



Public engagement and acceptance in the planning and implementation of European electricity interconnectors

Third report of the Commission Expert Group
on electricity interconnection targets

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The European Council of October 2014¹ endorsed the proposal by the European Commission of May 2014² to extend the 2020 electricity interconnection target (defined as import capacity over installed generation capacity in a Member State) to 2030 while taking into account the cost aspects and the potential of commercial exchanges in the relevant regions.

To make the 2030 target operational, the European Commission decided to set up a Commission Expert Group to provide specific technical advice, among others, and to examine any relevant elements that can have an impact on the interconnection target and the development and implementation of interconnectors.

The Expert Group on electricity interconnection targets was established by the Commission Decision of March 2016³. The Expert Group started its work in October 2016, following a public call for applications. In line with Article 5 of the Commission Decision three members, the Agency for the Cooperation of Energy Regulators (ACER) and the European Networks of Transmission System Operators for electricity (ENTSO-E) and for gas (ENTSOG) did not undergo the public call and were appointed directly. The Expert Group consists of 15 members and 2 alternate members. The mandate of the Group was extended in February 2019 in line with Article 5 paragraph 2. The full list of current members is presented in Annex 2.

The Expert Group handed its first report **Towards a sustainable and integrated Europe**⁴ to Commissioner for Climate Action and Energy, Miguel Arias Cañete in October 2017 after which it continued working on different aspects related to development, assessment and implementation of interconnections. It handed its second and third reports on **Electricity interconnection with neighbouring countries** and **Public engagement and acceptance in the planning and implementation of European electricity interconnectors** to Commissioner Arias Cañete on 19 June 2019. It will now continue its work on the impact of sector coupling on the development of interconnections.

The minutes of all the Expert Group's meetings are publicly available on a dedicated website⁵.

¹ Council Conclusions of 23 and 24 October 2014, available at https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/145397.pdf

² Communication on European Energy Security Strategy COM(2014) 330 final

³ Commission Decision of 9 March 2016 setting-up a Commission expert group on electricity interconnection targets 2016/C 94/02

⁴ Report of the Commission Expert Group on electricity interconnection targets: https://ec.europa.eu/energy/sites/ener/files/documents/report_of_the_commission_expert_group_on_electricity_interconnection_targets.pdf

⁵ You can access the summaries of all Expert Group meetings here: <https://webgate.ec.europa.eu/playground-multisite/ener/en/topics/infrastructure/projects-common-interest/electricity-interconnection-targets/expert-group-electricity-interconnection-targets>

The views in this report are the sole responsibility of the members of the Expert Group and do not necessarily reflect the views of the European Commission. The European Commission cannot be held responsible for any use, which may be made of the information contained therein.

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Executive summary

The Expert Group acknowledges that, in order to achieve its ambitious climate and energy goals, European Union needs to rely on a robust and interconnected grid where electricity interconnectors can support large-scale deployment of renewable energy sources, improve security of supply and benefit European citizens. The Expert Group also recognised that many transmission infrastructure projects face significant challenges in terms of public acceptance because of opposition on grounds of perceived risks to health, nature or intrusiveness of infrastructure in the landscape.

In its third report, the Expert Group called for a better understanding of public opposition as a multilayer phenomenon, which can occur in all phases of the decision-making process and should be treated as an opportunity to deliver projects that are socially acceptable and transparent and create momentum and support for European energy and climate policies.

The Expert Group mapped the most researched areas of concern considered as pivotal in addressing public opposition to grid infrastructure and identified a series of measures that can mitigate their impact. When it comes to grid development in their area, citizens and local communities care for about measures to ensure the environmental protection, the use of land and local value, their health and safety, their participation in the decision-making process and the alignment of national, regional and European needs and interests.

The Expert Group recognised that the Regulation on trans-European energy networks (347/2013) sets a solid reference point for transparency, public consultations and stakeholder engagement in the different phases of the decision-making process for energy infrastructure. Transmission system operators and project promoters are at the forefront of managing stakeholder engagement processes and any opposition on the ground. They have developed some of the best practices in grid planning that show innovative approaches to communication and engagement, environmental protection, sustainability and technological innovation.

In order to complement the existing practices and framework for stakeholder engagement in the development of electricity grid infrastructure, the Expert Group advances seven recommendations:

Establish a European Union framework to support the implementation of the Governance of the Energy Union and Climate Action⁶ through

⁶ Governance, as defined in the Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action

ensuring coherence between NECPs , TYNDPs and national grid plans. The expert group agrees that clarity on the role of grid infrastructure in contributing to the EU climate change objectives is a necessary condition for public acceptance. Therefore, an optimal and integrated network approach is needed to accomplish and balance decarbonisation, competitiveness and security of supply.

Develop coherent guidelines for the interpretation and application of the Environmental Impact Assessment (EIA) and Nature Directives to minimize impacts and avoid unnecessary opposition. Compliance with the existing EU environmental law does not only ensure a sustainable implementation of the investment, but should also provide certainty regarding the duration of administrative procedures at every stage of the implementation.

Create new opportunities for stakeholder engagement that carefully consider and address opinions, concerns and needs of citizens and impacted communities. An early engagement could turn opposition into an opportunity for transparency and information over costs and benefits of different alternatives. Coupled with a two-way dialogue on what technical solutions can be accepted at the local level and promoter's flexibility for adjustments, stakeholder participation can be turned into an active process delivering better and more accepted project.

Seek opportunities to create and enhance local value. Promoters can put in place a multi-service approach that ensures value creation at local level and prospects for the local environment and communities. The Expert Group acknowledges that the application of concrete measures of localised, compensatory (economic) nature may also be useful.

Step up efforts for meaningful communication by developing new online tools for planning visualisation and increasing transparency. The Expert Group considers that an open-access, collaborative tool would help stakeholders visualize their options, compare costs and impacts of different types of technology or routes and increase the involvement and legitimacy for a specific investment, whilst mitigating risks of opposition.

Regulatory recognition of the value of local benefits in the cost-benefit analysis of infrastructure projects and corresponding costs. A meaningful dialogue with local stakeholders on their wishes related to the implementation of a project in their community requires swift reactions and flexibility involving collaborative solutions on the ground. The Expert Group recommends a more flexible approach in the regulatory recognition of the value of local benefits supported by a set of indicators.

Political coordination at local, national, regional and European level.

Support and coordination between different political levels are crucial to sending the message on the added value of key electricity interconnection projects for ensuring a long-term social and economic welfare of European citizens. The cooperation and coordination of relevant energy ministries, regulators and consenting authorities across priority border areas actively promoting the projects are essential in championing the importance of cross-border infrastructure, the quality of the PCI label and its process underpinned by the highest standards of environmental scrutiny.

Introduction:

Current challenges in the implementation of key EU electricity transmission projects

The end of 2018 marked the successful completion of the political negotiations on the Clean Energy Package for all Europeans, thus establishing a stable and robust legislative framework for the European energy sector, which will facilitate the necessary investment in the clean energy transition and enable the completion of the internal energy market.

The European Union relies on its interconnected grid to reach the ambitious renewables target set for 2030 and deliver affordable, secure and sustainable energy to all Europeans. The level of energy infrastructure development varies across Member States, mostly due to different densities of transmission lines, historical policy decisions concerning infrastructure developments, differences in spatial planning and location of residential and protected areas. However, a well-interconnected and integrated European grid benefits citizens and local communities by ensuring that energy crosses borders and it is delivered where it is most needed. It is more important than ever to harness the trust and participation of active and engaged consumers in this process. In this regard, it should be taken into account that that civil society is not homogenous across Members States in terms of development, perception of values and understanding of energy infrastructure.

