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# European Commission proposal for TEN-E Revision



**CURRENT**

Enabling Network Technology  
throughout Europe



**currENT** is an industry association that represents the voice of Europe’s innovative grid technology companies. Our vision is a European power network that is the recognised world leader in enabling decarbonisation through the efficient use of modern grid technology. Power networks – both transmission and distribution – have to become even stronger enablers and accelerators of the energy transition.

We believe that renewable generation, coupled with electrification, is the ‘first order’ solution for the economic decarbonisation of Europe. Renewable-based electricity solutions can meet, by 2050, more than 70% of our total energy needs. As to make the ‘can do’ a ‘will do’ we need powerful climate proof power grids. Such grids are already possible today.

**currENT** members offer solutions that climate proof existing power networks and add innovative elements to the new ones that are yet to be built. Power networks can be optimised and reinforced through these solutions, and additional networks can start off with the latest state-of-the-art technology. Our solutions enable power networks to deliver the energy transition at least cost; in a secure, sustainable and socially responsible manner.

During the public consultation preceding the European Commission’s proposal (July 2020), **currENT** provided its recommendations for the revision of the TEN-E regulation to the Commission.

**currENT**’s main recommendations to the consultation were<sup>1</sup>:

1. Recognise the value of flexible solutions in the project selection processes, as these can be delivered quickly;
2. Start with the low-hanging fruits, optimise existing grids first and establish new infrastructure in accordance with a coordinated decarbonisation plan, using available technologies built-in;
3. Accelerate the uptake of innovative solutions for PCI projects, while facilitating and encouraging the participation of SME’s and the private sector;
4. TEN-E must reflect a 2050 pathway and plan, support the technologies needed and encourage the necessary grid innovation that will be needed to deliver a cost-effective European electricity infrastructure;
5. Align the TEN-E regulation with European long-term policy objectives and ensure that these are prioritised;
6. Increase transparency in network development with a focus on early stages of project selection and evaluation;
7. Strengthen the roles of ACER and the Commission and enhance the effectiveness of consultation processes.

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<sup>1</sup> See <https://www.currentheurope.eu/wp-content/uploads/2020/07/200709-currENT-TEN-E-recommendations.pdf>



currENT welcomes the publication of the revised TEN-E Regulation, and the opportunity to share additional feedback as the act undergoes further iteration in the trialogues. This document is our response to the European Commission proposal for a regulation on guidelines for trans-European energy infrastructure of 15 December 2020; COM(2020) 824.



## General Remarks on the European Commission's proposal

The TEN-E framework is the only available instrument for ensuring that the best possible clean energy infrastructure, with cross-border impact, will be available in a timely manner.

In December 2019, EU leaders agreed on achieving a climate neutral European economy before 2050. Carbon-free electricity is the inescapable precursor to a carbon-neutral Europe. It must increasingly be based on renewables, in particular also offshore renewables, which must be up and running long before mid-century. The massive build-out of renewables, in turn, must be underpinned by infrastructure, onshore and offshore, that is capable of distributing three times as much power as today, seamlessly throughout Europe, as efficiently and cost-effectively as possible and while maintaining high security of supply standards.

The increased EU greenhouse gas reduction target of 55% by 2030 will require a doubling of the share of renewables in energy to 40% by 2030. The share of renewable electricity must “as a minimum double from today’s 32% share of renewable electricity in the energy mix to around 65% share in 2030,” according to the European Commission, requiring average annual investments of more than €50 billion, double that of the investments in the previous decade (€24 billion)<sup>2</sup>. Grid optimisation technologies can help reduce these amounts tremendously.

currENT supports the overall aims suggested by the European Commission proposal on page 3. However, we would like to see a new bullet added: “Ensuring that infrastructure development of existing and new grids in Europe make use of the best available and innovative technologies.”

The Green Deal is a moon-shot project. It will require bold steps from policy makers to introduce the necessary changes to infrastructure planning and development while ensuring that the best available grid technologies are deployed throughout Europe.

The framework for the scenarios that ACER is asked to develop have to be further specified: the framework has to provide the system perspective for the Green Deal. There must be a clear link with other legislation such as the Smart Grid Indicator or the Energy Efficiency Directive article 15.2 on network efficiency.

Such a new European framework for infrastructure planning must recognise the contribution of innovative technologies, and should reflect the value of early deployment<sup>3</sup>. The neutrality of all involved parties must be ensured and monitored by ACER, the European Commission and the European Parliament.

