

ENTSO-E key recommendations to review the TEN-E Regulation

Complementary Annex

In September 2020, ENTSO-E published 6 key recommendations for the review of the TEN-E Regulation. These high-level policy recommendations addressed the general framework of a revised TEN-E Regulation. The present Annex provides in-depth explanations as well as clear and practicable proposals on how this framework can be integrated into the TEN-E Regulation revision process.

The Annex focuses on thematic focus areas considered by ENTSO-E as most important.

System planning – Make use of the TEN-E Regulation as a key instrument for an integrated infrastructure planning and as a catalyst for decarbonising the European energy system.

The ENTSO-E Ten-Year Network Development Plan (TYNDP) has been a unique pan-European development plan for electricity infrastructure for more than a decade. **The highly complex, biannual process with continuous improvements has allowed the TYNDP to become a holistic infrastructure-planning tool, able to consider other energy sectors as well.** It is important to keep in mind, that the TYNDP serves two related but distinct purposes. On the one hand, the TYNDP informs and supports the planning of national investments in regulated transmission grid environment. On the other hand, it is the only reference for the Projects of Common Interest (PCI) selection process, which serves EU energy policy objectives. Granting the PCI label is based on the assessment of different planning aspects with regard to a project, such as technical, economic and serviceability aspects in general.

Since 2018, the TYNDP has introduced joint electricity and gas scenarios commonly developed by ENTSO-E and ENTSG. It has been an important step towards a multi-sectorial view on the future energy system. The scenario building process has

been “preparing” the energy system for the green transition. Adopting a “one system view” been introduced in the Green Deal would require the integration of different sectors. It has to be done in a way that utilises all possible synergies between them, acknowledging that the direct use of electricity generated from variable renewable energy sources and avoiding cross-sectoral transformation is the most efficient way to decarbonise the energy system. Such a solution should offer flexibility for system operators to balance the system in the best possible way and bring additional benefits in terms of system resilience, reliability and security of supply. **The TEN-E Regulation should support smart sector integration solutions that respond to system needs in the most efficient way** also by fostering respective pilot projects and dedicated research programs.

Addressing the expectations arising from the Green Deal and building upon the current pan-European TYNDP planning process, ENTSO-E has developed a new roadmap for multi-sectorial planning support (MSPS). **With the MSPS, ENTSO-E has set an important milestone on its way towards a carbon free energy**

economy in 2050 and has offered a blueprint for integrated energy system planning. The MSPS relies on the central role of electrification, while at the same time enabling simultaneous consideration of different system components, technologies as well as their mutual interactions on the operational level (i.e. TSO/DSO). It has to be noted that the MSPS and TYNDP are separate but combined processes. The MSPS can serve as a basis for the TYNDP planning because its results may be used directly in the TYNDP sub-processes (scenario building and project assessment). Moreover, the MSPS can be considered as a transparent and flexible foundation for the development of the integrated energy system in the future, especially while introducing an open framework for relevant TYNDP processual steps.

The MSPS foresees the integration of important actors and sectors beyond gas and electricity into the scenario develop-

ment process. Due to the high complexity grade and significant modelling efforts, such integration should ideally be realised as a step-by-step approach.

It is notable though, that the identification of the sector-specific system needs during the infrastructure planning processes should be done independently by each individual energy sector. Due to its flexible features, the MSPS enables a dual- or multi-sectorial project assessment for relevant cases in the later process steps of comprehensive scenario building and consistent infrastructure planning¹.

The Green Deal ambitious objectives will raise decarbonisation efforts to an entirely new level. ENTSO-E is well aware of the challenges ahead and stands ready to contribute and provide the expertise and knowledge of European TSOs to the transition process at any time.

Further evolution of energy system wide cost-benefit analyses

As for the cross-sectorial planning, the continuous improvements and intensified stakeholder engagement are indispensable for the harmonized Union-wide methodology development of the cost-benefit analysis (CBA) – one of the main pillars of the TYNDP. After thorough assessment by ACER (Agency for Cooperation of Energy Regulators) and other stakeholders, the latest CBA methodology is proposed for European Commission approval this year.

