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COMMISSION STAFF WORKING DOCUMENT

Implementation of TEN-E, EEPR and PCI Projects

Accompanying the document

**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL
COMMITTEE AND THE COMMITTEE OF THE REGIONS**

Progress towards completing the Internal Energy Market

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1. LEGAL BASIS AND POLICY CONTEXT OF EU ACTION ON TRANS-EUROPEAN ENERGY NETWORKS

This Commission Staff Working Document is part of the package of the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions "Main Challenges for Completing the Internal Energy Market". It aims at giving an overview of the progress made under the main EU programs that have been providing financial aid or a range of regulatory benefits to energy infrastructure projects: the Trans-European Energy Networks (TEN-E), the European Energy Program for Recovery (EEPR) and the Projects of Common Interest (PCI) exercise.

The establishment and development of trans-European networks, including in the energy sector, are set out in Article 154 of the Treaty establishing the European Community. Following the legislation adopted in 1996 and 2003 respectively, the main EU instruments on trans-European energy networks (TEN-E) were adopted in 2006 and 2007. These were Decision 1364/2006/EC laying down guidelines for TEN-E and repealing Decision No 391/1996/EC and Decision No 1229/2003/EC, followed by Regulation 680/2007/EC ("TEN Financial Regulation") laying down general rules for the granting of Community financial aid in the field of TEN-E. The aim of the guidelines was to list and rank, according to the objectives and priorities laid down, projects eligible for Community assistance. The objectives included the effective operation of the internal energy market, ensuring the security and diversification of supply, strengthening territorial cohesion in the energy sector of the European Union and promoting sustainable development. The projects were ranked in three categories:

- **Projects of Common Interest** – which related to the electricity and gas networks meeting the objectives and priorities laid down in the Decision; they had to display potential economic viability (assessed by means of a cost-benefit analysis in terms of the environment, the security of supply and territorial cohesion);
- **Priority Projects** – selected from among the projects of common interest and had to have a significant impact on the proper functioning of the internal market, on the security of supply and/or the use of renewable energy sources;
- **Projects of European Interest** – priority projects of a cross-border nature or which had a significant impact on cross-border transmission capacity; they had priority for the granting of Community funding under the TEN-E budget and particular attention was given to their funding under other Community budgets.

The budget allocated to the TEN-E (around €20 million per year overall) was mainly intended for financing **feasibility studies**. A total number of 111 projects were financed under the TEN-E Regulation, between 2007 and 2013 (€143 million).

In addition, in 2009 the European Energy Programme for Recovery was adopted with the specific aim to make energy supplies more reliable and help reduce greenhouse emissions, while simultaneously boosting Europe's economic recovery after the gas crisis in Ukraine. Under this program, **grants for works** were awarded to selected, highly strategic projects

covering three broad fields: gas and electricity infrastructure projects, offshore wind projects and carbon capture and storage projects. Most of the budget available was allocated to 59 promoters and 61 projects in the following sub-programmes: gas infrastructure (€1363 million); electricity infrastructure (€904 million); offshore wind energy (€565 million); and carbon capture and storage (€1000 million).

In 2013, after 6 years of implementation, the TEN-E regulation was fundamentally revised and replaced by Regulation 347/2013 on guidelines for trans-European energy infrastructure (“TEN-E Guidelines”). Under this regulation, a revolutionarily new approach was established, aimed at identifying **Projects of Common Interest** in 12 energy infrastructure priority corridors and areas. The new concept of project of common interest covers lines, pipelines, facilities, equipment or installations falling under the energy infrastructure categories and is defined by certain criteria: it is necessary for at least one of the energy infrastructure priority corridors and areas; the potential overall benefits of the project outweigh its costs, including in the longer term; and the project has to either involve at least two Member States by directly crossing the border of two or more Member States, be located on the territory of one Member State and have a significant cross-border impact or cross the border of at least one Member State and a European Economic Area country.

Regarding its reporting obligations covering the above mentioned programs, the Commission shall first of all report to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of the Trans-European Energy Networks every two years (pursuant to Article 17 of Regulation 680/2007/EC and Articles 9(2) and 15 of Decision 1364/2006/EC). The previous TEN-E implementation report covered the period 2007-2009.

The present report covers the period 2010-2014 until the repeal of the TEN-E Guidelines and TEN Financial Regulation. The report will focus on those projects which are considered to be Projects of European Interest – which are of cross-border nature or have significant impact on cross-border transmission capacity – and priority projects – i.e. projects with high European significance that are established along the main corridors known as priority axes and have been granted Community financial aid between 2010 and 2014. This report on the implementation of the TEN-E projects highlights the progress in achieving the original objectives of the TEN-E legislation. It also describes which priorities have remained constant, or, on the contrary, have been adapted to the changing realities of the energy environment.

Secondly, this report also informs on the implementation of Projects of Common Interest (PCI) as identified under the TEN-E Guidelines, and the progress that has been made in the energy infrastructure sector in view of the Internal Energy Market completion. This report aims to establish early on in the process the main difficulties that PCI's may encounter. It identifies possible solutions in order to ensure their timely implementation and to avoid any obstacles and delays that might jeopardize the achievement of their objectives. It will feed into the comprehensive report on the implementation of projects of common interest that the Commission will publish in 2017, pursuant to Article 17 of the TEN-E Guidelines. Finally, the report includes an overview on the implementation of those projects that received funding

under the European Energy Programme for Recovery (EEPR) and that were subsequently granted PCI status (for one section or for the whole project).

The data in this report take into account the information provided by project promoters during the monitoring process for the TEN-E projects, the information that was submitted by project promoters in questionnaires collected on the implementation of the PCIs during the first quarter of 2014 and a common overview regarding the main potential difficulties or those already encountered by projects from each priority corridor.

