

Methodology for assessing the gas candidate PCI projects

PCI 2018-2019 exercise

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0. Introduction

This document describes the methodology of evaluating benefits, costs and other impacts of trans-European electricity infrastructure projects applying for the status of "Project of Common Interest (PCI)", and their contribution to the energy policy criteria identified in the TEN-E Regulation 347/2013, i.e. market integration, security of supply, competition and sustainability.

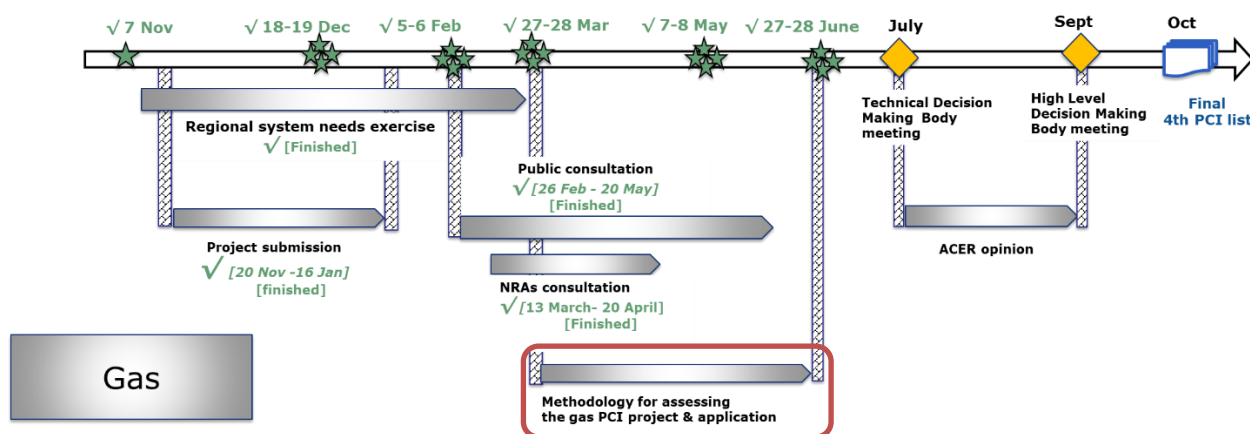


Figure 1. Gas PCI process 2018-2019

This document concerns all four gas priority corridors [North-South gas interconnections in Western Europe ('NSI West Gas'), North-South gas interconnections in Central Eastern and South Eastern Europe ('NSI East Gas'), Southern Gas Corridor ('SGC') and Baltic Energy Market Interconnection Plan in gas ('BEMIP Gas')].

Results from this assessment, complemented by the outcome of the public consultation, the NRAs' and ACER's opinion will be the input for the adoption of the regional lists and the Union list of PCIs.

This draft methodology was prepared and discussed within the framework of the Cooperation Platform, which consists of representatives of the European Commission (DG Energy), the Agency for the Cooperation of the Energy Regulators (ACER) and the European Network of Transmission System Operators for Gas (ENTSOG). The Cooperation Platform provides technical support to the work of the Regional Groups.

The [source of data](#) for the candidate PCI assessment is primarily [the ENTSOG TYNDP 2018](#), in particular the CBA outcomes part of the projects fiches.

1. Principles

For the PCI assessment and ranking exercise, the below main principles are to be followed:

- **General principles:**
 - PCI candidates that are commissioned by the end of 2019, or that do not fulfil the relevant criteria and requirements as set out in the TEN-E Regulation cannot be on the next Union list.
 - Projects of common interest to which the Member States on whose territory the project will be built object, cannot be included in the Union list.
- **Specific principles – related to the assessment and the ranking methodology:**
 - All the PCI candidates [including existing PCIs] will be subject to the same assessment and ranking process for the establishment of regional lists and for the establishment of the Union list of PCIs.
 - The PCI assessment exercise will be based on benefits resulted from the TYNDP 2018 “Distributed Generation¹” scenario.
 - The PCI assessment exercise will be done using a multi-criteria approach.
 - The infrastructure level to be used for this exercise is the “low infrastructure level”. In relevant cases, the advanced infrastructure level may be used, as a sensitivity element, to better reflect the benefits of the projects [especially in the case of competing projects].
 - The timeframe to be considered for the PCI assessment exercise is 2030 in line with the EU 2030 targets and consistent with the electricity PCI exercise;
- **Specific principles – related to monitoring:**
 - All candidates holding PCI label that did not indicate any progress in their implementation, since their inclusion in the latest PCI list, will not be recommended for inclusion in the fourth PCI list, unless duly justified.
 - All candidates holding PCI label that are delayed will be asked to duly justify their delay. The lack of proper justification may have a negative impact on the assessment of the candidate PCI, by the relevant TEN-E Regional Group/s.
 - All candidate PCIs that delivered incoherent information in the PCI process [especially related to commissioning date, status and the afferent costs (CAPEX, OPEX)] have to duly justify the detected discrepancies. The lack of proper justification may have a negative impact on the assessment of the candidate PCI, by the relevant TEN-E Regional Group/s.

