entsog

european network
of transmission system operators
for gas

TEN-YEAR NETWORK DEVELOPMENT PLAN

2018

INFRASTRUCTURE REPORT

TABLE OF CONTENT

1 INTRODUCTION

This TYNDP, as with the previous edition, together with the Project of Common Interest (PCI) selection process, is key to the development of gas infrastructures. Gas infrastructures, along with the implementation of harmonised business rules, are fundamental steps towards the European Internal Energy Market.

The TYNDP intends to provide transparent and thorough information to stakeholders. From one edition to another ENTSOG is constantly improving its TYNDP report, taking into account all the valuable feedback received by stakeholders in the past editions.

In the TYDNP 2017 ENTSOG provided for the first time a map with the collected projects and ensured increased transparency offering readers the overview of TYNDP projects, including project costs at aggregated level.

In line with ACER Opinion on TYNDP 2017[1)] (section 3.4), for the TYNDP 2018 edition ENTSOG has further worked on transparency, improving the TYNDP map and publishing the costs information at project level and for projects having declared their intention to apply to PCI during the TYNDP project collection.

Additionally, following the approval by the European Commission of the 2nd Cost-Benefit Analysis (CBA) Methodology, ENTSOG has run within the TYNDP a project-specific assessment (PS-CBA) for all projects having declared their intention to apply to PCI during the TYNDP 2018 project collection. The results will be published in the form of a project fiche within the Final TYNDP Report.

Project information provided in this TYNDP covers basic technical data, the maturity status of infrastructure projects and, outlined in the assessment chapters, the overall impact of projects relating to all four pillars of the European Energy policy: competition, security of supply, market integration and sustainability.

Projects submitted for TYNDP 2018 present different level of maturity and their inclusion in the TYNDP does not make their development legally binding.

Starting with the TYNDP 2018 edition, the submitted projects have also to comply with specific administrative and technical criteria for their inclusion in the TYNDP, as defined in the "ENTSOG Practical implementation document (PID) for developing the 10-year network development plan 2018"[2)]. This document follows the European Commission's recommendation on "Guidelines on equal treatment and transparency criteria to be applied by ENTSO-E and ENTSOG when developing their TYNDPs", as set out in Annex III.2 (5) of Regulation (EU) No 347/2013[3)].

In line with ENTSOG PID, project promoters were asked as part of the project collection to provide data and documents as a proof for the fulfilment of the administrative and technical criteria.

The ENTSOG PID was consulted in a dedicated workshop held on 24 November 2017.

All the projects listed in this chapter fulfilled the above-mentioned criteria and were therefore considered for the TYNDP assessment.

1) https://acer.europa.eu/Official_documents/Acts_of_the_Agency/Opinions/Opinions/ACER%20Opinion%2006-2017.pdf

2) https://www.entsog.eu/public/uploads/files/publications/TYNDP/2018/TYNDP062_180119_Practical_Implementation_Document_FINAL.pdf

3) https://eur-lex.europa.eu/legal-content/en/TXT/?uri=celex%3A32013R0347

2 GAS INFRASTRUCTURE AND EUROPEAN ENERGY POLICY

Existing European gas infrastructures already provide a high level of market integration, security of supply and competition in many parts of Europe. Further developments covering the whole European system are necessary in order to ensure that such benefits will be strengthened and maintained in the long term.

The Third Energy Package should ensure a sound climate for a market-based development of gas infrastructures. However, the timing of its implementation, the recent economic crisis, the lack of vision on the medium and long-term role of gas in the energy transition and CO_2 emissions prices have hampered the delivery of investments. In that context the TEN-E Regulation aims at facilitating the delivery of key infrastructures.

New infrastructure projects may contribute to market integration through additional flexibility and diversification of gas supply sources or routes. As a result, both competition and security of supply should increase.

Regarding the sustainability pillar of the EU Energy Policy, gas infrastructures already offer a flexible system able to support the development of renewable energies. These infrastructures are able to transport a low carbon fuel to support the development of intermittent renewable power production and enable a large-scale injection of non-fossil gas (such as biogas/biomethane or gas from power-to-gas processes). Gas infrastructures provide the advantage of storing renewable energy as well as transporting energy at relatively low costs. New investment may allow further integration of renewable sources and achieve further level of decarbonisation.