Infrastructure is at the heart of European energy policy, as its development and modernization is a prerequisite for achieving competitiveness, security of supply and sustainability. In the long term, the Union's energy security is inseparable from and significantly fostered by its need to move to a competitive, low-carbon economy which reduces the use of imported fossil fuels, in line with its 2030 policy framework on climate and energy and also fully consistent with its competitiveness and industrial policy objectives. The lessons learnt from the application of current policies as well as from the effectiveness of the Union's response to previous energy supply crises, as the ones from the winters of 2006 and 2009, showed that the key to improved energy security lies first in a more collective approach through a functioning internal market and greater cooperation at regional and European levels, in particular for coordinating network developments and opening up markets.

As pointed out in its EU Energy Security Strategy (EESS), published in May 2014, the Commission estimates that around €200 billion are required up to 2020 in order to cover the necessary significant development of energy transmission infrastructure, in particular cross-border interconnections between Member States, that would contribute to achieving a truly integrated and competitive internal energy market.

The gas crisis of 2009 showed that, in light of security threats, an integrated internal energy market should rely on diversified gas supplies. Moreover, taking into account the evolution of the current events in Ukraine and the potential for disruption to energy supplies, an increased focus was put on the short term on those Member States that are dependent on one single gas supplier. In the electricity sector, security can be achieved provided that grids are available to transmit supplies from one place to the other. The integration of markets in the Nordic countries into NordPool and the steps that have been taken towards the coupling of electricity markets in several areas represent crucial developments. Nevertheless, the development of competitive and well-integrated markets in the Baltic States and the South East of Europe lags behind, depriving those regions of the related security of supply advantages.

In these circumstances, 27 projects in gas and 6 in electricity were identified as critical for EU's energy security in the short and medium terms, according to the Annex 2 of the EU Energy Security Strategy because their implementation is expected to enhance diversification of supply possibilities and solidarity in the most vulnerable parts of Europe. Most of these projects have a PCI status under the TEN-E Guidelines, with different actions related to feasibility and environmental studies having received financial aid under TEN-E, while three others have been supported under the EEPR. Most of these projects are located in Central and

South-East Europe, as well as in the Baltic States. Other projects will help to end the energy isolation of Portugal and Spain.

Beyond the advantages related to the security of supply aspects, market integration will also entail mechanisms promoting demand response and rewarding flexibility, protecting vulnerable customers etc. Moreover, it will ensure the convergence of energy prices, under the circumstances where, while wholesale prices for both electricity and gas have significantly dropped over the last years, retail prices have increased significantly, due to taxes and levies. The implementation of the Regulation No 1227/2011 of 25 October 2011 on Energy Market Integrity and Transparency (REMIT) is of key importance in order to prevent market abuse.

A truly integrated and competitive internal energy market needs significant development of the energy transmission infrastructure, in particular cross-border interconnections between Member States. In March 2014, the European Council conclusions called for "Speedy implementation of all the measures to meet the target of achieving interconnection of at least 10% of their installed electricity production capacity for all member States". Taking into account the importance of interconnectors for strengthening security of supply and the need to facilitate cross-border trade, the Commission proposed the extension of the current target to 15% by 2030 while taking into account the cost aspects and the potential of commercial exchanges in the relevant regions.

Lessons from recent years showed that decisive steps have been taken in terms of increasing cross-border capacity through development of new infrastructure and enhancement of existing ones. Thus, the progress that has been made up to date in relation to the Day-Ahead Market coupling in electricity can be considered a successful achievement. In gas, an achievement of similar impact is the establishment of the PRISMA platform in 2013, where interconnection capacity for the networks of 28 TSOs responsible for transporting 70% of Europe's gas is auctioned in a transparent and uniform manner.

As pointed out above, the Projects of European Interest selected under the TEN-E had to have a cross-border nature or a significant impact on cross-border transmission capacity. At the same time, the projects that acquire PCI status under the TEN-E Guidelines have to prove, as a prerequisite, a significant cross-border impact. All these projects have been contributing and will continue to make a relevant difference in the upcoming years with regards to the interconnection of energy markets in the European Union and, eventually, to the achievement of the Internal Energy Market.

2. PROGRESS MADE IN THE IMPLEMENTATION OF TEN-E PROJECTS 2010-2014

At the end of this reporting period (2010-3 Q2014), around 85 **TEN-E actions** were still **ongoing** and 3 new Award Decisions were to be potentially adopted for different actions . Out of these actions, around 65 were granted financial aid during the time interval 2010-2014,

while the others had the Award Decisions issued before 2010 and were thus, already subject to the Report on the implementation of the TEN-E in the period 2007-2009.

In the time-interval 2010-2014, 42 actions were **finalised** and had received their final payments under the TEN-E, 34 of them having the EU contribution granted before 2010 (55,805,987 €) and 8 of them having the EU contribution granted in 2010 and 2011 respectively, amounting to a total of 12,485,730 €

Year of adoption of the Award Decision	Number of actions that were finalised and received their final payment	Total amount of the EU contribution to the finalised projects
2004	3	5,494,165 €
2005	4	7,144,987 €
2006	6	9,833,550 €
2007	6	8,090,000 €
2008	4	4,644,611 €
2009	11	20,598,674 €
2010	6	11,585,730 €
2011	2	900,000 €
2012	0	0
2013	0	0
2014	0	0

Between 2010 and 2014, 73 actions (41 in electricity and 32 in gas) were **granted Community financial aid** under the TEN-E guidelines. Moreover, up to 3 Award Decisions are still to be adopted in the upcoming months. The total amount of funds that was committed in the years 2010-2013 is 74,501,910 € out of which, a maximum of 12,200,000 € was committed for the year 2013 and includes the actions for which the decisions are still to be adopted.