¹ The choice of the Distributed Generation scenario is the result of the European Commission check on the alignment of the TYNDP 2018 scenarios with the latest European Union targets and scenarios [in particular the RES penetration, CO2 mitigation and gas demand].

2. Candidate PCIs assessment and ranking methodology

This process entails two steps: 1) check that all candidate PCI projects respect the technical, general and specific criteria listed below; 2) rank the candidate projects based on their support to the European Union energy targets.

2.1. Criteria check and assessment of all candidate PCIs

Each of the candidate PCI projects will be checked and assessed against the technical, general and specific criteria specified in the TEN-E Regulation.

This methodology applies to all the candidate transmission and storage PCIs that comply with the following [technical criteria](#):

- For transmission projects:
 - transmission pipelines for the transport of natural gas and bio gas that form part of a network which mainly contains high-pressure pipelines, excluding high-pressure pipelines used for upstream or local distribution of natural gas;
 - any equipment or installation essential for the system to operate safely, securely and efficiently or to enable bi- directional capacity, including compressor stations;
 - for gas transmission, the project concerns investment in reverse flow capacities or changes the capability to transmit gas across the borders of the Member States concerned by at least 10 % compared to the situation prior to the commissioning of the project;
- For storage projects and LNG:
 - underground storage facilities connected to the above-mentioned high-pressure gas pipelines;
 - reception, storage and regasification or decompression facilities for liquefied natural gas (LNG) or compressed natural gas (CNG);
 - for gas storage or liquefied/compressed natural gas, the project aims at supplying directly or indirectly at least two Member States or at fulfilling the infrastructure standard (N-1 rule) at regional level

The technical requirements can in most cases simply be checked against the information available in the TYNDP project sheets. In a few more complex cases, a further check involving the project promoters, ENTSOG and ACER may be done.

[General criteria](#) to be fulfilled by a candidate PCI:

1. it is necessary for the priority corridor in which it is a candidate
2. its potential overall benefits (assessed according to the specific criteria mentioned below) must outweigh its costs
3. it must have a cross-border dimension according to one of the options in Article 4(1)(c) of the TEN-E Regulation meaning:
 - a) involves at least two Member States by directly crossing the border of two or more Member States;

- b) (ii) is located on the territory of one Member State and has a significant cross-border impact as set out in Annex IV.1;
- c) (iii) crosses the border of at least one Member State and a European Economic Area country.

The general criteria 1 and 3 can be checked against the information available in the TYNDP project fiche and the promoters justification in the PCI process.

The general criteria 2 will be checked using the CBA outcomes available in the TYNDP project fiches.

The project contributes to at least one of the following [specific criteria](#):

- a) market integration, inter alia through lifting the isolation of at least one Member State and reducing energy infrastructure bottlenecks; interoperability and system flexibility
- b) security of supply, inter alia through appropriate connections and diversification of supply sources, supplying counterparts and route
- c) competition, inter alia through diversification of supply sources, supplying counterparts and routes;
- d) sustainability, inter alia through reducing emissions, supporting intermittent renewable generation and enhancing deployment of renewable gas;

The fulfilment of specific criteria a) to d) are to be checked against the CBA outcomes available for each of the candidate PCI projects within the frame of TYNDP2018.

Assessment of the candidate projects

The evaluation of the PCI candidates benefits will be done under the "Distributed generation" scenario, the "Low" infrastructure level. When relevant, the information on the projects under the advance infrastructure level will be also considered in the assessment.

For analysing if the overall benefits of the candidate PCIs outweigh their cost the below benefits and costs are to be considered.

Benefits of the candidate PCIs

The positive impact (benefits) of a PCI candidate is determined by comparing the situation with and without the analysed candidate. The impact shows if and how the situation of a Member State concerned changes (in most cases improves) due to the implementation the PCI candidate.

These benefits will be considered only if:

- the project addresses the TEN-E priority corridors' objective and mitigates least one of the needs identified within the Regional Groups².
- the project has a confirmed gas supply source and its capacity is dimensioned proportionately to the import needs of the countries immediately concerned, taking into account the existing infrastructure.

² The TEN-E priority corridors validated needs and concerned Member States - see annex 1

The PCI candidate benefits will be included:

- to an extent that is necessary to address the identified need, thus from the starting point³ until the thresholds⁴ agreed by the Gas Regional Group [in 27-28 March 2019 meeting] are reached. Any benefit brought by the project in addition to the identified need is not be considered.
- in line with the degrees of impact on the concerned⁵ Member States. Some Member States might be much further from reaching the agreed threshold than others and thus be in a visibly worse situation. Consequently, the methodology "rewards" more those PCI candidates which improve a situation of a Member State being in a worse initial position (i.e. further from the threshold) than other PCI candidates which improve the situation of a Member State being in a better situation (i.e. closer to the threshold).
- and for the competing project specifically, the benefits to be used are the result of applying the advance infrastructure level.