Picture courtesy of Teréga

3 EXISTING CAPACITIES & PROJECT DATA COLLECTION PROCESS

ENTSOG has improved the transparency on the process, strengthened the communication with project promoters and further developed its Project Data Portal to ensure the best possible availability, consistency and quality of the collected project data. This in exchange ensures the quality of the assessment.

For each TYNDP ENTSOG collects information on existing infrastructure capacities directly from TSOs (for transmission infrastructures) as well as from GIE[1] (for LNG regasification terminal and storage facilities). For TYNDP 2018 the existing capacity was collected as of 1 January 2018.

In order to provide a holistic view of the European gas system over the next 20 years, it is important that all relevant infrastructure projects are incorporated into the TYNDP. ENTSOG has endeavoured to run an open and transparent data collection process, and actively encouraged project promoters to submit their projects. To ensure the proper information and preparedness of all project promoters, ENTSOG has informed them on the project submission process starting well in advance and on numerous occasions.

As the submission of comprehensive project data is a critical prerequisite for the infrastructure analysis, ENTSOG provides a Project Data Portal open to all project promoters to support the process.

Only projects actively (re)submitted by promoters through the Project Data Portal have been considered in this edition of the TYNDP. This process ensures transparency and non-discrimination between projects. Ahead of the submission phase, to better support project promoters, ENTSOG provided a documentation kit[2] with a handbook[3] on how to use the Project Data Portal and organised dedicated webinars for project promoters.

In order to increase transparency and accuracy of the information and to facilitate coordination among promoters, the ENTSOG Project Data Portal offers promoters capacity monitoring interfaces. This allows project promoters to actively monitor their submission through specific reports and check the final capacity value resulting from the application of the "lesser-of-rule"[4]. Additionally, in order to ensure a more careful consistency check on submitted projects data, during the TYNDP 2018 project data collection, ENTSOG had a loop with ACER and National Regulatory Authorities (NRAs). Promoters were informed on the comments provided by ACER and NRAs and allowed to amend the information provided during the project data collection if deemed necessary.

When submitting projects, the promoters commit to report accurate and up-to-date information. In very few instances ENTSOG has directly undertaken corrective actions in line with pre-defined rules. Furthermore, for a given project, the related TYNDP code is assigned automatically by the Project Data Portal when the project is first submitted. Updates of the project in future TYNDPs are handled by the promoter under the same project code. This allows using the project code as another key for the monitoring of projects along the different TYNDP editions and for the PCI selection process.

In order to ensure as much consistency as possible, ENTSOG encouraged promoters intending to resubmit projects already part of the TYNDP 2017 to update the already existing information while keeping the same TYNDP project code. In this way it has been possible to better link the different TYNDP editions and monitor the project evolution. In TYNDP 2018 only two projects, already part of TYNDP 2017, were resubmitted under a new TYNDP code (see section 5.3.2 for more details).

1) Gas Infrastructure Europe

2) https://www.entsog.eu/public/uploads/files/publications/TYNDP/2018/Project%20Submission%20Support%20Documents.zip

3) https://www.entsog.eu/public/uploads/files/publications/TYNDP/2018/Project%20Submission%20Handbook.zip

4) The "lesser-of-rule" means that, on a Point with Entry and Exit capacities, the minimum of the two values will be considered as the firm capacity available for use. Example: Promoter A submits an Exit capacity on Point P in the value of 100. Promoter B submits an Entry capacity on the other side of the Point P, in the value of 200. After the application of the rule, the firm capacity considered for modelling will be 100.