Year of adoption of the Award Decision	Number of actions in electricity granted financial aid	Commitments	Number of actions in gas granted financial aid	Commitments	Total number of actions granted financial aid	Commitments
2010	13	11,015,131 €	8	8,491,944 €	21	19,507,075 €
2011	10	9,906,238 €	11	13,724,541 €	21	23,630,779 €
2012	10	9,797,793 €	8	9,366,263 €	18	19,164,056 €
2013	8 (up to this date)	8,544,914 €	5 (up to this date)	1,340,239 €	13 (up to this date)	12,200,000 €
						74,501,910 €

After a general assessment of the projects that were granted Community financial aid between 2010–2014, one can notice that the main reported obstacles to projects implementation are

numerous and cover a range of issues. The reported difficulties and obstacles vary from project to project, but some of them prove to be common to more actions and seem to be of systematic nature. Thus, they are occurring time and again in many of the TEN-E projects irrespective of their location and type and cause delays in the planned time schedule. The main common obstacles reported are related to:

- The legal and regulatory framework;
- Problems related to the initially chosen route;
- Financial and technical constraints.

In many cases, the legal and regulatory framework has proved to be an obstacle during the necessary manifold authorisation and permitting procedures at different administrative levels: federal, regional, local. The lack of harmonisation of these procedures along the route of the projects, especially in the case of projects crossing several countries, has also caused delays in the implementation. Furthermore, changes required to the ownership structures of transmission and distribution companies stemming from the third internal energy market package have also caused delays to many projects.

Regarding the problems related to the initially chosen route, project promoters have been facing a risk of non-acceptance and hence delays when addressing the expectations of NGOs and land owners and when closing an easement agreement with owners of the land impacted by the construction of the projects. The public consultations and negotiations with land owners or the public in general, caused sometimes delays during the pre-construction phases of the projects, while in other cases imposed a change of the chosen route.

Certain actions have suffered from a lack of financial resources or from technical challenges due to the difficult implementation of innovative solutions.

Other issues encountered relate to bottlenecks in the engineering, manufacturing and installation capacity of the manufacturers; many on-going projects are competing for the supply and delivery of necessary materials (cables, converter transformers etc.)

3. THE CONTINUITY BETWEEN TEN-E, EEPR AND THE PCI PROCESS

This part of the report describes how many projects adopted under the first TEN-E Regulation and under the European Energy Program for Recovery have acquired Project of Common Interest status in the first Union-wide list established under the new TEN-E Regulation 347/2013. It also explains why they still count among the priority energy projects in Europe.

In electricity, 11 projects that had been included in the priority axis of the "old" TEN-E have subsequently acquired PCI status (partially or in their integrity) under the new TEN-E Regulation. From EEPR, for 2 projects the transfer was made to the PCI list of 2013. This continuity proves that they are still in line with the main objectives of the energy policy.

Most of them are interconnection lines (between Italy and Slovenia, Ireland and the United Kingdom, Denmark and Germany, Poland and Lithuania, Hungary and Slovakia, for instance); others are internal lines that have an impact on the interconnection capacity with

neighbouring states. At the same time this continuity is a sign of slow progress in project implementation.

In gas, 9 TEN-E projects have also become part of the first PCI list. These include pipelines that cross the territory of several Member States or third countries and several LNG terminal projects. From the EEPR, 4 projects were also transferred – partially or entirely – to the PCI list.

An assessment of the "old" TEN-E projects of the different categories shows that most of the projects which have made it to the new Union list of PCIs are those that had been given the status of Projects of European Interest and thus have a significant cross-border impact. Those ones that were not selected as PCIs under the new Guidelines were mostly part of the other project categories (priority projects or projects of common interest) and were not answering to this essential selection criterion of the PCI process.

Other projects have been in the meantime completed. A third category of projects which were not retained are those that, given the developments since 2004 when the first TEN-E decisions were adopted, were no longer in line with the main priorities and objectives of the European energy policy. From the EEPR, 6 projects have later answered to the PCI objectives and have been included in the new list.

The lessons learned from the TEN-E and EEPR exercises have been taken into consideration in the provisions of the new Regulation.

Firstly, the difficulties related to the lengthy and un-harmonised permitting procedures - given the multiple institutions from different administrative levels involved in the process - determined the need to establish a single competent authority or authorities integrating or coordinating all permit granting processes ('one-stop-shop') at national level, as well as the need to limit under normal circumstances the time period of granting such permits to a maximum of 3.5 years. These provisions became legal obligations for the Member States under Articles 8, 9 and 10 of Regulation 347/2013.

Secondly EEPR has demonstrated the leverage effect of EU financial assistance in obtaining private funding for projects of European significance addressing in particular the security of supply concerns in Central and Eastern Europe by providing for the possibility to reverse the gas flows. Therefore, it has been decided that under the new Regulation PCIs that demonstrate significant external benefits and hence prove not to be economically viable under the existing regulatory framework and market conditions may not only profit from grants for studies, but also, under certain conditions, from grants for works and innovative financial instruments under the Connecting Europe Facility (CEF).

A third lesson learned is the need to ensure increased transparency and enhanced public participation in the PCI process. Experience in past exercises has proved that in many cases, the increased sensitivity or strong opposition of the public was due to lack of information with regards to the need, impact and technological solutions of the projects. Therefore, under the new TEN-E regulation ensuring a proper transparency on the implementation of PCIs is a

requirement. This will have a positive impact on the awareness of the public, engage civil society in a constructive dialogue with the promoters of the projects and the competent authorities, and contribute to finding better solutions, which are adapted to the needs of that particular situation or region.