Projects of Common Interest (PCIs) constitute an effective tool for building well-interconnected energy networks, which are a precondition for an integrated, secure, competitive and sustainable internal energy market in the European Union. Regulation (EU) No 347/2013 on guidelines for trans-European energy infrastructure (TEN-E Guidelines) governs the identification and selection of key projects in an open and transparent manner, seeking to provide the correct balance between participants and interests, and opening the participation and involvement to a broad range of environmental and consumer representatives. Projects on the Union list of Common Interest are identified and selected as key

infrastructure for achieving the European Union's climate and energy policy objectives.

Yet, the process of constructing, extending and upgrading energy infrastructure including electricity grids in Europe is often faced with reservations from citizens and stakeholders. This is due to perceived negative impact on health or nature, which the Commission Expert Group on Electricity Interconnection Targets briefly addressed in its first report *"Towards a sustainable and integrated Europe"*⁷.

In the opinion of the Expert Group, in order for the European Union to advance with its ambitious energy and climate objectives, new transmission assets including interconnectors, and their efficient use, are needed to deliver renewable electricity from remote and isolated generation sites (e.g. off-shore or islands) to consumption centers and storage sites and to connect regions with complementary characteristics of renewable generation, thus enabling the consumption of clean energy by European citizens.

However, the Expert Group also recognised that many transmission infrastructure projects face significant challenges in terms of public acceptance because of opposition on grounds of perceived risks to health, nature or intrusiveness of infrastructure in the landscape. In some cases, public disputes led to significant delays or even redesigns of some projects in advanced stages of implementation, such as for instance change from overhead technology to undergrounding, a solution both technologically more challenging and more costly.

Building an interconnector is a highly complex and time-consuming task. Therefore, the Expert Group insisted that early involvement of stakeholders in the design phase, as laid down in the TEN-E Regulation, as well as communication and outreach to national, regional and local decision-makers are important in order to overcome justified concerns. The outreach should rely on a thorough explanation on how a project addresses infrastructure needs, what benefits it would bring to European citizens and involved communities, how potentially adverse impacts are minimised and what the wider system benefits are, for instance, in terms of increased possibilities for reliance on renewable energy sources. Collaborative decision-making processes are considered useful and important to build trust and reduce public opposition. Therefore, the Expert Group considered it worthwhile to elaborate clear and comprehensive approaches for costs recovery of activities carried out by project promoters in this regard, that aim at delivering better⁸ and

⁷ Report of the Commission Expert Group on electricity interconnection targets: https://ec.europa.eu/energy/sites/ener/files/documents/report_of_the_commission_expert_group_on_electricity_interconnection_targets.pdf

⁸ An approach supported by the Renewables Grid Initiative and ENTSO-E where 'better projects' are understood as processes 'that starts with improved stakeholder engagement and include the implementation of additional measures resulting from stakeholders' input', Value of timely

faster projects on the ground. For example, where finding an agreement on new pathways for infrastructure seems an insurmountable problem, the Expert Group recommended discussing with local stakeholders and citizens at an early stage in order to find technically and economically feasible alternatives such as expanding existing lines, increasing capacity or changing from alternating current to direct current technology to enable better use of the lines, partial undergrounding in sensitive areas (a solution already applied in some Member States) and other system alternatives. Necessary permits have to be secured, in any case, but the solutions identified may be more acceptable to local communities and result in less impact on the landscape as no new pathways have to be found.

The Expert Group noted the availability of a number of good public involvement practices developed across Europe (for example those included in the Good Practice of the Year) and encouraged their sharing and learning as well as better dissemination in that regard.

The Expert Group concluded that further work on this issue is needed. This report presents the conclusions of that additional work carried out by the Expert Group and formulates specific recommendations on public involvement to facilitate a timely development of key infrastructure and achievement of the interconnection targets.

1. The misperceptions over public opposition

According to the Agency for the Cooperation of Agency Regulators, approximately 21% of electricity grid expansion projects are delayed⁹. At the end of 2018, more than 40% PCIs are behind schedule compared to their schedule¹⁰ in the previous year. The most frequently reported main reason for delay by the promoters is related to permitting and public opposition¹¹.

Opposition is fueled by many factors, including fear that these projects are environmentally harmful, as well as by perception of strong imbalances between the distribution of socio-economic costs and benefits among affected local communities. In addition, stakeholders are concerned about increasing costs for

implementation of better projects, working paper, May 2019. Available at <https://www.entsoe.eu/2019/05/20/value-of-timely-implementation-of-better-projects/>

⁹ Opinion No 06/2019 of the Agency for the Cooperation of Energy Regulators on the implementation of the Ten-Year Network Development Plan, 15 January 2019, page 19

¹⁰ Consolidated Report on the progress of electricity and gas Projects of Common Interest for the year 2017, Agency for the Cooperation of Agency Regulators, 11 October 2018

¹¹ See also: Battaglini A. et al. 2012, Perception of barriers for expansion of electricity grids in the European Union, Energy Policy, Volume 47, 254-259; Cain N. L. and Nelson H. T. 2013, What drives opposition to high-voltage transmission lines?, Land Use Policy, Volume 33, 204-213; Keir L. et al. 2014, Environmental justice and citizen perceptions of a proposed electric transmission line, Community Development, Volume 45, 107-120.

consumers and households. It is also fueled by misunderstanding on how the power system works.

Public opposition is a multilayer phenomenon, which can occur in all phases of the decision-making process: from the “need definition”, when the needs of new projects and upgrades are discussed to the last steps of deployment of projects on the ground. Consequently, public engagement and consultations should be carried out during all stages of the decision-making process, with each phase requiring specific tools and approaches. However, the ability and interest of stakeholders, in particular civil society, to engage in the initial stages of defining the need and deciding how these needs are best met, is very limited. Most efforts to oppose projects are channeled in the later stages of permitting and implementation, where opposition is most effective and impactful¹².

Due to late intervention, which is usually limited to resistance, public opposition is often narrowly understood as NIMBYsm (derived from NIMBY “not in my backyard”). It is considered to be driven by the hostility of citizens concerned about local interests. Generalising and interpreting the situation in a pejorative way is contributing to increasing polarisation within a community or society. This interpretation puts legitimate local concerns on hold in the face of national or European-wide interests. The NIMBYsm concept has shaped engagement activities and policies and defined compensation policies with the objective to overcome opposition. However, in practice “.... creating a destructive self-fulfilling cycle in which local opposition is usually considered by project developers and policy makers as evidence of NIMBYsm” (P.Devine-Wright 2011, 2012)

Instead, public opposition should be interpreted as the presence of asymmetries between on one side, costs, impacts, and decisional power of political institutions and promoters and on the other side, benefits and the desire of citizens to be involved in the decision-making process to design alternatives deemed fairer. Such involvement is also an emerging requirement to plan projects that are socially acceptable and transparent. In this context, the Expert Group recognizes the need to address public opposition as an opportunity to deliver better projects and create momentum and support for European energy and climate policies.