For this exercise, the benefits, presented below, are to be considered. The associated values are extracted from the TYNPD 2018- PS-CBAs⁶ and considered to the extent needed to respect the rules presented above.

- a) **Curtailed demand [CD]** – [non-monetized value] = [%] demand that cannot be satisfied in a given area due to climatic stress conditions meaning extreme temperatures with lower probability of occurrence than normal conditions (e.g. occurring with a statistical probability of once in 20 years, 1/20) and supply stress conditions due to specific route disruptions (Ukraine transit, Belarus transit, Baltic States and Finland imports, Algeria route). The considered routes disruptions are the ones used in the needs identification exercise.
- b) **Single Largest Infrastructure Disruption [SLID]** – [non-monetized value] = the [%] of demand in a specific country that risks being curtailed in case of the disruption of a country single largest infrastructure. It is an N-1 model which takes into account the impact of such disruption on the analysed country but also on other European countries.
- c) **Supply Source Access [SSA]** – [non-monetized value] = number of supply sources an area can access. The ability of an area to access a given source is measured through a supply source diversification metric. SSA provides the aggregate view across all supply sources. This supply source diversification ability is calculated from a market perspective, as the ability of each area to benefit from a decrease in the price of the considered supply source. Such ability does not always mean that the area has a physical access to the source.

³ A "starting point" is a value which describes the initial situation of the Member States' concerned that PCI candidates are expected to remedy. In most of the cases, the starting points will be different for each Member State. For this exercise two "starting points" are defined, in line with the status of the project: a) Starting point 1 [For FID projects part of the "low" level infrastructure] - the starting point is the situation of the concerned Member States without the analysed project; b) Starting point 2 [For advance projects] - the "starting point" is the situation of the concerned Member States with all the FID implemented ["low" level infrastructure].

⁴ A "threshold" for a given infrastructure need as agreed by the Gas Regional Groups in 27-28 March 2019 meeting. The threshold remains the same for all the Member States concerned.

⁵ The TEN-E priority corridors validated needs and concerned Member States – see annex 1

⁶ <https://www.entsog.eu/sites/default/files/2019-04/TYNPD%202018%20Project-Specific%20CBA%20Results.pdf>

- d) **Supply source dependence [SSD]** – [non-monetized value] = the [%] of a demand within a country with a strong dependence to a specific supply source [e.g. RU, NO and LNG]. SSD allows identifying cases where this dependence is related to an infrastructure bottleneck (physical dependence). In other words, the SSD represents the minimum share of a given source in the supply mix being the source share, which cannot be substituted by other supply sources.
- e) **LNG and Interconnection Capacity Diversification indicator [LICD]** – [non-monetized value] = this benefit measures the diversification of paths that gas can flow through to reach a market area. The LICD ranges from zero to 10.000. The lower the value, the better the diversification is.
- f) **CO2 mitigation** – [monetized value] = this benefit measures the CO2 savings as a result of switching from heavy fuels [coal/oil] to gas in specific regions, like the coal regions in transition.
- g) **Adaptation to high-calorific gas** – [non-monetized value] = this benefit is to be considered only for the projects that support the conversion of infrastructure in areas currently supplied with low-calorific gas to high-calorific gas in response to the decline in the production of low-calorific gas from the Groningen field.
- h) **Physical isolation**– [non-monetized value] = this benefit is to be considered only for the Member States which are physically isolated from its EU neighbours and are at the periphery of Europe.
- i) **Access to a new source**– [non-monetized value] = this benefit is considered only for the projects allowing the European Union to tap into new sources of gas that currently are not reaching any of the European Union Member States markets. Note: the European Union is considered as one entry point and it does not look if a region within Europe increases its access to other sources, which are currently accessed by other EU regions.

Cost of the candidate PCIs

The cost to be considered for this exercise is CAPEX and OPEX -> values as included in the TYNDP 2018 project fiches.

- a) Capital expenditure (**CAPEX**) represents the initial investment cost that corresponds to the cost effectively incurred by the promoter to build and start operation of the gas infrastructure. CAPEX should consider the costs of obtaining permits, feasibility studies, obtaining rights-of-way, groundwork, preparatory work, designing, dismantling, equipment purchase and installation.
- b) Operational and maintenance expenditure (**OPEX**) corresponds to costs that are incurred after the commissioning of an asset and which are not of an investment nature, such as direct operating and maintenance costs, administrative and general expenditures, etc.