4. CURRENT STATUS OF THE IMPLEMENTATION OF PCIs

In 2013 the first list of PCIs was established by delegated Regulation C(2013)6766. It contains 248 projects, of which 132 in electricity and 107 in gas, 7 in oil and 2 in smart grids. The main selection criteria for the projects were in line with the EU's overall energy policy objectives. The projects are contributing to:

- The realization of a pan-European integrated grid;
- Ending isolation and removing bottlenecks in national grids;
- The achievement of the 10% electricity interconnection target advocated by the Barcelona Council Presidency in 2002 (only Spain will not achieve this objective through implementation of the projects on the current list);
- The diversification of gas sources and ending single source dependency of several Member States (as a result of the selected PCIs, all Member States will have access to at least 2 supply sources, except for Cyprus which will have indigenous resources);
- Ending single source dependency in oil in Central-Eastern Europe (security of supply).

Under the 'old' TEN-E exercise, the list of projects of common interest was fixed in an Annex, becoming out dated over time and modifiable only through ordinary legislative procedure.

The new TEN-E Guidelines established a revolutionarily new approach. First of all, 12 priority corridors were identified:

- Northern Seas offshore electricity grid,
- North-South electricity interconnections in Western Europe,
- North-South electricity interconnections in Central Eastern and South Eastern Europe,
- Baltic Energy Market Interconnection Plan for the electricity sector,
- Smart grids deployment,
- Long-term electricity highways,
- North-South gas interconnections in Western Europe,
- North-South gas interconnections in Central Eastern and South Eastern Europe,
- Southern Gas Corridor,
- Baltic Energy Market Interconnection Plan for the gas sector,
- Supply connections in Central Eastern Europe for oil,
- Cross-border carbon dioxide networks (CO₂).

The projects in the first Union list of projects of common interest - adopted in October 2013 - were identified in Regional Groups, based on these priority corridors. Member States and the Commission were the key drivers, while involving relevant stakeholders such as national

regulators, transmission system operators, project promoters etc. The PCI identification is based on objective criteria and a cost-benefit analysis. As of 2015 when the second Union list of PCIs will be published, only projects included in the 10 Year Network Development Plans prepared by the European Networks of Transmission System Operators for gas and for electricity (ENTSO-E and ENTSO-G) can be selected. Exceptionally in the first selection round also other projects could be considered.

PCIs are part of EU law – their monitoring will ensure that the projects are implemented in a timely manner and that no delays will occur that could jeopardize the achievement of the EU energy policy objectives. The European Commission and ACER will therefore closely monitor the process. Article 5 sets out a number of key tasks of the Regional Groups related to the implementation and monitoring of the PCIs.

Article 5.1 requires project promoters to draw up an implementation plan, including a timetable regarding feasibility and design studies, approvals by the National Regulatory Authorities (NRAs) and others, permitting, construction and commissioning. Article 5.3 obliges ACER and the Regional Groups to monitor the progress achieved in implementing the PCIs and, if necessary, make recommendations to facilitate their implementation. The Groups may i.a. convene meetings with the relevant parties and invite the Commission to verify the information provided on site. According to Articles 5.4 and 5.5, by 31 March of each year following the year of inclusion of a PCI in the Union list, project promoters shall submit an annual progress report to the competent (permitting) authority and to ACER (or the Regional Group, i.e. Commission, in case of oil and CCS), indicating the state of play, delays and revised planning. ACER then submits a consolidated report to the Regional Groups, including recommendations on how to overcome difficulties and delays. The report will also contain an assessment of the consistency between the ENTSOs, TYNDPs and the TEN-E priority corridors/areas. As a general principle, the outcome of the progress reports should feed into the work of the Regional Groups, including NRAs' and ACER's checks enshrined in the PCI process, to select the next PCIs. And finally, Article 5.6 requires the competent (permitting) authorities to report each year to the respective Regional Groups on the progress, delays and reasons thereof in the permitting process of the relevant PCIs.

The graphs below provide an overview of the current implementation statistics for the PCIs on the first Union list, according to the implementation plans submitted by project promoters in line with Article 5.1 of the TEN-E Guidelines. In the case of projects that are implemented per different sections, the phase which has been completed or is currently on-going for all sections was considered (the smallest common denominator).

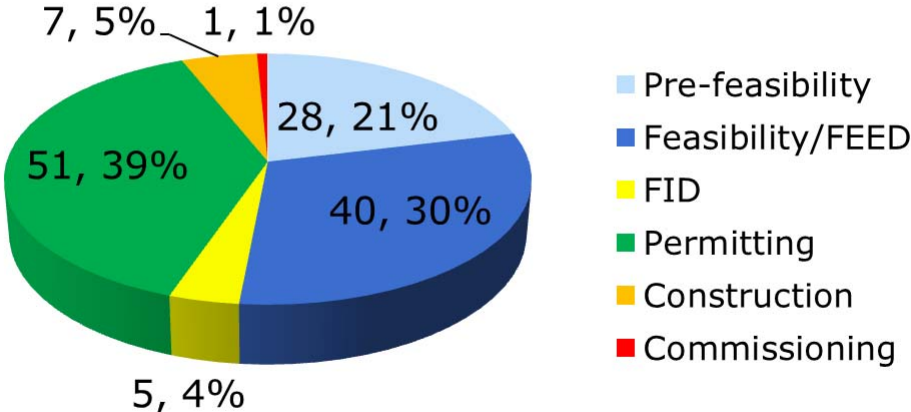
Electricity

At the moment of reporting, out of the 132 PCI in electricity, one project has already been completely finished and has entered the commissioning phase. Seven projects have entered the construction phase, 51 were in permitting procedures and 5 have started the procedure in view of having the Final Investment Decision awarded. With regards to those projects that are

still in the study phase, 40 were subject to feasibility studies or Front End Engineering Design (FEED) and 28 were still in the pre-feasibility studies phase.