¹² Cf.: Ciupuliga A. R. and Cuppen E. 2013. The role of dialogue in fostering acceptance of transmission lines: the case of a France–Spain interconnection project. *Energy Policy*, Volume 60, 224-233; Komendantova N. and Battaglini A. 2016, Beyond Decide-Announce-Defend (DAD) and Not-in-My-Backyard (NIMBY) models? Addressing the social and public acceptance of electric transmission lines in Germany, *Energy Research & Social Science*, Volume 22, 224-231; Späth L. and Scolbig A. 2017, Stakeholder empowerment through participatory planning practices: The case of electricity transmission lines in France and Norway, *Energy Research & Social Science*, Volume 23, 189-198.

This will require going beyond current regulations and practices and developing innovative approaches and tools in order to help citizens engage in a transparent and dynamic way. Energy transition is a multidimensional process that includes technical, economic, political and, above all, societal transformations. Engagement activities and tools should deliver active public engagement in a two-way process, which includes synergies between policies on energy, sustainability, climate change and social issues. This approach would reflect the complexity of transforming the European energy system, would ensure the integration of the local level in the national and European thinking, and ultimately support a paradigm shift by fostering dialogue based on value patterns and not on specific investments.

2. The existing framework for public involvement in planning and implementation of Projects of Common Interest: a basic toolkit

In its commitment towards reaching a low-carbon economy by 2050 and delivering clean, sustainable and affordable energy to all Europeans, the Commission has put in place a stable framework for energy infrastructure in the form of the TEN-E policy and its instrument, PCIs. The aim is to render the implementation of this framework both transparent and collaborative, so that citizens and other stakeholders know and share the benefits brought by the infrastructure project at the local level or through a positive impact on the electricity prices¹³.

- The ENTSO-E Ten Year Network Development Plan

Drafted on the basis of future scenarios for the energy system that will ensure the achievement of decarbonisation objectives and renewable integration targets, the biennial Ten-Year Network Development Plan (TYNDP) developed by the European Network of Transmission System Operators in Electricity (ENTSO-E) identifies investment needs in infrastructure across Europe and analyses in detail the benefits and costs of projects that have significant cross-border relevance. Stakeholder involvement and consultations are an important part of this process, seeking to ensure that all relevant parties are informed and have an early say on the assumptions, data, methodologies and tools.

The role of the TYNDP is to support informed investment decisions and decision-makers, based on a systematic cost benefit analysis methodology for assessing projects, whilst factoring in uncertainties and economic, political and societal trends in the future development of infrastructure. The cost benefit analysis in the

¹³ Energy Prices and costs in Europe, Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee, and the Committee of the Regions, COM(2019)1 final, page 2

framework of the TYNDP is used as support for decision-making in the PCI process enshrined in TEN-E Regulation.

- TEN-E requirements

Transparency and public participation are cornerstones of the TEN-E Regulation, which set minimum requirements for ensuring that third parties can access information and participate in consultations carried out for project development. The specific measures laid down in the TEN-E Guidelines stem from the UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, usually known as the Aarhus Convention, which sets a legal obligation on enabling public *“access to information, participation in decision-making and access to justice on environmental matters”*.

Article 9 of the TEN-E Regulation sets the obligation on project promoters to draw up and submit a concept for public participation to the competent authority, and ultimately carry out at least one public consultation. However, Article 9 does not prescribe ways for carrying out the consultations thus creating a need to identify and promote best practices.

Moreover, the promoters are required to establish and regularly update a website with relevant information about the project, linked to the Commission website and publish relevant information by other means available to the public.

The legal framework provides for a minimum set of elements for transparency and participation, without creating burdensome procedures for public promoters. However, the mere implementation of these legal obligations does not guarantee the acceptance from citizens and stakeholders. Although the principle of transparency and participation applies to the design and implementation of all major infrastructure projects, interconnectors enjoy an inherent complexity.

- European Commission's Transparency Platform for PCIs¹⁴:

Article 18 of the TEN-E Regulation calls on the European Commission to set up and regularly update a Transparency Platform, in the form of a online map accessible to the general public which provides visual information on PCIs, including geographic information and technical details, implementation status, main results of the cost benefit analysis and the European Union funding allocated for each project.

¹⁴ Interactive map of Projects of Common Interest, accessible at:
http://ec.europa.eu/energy/infrastructure/transparency_platform/map-viewer/main.htm

The Transparency Platform is a useful and informative tool providing the public with basic information on the infrastructure of key interest for the European internal energy market. However, the platform remains a passive one-way source of information, falling short of engaging with stakeholders on the details for the further implementation of those key projects.

The Expert Group believes there is an opportunity to render this platform more collaborative, where stakeholders could become an active part of the decision-making process during the implementation of the projects already identified as of Common Interest.

- The Energy Infrastructure Forum and the award for good practices in grid planning

The Energy Infrastructure Forum is a yearly event organised by the European Commission that reunites representatives of the EU institutions, transmission system operators, regulators, energy companies, NGOs and civil society and the financing community. Every year in Copenhagen, the Forum meets to discuss challenges to the development of Europe's energy infrastructure and the completion of its internal energy market.

The 2018 and 2019 editions addressed the issue of incentivising public engagement activities with a view to increasing public trust and acceptance of energy infrastructure projects and concluded on the need for mainstreaming stakeholder engagement activities carried out by transmission system operators (TSOs) with this aim. Further activities are to be carried out by ACER, ENTSOs, the Competent Authorities and the Renewables Grid Initiative on finding practical and innovative solutions from a regulatory perspective in order to scale up best practices in stakeholder engagement activities. Later in the report, the Expert Group acknowledges the importance of regulatory recognition of justified and reasonable stakeholder engagement costs.

Over the past five years, the Energy Infrastructure Forum also hosted the Renewables Grid Initiative Good Practice Award ceremony, which rewards outstanding projects in the field of communication, technology and environmental protection that foster increased public acceptance and trust in energy infrastructure. For the 2018 and 2019 editions of the Good Practice of the Year award, a record number of projects were submitted across all categories, showing an all-round greater interest in best practices which integrate renewables into the electricity grid.

- The PCI Energy Days

Launched on 19-20 March 2019 in Brussels to complement the Energy Infrastructure Forum, the PCI Energy Days is an annual event dedicated to TEN-E

policy and the practical implementation of PCIs. It provides the project promoters the opportunity to showcase their projects and share experience on how to build future-proof and environmentally sound energy infrastructure by using innovative technological solutions, involving local communities and finding new approaches to financing. The event also looks into further exploring synergies and interactions with other policy areas, such as research and innovation and Horizon 2020 financial instrument and renewable cross-border projects.

The PCI Energy Days brings together project promoters, representatives from Ministries and competent authorities, regulators, representatives of the European Investment Bank and the wider financing community, Members of the European Parliament and representatives of other European institutions, environmental organisations and civil society representatives.

- European Sustainable Energy Week (EUSEW)

The 2018 edition of European Sustainable Energy Week (EUSEW) hosted a policy session on public acceptance of energy infrastructure from a different perspective, looking into how new technologies help citizens and communities engage and understand the local value of energy infrastructure projects.

New technologies help disseminate the information and improve access to relevant data in a real-time interactive manner. These technologies support inclusiveness and empower citizens in becoming actors enacting change from merely passive respondents.

The policy session featured best practices in deploying new tools, which use technical & spatial data for early public engagement and awareness and explore means for citizens to be informed on the local benefits that energy infrastructure projects can have in their communities.