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<sup>2</sup> SWD (2020) 0346; European Commission, 15.12.2020.

<sup>3</sup> The value of early deployment means that congestion costs and other costs are avoided when technology solutions are deployed ahead of a –delayed, or planned- infrastructure.



## Detailed comments

### TEN-E as a vehicle for delivering the increased climate ambitions.

The European Commission’s proposal recognises that the TEN-E framework needs revision to future-proof Europe’s energy infrastructure framework and bring the guidelines in sync with the increased climate ambition for 2030 and the decarbonisation objective for 2050.

The current TEN-E framework was established, structured and developed with a focus on infrastructure development one decade ahead, rooted in ten-year network development plans (TYNDP), defined by the incumbent asset owners of European electricity and gas infrastructure. As the term suggests, TYNDPs will only reach ten years ahead.

**currENT** agrees that the central objective of the revision must be to bring the TEN-E guidelines in line with the new, ambitious decarbonisation agenda. However, we doubt that the proposal will be sufficient to deliver the necessary infrastructure investments in time, despite the clear improvements and bold suggestions from the Commission. The achievement of the new climate targets will require a commitment to the NOVA principle<sup>4</sup> and thus the imperative use of innovative technologies in optimisation of existing grids and improving future grids.

We welcome the following improvements in the European Commission’s proposal:

- Updated eligibility criteria for smart electricity grids;
- The exclusion of natural gas infrastructure;
- The inclusion of Projects of Mutual Interest (PMIs);
- The integrated offshore development and offshore network plans within each Sea Basin;
- The initiatives to shorten permitting procedures and the one-stop-shop per sea basin for offshore renewable projects
- The ambition for a simplified process for automatic inclusion in the Union-wide TYNDP;

**currENT** also welcomes the proposal’s statements in relation to climate change, resilience and preparedness, in particular the following recitals:

- (recital 7) technological development has been rapid in the past decade. That development should be taken into account in the infrastructure categories covered by this Regulation, the projects of common interest selection criteria as well as the priority corridors and thematic areas.

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<sup>4</sup> NOVA is an abbreviation for “Netz-Optimierung vor Verstärkung vor Ausbau”, meaning “optimisation ahead of reinforcement ahead of expansion of lines”. This principle is applied in the German NDP and by BNETZA, the German regulator. In its consultation response to the German NDP 2021 currENT has insisted on the need to apply optimization not only to existing lines, but also to future lines.



- (recital 8) While there has been very significant progress in the completion of the internal energy market, there is still room for improvement by a better utilisation of existing energy infrastructure, the integration of the increasing amounts of renewable energy and system integration.
- (recital 9) The Union’s energy infrastructure should be upgraded in order to prevent technical failure and to increase its resilience against such failure, natural or man-made disasters, adverse effects of climate change and threats to its security,
- (recital 10) The Union’s energy infrastructure should be resilient to the unavoidable impacts that climate change is estimated to create in Europe in spite of the mitigation efforts. Hence, strengthening the efforts on climate adaptation, resilience building, disaster prevention and preparedness is crucial.

currENT sees, on the other hand, three shortcomings in the proposal that need to be addressed in the dialogues:

**Firstly**, the European Commission’s proposal contains promising language on the need for innovation in grid technology. However, unfortunately some of the most significant references to innovation in the recitals, (e.g. recitals 1, 18 and 41), are not adequately reflected in the Articles. Europe cannot afford to ignore the enormous efficiency gains that can be reaped with innovative grid technology, available today and applicable to existing and future infrastructure. Neither can it afford to ignore emerging new grid technology.

**Secondly**, the proposal does not make the use of innovative technology in grids mandatory. This request was already made in the report to EC on the assessment of TEN-E by Trinomics, in 2018.<sup>5</sup> Without the deployment of innovative solutions in investments will become unnecessarily high. Readily available grid-enhancing technology solutions such as Dynamic Line Rating, modular power flow control devices and distributed STATCOMs can have as powerful an impact as planning, constructing and operating new high CAPEX transmission assets, and they can often be deployed in a fraction of the time needed for new lines. 2030 is very near in electric infrastructure terms. Technology that can be applied fast, with relatively limited planning procedures, minimal environmental impact, and which increases the efficiency of the existing infrastructure, must be given preference, in accordance with the Efficiency First Principle, and the NOVA principle

**Thirdly**, the proposal does not adequately reflect the stated ambition of bringing the guidelines in line with the increased climate ambition, particularly in terms of offshore. There is a need for proper, EU governance of the offshore space as the current institutional setting will fail to deliver the necessary

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<sup>5</sup> [Evaluation of the TEN-E Regulation | Trinomics](#)



investments in grids and power capacity. Therefore, **currENT** is advocating for a single, European entity to plan and coordinate the deployment of offshore renewables and grid infrastructure.