Statistics on the implementation of Projects of Common Interest in electricity

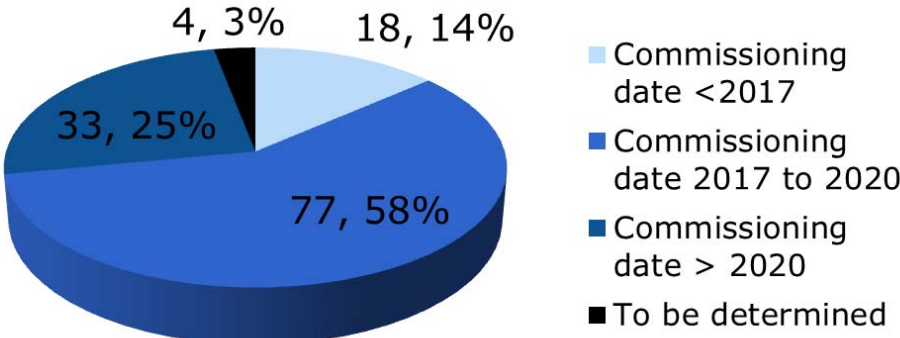
Current implementation status of Electricity PCIs (132)



Regarding the expected date of commissioning for the projects in the electricity sector, 18 of them are to be finalised and commissioned by 2017, 77 between 2017 and 2020 and 33 after 2020. In the case of 4 of them, project promoters indicated that the commissioning date is still to be determined.

Statistics on the expected timeframe of the commissioning of PCI in electricity

Commissioning dates of Electricity PCIs (132)

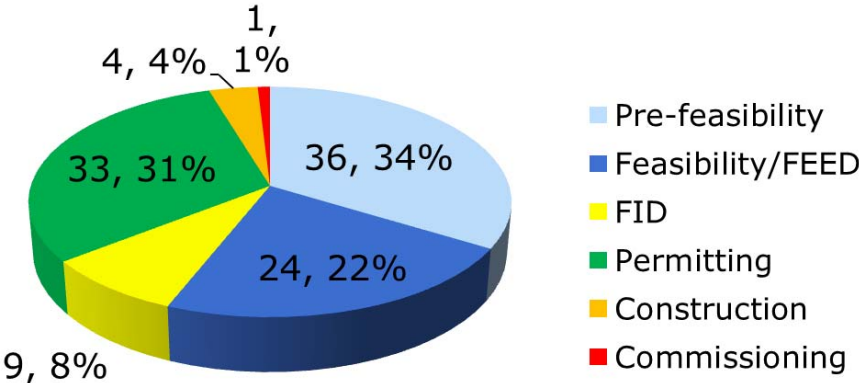


Gas

In gas, out of the total number of 107 PCI, one was finished and has entered commissioning and 4 were in the construction phase. For 33 gas projects the permitting procedures have started and for 9 others the Final Investment Decision (FID) is to be awarded. Out of the projects that were still in the study phase, 24 were in the feasibility/FEED phase, while 36 were in the pre-feasibility phase.

Statistics on the implementation of Projects of Common Interest in gas

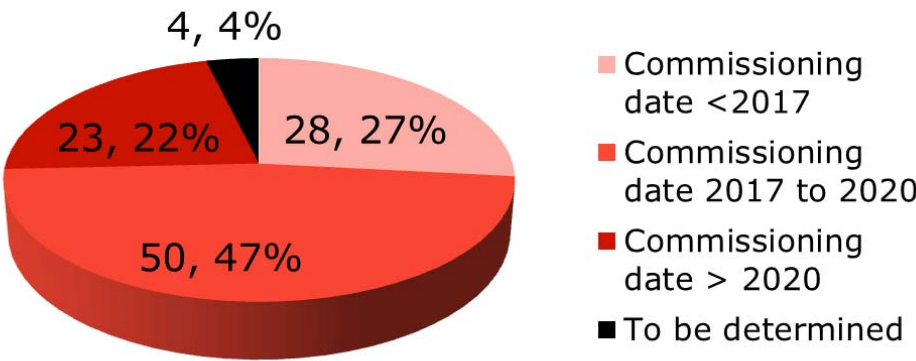
Current implementation status of Gas PCIs (107)



In gas, out of the 107 projects, 28 are expected to be commissioned by 2017, 50 between 2017 and 2020 and 23 within the time horizon after 2020. The commissioning dates for 4 projects are still to be determined.

Statistics on the expected timeframe of the commissioning of PCI in gas

Commissioning dates of Gas PCIs (107)



4. Obstacles in PCI project implementation

Main challenges for electricity Projects of Common Interest

In their initial progress reports, project promoters have reported on the difficulties they are encountering so far. There are recurring problematic issues that affect a number of projects in all corridors. These are:

1. Uncertainties regarding the timely delivery of permits by the competent authorities. In some cases these are exacerbated by the interdependencies with other projects or internal reinforcements that carry their own separate permitting risks.
2. Public acceptance, related to concerns about optical impact/ impact on the landscape, impairments due to electro-magnetic fields and environmental concerns (impact on habitats and the overall need to respect related environmental legislation). These concerns also have an impact on the duration of the permitting process, so project promoters have to make sure that an adequate planning of these stages will not cause delays in the implementation of the projects.
3. Lack of compatibility of regulatory regimes between Member States, in the case of cross-border projects.
4. Lack of access to finance, especially for projects in countries which have a long list of PCI's and which are in a problematic financial situation.