To keep up a well-functioning CBA assessment, it is crucial that the CBA continues to follow a multi-criteria approach. The CBA development should aim at a constant improvement of the methodology to achieve a neutral evaluation of infrastructure across sectors. An adequate adjustment of the CBA methodology is also necessary to capture economies of scale and economies of scope that hybrid and/or cross-sector projects could provide. The TSOs are the appropriate actors to propose adaptations to the underlying methodology.

ENTSO-E members' experience in putting policy goals for energy transition into practice is well recognised. The understanding of the real-time operating patterns of the system, integrating markets and physics, performing asset management – these TSOs skills form the cornerstone of the necessary knowledge to identify electricity infrastructure needs while measuring the system-wide costs and benefits from a societal point of view. The neutrality of such system analysis is ensured by simultaneous considerations of socio-economic welfare aspects and system-wide, technology-agnostic and scenario-driven views performed under scrutiny of national authorities.

The efficient energy system of the future must be built upon a strong electricity grid favoring and promoting direct electricity consumption from available renewable energy sources. However,

in case of non-regulated sectors, like heavy transport or chemical industry, there might be certain internal business-related decisions, which would not be 'CBA'-labelled. These, however, would have a similar role in terms of quantifying benefits and costs for these utilities by making respective investment decisions. Such business decisions inside individual sectors may also be influenced by the energy infrastructure planning process, as the energy supply and resulting energy prices might play a decisive role in the process as well. Therefore, **the purpose of the MSPS is to facilitate the most efficient solutions at system level**, rather than to make business investment decisions inside sectors alone.

Besides improving security of supply, electricity transmission projects enable flexibility sharing and the cost-effective integration of renewables, thus reducing costs, emissions and energy dependency for EU citizens. In particular, the future electricity system will have to transmit energy from regions with high renewable potential, such as areas with offshore renewables, to the major (usually remotely located) load centres.

Interconnectors contribute to a smart, sustainable and inclusive growth and bring benefits to the entire Union in terms of competitiveness and economic, social and territorial cohesion. In this regard, the achievement of the electricity interconnection target of at least 15 % for 2030 as set out in the Governance Regulation (Regulation (EU) 2018/1999), provided that system benefits outweigh costs, is the key to fulfil the goals of the Energy Union. It enables the energy transition measures necessary to mitigate and adapt to climate change, and efficient fulfilment of the commitments undertaken in the Paris Agreement.

¹ [For details see Artelys focus study](#)

Innovation & digitisation

The **integration of innovative technologies and the enhanced use of digital solutions** can complement the energy transition while supporting the modernisation of the transmission system infrastructure. Furthermore, the deployment of innovative technologies might lead to a reduction of environmental impacts, can optimise the utilisation of existing assets and increase cost effectiveness while guaranteeing a high level of security of supply. Innovative technologies can also improve power system capabilities and performance characteristics, such as reliability in case of expected contingencies, resilience against unexpected events, as well as security and operational safety aspects.

To facilitate the development of new technologies, the new TEN-E Regulation should therefore provide support for innovative technologies and pilot projects in case a project either demon-

strates an advanced level of industrial maturity or the ability to provide benefits on a pan-European scale. **While the research, development and innovation activities are financed through dedicated EU financial instruments, the uptake of full-scale deployment of innovation and digital solutions in the electricity infrastructure should indeed be considered within the perimeter of the TEN-E Regulation.**

Accordingly, development projects of energy system that are based on a high level of innovative technologies/processes with proven benefits for system users should be assessed at an adequate level in the PCI process. To de-risk their deployment, this can be done introducing innovation-related quantitative or at least qualitative criteria in the project assessment.

PCI Stability – Strengthen the PCI label as a mere presumption of usefulness and as a stable driver for project promoters

An improved stability of the PCI label for advanced, mature projects would reduce related administrative burdens and create a more stable and inviting framework for project promoters

To further improve certainty and stability of the PCI label, PCI projects which have reached sufficient maturity (under construction or in permitting) and are demonstrating steady and concrete progress, as per their implementation plan, should be automatically re-confirmed in the future PCI lists until their commissioning without imposing re-application by project promoters. Processing time at regional groups' level could be also accelerated if requirements in terms of transparency, criteria and assessment steps, as well as, in terms of participation of all relevant actors, are met. Accordingly, project promoters should be officially and timely informed about the way their projects are evaluated (score thresholds). In case of any problems or missing data, a request for additional information should be sent to the promoters in a duly agreed time in order to allow them to perform necessary corrections/completions measures without causing a delay.

