respect to offshore grid planning;
4. Wider climate-impact selection criteria for PCIs.

### 2.3. Sustainable Funding Mechanisms

The commitment of governments to rebound from the economic consequences of the COVID-19 pandemic has also played a role in fostering financial instruments devoted to driving sustainable investments. A clear step in this direction is represented by the EU commitment to devote 30% of EUR 1.8 trillion in loans and grants (in 2018 prices) to support the climate change fight by combining the 2021–2023 NextGenerationEU program (the EU pandemic recovery plan) with the 2021–2027 Multiannual Financial Framework (the EU long-term budget) [12]. In particular, the Recovery and Resilience Facility [13] allows the Commission to raise funds from capital markets to support the Member States in developing reforms and infrastructural projects aimed at meeting European priorities. The borrowing, concentrated between mid-2021 and 2026, will be repaid until 2058 by the borrowing Member States, future EU budgets (grants) and new sources of revenues envisaged by the Commission such as a carbon border adjustment mechanism, the Emission Trading System (ETS), a digital levy and, eventually, new measures to be proposed by June 2024 [14].

One example of an innovative solution to foster sustainable generation investments is the EU Renewable Energy Financing Mechanism (REFM). Established by the Commission and operational since January 2021 pursuant to the “Governance Regulation” [15], REFM aims to enable more cost-effective deployment of renewable energy projects across the EU and to foster cooperation among the Member States in achieving Union-wide and individual binding targets on renewable energy, as set in the National Energy and Climate Plans. The program, currently implemented by the European Climate, Infrastructure, and Environmental Executive Agency (CINEA) [16], foresees three options: (a) statistical transfer of renewable energy generated in a Member State to another one; (b) joint projects; and (c) the possibility for the Member States to collectively benefit from projects hosted in a different Member States through tendering and bidding. An example of statistical transfer is represented by the 2017 bilateral agreement between Lithuania and Luxembourg, with the former transferring a certain amount of renewable energy production between 2018 and 2020 to help the latter fulfil its 2020 national renewable energy targets [17].

It is expected that such mechanisms will be further developed to facilitate investments in European locations where renewable resources are abundant and developing them makes the most sense, instead of being restricted to national borders.

### 2.4. EU Taxonomy for Sustainable Activities

Another important EU initiative regards the establishment of criteria to determine to what extent an economic activity and, by extension, investments in it can be considered environmentally sustainable. In particular, the identification of suitable sustainability criteria for investments is a key element of the “EU Taxonomy Regulation”, which entered into force in July 2020 [18]. The Taxonomy Regulation aims at guiding and mobilising investments in activities that are deemed necessary to achieve long-term EU climate objectives.

In particular, Article 3 of the Taxonomy Regulation defines as environmentally sustainable an activity which:

1. Contributes significantly to one or more environmental objectives such as climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, the transition to a circular economy, pollution prevention and control protection and restoration of biodiversity and ecosystems;
2. Does not significantly harm any of the environmental objectives referred to in point 1 above;
3. It is carried out in compliance with the minimum safeguards,
4. Complies with suitable technical screening criteria.

According to the principles of the Taxonomy Regulation, the actual list of environmentally sustainable activities must be defined through the Commission delegated acts [19].

While all delegated acts equally contribute to the implementation of the Taxonomy Regulation, the discussions on the scope of the so-called climate delegated acts have been

particularly important and animated, giving the impact and repercussion on the energy and the financial systems. The first act, encompassing sustainable activities for climate change adaptation and mitigation objectives, was formally adopted in June 2021. A second complementary delegated act, covering specifically the role of private investments in gas and nuclear activities, was approved in principle by the Commission in early February 2022 and sent to the European Parliament and Council for scrutiny [20]. Without going into the merits of the different positions, a challenging and contentious discussion among the different stakeholders involves the inclusion (or not) of nuclear and gas activities as transitional activities accelerating the shift from more pollutant activities towards long-term carbon neutrality.

### 3. Discussion on Opportunities for Future Improvements

Considering all the above, it is safe to assert that energy infrastructure investments are already operating in a new environment. In addition to the technical and market considerations, a series of other factors are gaining increased popularity, such as the efforts to accelerate the climate change mitigation measures, changes in the societal acceptance of infrastructure projects, increased needs for the protection of national and European critical infrastructures, an ever-evolving geopolitical environment, increased volatility in international commodity and financial markets, pandemic(s), mitigating energy poverty and vulnerability, hybrid threats new technologies to be integrated into existing systems, etc. We can also anecdotally mention the case where the project promoters for a particularly small infrastructure project were requested to show the direct links with the COP-21 objectives.

Defining the policies, methodologies, and the *modus operandi* for navigating this new environment is indeed a challenge for policy makers, regulators, system and market operators, the private sector, and the general public. While this situation may be overwhelming for certain parties, we can already draft a roadmap for defining the conceptual and methodological frameworks, starting with the terminology, a common understanding of the issues, the policy goals in accordance with the technical capabilities, the mapping of stakeholders, etc.

In the following subsections, we will present some key elements that are currently out of the scope of the enforced or foreseen EU legislative processes but that, we think, represent important elements of reflection for future improvement of policy and regulatory frameworks of EU energy infrastructure, with the aim of efficiently achieving the objectives of the European Green Deal.