Given the long term nature of infrastructure projects, it is likely that more difficulties will emerge in the coming years. As the commissioning dates get closer, efforts on permitting procedures, regulatory approval and financing solutions will intensify and political support will play a more important role. Therefore, project promoters, Ministries and regulators need to report on existing and potential difficulties on a constant basis. Progress of implementation will be monitored closely in the regional groups established in the TEN-E Regulation and remedial action will be proposed where necessary.

The following paragraphs provide a more detailed look into the specific difficulties that have been encountered or might be encountered in the future in each of the priority corridors of the electricity and gas sectors.

Priority corridor Northern Seas offshore grid ("NSOG")

The majority of challenges encountered in the NSOG corridor are related to the permit granting process or are of a regulatory nature.

The uncertainties regarding the adequate planning for and the timely delivery of permits by the competent authorities are those that are raised most often in this priority corridor. In certain cases, mitigation measures might be required to address the opposition of shipping

authorities, to reach an agreement on the final route and progress towards a license application for the project. Addressing properly the actions aimed at acquiring public acceptance is of key importance, especially for grid projects on-shore; this also impacts on the permitting process. The main reasons for the decreasing acceptance or strong opposition of the population against the projects are: reasons of optical impact/ impact on the landscape, impairments due to electro-magnetic fields and environmental concerns (impact on habitats and the overall need to respect related environmental legislation).

Regarding the regulatory issues, arrangements against which a Final Investment Decision is assessed are still on-going in certain cases (regulatory solution, tax treatment etc.). That may thus influence the commercial viability of projects.

Another issue often raised by the project promoters is the interdependence with other projects or necessary internal network reinforcements that carry their own separate risks related to permitting delays or incompatible regulatory regimes (different feed-in tariffs for offshore wind farms between different Member States). Other obstacles were also mentioned during the cooperation with other users in the Northern Sea with impact on technical, financial and timing aspects.

In certain cases, the projects also encounter challenges related to the crossing of private lands (and thus encountering issues related to the opposition of landowners) or natural barriers (seabed, rivers) or of existing infrastructure (tunnels, bridges, canals, motorways, railways). These last ones might raise both technical difficulties and issues during negotiations with the authorities in charge of the respective transports infrastructure. Possible technical difficulties were also mentioned in the case of new or recently developing solutions (e.g.: risks related to the HVDC supply chain).

Priority corridor North-South electricity interconnections in Western Europe ("NSI West Electricity")

Electricity projects in NSI WEST are also confronted with uncertainties regarding the timely delivery of permits by the authorities. Delays can occur due to long negotiations with real estate owners regarding the routes of the grid or cable. On specific cases, demonstrations, occupation of land and hostile and destructive actions of organised opposition groups have been signalled by project promoters to have taken place. In others, despite the possible granting of planning consent by the competent authorities, private landowners along the route have expressed their intention to block access to their lands for construction. Besides this, public opposition and acceptance are therefore quite common for new electricity lines, the range of reasons covering visual impact, risks related to electro-magnetic fields, environmental concerns (impact on birdlife), especially in the case of large scale projects.

Technical difficulties arise in the case of projects crossing difficult terrain conditions or natural barriers (e.g.: submarine canyons or high depth and geological instability of the

seabed, rivers). For certain projects, potential delays can occur due to scarcity on the market for HVDC cable and converter stations.

Given the difficulty to predict the long run electricity market needs, the economic viability of certain projects could be jeopardised.

Priority corridor North-South electricity interconnections in Central Eastern and South Eastern Europe ("NSI East Electricity")

As in the case of the other corridors, public acceptance of grid development also raises risk of delays for the implementation of the projects in NSI EAST. The main elements of concern or opposition relate to the routes of the projects crossing densely populated areas, the general public “not in my back yard” approach or elements of complexity related to expropriation.

Delays are encountered or likely to occur due to the lengthy permitting procedure due, for instance, to the location of the project in Natura 2000 sites or alternatively close to living areas. In a specific case, granting of permits for multi-year sea-prospecting of hydrocarbons in the area of a cable lying might require the change of the route.

Other complexity element which was signalled by some project promoters was the difficult coordination of the different sides involved in the implementation, in adopting a harmonized approach regarding the priority of the project or its feasibility and difficulties in public procurement due to parallel planning processes in different countries. Moreover, the interdependence of a PCI on other projects (construction of other interdependent grid expansion projects and generation development projects) might also cause delays.

Baltic Energy Market Interconnection Plan ("BEMIP Electricity")

Problems with land owners are defined as the main difficulties for future permitting process of several projects in the Baltic States region.

Moreover, financial difficulties could also raise problems given that more PCIs located on the territory of the same country will be in construction phase at the same time and will thus require high investments.

Priority corridor North-South gas interconnections in Western Europe ("NSI West Gas")

Projects in NSI West Gas might encounter delays or stall while awaiting regulatory clarity on tariffing decisions. In certain cases, the lack of progress on this issue has been the most critical reason for the financial backers on the projects not progressing with the next stages of

investment or even withdrawing from the project. In cases where long term commitments have the same tariff as future short term booking, there is no incentive for shippers to go for long term commitments that would reduce financial risk and keep tariff competitiveness.

Especially in the case of projects of large scale and crossing several countries, permitting procedures have proved to be complex and time-consuming. Interdependence with other projects might also represent a challenge in the implementation of certain PCIs.

The need for harmonization of the odourisation practices in certain Member States might pose problems and be confronted with the reluctance of the operators or national authorities.

Moreover, uncertainties in the market scenarios were elements of complexity in the finalization of the commercial frameworks for certain projects.

Priority corridor North-South gas interconnections in Central Eastern and South Eastern Europe ("NSI East Gas")

The volatile regulatory and legal environment in several Member States has been having negative consequences on the certainty of the investment return and thus, on the willingness of shippers to book capacities on a long-term basis. In other cases, delays in launching the open season occurred.