Similarly, the official opinions of respective authorities (National Regulatory Authorities – NRAs, ACER, ENTSO-E and ENTSOG) regarding the eligibility and assessment of the projects should

be communicated to project promoters, Member States representatives and all other relevant stakeholders in a timely manner in order to give them the possibility for any clarifications and explanations necessary. Such approach would help avoiding any potential misunderstandings. In this context, the role of TSOs as neutral entities responsible for system security, and planners of the national networks in dialogue with the NRAs, should be recognised.

Furthermore, the project assessment methodology used by the European Commission for the PCI selection process should stay constant and not change every two years because such biannual reassessment of projects bases on new scenarios and is therefore incomparable. It also generates an unstable framework and thus represents a concrete risk for the implementation of key projects.

In addition, monitoring obligations of PCI projects create high cost and effort for project promoters. The simplification of the monitoring process or extension of its frequency would significantly improve project implementation process.

Eligibility – Define eligibility criteria for a PCI status ready to meet new challenges

The conditions of eligibility for PCI status should be consistent with the Paris Agreement and the 2050 climate neutrality objectives without calling into question the criteria of significant cross-border impact.

Offshore

The new TEN-E Regulation can make a difference by supporting the rise of offshore transmission infrastructure. In this respect, **TSOs call for the TEN-E Regulation to explicitly recognise the necessary connections of large offshore hubs as projects fulfilling eligibility criteria for PCI status.** The successful integration of such an amount of renewable energy into the electricity transmission system would require innovative infrastructure extensions. **These investments are the first building blocks of a future offshore grid realised as hybrid interconnections, meshed grids or radial connections.**

ENTSO-E recommends that such projects are explicitly included into the categories of eligible projects. Because they are aiming at large Renewable Marine Energy production, hubs or scalable connection projects, offshore undertakings are likely to accommodate large volumes in the long-term. With the amount of offshore renewable generation capacities that are foreseen

in the context of the European Commission's long-term strategy towards climate neutrality, innovative solutions of offshore projects will become more and more important. The notion of benefit to the European Union is therefore undeniable. However, offshore projects also introduce specific technical and regulatory challenges. It is therefore even more recommendable to consider such projects as potential PCI candidates, because access to Connecting European Facilities (CEF) funding could make a huge difference in their development and support their realisation.

The proposed modifications will have to be complemented by a **review of the geographical perimeter of the priority corridors** and thematic areas established in the Regulation. In the current version of the TEN-E text, only the Northern Seas are mentioned. ENTSO-E recommends therefore extending the priority corridors to the Atlantic and Mediterranean areas as well.

Significant cross-border impact

The TEN-E Regulation was written to support and facilitate the development of trans-European networks especially by promoting the interconnection and the interoperability of national networks. The PCI process was designed to promote and to accelerate implementation of scale projects that meet the rationale behind the TEN-E Regulation, namely the pooling of resources to serve an European optimum. In this context, the eligibility of smart grids projects should always be subject to such criteria.

In terms of the currently applied threshold of 500 MW of increased cross-border capacity, ENTSO-E recommends to re-evaluate whether the current design and form of the criterion on significant cross-border impact for a project (500 MW GTC, as defined by Annex IV.1), is still the most appropriate and relevant to identify projects of common interest in electricity transmission. There can be projects that do not meet this specific threshold but still deliver high value to Europe and European energy consumers. If a new requirement was to be designed, **it would have to be studied in a global way**, taking into account all different projects that need to be labelled as PCI in the next decade for the timely delivery of EU objectives (among others: interconnections with third countries, offshore connections, projects for digitalisation of the transmission network). In this

context, **transmission projects that do not directly cross a border between Member States, but deliver value and benefits that go beyond one Member State and contribute positively to EU energy policy goals should also continue to be eligible for the PCI status.**

According to the TEN-E Regulation, all transmission lines designed for an operating voltage above 220 kV and underground and submarine transmission cables designed for operating voltage above 150 kV) that interconnect Member States and Member States to third-countries, or cross Bidding Zone/critical sections should be eligible under TEN-E without imposing a specific threshold. Only in case of internal lines that do not cross two bidding zones, a specific threshold to highlight the cross-section impact between bidding zones should be foreseen (e. g. 100 – 200 MW). The methodology for calculating the requirements set should be delivered by the project promoter through a specific study subject for approval by the relevant stakeholders – and notably, the concerned TSOs, ENTSO-E and the European Commission.