2.2. Ranking of the candidate PCIs

The ranking of gas PCI candidates is to be done in line with the scoring of the projects benefits and costs.

The ranking will be done individually for each of the TEN-E priority corridors and per type of technology [transmission, LNG and storage].

The allocation of points will be done in line with the improvement the project brings from the “starting point” to the “threshold”. Depending on the type of benefit the points distribution can be done binary, discrete, linear or non-linear. The points distribution are to reward more those PCI candidates which improve a situation of a Member State being in a worse initial position (i.e. further from the threshold) than other PCI candidates which improve the situation of a Member State being in a better situation (i.e. closer to the threshold).

Security of supply	Curtailed demand	Threshold -> 100%
	Single largest infrastructure disruption	Threshold -> 0%
	Access to a new source	No threshold [binary value]
Competition	Supply source dependence	Threshold -> 25%
	Supply source access	Threshold -> 3
	LNG and Interconnection Capacity Diversification	Threshold -> 5000
Market integration	Physical isolation	No threshold [binary value]
	Adaptation to high-calorific gas	No threshold [binary value]
Sustainability	CO2 mitigation	No threshold

The aggregated score of the project equals the sum of all the scores per benefit & pillars put in context of the total cost of the project.

3. Next steps

After the assessment and ranking of the candidate PCIs, the Regional Group members, in line with their responsibilities, will validate the draft list.

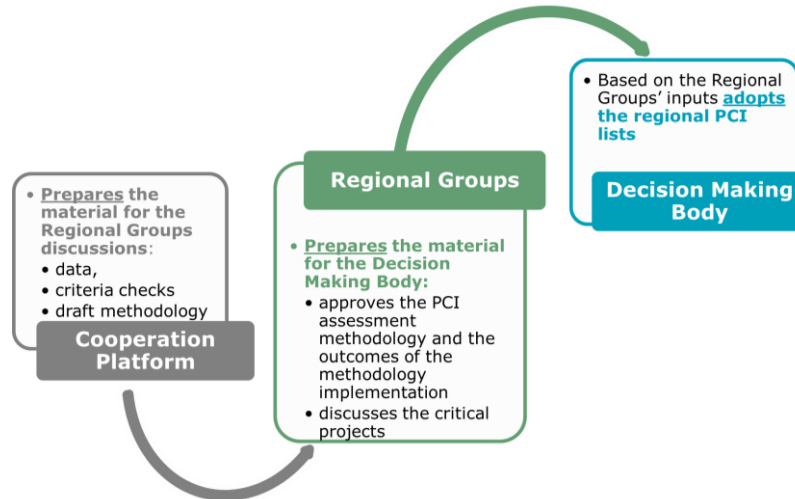


Figure 2 Roles and responsibilities in the PCI process

This draft list will then be presented to the Technical Decision Making Body [composed of Member States and the European Commission] for the formal validation. This will be followed by the Agency [ACER]’s formal opinion.

After receiving the ACER opinion, the Decision Making Body [composed of Member States and the European Commission] will meet [autumn2019] to formally approve the list.

The list will be adopted by the European Commission in the form of a Delegated Act, and will become Annex to the TEN-E Regulation after the publication in the Official Journal of the European Union. The new PCI list is expected to enter into force in spring 2020 and replace the current third PCI list.

Annex 1: The TEN-E priority corridors validated needs and concerned Member States

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

Market integration-Mitigate high price differentials: : Spain

Curtailed Demand: Portugal, Spain

Single Largest Infrastructure Disruption: Ireland, Portugal, United Kingdom

Supply Source Access: Portugal, Spain

LNG and Interconnection Diversification: Ireland, Portugal, Spain,
United Kingdom

Physical isolation: Malta

Adaptation to high-calorific gas: France, Belgium, Germany

Priority corridor North-South gas interconnections in Central Eastern and South Eastern Europe ('NSI East Gas') and Southern Gas Corridor* ('SGC')

Market integration - Mitigate high price differentials:

Croatia, Hungary, Italy, Slovenia, Poland

Security of Supply - curtailed demand:

Bulgaria, Croatia, Romania

Security of Supply - Single largest infrastructure disruption (SLID):

Croatia, Greece, Romania, Slovenia

Competition – Supply source dependence: Croatia, Czech Republic,
Hungary, Poland, Romania, Slovakia

Competition - LNG and interconnection capacity diversification (LICD):

Croatia, Greece, Romania, Slovenia

Ending physical Isolation:

Cyprus

*The access to new sources not currently reaching EU MS is a need relevant for the entire SGC.

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

Curtailed Demand: Estonia, Finland, Lithuania

Single Largest Infrastructure: Sweden

Supply Source Dependence: Estonia, Latvia, Lithuania, Poland

Increase Market Diversification: Denmark