Projects in NSI East Gas have also been encountering difficulties related to the easement and land plots acquisition that caused delays in the implementation and, in the case of LNG terminals, risks related to the disruption of the port traffic have been raised as major issues. Unclear legislative requirements and overlapping between the competent public authorities (national, regional, local administration) regarding the permitting procedure have also proved to be time-consuming. In certain cases, inadequate planning for the obtaining of environmental permits in relation to the access to seashore, seabed and sea space or the lengthy time required by the authorities for their issuance have been putting challenges, while in others, the lack of agreement by the states concerned regarding the location of the project have actually frozen its implementation.

The coordination of the countries involved in the project also raised problems regarding the agreements related to routing and capacity allocation, especially in the case of those which are EU non-Member States.

Some projects might encounter financial difficulties due to the potential cost implications of the investments.

Priority corridor Southern Gas Corridor ("SGC")

Permitting related difficulties have been encountered, given that the routes of certain projects cross archaeological sites, mine fields or are in the vicinity of military bases. Land acquisition

can be a complicated process, resulting in certain circumstances, with court cases. In the case of obtaining environmental permits, a more adequate planning should be envisaged, especially for offshore pipeline sections, when the project might be crossing, for instance, a sea strait or Natura 2000 sites.

Obstacles during construction were also raised by the fact that the route of pipelines cross natural barriers (mountainous regions where elevation is higher than 2000 m, water depth and the necessary length of the offshore sections of the pipelines, rivers etc.), due to the geological structure of the ground or unexpected severe weather conditions.

The interdependence with other projects might impact on the choice of the final technical configuration of certain PCIs. Due to their cross-border character and magnitude, certain projects encountered obstacles because of the difficult coordination of the involved stakeholders.

Gas deliveries under different Gas Supply Agreements in the case of projects crossing several countries, uncertainties related to the securing of gas supplies (upstream developments) have also been major risks impacting on the proceedings for the FID of certain pipeline projects.

Large investments amounts and the need to implement the projects in relatively short timeframes and in parallel with other projects lead to strenuous financial effort for the promoters.

Priority corridor Baltic Energy Market Interconnection Plan in gas ("BEMIP Gas")

In some cases, the lengthy permit granting processes might be impacted by the proximity with the border with other Member States. Land acquisition and right of use issues have been delaying or even putting on hold the process of permit granting, while in others, strong public opposition ("not-in-my-back-yard" issues) determined the need to change the basic layout for pipelines routes or compressor stations.

The interdependency with other projects and their implementation might impact on the sufficiency of gas demand and then leave under uncertainty the status of certain projects in the Baltic region.

Project promoters have been indicating that the regulations in the Baltic region for LNG import, storage and re-gasification facilities are not sufficiently effective. The regulatory principles vary significantly across the impacted countries and therefore there are no clear regulatory grounds for the compilation of the business plan of the projects.

Financing of certain projects is challenging, given that they do not prove to be financially viable.

5. ADDRESSING THE IDENTIFIED CHALLENGES FOR THE IMPLEMENTATION OF THE PROJECTS

The Commission is already pro-actively taking action in order to address the difficulties that are or will be faced by PCIs. The Regulation itself foresees ways to address the main problems reported by projects so far.

I. Permitting

Member States are obliged to address the accelerated permit granting. According to Article 10 of the Regulation, the total duration of the permit granting can be maximum 3,5 years, except in duly justified exception. Member States also had to establish a 'one-stop shop' responsible for facilitating and coordinating the permit granting process for projects of common interest (Article 8 of the Regulation). The establishment of these one-stop shops was due by November 2013 and in 2014 and 2015 Member States will have to make sure that they are functioning without any hurdles and that other measures, including the publication of the manual on the permit granting process for project promoters, and the adoption of legislative and non-legislative measures streamlining the environmental assessment procedures are adopted timely.

The specific measures to be taken by the Member states to accelerate the permit granting process and to streamline environmental assessment procedures applicable to PCIs include: the designation of the one-stop-shops for PCIs, the publication of the manuals of procedures for PCIs, the implementation of non-legislative and legislative measures streamlining environmental assessment procedures (if assessed as possible by the Member States). Establishment of the one-stop-shops is of particular importance to ensure the lawfulness of the permit granting process for PCIs and to avoid (legal) action brought against Project Promoters and national authorities by third (natural and/or legal) parties.

Regarding these measures, the state of their adoption in 3Q2014 was the following:

- 17 Member states had established the one-stop-shops, while for the remaining 11 Member States, the EU Pilot (launched in March 2014) was still on-going, by requesting further information;
- 11 Member States had published their manuals;
- No Member State had informed the Commission that it had identified as possible any non-legislative measures that it needed to adopt to streamline the application of the environmental assessment procedures. A thorough analysis is planned for September 2015 by when the Member States are obliged to take the necessary legislative measures.

II. Public acceptance (or public concerns)

The decreasing acceptance or strong local opposition of the general public or interest groups to the development of grid infrastructure is one of the most common problems for electricity

projects. Early engagement with citizens/consumers on diverse energy policy issues is crucial for meeting the European climate and energy targets by 2020. It is necessary for all project promoters to better engage with the affected population to foster more widespread understanding and support for infrastructure projects.