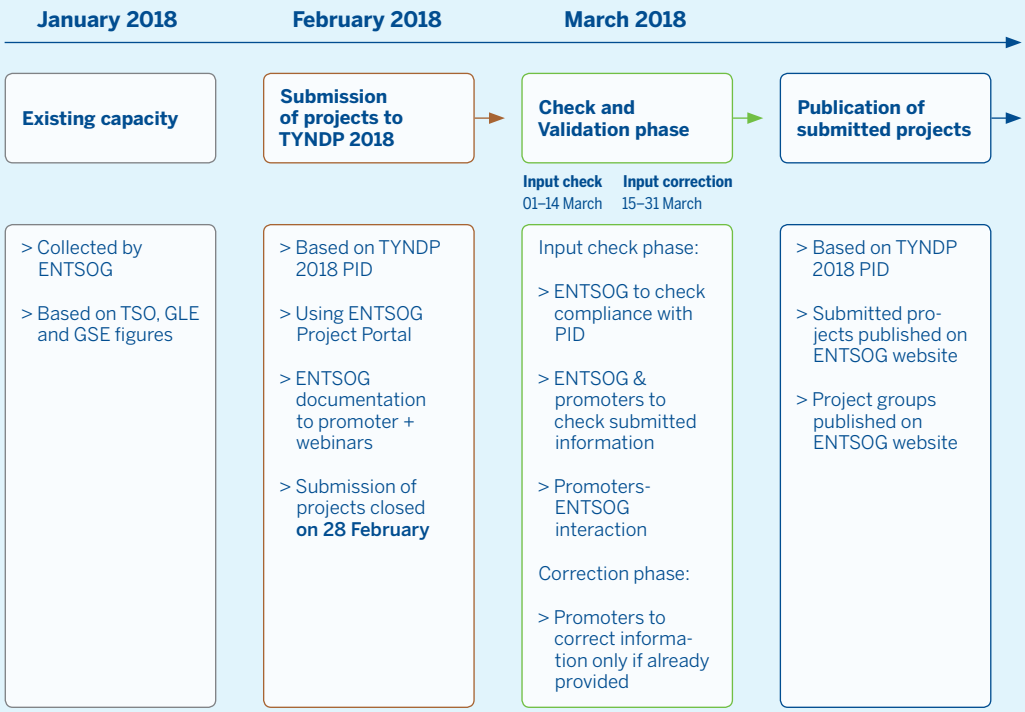


Figure 3.1: Project collection and publication timeline

In line with ACER Opinion on TYNDP 2017[1)] (section 3.10), ENTSOG improved the Project Portal questionnaire with project promoters being asked to indicate whether the submitted projects are included in the latest National Development Plan and to indicate the background for their submission. For further details please refer to section 5.6.

Promoters were also requested to provide comprehensive information including detailed project implementation scheduling (section 5.4) and estimated costs (section 5.5).

To ensure an early transparency on the TYNDP input data, ENTSOG has organised on 24 November 2017 a public workshop to inform all stakeholders of the main improvements and the timeline related to the TYNDP 2018 project data collection as well as to present the ENTSOG Practical Implementation Document. The material provided in this public workshop, including a list of the submitted projects, has been published on ENTSOG website[2)]. Additionally, to share advanced information with stakeholders on the projects to be included in TYNDP 2018, on 1 June 2018 ENTSOG published the list of all submitted projects in the form of draft Annex A[3)].

The project submission phase took place from 31 January 2018 to 28 February 2018. The submission phase was followed by a check and validation phase where both ENTSOG and promoters could verify and amend the submitted information. This TYNDP reflects therefore project status as of March 2018. As already mentioned, in this period ENTSOG had also a loop with ACER and National Regulatory Authorities that supported ENTSOG in checking the submitted information.

Additionally, on 26 October 2018 ENTSOG published the list of groups of projects (so called PS-CBA groups) on which ENTSOG, in line with the provisions included in the 2nd CBA Methodology, has run the project-specific assessment.

Above a graphical representation of the overall process followed.

Additionally, from 30 July 2018 to 14 September 2018 ENSTOG has run a survey on TYNDP 2018 project collection to receive feedback from project promoters who submitted their project(s) to TYNDP 2018. The feedback received will be used by ENTSOG to improve the TYNDP 2020 Practical Implementation Document and the TYNDP 2020 project data collection process.

1) https://acer.europa.eu/Official_documents/Acts_of_the_Agency/Opinions/Opinions/ACER%20Opinion%2006-2017.pdf

2) https://www.entsog.eu/events/workshop-on-tyndp-2018-project-collection-implementation-guidelines-and-timeline#welcome

3) https://www.entsog.eu/publications/tyndp#ENTSOG-TEN-YEAR-NETWORK-DEVELOPMENT-PLAN-2018

4 PROJECT STATUS AND INFRASTRUCTURE LELVELS

4.1 PROJECT STATUS

Projects are categorised along two different project status: FID and non-FID. As for TYNDP 2017 the non-FID status has been sub-categorised into non-FID Advanced (hereafter Advanced) and non-FID Less-Advanced (hereafter Less Advanced)[1].