### Application of the Energy Efficiency First and Do No Significant Harm principles

Recital (21) states that it is important to “ensure that only infrastructure projects for which no reasonable alternative solutions exist may receive the status of project of common interest”. The proposal aims to achieve this by applying the “Energy Efficiency First Principle” (EEF) and the “Do No Significant Harm” principle (DNSH) to the infrastructure gaps identification process.

The energy Efficiency First Principle is enshrined in EU law by the Regulation on the Governance of the Energy Union and Climate Action<sup>6</sup>. It states that Member States, before taking energy planning decisions, must consider whether “cost-efficient, technically, economically and environmentally sound alternative energy efficiency measures could replace in whole or in part”, the envisaged planning, policy and investment measures”. (...) “This includes, in particular (...) future investment decisions on energy infrastructure in the Union”. It adds that “Such cost-efficient alternatives include (...) more efficient conversion, transmission and distribution of energy.”

Do No Significant Harm is established by Article 17 of the Taxonomy Regulation<sup>7</sup>, which states: “An activity is considered to do significant harm to the circular economy (...) if it leads to significant inefficiencies in the use of materials or in the direct or indirect use of natural resources”.

**currENT** strongly supports the proposal’s ambition to apply selection criteria that rewards efficiency and flexibility in line with the EEF and DNHS principles. Article 13 establishes that the ENTSOs shall “implement the energy efficiency first principle and consider with priority all relevant non-infrastructure related solutions” when submitting its infrastructure gaps reports to the Commission and the Agency. Furthermore, Annex V (5) states that the energy system wide cost-benefit analysis must “explain how the energy efficiency first principle is implemented in all the steps of the ten-Year Network Development Plans”. However, it is unclear from the Commission’s proposal what that means in practice and how the ambition from recital (21) is reflected in the articles.

**currENT** supports the inclusion of these principles in the revision but would like to highlight the need for the implementation of the EEF principle to be closely monitored and regularly reported on by the relevant authorities, including ACER. This could be further supported by requiring National Regulatory Authorities (NRAs) to adopt this approach and ensure that how the EEF is being implemented is reported in National Development Plans. **currENT** highlighted the importance of greater use of the EEF in our response to the recent consultation on the revision of the Energy Efficiency Directive 2012/27/EU.

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<sup>6</sup> Regulation (EU) 2018/1999

<sup>7</sup> Regulation (EU) 2020/852



currENT further notes that the Commission has not delivered the methodology for efficiency of energy networks (article 15.2 EED) that was due for end of 2020. currENT believes that the needed methodology should not limit efficiency here to technical and non-technical losses, but must have a broader perspective including system losses such as redispatch and curtailment and the cost of delayed networks to society (see recommendation below on the value of early deployment). currENT asks the Commission to align the outstanding EED provisions, the Smart Grid Indicator and this TEN-E update, to arrive at a consistent set of policy measures across the related regulatory updates.

In addition, the articles do not stipulate how the Do No Significant Harm principle is assessed by the ENTSOs, the Agency and the Commission. Article 5, leaves it to project promoters to assess impacts and the link between the infrastructure gaps reports and the designation of Projects of Common Interest (PCIs) and Projects of Mutual Interest (PMIs) is not clear from the proposal.

Consequently, it is difficult for currENT to assess from the legal text if and how the application of the EEF and DNHS principles will be ensured in the PCI and TYNDP processes. For example how the significant efficiency benefits from Flexible AC Transmission Systems (FACTS), Dynamic Line Rating (DLR) or Superconducting Cable System (SCS) technologies will be taken into account in the process of selecting PCIs and PMIs and their inclusion in the Union-wide ten-year network development plans (TYNDP). From currENT's perspective it is crucial that all projects are scrutinised for their adherence to the two principles and we welcome the increased scrutiny from the Agency and the European Commission in the process.