In 2014 the Commission initiated and published a study on ways to address concerns surrounding grid infrastructure development: "Study regarding grid infrastructure development: European strategy for raising public acceptance". It produced inter alia a web-based toolkit allowing stakeholders, especially TSOs, NGOs, public authorities and local communities to develop a targeted, effective communication approach towards stakeholders in order to address concerns surrounding grid development. The online "toolkit" was established as a website that contains communication and stakeholder involvement elements with high potential to raise public acceptance and participation for individual grid infrastructure development projects in Europe. With this innovative approach, the framework for such a toolkit both in technical form and structural content includes tables for toolkit elements such as stakeholders, stages, communication contents, channels, formats and practice examples. Moreover, it includes communication messages and user guides for making it easier to be applied on the ground. The Steering Committee that was established with the aim of contributing to the publication of the Study acknowledged that the primary users of the toolkit would likely be TSOs and other project promoters as most frequent initiators of communication and stakeholder involvement activities to raise public acceptance. Other stakeholders (e.g. NGOs and local stakeholders) are invited to use the toolkit to engage in a multi-stakeholder dialogue, contribute their expertise, and play a constructive part in the process.

Transparency on project implementation will make an important contribution to improved public acceptance. Transparency is an essential provision of the TEN-E Guidelines Regulation (Article 18). The Commission has established a Transparency Platform - including an interactive map "PCI Viewer" - that will be providing essential information on the projects (location, implementation plan, progress report, results of Cost Benefit Analysis, funds allocated to projects – if any). Project promoters are also legally obliged to submit a concept for public participation for approval of the competent authority.

III. Financial difficulties

The primary objective of the EU infrastructure policy is now to ensure the timely implementation of the PCIs. Together with the streamlined permit granting procedures and the common regulatory framework, the €5.8 billion of the Connecting Europe Facility (CEF) will help to achieve this. All PCIs can get grants for studies or have access to financial instruments under this programme. However, only projects that can prove they have externalities for which neither the market, nor the users (through tariffs) are willing to pay, may be considered for grants for construction.

The CEF represents only 3% of the €200 billion investment needed up to 2020, but it can leverage other funds through using financial instruments. For the CEF to make a difference it must be targeted at few critical projects and it must also be combined with the efforts of regulators to finance part of the infrastructure through network tariffs and of Member States making use of the European Structural and Investment Funds, where relevant. Therefore, a special focus will be given to the project identified as key from a security of supply point of view, according to Annex II of the EESS. The cost of these projects is estimated at around €17 billion. The critical PCIs are mainly large scale projects, except a few LNG terminals and storage projects, and are inherently complex and prone to delays. Hence, the possibilities to speed up their implementation require more than just early CEF support. The Commission therefore intends to intensify its support for the critical projects by bringing together the project promoters to discuss technical possibilities to speed up project implementation and National Regulatory Authorities to agree on cross-border cost allocation and financing as well as the relevant Ministries to ensure strong political support both in view of the first but also the later calls. The development of responsible public-private partnerships to increase the leverage effect of EU spending is also encouraged.

In other words, the CEF will provide some of the necessary financial support, acting as a catalyst for further funding from the private and public sector by giving infrastructure projects credibility and lowering their risk profiles. Nevertheless, it is evident that the large majority of financing will need to come from other sources. The reduced lead times and improved regulatory framework will by themselves reduce the project risk, and thus bring down the cost of financing.

As project implementation progresses and more information on the encountered problems emerge, the Commission will develop complimentary approaches and tools to address these problems in their early stages.

IV. Regulatory difficulties

Next to challenges related to ensuring an adequate duration of permit granting procedures and providing adequate financing instruments, the design of a stable and incentivising regulatory framework is one of the crucial elements in delivering the necessary investments in energy infrastructure.

Electricity and gas transmission, liquefied natural gas and compressed gas (in some Member States also storage) infrastructures are regulated sectors, in which costs for their installation, operation and maintenance are recovered through tariffs approved by national regulatory authorities and paid by users. It is a challenge for NRAs to find an optimal balance to keep tariffs affordable for users and to avoid inefficient investments, and at the same time provide for returns that are sufficiently attractive for investors, particularly for certain projects with positive externalities but for which the promoter faces higher risks.

Such projects include for instance those related to increased security of supply (e.g. gas reverse flows), those where new technologies are applied or where advance capacity investments are necessary (e.g. offshore grid), and interconnectors which are more complex than purely national projects due to the involvement of at least two Member States. Challenges have also been mentioned for gas projects where the commitment horizon of shippers may be relatively short compared to the depreciation periods used. Yet, the regulatory framework has a strong influence on the attractiveness for financial institutions to lend or for external financial investors and TSOs to invest in the project, as it determines the return on an investment. However, in the past, TSOs and investors have repeatedly indicated that especially for projects for which they face higher risks, including cross-border investments, the regulatory framework is not suited to deliver on the investment challenges ahead.

In this context, regulatory incentives refer to providing a sufficiently attractive framework for long-term investors (focus on risk/remuneration) and to enabling the delivery of the European energy policy goals (focus on CBA and internalising positive externalities in the business case for project promoters). Articles 11-13 of the TEN-E Regulation address improved regulatory treatment. The TEN-E Guidelines establish rules to ensure that, where a project of common interest faces higher risks than comparable infrastructure projects, appropriate incentives are granted. To this end, the risk profile of the respective project has to be considered in the context of the net positive impact of the project, the latter being provided through a cost-benefit analysis carried out based on the methodology drawn up pursuant to Article 11. Possible incentives may include, but are not restricted to, rules for anticipatory investments, early recognition of costs in the regulatory asset base, and priority premiums. Where appropriate, the Commission may engage in finding tailor-made solutions, in particular for corridors where this type of challenge is more prevalent. With this aim, a study on regulatory incentives for investments in electricity and gas infrastructure projects is currently being carried out at the initiative of the Commission and will be finalised in the upcoming months. Moreover, a study on Regulatory issues and associated risks in developing the Northern Seas off-shore grid is planned to be carried out and finalised in 2015.