- Environmental guidelines for large-scale infrastructure development in the EU

Since May 2011, the European Union has an EU Biodiversity Strategy in place to halt biodiversity loss in the EU. Together with the EU Nature Directives, it aims to protect Europe's most endangered and vulnerable terrestrial and marine species and natural habitats and ensure that large-scale infrastructure developments are being carried out in full compliance with the EU environmental acquis. The European Commission issued a number of guidance documents and requirements designed for project developers, transmission system operators and authorities, NGOs and any interested stakeholder to help ensure coherent application of

environmental assessment procedures¹⁵ required under European Union law for PCIs.

- Studies with a communication and local aspects dimension

The Expert Group believes that transparency and communication on the added value and benefits brought by the infrastructure project at the local level is essential, for which it is supporting public consultations and exchanges of best practices in communicating about the grid and enhancing the capacity of citizens and the organised civil society to directly participate in the planning and development of infrastructure projects.

In August 2014, Roland Berger carried out a study¹⁶ for the European Commission, which concluded with the launch of an online engagement instrument called the “Grid Infrastructure Communication Toolkit” in an effort to facilitate and inform the dialogue with stakeholders in the process of grid development. Three years later, a new study proposed follow-up actions to increase awareness of existing insights and tools and improve stakeholder engagement and public acceptance of infrastructure development. New communication tools¹⁷ and visuals¹⁸ have been developed to support the Commission, project promoters and interested stakeholders to engage with the wider public on issues related to energy infrastructure development.

More efforts are currently directed into communication aspects to complement the regulatory framework and the efforts deployed by project promoters with a view to addressing citizens’ concerns by applying local knowledge and instruments. The Commission launched early 2019 a new study with an even greater local dimension. Under this initiative and following an initial scoping exercise and extensive research, dedicated communication campaigns will be carried out in two European regions with the help of a network of local stakeholders. The campaigns would openly address grid development issues, while at the same time offer clarifications on local benefits and concerns in the process of energy infrastructure development.

¹⁵ Streamlining environmental assessment procedures for energy infrastructure Projects of Common Interest (PCIs), accessible at http://ec.europa.eu/environment/eia/pdf/PCI_guidance.pdf

¹⁶ Study regarding grid infrastructure development: European strategy for raising public acceptance, accessible at

https://ec.europa.eu/energy/sites/ener/files/documents/20140618_grid_toolkit_report_0.pdf

¹⁷ Policy handbooks, leaflet and infographics on the benefits of an integrated energy grid available at <https://ec.europa.eu/energy/en/topics/infrastructure/public-acceptance-infrastructure-projects>

¹⁸ Short videos explaining what are Projects of Common Interest and their benefits to citizens:

<https://www.youtube.com/watch?v=jMcachG8-1M>

The current policy and regulatory framework for network development at the European level¹⁹ is an adequate overarching regulation, which sets a reference point for consultations and stakeholder engagement in the different phases of the decision-making process for energy infrastructure. The PCI label and the subsequent application of the TEN-E Regulation ensures that a common set of rules and a consistent approach is taken by promoters in project development.

However best complemented by different communication initiatives and best practice exchanges, this reference point does not ensure an effective involvement from the public and local stakeholder and, ultimately, acceptability of the development. Promoters have to express flexibility and creativity in their engagement activities.

3. Areas of concern: key elements for increasing public involvement and acceptance of grid infrastructure

Citizens and civil society groups become aware and concerned about various issues when faced with the construction of a new large-scale grid infrastructure investment. The impact on their surroundings and their experience develop a series of underlying motivations that form a reaction. Different elements influence their perception over the reality of the impact on their lives and communities. Understanding the complexity of their needs and concerns is essential to designing meaningful engagement policies.

The Expert Group has mapped the most researched areas of concern considered as pivotal in addressing public opposition to grid infrastructure and grouped them in six major categories. Successful mitigation practices effective in each case are also summarized.

A. Environmental protection

The impact of underground or overhead transmission lines on the environment is usually one of the main concerns of local communities impacted by developments. The suspicion that promoters did not properly consider all environmental implications and did not follow the procedures tend to feed negative reactions across local communities.

The following measures can preempt such reactions and possible disagreements:

- Clear and robust application of the European environmental protection acquis at national level, as well as monitoring and reporting of its

¹⁹ European energy infrastructure policy, available at <https://ec.europa.eu/energy/en/topics/infrastructure>

implementation including effectiveness of mitigation measures, and the possibility for assessing fitness for purpose.

- Mandatory requirement to carry out a Strategic Environmental Assessment (SEA), and a fully-fledged Environmental Impact Assessment (EIA) across the full scope of all cross-border developments, onshore and, increasingly over time, also in the offshore environment.
- Regulatory flexibility to amend project features, from technology to routing and siting, in order to avoid environmentally sensitive areas and accommodate requests from the impacted communities and stakeholders following consultations and dialogues.

B. Land use and local value

Another common concern often expressed by communities is that the construction and operation of electricity interconnectors could impact the value and use of land. The perceived impact varies from loss of real-estate value in the vicinity of power lines and alterations to the current use of land to growing competition in land use among different users for road infrastructure, tourism or agriculture. A category of itself generating disagreement within a local community covers the involuntary relocation of populations or the unsatisfactory compensation in case of involuntary relocation.

The following measures can successfully mitigate the above concerns:

- Promoting and carrying out of a Strategic Environmental Assessment (SEA) for grid development plans at national level, which can indicate such risks and allow for alternatives in the early stages of planning.
- Early identification and consultation with all interested stakeholders on the priority grid areas for development, the needs for infrastructure, alternatives on how to meet the identified need including cost and benefits of different options.
- Collaborative selection of best sites and routes.
- Coordination in planning and developing infrastructure in the same corridors/ cross-border areas.
- Exhaustive information on the construction methodologies and plans and the provision of transitory measures in agreement with local authorities.

- Avoidance or minimal application of compulsory purchase schemes often successfully replaced by negotiated collective agreements.

C. Health and safety

Health, safety and security represent a particular set of challenges to address when related to grid developments.

Public concerns about the potential health effects from exposure to electromagnetic fields (EMF) emanating from installations started in early 90s and has mainly focused on the low-frequency magnetic fields from transmission lines. Although studies²⁰ have concluded that findings "do not provide convincing evidence for a causal relationship between low-frequency magnetic fields exposure and self-reported symptoms", fear over exposure to EMF, the electromagnetic compatibility (EMC) or susceptibility of adjacent third party equipment are still fueling debates due to incoherent sources of information on the internet and literature.

Fear of unknown technology coupled with lack of scientific information adds to the concerns over the safety and security of a development site and its operations.

Successful practices should take into account:

- Independent and reputed expertise in the field of EMF providing information and guidance to the public, including the provision of EMF-related information on common consumer goods and appliances.
- Independent provision of consistent and cross-referenced sources of information about electromagnetic fields (EMF).
- Identification of appropriate commercial and military standards (for withstanding magnetic fields) for sensitive electronic or communication equipment;
- Harmonized approach across Europe regarding the security distance between infrastructure and housing.
- Community education for the safe operation of equipment and site security.