Interconnections with third countries

The eligibility framework of the TEN-E Regulation shall reflect the need to link the European grid with third countries as well. To timely fulfill the priorities defined in the European

Green Deal, it is necessary to intensify the involvement of EU neighbouring countries and to enable their integration into the EU energy market.

Green Deal metrics:

The project assessment based on the harmonised cost benefit analysis (CBA) methodology is a central part of each TYNDP. The results are also the input data and hence the starting point for the PCI selection process. **In the context of the Green Deal objectives (climate neutrality and decarbonisation), more attention should be given to the CO₂ indicator included in the CBA.** So far, the focus of stakeholders and policy makers has been put on the monetized part of the CBA. However, it is important to note that the current CBA does already contain a highly relevant metric able to assess a projects contribution to climate objectives.

This metric is critical to make the transmission network ready for a carbon-neutral future.

Besides the CO₂ indicator, other metrics aimed at picturing a project's contribution to sustainability goals might be envisaged and should be developed in close cooperation with other actors and sectors, also taking into account new driving forces (such as offshore grid, energy system integration etc.).

Financing/CBCA – Support project realisation through fair and simple financing instruments and mechanisms

Considering the upcoming investment needs in EU energy infrastructure, a fair and efficient financing toolbox is indispensable. Yet, experience has shown that the currently applied cross-border cost allocation mechanism (CBCA) has several severe shortcomings. From the point of view of project promoters, the CBCA serves as a bureaucratic pre-process necessary to apply for EU funding (i. e. CEF). According to the gathered experience, the current CBCA process and payment methods have implied significant financial risks in terms of balance sheets and ratings. The involved TSOs have gotten no asset or security for their CBCA payment and timely cost recovery was not ensured. In fact, those TSOs had to serve as 'credit institutions' without getting an asset as security for provided loans. It is obvious that the current CBCA mechanism does not serve its purpose offering nothing but a complex and time-consuming process, which has a damaging effect on trust between project promoters at the end of the day. Therefore, **ENTSO-E strongly recommends a fundamental redesigning of the CBCA mechanism (including ACER Recommendation 05/2015 on CBCA) within the revision process of the TEN-E Regulation.**

Accordingly, a negotiated voluntary solution should stay the default approach for project financing between respective countries of hosting project promoters. Apart from that, alternative ways of cost sharing could be envisaged if a project is not commercially viable for the hosting countries, but economically viable from a European perspective. In such cases, European funding shall become the preferred option. **Given the current and upcoming needs for significant investments in the EU energy infrastructure necessary to reach the EU decarbonisation goals, a "fast track lane" to access support from financial instruments (i. e.**

CEF or specific programs) should support all PCI projects.

A new CBCA process involving non-hosting countries should be considered as a "measure of last resort" applicable only under certain pre-defined conditions:

- › **The data basis should be transparent and understandable for all parties.** Therefore, only TYNDP scenarios should serve as input data for the CBA within a CBCA decision, except if the concerned NRAs of hosting and non-hosting Member States decide otherwise (currently, the use of own scenarios is allowed) and no externalities beyond benefits stemming from the TYNDP scenarios should be considered.
- › **A CBCA should be applied only if there is no doubt that citizens of non-hosting countries would also significantly profit from the project.** Therefore, the net benefit of at least one of the hosting countries should be negative in all TYNDP scenarios. If, according to all TYNDP scenarios, more than 50 % of the benefits are allocated to the hosting countries, the scope of any CBCA decision should be limited to the hosting countries.
- › In case of a CBCA application, the selection criteria to determine involved countries needs to be fair and the number of involved countries limited to a minimum. A non-hosting country should exhibit in all TYNDP scenarios a positive net benefit if considered for a CBCA. The currently applied absolute significance threshold of 10 % (determined by the ACER recommendation 05/2015) needs to be transformed into a relative significance threshold related to the "size" of

the country using e. g. criteria like gross domestic product, annual demand or population. Through this, the details of the methodology based on the absolute size of a country would be more robust, and a fair determination of influenced countries would be ensured.