#### 3.1. Governance Framework for Coordinated EU Energy Infrastructure Planning

We think that the first important point of reflection on the improvement of future frameworks for EU energy infrastructure development relates to the governance of the EU energy infrastructure planning.

Pursuant to Article 12 of the provisional agreement on the TEN-E revision [11], the development of joint scenarios for the Ten-Year Network Development Plans (“TYNDPs”) for electricity and gas is a task assigned to the European Network of Transmission System Operators for Electricity (“ENTSO-E”) and for Gas (“ENTSOG”), which shall follow specific framework guidelines issued by the European Union Agency for the Cooperation of Energy Regulators (“ACER”). We recall that TYNDPs are the main instruments used for the identification and selection of PCIs for electricity and gas projects.

Although it is prescribed that the TYNDPs scenarios developed by the ENTSOs must be approved by the Commission, concerns have been expressed on whether these organisations can be perceived as neutral when developing these scenarios, given that they, by definition, directly represent the interest of transmission system operators (“TSOs”). TSOs are the prominent project promoters for electricity and gas projects. While the ENTSOs are key stakeholders in the process of developing scenarios, there are proposals for assigning this task to an independent third-party body. This position is similar to the

one presented by ACER and the Council of European Energy Regulators (“CEER”) in their joint position paper on the TEN-E revision [21].

Another reason one could advocate the shift of this responsibility away from the ENTSOs to an independent body is that the scenarios for the identification and selection of PCIs must be consistent among all infrastructure categories. This is particularly relevant in a context where cross-sectoral integration of different networks (e.g., electricity, gas, hydrogen, and CO<sub>2</sub> transport networks, etc.) and systems (e.g., energy, industry, and transport) is a key element for the efficient development of EU-wide energy infrastructure. If the scenarios were developed by an independent third party, all project promoters within different infrastructure categories would use the same assumptions with respect to technical and economic parameters and variables, providing a higher level of consistency in evaluating projects impacting different sectors.

Finally, the arguments presented for independent scenarios could be extended to the identification of infrastructural gaps (see Article 13 of provisional agreement on the TEN-E revision). The scope of the objectivity of the outcome of this task, jointly assigned to the ENTSOs in the upcoming update of the TEN-E framework, could be considerably improved if assigned to an independent third party.

### 3.2. Harmonised Electricity Network Tariffs

The second point of reflection we would like to highlight is the opportunity of increasing the level of consistency in EU network tariffs for electricity. In this respect, we observe that Article 18 of the recently approved Reg. (EU) 943/2019 (“Electricity Regulation”) [22] has been recently improved with the aim of mitigating the risk of market fragmentation by:

1. Requiring ACER to issue regular updates of best practices reports on transmission and distribution of electricity network tariffs with the aim of increasing transparency and comparability in the tariff setting;
2. Urging national regulatory authorities (“NRAs”) to duly take the results of ACER monitoring when setting or approving network tariffs.

The first best practice report for electricity transmission network tariffs issued by ACER in 2019 identified significant differences in the application of transmission charges for injections, recovered cost categories, losses, time signals, and locational signals [23].

Focusing on electricity distribution tariffs, instead, the main findings of the first ACER report show an even more fragmented situation [24]. Firstly, the report highlights how there is no common understanding of the meaning of “distribution tariff” and, by extension, on how it can be distributed (for instance, in some Member States, reported distribution network tariffs cover taxes, levies, and other non-DSO cost elements such as contribution for renewable energy support schemes, cogeneration, etc.). Secondly, other key elements of distinction among the Member States are the distortive effect and the lack of cost reflectivity caused by applying different approaches in setting injection tariffs for transmission and distribution networks. The third element of differentiation is the variety of approaches in terms of applying tariff bases to injection tariffs distribution.

Given the findings of the monitoring of ACER on electricity network tariffs, we suggest that a stronger requirement for harmonisation of electricity network tariffs would be desirable in future updates of the Electricity Regulation. For example, the EU energy legislative framework could be updated by promoting the development of network codes for harmonised transmission and, in particular, for distribution network tariffs, in the wake of the Tariff Network Code on harmonised transmission tariff structures for gas (Reg. (EU) 2017/460, “TAR NC”) [25].

Finally, we think that measures and actions to reduce energy poverty should not directly affect the design of electricity network tariffs. In fact, ex ante reductions of network charges motivated by energy poverty could result in distortive effects, potentially undermining cost reflectivity and cost recovery for transmission and distribution network operators and therefore creating disincentives hindering effective energy infrastructure development. In this respect, we think that social support provided by governments via

state budgets is a more effective approach for reducing the risk of energy poverty for the most vulnerable categories of customers.

#### 4. Conclusions

Energy infrastructure development is a key element for the fulfilment of EU energy policy objectives in a multifaceted perspective. While the analysis shown in this opinion highlighted how important policies and instruments had been proposed and introduced, we think that additional measures and efforts are needed in order to foster and accelerate sustainable and climate-resilient investments, reduce risks to the security of supply and promote competitiveness at EU level. We call for an integrated, enhanced, and holistic approach to cross-sectoral energy infrastructure development to support the ambition for Europe to become the first climate-neutral continent by 2050.

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