²⁰ SCENIHR (Scientific Committee on Emerging and Newly Identified Health Risks), **Potential health effects of exposure to electromagnetic fields (EMF)**, 27 January 2015, accessible at https://ec.europa.eu/health/scientific_committees/emerging/docs/scenihr_o_041.pdf

- Education targeting the understanding and awareness of the technology used and its merits, which could include site visits and any other immersive experience.

D. Stakeholder participation and trust in the decision-making process

Stakeholders' involvement in the decision-making process is dependent on their awareness and perception of why grid infrastructure is needed. Lack of political commitment and of bottom up processes to define the need case and/or alternatives, weak assessments and poor communication stimulate mistrust over the rationale for grid infrastructure.

Corporate approach and practices in promoting a specific grid investment plays a defining role on how messages are perceived by the impacted communities. Previous positive or negative experience with infrastructure planning by a certain corporation is decisive on the degree of confidence stakeholders have in their involvement or decisional weight²¹.

Measures that harness stakeholders' participation and trust in the process need to include:

- Clear and open communication of objectives for the development, including its alignment and compatibility with targets set at national and European level for the integration of renewables, reduction of carbon dioxide emissions, wider climate protection measures and guaranteeing secure and reliable supply of electricity.
- Full transparency of underlying assumptions in the analysis of costs and benefits of projects and its alternatives. Disclosure of costs for the society in case of delay.
- Independent third-party impact analysis of the infrastructure development and provision of collaborative decision-making with impacted communities, including transparent mitigation and compensation measures.
- TSO staff training programmes on community engagement practices, participatory leadership and conflict management and resolution.

²¹ Aaen S. et al, 2016, Beyond public acceptance of energy infrastructure: How citizens make sense and form reactions by enacting networks of entities in infrastructure development, *Energy Policy*, Volume 96, 576-577

- Office presence in the development communities throughout the duration of the project, providing on-request appointments with project management.
- Willingness and ability to understand and address stakeholders concerns and requests.
- Coherent long-term commitment of all local actors towards the project and communication on documented positive effects on local economy/ realities.

E. National, regional and European needs and interests

The complex nature of different instruments and interest of national and European energy and climate policies make it difficult for citizens to grasp or quantify impacts on their livelihoods and communities. Two main issues derive of such complexity.

Firstly, diverging national energy interests and political commitments towards key measures delivering European energy and climate objectives, may lead to confusion, mistrust and inaction regarding cross-border infrastructure. Moreover, regulatory uncertainty and lack of harmonization of regulations affecting these projects increase negative trends.

To mitigate the political and regulatory risks related to infrastructure development, the following should be applied:

- Ensure the implementation of ambitious, coherent and measure-oriented National Energy and Climate Plans (NECPs) in the coming decade, including infrastructure.
- Meaningful consultation on the NECPs with the neighboring Member States on integrated infrastructure planning, including in particular through High-Level Groups²² and the TYNDP process.
- The highest standards of scrutiny and objectivity possible for consenting nationally and internationally significant infrastructure.
- Cross-border monitoring and reporting about efficiency of measures and practices.

²² The High Level Groups are organised by the European Commission and bring together representatives from EU countries in the region, transmission system operators, and regulators. They provide strategic steering and policy guidance on political and technical topics and monitor the progress of current Projects of Common Interest (PCIs). More on the High-level Groups: <https://ec.europa.eu/energy/en/topics/infrastructure/high-level-groups>

- Provision of mechanisms for conflict management, which accommodate bottom-up solutions prior to escalation of conflicts.

The other issue is the concern that local needs of communities are neither reflected in the wider spectrum of national, regional and/ or European needs, interests and policies, nor in specific initiatives aiming at creating economic value for impacted local communities. In addition, initiatives for creating local value are highly debated among promoters, authorities and civil society, who are split over its benefits and unintended consequences. This is because, if not properly handled, such initiative may lead to the perception of buying acceptance from the communities. The concern is further intensified by the perception of increased unfairness associated with presence of large-scale infrastructure of national relevance in the local community and the related lack of transparency over costs and benefits sharing and decision-making processes.

In order to ensure the alignment of local, national European interests in grid infrastructure, measures should aim to:

- Enable and support stakeholders' input in the European grid planning during the need definition stage.
- Include clear communication of the needs justification for the project (see section "*land use and local value*") complemented by the demonstration of the cost-benefit analysis by the promoters.
- Ensure cooperation between national and municipal authorities and local interest groups at the national/ regional level.
- Guarantee active involvement of European actors in the public consultations and in general the approval and the maturing of the project.
- Apply creative practices for early participation of stakeholders, ensuring their empowerment and engagement in the decision-making process.
- Use dynamic two-way engagement between promoters and stakeholders allowing for project amendments and the regulatory recognition of corresponding reasonable costs incurred.
- Develop European guidelines for creating and enhancing local value through a fair and symmetric distribution of benefits arising from the development of the infrastructure in the impacted community.
- Apply compensatory economic policies and actions aimed at directly supporting those local communities impacted by the infrastructure.

4. From opposition to acceptance: digital opportunities and challenges

TSOs plan and operate the electricity transmission grid with the aim of guaranteeing a secure supply of electricity to homes, businesses and industries across the EU, a gain in social economic welfare through efficient and effective

integration of energy markets, sustainability through the integration of renewables and decarbonisation. Apart from mastering technical expertise, promoters are also the first contact on the ground with communities where the development takes place.

Their core business of planning and operating the grid requires TSOs to manage stakeholders engagement processes and therefore also opposition on the ground. TSOs are developing some of the best practices in grid planning that show innovative approaches to communication and engagement, environmental protection, sustainability and technological innovation. This has been possible thanks to an improved understanding of the issues at stake and the allocation of more resources in order to design valuable stakeholders engagement processes aimed at addressing public concerns.

As briefly covered in the first section of this report, public opposition is a multi-faceted phenomenon that cannot be fixed²³ but rather addressed through a toolkit approach during different stages of the planning and implementation of the investment. Concerns that influence public perception and become topics of interest for the local community impacted by grid development projects can turn into opportunities for creating local benefits. As such, it can contribute to achieving a sufficient degree of acceptance needed for the infrastructure to be built. Going beyond the NIMBYs and acknowledging that citizens are not passive respondents to infrastructure can trigger different possibilities for addressing citizens' concerns and therefore for mitigating risks of opposition.

In order to increase support for grid projects and constructively involve stakeholders in their development, one necessary step is the reduction of the environmental impacts of projects. Planning the grid with due respect to the mandatory requirements of environmental legislation in force is a fundamental step to mitigate unintended effects on vulnerable protected areas. At project level, there are already many initiatives aiming at protecting the environment such as environmental enhancement and the creation of new ecosystems²⁴, but also conservation measures such as managing certain biotopes²⁵ or protecting endangered species and habitats.