- › **Increase public acceptance by limiting CBCA payment not to exceed the benefits for the country concerned.** EU funding (i. e. Connecting Europe Facility) could be used to cover the portion of the costs that exceed the benefits for the hosting countries and which is not reallocated to other countries
- › **Insurance of the cost recovery via tariffs for the contributing non-hosting project promoters.** Paying non-hosting TSOs need a security. Potential options could be payments at key pre-defined project milestones or definition of a minimum project availability target over a certain (pre-defined) period of time (e. g. 5/10 years) and partial refunding of CBCA if the target with precisely defined criteria has not been achieved by the end of the period.

As receiving funds from the CEF can reduce the regulatory asset base of grid operators, it is recommendable that the new TEN-E Regulation support national regulatory authorities by introducing new instruments that strengthen TSOs incentives to obtain CEF grants for the financing of PCI implementation. The co-funding of a PCI project by the European Union allows the reduction of the impact of new grid developments on transmission tariffs, resulting in a direct benefit for consumers.

Furthermore, the TEN-E Regulation revision should improve legislative effectiveness in fostering network investments by strengthening the synergies between research and innovation programs as well as creating new ones between the different available funding instruments, notably the CEF (including CEF digital) and Horizon Europe. The revised TEN-E Regulation shall also ensure consistency between different financial instruments and funding mechanisms operating under EU-Taxonomy Regulation.

In case a PCI project involves private project promoters and TSOs, the latter shall be given a possibility to apply for European fund.

PCI Permitting – Timely deliver PCIs through faster permitting and comprehensive public engagement

The principles established in the current TEN-E Regulation should have improved and accelerated permitting procedures in particular by the introduction of the so-called ‘one-stop shop’, as well as clear definitions of time limits foreseen for final adoption of authorisations. However, in practical terms, such measures do not always ensure effective respect of the envisaged timelines or actual streamlining of the procedures.

Moreover, since 2013 the complexity in permitting procedures has increased significantly. In many Member States, permitting processes encompass far more activities than are considered as mandatory steps in the current TEN-E Regulation. The ongoing energy transition followed by massive integration of the growing

numbers of RES capacities, as well as pursuing the European climate and energy targets, require continuous investments and development of the necessary energy infrastructure. **The prompt implementation of the transmission grid projects is a key prerequisite for effectively addressing mentioned objectives. For this very reason, the status of PCI should become an even more tangible instrument to support faster project implementation.**

With this in mind, ENTSO-E recommends to review the TEN-E Regulation so as to **strengthen effectiveness and efficiency of the permitting procedures by introducing timely and modern specific measures** that should ensure the following:

Effective respect for the envisaged timeline, through:

- › **Empowerment of the one-stop-shop** to ensure respect of timelines through enactment of milestone plans. In case the the one-stop-shop and the permitting authority share an administrative body it should be possible that this the one-stop-shop function regarding timelines is moved to another body while ensuring that **authorities involved in permitting procedures dispose of adequate resources** to fulfil their tasks in the same time.
- › **Promoting dialogue between the different authorities involved** in the permitting process.
- › **Introduction of silent consent provision**, i. e.: implicit approval in cases where the competent authorities involved in the permitting procedure do not raise issues within the given timelines.
- › **Issuing of a final authorisation**, which takes into account all aspects of the process needed for commissioning of the project without deferring any outstanding points for further revisions or approvals (unless from the perspective of the project promoter a later enactment will speed up the process). This would allow avoiding the ‘moving target’ effect, by which

parts of projects are revised even after authorisation, requiring new approval processes and thus leading to delays in overall implementation timelines.