## Rapidly Deployable Solutions

currENT welcomes the greater focus on 'accelerating the project implementation' which was identified in the Impact Assessment, and is referenced multiple times throughout the proposal. At currENT, we advocate that power networks must not delay Europe's green recovery or achievement of European energy targets. Hence, the implementation of key European projects and next generation solutions must be accelerated.

While we recognise that the permitting process has historically been one of the main delay factors for PCI projects and the need for streamlining, we would also like to highlight the benefits of better supporting the use of rapidly deployable solutions. Rapidly deployable solutions are often non-wires solutions that can act as enablers of larger infrastructure projects and crucially lead to the quicker release of capacity on the existing network. The revised provisions in Chapter II on the selection and monitoring of PCI projects are welcomed by currENT in this regard, particularly 5 (a)(b)(c). By considering these factors of (a) urgency, (b) complementarity of projects, and (c) the progress of the implementation of existing projects, the TEN-E Regulation can ensure that the projects, most critical to Europe, are prioritized and – even more importantly - delivered on time.





currENT would like to point out here that the focus on urgency should be considered not only in light of whether the PCI project should be awarded PCI status in the given year, but it should also consider which proposed projects can best meet the system need in the required timeframe, as the value of reducing carbon emissions in the near-term is far greater than reducing the same carbon emissions in 10 years' time. For example, if comparing two projects to meet the same need, and one can be delivered in 1 year and one in 10 years' time, it is important that the earlier benefits such as increasing market integration, reducing wasted renewable energy or improving security of supply in the 9 years before the 10-year project is built are recognised in the project selection process. In this way the 'cost of delay' associated with some projects can be taken into account.

### **Innovation in grid infrastructure is a no regrets option that will boost Europe's competitiveness**

As the Commission points out in its Impact Assessment, “regulatory frameworks and regulatory practice in the Member States in many cases do not sufficiently support innovative grid investments by the TSOs or even constitute a barrier to such investments,” a point also made by the 2019 Ecorys report.<sup>8</sup>

Modern technology can often provide the benefits required of a traditional infrastructure PCI without the large-scale construction works or local disruption. currENT therefore welcomes the updates to the current Articles 2(7), 4(2)(c), 4(4), and Annex II to better reflect technological change, particularly the explicit recognition of “control systems and sensor technologies both at transmission and medium voltage distribution level, aiming at a more efficient and intelligent electricity transmission and distribution network, increased capacity to integrate new forms of generation, storage and consumption and facilitating new business models and market structures” However, it is not entirely clear from the definition of “smart electricity grids” in Article 2 (8) that these technologies include grid-enhancing technologies such as grid monitoring solutions. We ask for the definition in Article 2 (8) to be broadened to reflect the scope of Annex II 1 (d), which would ensure that these important grid-enhancing technologies or non-wire solutions are fairly valued as enablers of smart electricity grids.

If Europe is to meet its decarbonisation agenda, it is crucial that we avoid closed shop innovation policies. Closed loop discussions lead to sub-optimal innovation. The proposal recognises that “regulatory frameworks should provide proportional and appropriate incentives for investment” for projects that are likely to incur higher risks such as “innovative transmission technologies” or “projects with high operational expenditure” (page 16 of the Explanatory Memorandum). currENT has previously proposed that the CAPEX bias or bias towards traditional solutions is lessened by applying a more output-based approach to regulation. Such an approach would focus on the target outcomes of network investments, rather than the type of solution chosen, regardless of whether it is a CAPEX- or OPEX-based solution. This approach needs to be reinforced by output-based incentives that support greater investment in trialing

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<sup>8</sup> Ecorys et al: Do current regulatory frameworks support innovation and security of supply in infrastructure for gas and electricity. [Energy Infrastructure Forum 2019 - background papers | European Commission \(europa.eu\)](#)



new technologies, and ultimately transitioning these technologies to Business As Usual (BAU) investments.

**currENT** suggests that this is done by introducing an obligation on network companies to transparently share their innovation experiences, learnings and best practices with the wider energy community. This could be done through a fit for purpose Smart Grid Indicator. That way, the risk of wasting research money and duplicating work to prove an already proven technology is minimized. Furthermore, it should be recognised that the private sector and other industry players are at the forefront of developing innovative solutions thus, should be more involved in the innovation process.

Innovation funding for new transmission technologies must be expanded beyond the TSO to the private sector. Meanwhile, more political support is needed for utilities to facilitate development of new technologies from TRL6 to TRL9 “sand boxes” and / or other incentives where needed, and TSO’s must be incentivised to engage in external R&D partnerships to facilitate demonstration and deployment of innovative network technologies.