²³ Aaen S. et al, 2016, Beyond public acceptance of energy infrastructure: How citizens make sense and form reactions by enacting networks of entities in infrastructure development, *Energy Policy*, Volume 96, 577

²⁴ Launched in 2011, the aim of LIFE Elia-RTE project is to create green corridors under overhead electrical lines in wooded areas in Belgium and France. Various innovative actions aimed to enhance biodiversity and to raise awareness concerning natural habitats and species linked to this linear context. More information: <http://www.life-elia.eu/en/Actions>

²⁵ Environmental activities of Slovenska elektrizacna prenosova sustava, a.s.:
https://www.sepsas.sk/en_zivprostredie.asp?Kod=122

Collaborating with local activists and non-governmental organisations²⁶ in the process, like in the case of building part of the LitPol Link interconnector in Lithuania, delivers the much-needed local knowledge, as well as builds trust. In this case, the involvement of the Lithuanian Ornithological Society helped contribute to the enhanced protection of breeding conditions for birds. As part of sustainable route management, the Austrian Power Grid AG implements projects to protect species and biotopes, such as the projects to protect the Great Bustard, the Saker Falcon, the Hoopoe and the Ural Owl²⁷. The “nesting box concept” encourages birds to continue using the transmission line structures. More than 200 nesting boxes have been installed thus far and their success is monitored by the Vienna University of Veterinary Medicine, BirdLife Austria, BirdLife Carinthia and the WWF.

Minimising intrusion to the surrounding landscape is yet another successful practice. Concerns related to landscape can be addressed as part of the stakeholders’ engagement process by using innovative tower designs²⁸, partial undergrounding or by optimisation measures aiming at maximising the re-use of existing infrastructure or re-thinking the conversion and removal of lines.

Best practices examples show that planning grid investments requires not only the acknowledgment of related environmental impacts, but also the wider effects on different ecosystem services, the cultural and recreational dimensions of nature and the non-monetized values of the environment. All of the above influence and shape actions of different groups of stakeholders.

As a response to the Irish Government’s “Strategic Importance of Transmission and Other Energy Infrastructure” statement in 2012, that advocates for incorporating community gain into major energy infrastructure projects, EirGrid established two community gain initiatives: ‘Community Fund’ and ‘Proximity Payments’. In 2016, the first Community Fund scheme was established, for the Mullingar – Kinnegad 110 kV overhead line project (24km). The value of the fund was €360,000 and was calculated based on the linear distance x voltage (24 km x

²⁶ Project LIFE Birds Electrogrid (2014-2018) aimed at improving the conservation status of the migratory, wintering and some breeding bird species occurring in Lithuania, through a reduction in the negative impact of high voltage overhead electricity transmission lines on their populations. More information: http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=5055

²⁷ More about APG’s sustainable route management: <https://www.apg.at/en/Ueber-uns/Umwelt-und-Zukunft>

²⁸ In 2014, Danish power pylon design and engineering company Bystrup received the “technology and design” Good Practice award for designing the “Eagle Pylon”, a pylon that not only serves as a visual alternative to classic lattice pylons, but also proved an asset in gaining public acceptability, easing production and installation, and reducing maintenance efforts. TSOs like RTE France, Tennet, Amprion, SOHertz and National Grid use new designs and technologies when building transmission infrastructure.

110 kV). Following a scoping study, financial assistance was provided to 37 community groups in the vicinity of the infrastructure project for short and long-term projects such lighting of the walkway in the village of Cullion, the new kitchen facility at the Mullingar Youth and Community Centre or the Youthwork Ireland Midlands – Mullingar EYE project (establishment of a career academy with the goal to expand the provision of education and career support, in an after-school capacity, to those out of the school system and the unemployed).

Building a coherent storyline for why robust infrastructure is needed, whilst being transparent on the costs of action or inaction, impact and alternatives remains crucial for ensuring a high degree of legitimacy for a specific investment and mitigate risks of opposition at local level. Efforts should be stepped up to develop these coherent narratives able to function at local level as well as national and European level. The ongoing work on developing a methodology on the value of better project implementation²⁹ can contribute towards raising awareness of the costs of delays (or inaction), as well as towards providing comparable alternatives. All energy infrastructure projects, independently of whether they are of national or European interest, contribute to creating an "opinion" and a "mindset" around grid infrastructure among citizens.

In an increasingly digital world, the Expert Group would like to investigate how an internet based siting tool could support project developers, policy makers as well as citizens and civil society to develop a better understanding on the need for grids and how to best respond to that need when deciding on specific investments. In this regard, at European level visual tools used in the context of the TYNDP and PCI could be improved to show interactive maps focusing on corridors and projects with significant cross-border relevance, whilst at national and local level specialized tools for individual and detailed siting should be used for interaction with citizens based on local specificities and local language.

The Expert Group liaised with the Western Electricity Coordinating Council (WECC), developers of the United States and Canada in charge of the Western Interconnection Transmission Planning to understand the concept and functioning of their environmental data viewer³⁰, which uses environmental and cultural data for transmission expansion plans.

The Expert Group considers that the rationale behind the WECC environmental viewer tool is also relevant in the European context. A European tool inspired by the US/ Canadian one could bring substantial benefits and become a valuable resource for project developers, policy makers, public administrations and civil society. The tool addresses current system planning challenges, which includes

²⁹ Value of timely implementation of better projects, working paper, May 2019. Available at: <https://www.entsoe.eu/2019/05/20/value-of-timely-implementation-of-better-projects/>

³⁰ The WECC Environmental Data Viewer is available at: <https://ecosystems.azurewebsites.net/WECC/Environmental/>

renewable potential areas, the protection of vulnerable species, habitats, and vegetation, the preservation of game rangeland, migration corridors, and critical rivers and streams, and accommodates specific cultural considerations, including national parks and monuments, Native American tribal lands and sacred sites. When developing the tool, special attention was paid to the granularity level of the data viewed, which focuses on a corridor level, rather than siting level.

Different applications of modern 3D visualisation tools already exist amongst the best practices performed by some TSOs at national level in seeking the best location in the landscape, identifying constricted areas and illustrating the effects of building new transmission projects on the electricity flows. The Annex to this report describes the rationale, features and governance of a proposal for the creation of an online open access collaborative platform, which would increase transparency for decision-making in infrastructure planning and implementation.

5. Conclusions and recommendations

With the TEN-E Regulation in place since 2013, the European Union enjoys a stable and robust framework for ensuring that needed cross-border energy infrastructure is being built in the EU to complete the internal energy market, achieve energy and climate target and deliver sustainable, affordable and secure energy to all Europeans.

The establishment of a Union-wide list of Projects of Common Interest is preceded by the identification of infrastructure needs at national, regional and European level in an inclusive, open and transparent process, allowing civil society representatives, environmental organizations and any interested stakeholder to participate and contribute to the decision-making process. The regulation puts forward minimum requirements for ensuring that impacted communities can be consulted on the technical details of the implementation of individual projects and the environmental merits of the development. Practice has shown, nevertheless, that the minimum legal requirements for consultation and participation do not meet the expectations of an increasingly informed public who demands flexibility, collaboration, transparency, high environmental protection and a fair distribution of costs and benefits - including at the local level - from state authorities and project promoters.

The Expert Group advances the following recommendations that aim to complement the existing framework for stakeholder engagement in the development of electricity grid infrastructure.

1. Establish a European Union framework to support the implementation of the Governance of the Energy Union and Climate Action³¹ through ensuring coherence between NECPs , TYNDPs and national grid plans

The expert group agrees that clarity on the role of grid infrastructure in contributing to the EU climate change objectives is a necessary condition for public acceptance. Therefore, an optimal and integrated network approach is needed to accomplish and balance decarbonisation, competitiveness and security of supply.