- › In addition, it is of the utmost importance that **TEN-E provisions and implementation on national level do not lead to**

Actual streamlining of the procedures through:

- › Providing guidelines/indications on requirements at national level, for completeness of documentation to be submitted by the project promoters in order to avoid further requests.
- › Providing specific pre-authorisations in the early stages (such as permissions for access to areas where archaeological surveys are needed, in order to assess whether the identified site is suitable to host the project) of the pre-application procedure in order to allow evaluation of concrete feasible solutions already in the public consultation phase. This would make it possible not to question any important part of the project in the permit granting procedure and avoid repetition of procedural steps
- › Minimising procedural layers and redundant activities - any requirement prescribed by the new TEN-E Regulation should not generate additional workload for the project promoters but it shall be complementary to the requirements of the

higher legal uncertainty and risks for project promoters and public authorities involved into the process. Therefore, new rules should be limited to a minimum, unless they lead to clear and tangible improvement of the procedure while not adding legal risks.

national permitting regimes. In many countries, spatial planning is carried out as a procedure on its own, before the permit granting process as described in TEN-E Regulation even starts. Therefore, the new TEN-E Regulation could provide an impulse to integrate the planning processes, which would lead to eliminate redundant steps that are carried out in both procedures, such as Natura2000 checks.

- › In addition, there should be enough flexibility to properly match TEN-E-rules with national procedural law, e.g. on public consultation, which in some Member States is carried out earlier in the process than it is currently requested by TEN-E.
- › Also, the new TEN-E rules should foster digitalisation of the procedures in permitting, for example, publication of documents online as an alternative to presenting paper documents (amounting to several thousands of pages, sometimes tens of thousands) locally.

Furthermore, with specific regards to the environmental assessments, the TEN-E regulation should:

- › **Ensure that the project promoter has access to the data and information required for the preparation of environmental reports.** In this regard, it would be helpful if the Member State identifies a body/entity, which would be the project promoter's central point of contact for obtaining all necessary data. If this entity certifies that some of the requested information is not available, the project promoter should be exempted from providing the data.
- › **Provide simplified environmental assessment procedures** for renewal projects and modernisation/technological upgrade of pre-existing assets (for instance new kinds of conductors/cables). By assessing alternative routings for power lines, which takes considerable time in all permitting stages, legal certainty for the project promoter should be ensured once an alternative – based on the permitting authority's decision in the course of the process – is not considerable anymore. A respective deadline should validate, and hence finalise the entire process.
- › **Support the introduction of the single and concentrated approval of all authorisations** needed within the context of the Environmental Impact Assessment, i. e.: landscape protection permits, hydrogeological risk authorisations as well as authorisations related to protected areas (Nature 2000 areas, national/regional parks). This would avoid subsequent approvals of many specific authorisations, which usually make the permitting process much longer and could lead to hindering the project implementation.
- › When reviewing EU environmental legislation, the focus should be set on ensuring that project promoters can handle environmental provisions efficiently and effectively (cf. accessibility of data for project promoters). The ultimate goal should be to deliver the infrastructure needed in a timely manner, not compromising on the overall ambitions with regard to nature conservation.

Effective public participation and stakeholder engagement at the local, regional, national and cross-border levels is indispensable for permitting. **Public participation should therefore maintain a central and imperative role in the TEN-E Regulation.**

In many cases, national provisions and voluntary steps taken by TSOs today already go beyond TEN-E Regulation obligations on public consultation. **When defining concrete participation and communication measures, the TEN-E regulatory framework should provide the right level of flexibility to achieve the intended aim, without compromising on the ambition.** In this regard it should be ensured that TEN-E Regulation requirements are compatible with national public consultation provisions, which might require earlier public participation than requested by TEN-E. **It is therefore essential to carry out public consultation early enough** to anticipate needs for further analysis and to avoid delays during the following steps. It should be ensured that TEN-E provisions do not lead to redundant processes if public consultation is carried out at an earlier stage than prescribed in the Regulation. A voluntary consulting process by the implemen-

tation of the advanced and inclusive models of “participatory planning” and stakeholder engagement conducted by TSOs should be further encouraged and recognised, for example through an exemption or simplification of the mandatory procedures required by the Regulation. In addition, authorities should be more actively involved in the consultation process in order to speed up the approval sequence.

Finally, learning curves on both sides (project promoters and permitting authorities) should lead to more streamlined and efficient processes in the future. **In order to foster mutual learning and to provide more efficient and effective permitting procedures, exchange of good practices within Member States and beyond should be encouraged.**

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