## Governance

The proposed revision of the TEN-E framework aims at moving cross-border infrastructure planning and development from a national to a regional approach. It must be recognised that a European challenge of this magnitude requires a truly European solution.

The Commission Impact Assessment<sup>9</sup>, accompanying the Commission’s proposal, tables as possible options an Independent System Operator or Joint Undertaking for offshore grids (Policy Option B.1.2) and the introduction of cross-sectoral infrastructure planning by a neutral actor responsible for the entire planning process, developing scenarios, market and network studies and identification of infrastructure gaps (Policy Option B.2.2).

It is these types of regulatory reform that is needed for Europe to reach its moon-shot attempt at reaching decarbonisation in due time. Unfortunately, these policy options from the Impact Assessment are not adequately reflected in the Commission’s proposal when it comes to the offshore space.

**currENT** welcomes the increased role of ACER and the Commission in developing the framework in the “independent validation” of defining future scenarios, identifying long-term infrastructure gaps, assessing individual projects and drawing up the Union-wide ten-year network development plan.

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<sup>9</sup> SWD (2020) 346; European Commission 15.12.2020



## Offshore infrastructure requires a change in governance structure

The Commission’s Offshore Renewable Energy Strategy estimates investment in offshore renewables at almost €800 billion; around two thirds to fund the associated grid infrastructure and a third for the offshore power generation. Innovative solutions have an important role to play in delivering on this ambitious strategy. Grid-enhancing technologies can unlock more near-term capacity in the existing grid, and state-of-the-art technology for cable systems can ensure that energy is transported over long distances from offshore wind hubs to large demand centres. The potential of such innovative solutions to deliver the energy transition at least cost - in a secure, sustainable and socially responsible manner – must be considered in the PCI selection process.

The European Commission proposes in Article 14 that by July 2022 “Member States shall jointly define and agree to cooperate on the amount of offshore renewable generation to be deployed within each sea basin by 2050, with intermediate steps in 2030 and 2040”. Furthermore, Article 14 proposes that “Integrated Offshore Network Development Plans” are developed by 2023 for each sea-basin of the Union. These are inadequate but excellent proposals and the Commission should be commended for attempting to arrive at a more Europeanised approach to infrastructure planning and investment. **currENT** strongly supports the proposals in Article 14 and encourages all dialogue parties to keep them intact and ambitious in the adopted regulation.

The European Commission’s proposal for revised TEN-E guidelines contain promising language on the need for offshore infrastructure and innovation in grid technology. However, some of the most important language in the recitals, e.g. (18) and (41), on the need for offshore grid innovation could be better reflected in the articles of the proposal.

**currENT** proposes that the language of Recital (18) “In particular, offshore infrastructure planning should move away from the project by-project approach towards a coordinated comprehensive approach” and Recital (41) on incentives for “innovative transmission technologies for electricity allowing for large scale integration of renewable energy” is reflected in Article 14. This would ensure that the “integrated offshore network development plans” include sections on grid innovation and grid technology needed to reach the 2030, 2040 and 2050 ambitions established for the European Sea Basins.

If the “Integrated Offshore Network Development Plans” of Article 14 do not encourage and incentivize grid innovation, the proposal would leave the impression that Europe can reach our decarbonisation goals over the next 30 years without improved grid technology. We cannot.

## A coordinating European offshore entity

The point-to-point, national approach using current grid technology will not deliver the Green Deal. Without innovation in network technology and construction of the necessary offshore infrastructure, Europe will fail to deliver on its climate commitments and the transition will need to be accomplished at a higher cost using less appropriate technology.



**currENT** suggests to boost Article 14 as to reflect an appropriate governance of the offshore space. While RCCs have been set up through the Clean Energy Package for all Europeans, the offshore space requires a higher level of ambition for planning and deploying offshore renewables and infrastructure regionally, timely, and to the benefit of all Europeans.

**currENT** is advocating for a single European coordinating entity to plan and coordinate the deployment of offshore renewables and offshore grid infrastructure. Such an entity would be a novel approach. The compelling arguments are that, since there are no existing grids offshore, there is no existing, rigid institutional and regulatory setup that needs to change and, secondly, it would minimise any green premium associated with decarbonisation.

The new entity must be independent of asset ownership and with appropriate representation of governments, regulators and system operators, as well as NGOs and relevant stakeholder associations.