The following pillars are recommended:

- The identification of infrastructure needs at national, regional and European level in an inclusive, open and transparent process, allowing civil society representatives, environmental organizations and any interested stakeholder to participate and contribute to the decision-making process. Applying with the existing regulations regarding PCIs to national network planning is recommended.
- The assessment of the coherence and impacts of national network planning and implementation on the decarbonisation targets taking into account competitiveness and security. Such assessment can be undertaken by ENTSO-E with an ad-hoc external forum to provide check and balances. After such exercise is carried out at EU level, Member States can make necessary adjustments.
- Complementing national and EU regulatory framework to promote optimal EU power network and measure impacts on decarbonisation, security and competitiveness.
- Provide robust grid infrastructure planning for the implementation of national energy and climate plans (NECPs) to deliver by supporting the Paris Agreement and support the process towards EU climate neutrality by latest 2050.

The EU's national energy and climate plans are an important instrument to inform consistent infrastructure planning on national (NDPs) and European level (TYNDP) on the path to 2050. Against this background, the EU and its Member States need their plans to be fine-tuned and implemented. In order to make optimal and effective use of this instrument, Member States should exchange best practices

³¹ Governance, as defined in the Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action

and results of national planning processes and benefit from cross-border cooperation within the framework of the Governance Regulation and the NECPs.

Grid operators, power generators, industry and civil society, among others, should be consulted before and during the decision-making and planning processes of the NECPs. This will foster better coordination and promote cross-border and regional cooperation.

2. Develop coherent guidelines for the interpretation and application of the Environmental Impact Assessment (EIA) and Nature Directives to minimize impacts and avoid unnecessary opposition

Compliance with the existing EU environmental law does not only ensure a sustainable implementation of the investment, but should also provide certainty regarding the duration of administrative procedures at every stage of the implementation.

However, practice has pointed to a lack of harmonization in the interpretation and application of key Nature Directives across Member States that can prove particularly difficult and lengthy in the case of those building cross-border infrastructure.

A Strategic Impact Assessment (SEA) at the level of national grid planning is important to understand vulnerabilities and plan accordingly; at project level an environmental impact assessment should be mandatory for every transmission project and guidelines should support the implementation. With a harmonised application of the EIA Directive and a standardized approach to what should be included in the environmental statements, construction methodologies and implementation plans will also be of consistent quality and comparable to ensure continuous improvement.

3. Create new opportunities for stakeholder engagement that carefully consider and address opinions, concerns and needs of citizens and impacted communities

The debate on public acceptance has shown that stakeholders feel left out of the different layers of the decision-making processes, despite efforts from the Commission, Member States, ENTSOs and project promoters. In order to avoid the “last mile” opposition and the heavy costs of delay, promoters are encouraged to develop innovative way to involve the impacted communities in the different stages of projects planning.

An early engagement could turn opposition into an opportunity for transparency and information over costs and benefits of different alternatives. Coupled with a two-way dialogue on what technical solutions can be accepted at the local level and promoter's flexibility for adjustments, stakeholder participation can be turned into an active process delivering better and more accepted project.

4. Seek opportunities to create and enhance local value

By enhancing the local environment (e.g. by creating and managing natural and semi-natural areas, new ecosystems), by creating schemes for co-ownership for the development, by supporting local ambitions for distributed generation or simply by building recreational areas, promoters can put in place a multi-service approach that ensures value creation at local level and prospects for the local environment and communities. This can only be achieved as a collaborative exercise where communities express their needs and agree on the details together with project developers.

The Expert Group acknowledges that the application of concrete measures of localised, compensatory (economic) nature may also be useful. These measures may, for example, involve payments, directly (and proportionally) to the local communities impacted by a development, of a specific percentage of its annual transmission-fee earnings, in the very same way that certain Member States have long legislated that a specific percentage of a RES project's annual turnover is paid directly (and proportionally) to the local communities where the project is installed. Finally, in a more general direction, it would be useful to create a European Investment Fund for the territories crossed by strategic infrastructure. This Fund will invest in projects led by the affected territories, aimed at boosting their economic activities or providing more public facilities. The investment would be conditional on a shortening of the time limits for consultation and an absence of appeals by the communities affected, as well as on the approval by all of the local authorities crossed by the project and by a local referendum.

5. Step up efforts for meaningful communication by developing new online tools for planning visualisation and increasing transparency

Efforts should be stepped up in communicating about best practices and success stories, helping communities compare information on different projects and identify better practices that could be suitable to their local realities.

Effective engagement requires a collaborative approach as described in the first recommendation. Digital tools supporting this framework should ensure interoperability and enable consistent views at national, regional and European level as well as centralized access to all the necessary information in one, easy to

grasp tool that helps build a coherent storyline for why there is a need for a certain investment, including the costs and benefits of its alternatives.

The Expert Group considers that an open-access, collaborative tool would help stakeholders visualize their options, compare costs and impacts of different types of technology or routes and increase the involvement and legitimacy for a specific investment, whilst mitigating risks of opposition.

Consider facilitating end-user communication also, such as on labelling of domestic products, messages on electricity bills and consumer websites, but also in public places, in the proximity of electrical infrastructure.

6. Regulatory recognition of the value of local benefits in the cost-benefit analysis of infrastructure projects and corresponding costs

Being able to launch and maintain a meaningful dialogue with local stakeholders on their wishes related to the implementation of a project in their community requires swift reactions and flexibility involving collaborative, bottom-up solutions on the ground.

These collaborative solutions are perceived as a fairer redistribution of costs and benefits at local level and can either create or enhance local value. Although the regulatory framework applied to cost recognition in the planning and implementation of energy infrastructure projects differs across the Member States, the majority is characterized by an “up front” declaration and inclusion of stakeholder engagement-related costs, with no possibility for revision following negotiations with stakeholders or adjustment to the initial project layout.

In an increasingly fragmented and polarized society, there is strong value in creating local benefits, notably in economically depressed rural areas where “European interests” are often considered the cause of local discomfort.

The Expert Group recommends a more flexible approach in the regulatory recognition of the value of local benefits supported by a set of indicators. An explicit acknowledgement or a two-step process for cost recognition could serve as incentives for carrying out necessary activities that would increase public awareness and favor public acceptance.

7. Political coordination at local, national, regional and European level

Support and coordination between different political levels are crucial to sending the message on the added value of key electricity interconnection projects for ensuring a long-term social and economic welfare of European citizens. Stronger presence and involvement of representatives of the EU institutions could build

bridges between Member States' various decision-making layers. The cooperation and coordination of relevant energy ministries, regulators and consenting authorities across priority border areas actively promoting the projects are essential in championing the importance of cross-border infrastructure, the quality of the PCI label and its process underpinned by the highest standards of environmental scrutiny.

The Commission's regional cooperation initiatives offer a promising framework to speed up the necessary investments. The appointment of European coordinators, which has proven useful in the past to promote a constructive dialogue between the various stakeholders involved in key infrastructure projects, can also be used to mediate or better coordinate between the EU, national and local levels.

ANNEX 1: Proposal for an open access collaborative platform to increase transparency for decision-making in infrastructure planning and implementation on voluntary basis for project promoters.

A solution for ensuring increased transparency in infrastructure planning could be the development of an online tool, which could accommodate collaborative exchanges on the planning of necessary large-scale infrastructure.

The Expert Group proposes the creation of *an online open access collaborative platform* to increase transparency for decision-making in infrastructure planning and implementation on voluntary basis for project promoters. A further suggestion could include the identification and evaluation of the social and environmental impacts of power infrastructure with the purpose of increasing transparency in infrastructure planning and implementation.

This annex presents the rationale, possible features and governance of such tool.

A. The rationale of the tool

- The tool would make available a variety of existing information (environmental, archaeological, recreational sites, RES potential, protected areas etc), generally scattered across Member States and institutions, in a systematic and coherent way by creating new layers of information to already existing maps or platforms;
- The tool aims at increasing transparency and highlighting the complexity of the decision-making process towards the public and involved parties. This aim will contribute to feasible/viable decisions thanks to increased awareness of the different constraints in project design, planning and implementation;
- A European tool would trigger a need for a more systematic and cross-comparable approach to providing consistent evidence which underpins infrastructure requirements. Over time, the tool should be demonstrating the rationale for investments and provide for corresponding alternatives at each stage of the design and planning;
- The ability to visualise and analyse land data will reveal relationships, patterns and trends, essential in determining where to place new infrastructure and it will increase optimization opportunities;
- Visualisation will also reveal any perceived environmental or cultural risks and related costs prior to the transmission lines development;
- Ultimately, visualisation adds value to the process as it could create opportunities for different stakeholders: e.g. corridors could potentially become “green corridors”. When connected, the “green corridors” could further provide ecosystems services;

- The tool would become a commonly accepted point of reference for the relevant stakeholder groups and provide for a basis for constructive discussions on the need or alternatives for infrastructure. If gathered and collaboratively agreed, data used in the tool will increase the legitimacy of the output;
- The usefulness of developing and using such a tool goes beyond stakeholder engaging - economic value for project developers, by giving open access to an aggregated set of data otherwise difficult to access.

B. Features of the tool

- The tool can either be stand-alone or part of an existing Commission platform, such as the Transparency Platform;
 - The platform should be technology-neutral in order to be used for both electricity and gas grids;
 - A technical protocol should enable expansions over time in case new features may need to be added (geographical elements or sectorial layers);
 - It should have an user-friendly interface, openly accessible to the public, in the form of a multi-layer representation of the setting where energy infrastructure is to be developed, possibly linked to larger database.
- The tool should be constructed in a collaborative way such that large number of stakeholder groups can develop a sense of ownership and perceive it as “their own” and not the tool of other actors with vested interest;
- Consistency between TYNDP and environmental indicators in national plans should be ensured. Correspondingly, any inconsistency with existing national tools developed in the context of European law and guidelines (such as the Strategic Environmental assessment framework) should be avoided.

It should include, but not be limited at:

- ✓ the geographic coverage of the European network of protected sites and areas designated of interest from an environmental, habitat and species perspective;
- ✓ archaeological and agricultural constraints;
- ✓ economic data reflecting the societal interests and vulnerabilities (e.g. land-use, tourism attractions, housing plots, recreational areas etc) ;
- ✓ existing grid (gas and electricity) and generation sites (if possible);
- ✓ benefits and costs of (existing) interconnectors including their environmental impacts or mitigation measures (based on an

- economic model with values ideally defined in the collaborative process to be set up);
 - ✓ RES potentials and designated areas for RES expansions;
 - ✓ information on drivers for the need (in our case for instance centers of load and generation), available corridors and ideally simulation tools for analyzing the impact of alternatives;
- The tool should reference a repository of the most relevant European Guidelines for the development of energy infrastructure, especially with respect to the mitigation of negative impacts on environment and compensation.

C. Design process and governance

- A consortium should be set up to involve all interested stakeholders in designing, planning and promoting such a tool.
 - It should include, among others, TSOs, the ENTSOs, local representatives, utilities, generators, environmental and consumers associations, agricultural associations, competent authorities, urban planners and technology providers. Leaders for different set of activities/tasks should be selected among the participating stakeholders.
 - All interested stakeholder groups should be invited to participate on a voluntary basis. Stakeholders should select a representative so that their number remains manageable, but relevant for the purpose of delivering a common planning and information tool for broader use;
- The consortium should jointly develop a work programme and update it regularly. The plan should include the scope of tool, possible areas that might be covered in future expansions of the tool and rationale.
- Developing the need case for infrastructure is key for ensuring public acceptance rather than hindering it. With many important platforms existing at the local level and a wealth of information already out there (such as the Transparency Platform, the upcoming NECP plans) the value of such tool and the governance are crucial.
- The governance of the tool should be further investigated as to agree on the best possible solution from a public acceptance point of view. Options include the Commission's Transparency Platform, the European Environmental Agency, a respected civil society umbrella organization or any dedicated entity.
- Subsidiarity principle should be considered in the process. The EU added value should be clearly explained and justified.

ANNEX 2: Composition of the Expert Group and profiles of its members

1. **Mr Gkizas G. Apostolos**, Head of Units(s) RES Development & Energy Storage Policy Electricity Networks & Smart Grids Technologies at Greek Regulatory Authority for Energy (RAE) representing the Agency for the Cooperation of Energy Regulators (ACER);
2. **Mr Robert Schroeder**, Manager System Development, and **Ms Concha Sanchez Perez**, System Development Advisor, representing the European Networks of Transmission System Operators for electricity ENTSO-E;
3. **Mr Anne Boorsma**, ENTSOG, Business Area Manager System Development, and **Mr Malcolm Arthur**, Business Area Manager Markets, representing the European Networks of Transmission System Operators for gas ENTSOG;
4. **Ms Paulina Beato Blanco**, member in a personal capacity, Professor of economics, former CEO of Red Electrica de Espana, former principal economist of the Interamerican Development Bank;
5. **Mr Maciej Jakubik**, Executive Director, representing Central Europe Energy Partners (CEEP);
6. **Mr Yannick Phulpin**, Senior Engineer EDF, representing Eurelectric;
7. **Mr Nikolaos Vasilakos**, Member of EREF Advisory Board, former President of the National Regulatory Authority for Energy in Greece, representing the European Renewable Energies Federation;
8. **Mr Pierre Bernard**, CEO, representing Friends of the Sustainable Grids;
9. **Mr Daivis Virbickas**, CEO, and his alternate **Mr Liutauras Varanavicius**, Director of Strategy Department, representing Litgrid AB;
10. **Mr Brian Vad Mathiesen**, member in a personal capacity, Professor in Energy Planning and Renewable Energy Systems at Aalborg University;
11. **Mr Michal Smyk**, Head of Strategy, Polska Grupa Energetyczna (PGE), representing Polish Electricity Association (PKEE);
12. **Mr Morris Bray**, Director European Business Development, representing National Grid;
13. **Ms Antonella Battaglini**, CEO representing Renewable Grid Initiative (RGI);
14. **Mr Auke Lont**, CEO and his alternate **Mr Tor Eigil Hodne**, Senior Vice President European Affairs, representing Statnett;

15. **Mr Jochen Kreusel**, Market Innovation Manager Power Grids Division and Senior Vice- President at ABB; Professor RWTH Aachen, T&D Europe Vice-President, representing T&D Europe;

16. **Ms Cécile George**, alternate member in a personal capacity, former Director of Electric Grid Access at the French energy regulatory authority;

Chair of the Expert Group: **Ms Catharina Sikow-Magny**, Head of Networks and Regional Initiatives Unit, Directorate-General for Energy, European Commission, assisted by Policy Officer **Ms Oana Langa**, Networks and Regional Initiatives Unit, Directorate-General for Energy, European Commission.

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