Each project status is directly derived from the information provided by its promoter and according to the rules set in the ENTSOG Practical Implementation Document:

- The FID status of a project corresponds to a project that has taken the final investment decision before the closure of TYNDP project collection period;
- The Advanced status is applied to all non-FID projects that have:
  - commissioning year expected at the latest by 31 December of the year of the TYNDP project data collection + 6 (e.g. 2024 in case of TYNDP 2018, for which projects are collected in 2018)
  - and whose permitting phase has started ahead of the TYNDP project data collection OR FEED[2] has started (or the project has been selected for receiving CEF[3] grants for FEED) ahead of the TYNDP project data collection.
- All projects which do not meet the FID or Advanced criteria are considered as having the Less-Advanced status.

Based on the past TYNDP experience and the recommendations expressed by ACER in their Opinion, the Advanced status was already introduced in the 2017 edition[4] and allows to better reflect the different project maturities. This status was defined in close cooperation with ACER and the European Commission, and in consultation with stakeholders.

Additionally, the PCI status is assigned to a project which is part of the latest approved Union list of Projects of common interest (The PCI List) referred in Article 3 of the Regulation (EU) 347/2013, irrespective of the above-mentioned project status.

4.2 INFRASTRUCTURE LEVELS

Project status is used to define different infrastructure levels. These infrastructure levels are used in the TYNDP for the assessment of the European gas system.

- Low Infrastructure Level:
  existing infrastructures + infrastructure projects having FID status (whatever their PCI status is);
- Advanced Infrastructure Level:
  existing infrastructures + infrastructure projects having FID status + Advanced projects;

As recommended in the ENSTOG 2nd CBA Methodology, another infrastructure level is considered in relation to the previous PCI list[5]. The PCI 3rd list Infrastructure Level is composed by existing infrastructures + infrastructure projects having FID status (whatever their PCI status is) + infrastructure projects labelled PCIs according to the previous selection (not having their FID taken yet). This Infrastructure Level allows to build a bridge between two sequential PCI selection rounds and to enable the assessment of the cumulative effects of the 3rd list of PCI projects.

The ENSTOG 2nd CBA Methodology defines the FID Infrastructure Level as the reference grid on which the system assessment should

1) In the TYNDP 2018 Map Less-Advanced projects have been simply labelled as "non-FID" while Advanced projects have been labelled as "Advanced".

2) Front End Engineering Design as the basic engineering activity conducted after completion of the conceptual design or the (pre-) feasibility study.

3) The Connecting Europe Facility (CEF) is a EU funding instrument defined in Art. 14 of Regulation (EU) 347/2013.

4) http://www.acer.europa.eu/official_documents/acts_of_the_agency/opinions/opinions/acer%20opinion%2011-2015.pdf

5) https://ec.europa.eu/energy/sites/ener/files/documents/5_2%20PCI%20annex.pdf

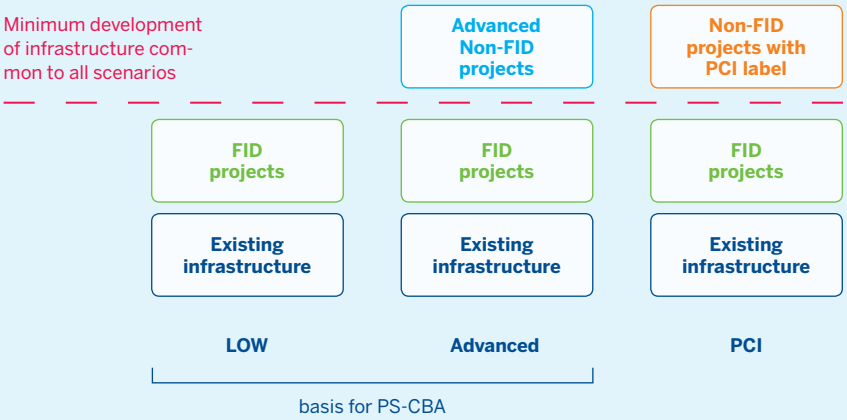


Figure 4.1: Infrastructure Levels

be run and the infrastructure gaps against which to assess projects should be identified.

Once the infrastructure gaps are identified, the assessment of the European gas system is complemented by assessing the overall further impact of the Advanced and PCI Infrastructure Levels. The Low and Advanced infrastructure levels are also used as basis for the PS-CBA assessment.

Figure 4.1 illustrates the different Infrastructure Levels and their role in the TYNDP 2018 assessment. Based on the experience of the past TYNDPs and PCI selection processes, ENTSOG identified that the High Infrastructure level[1)], due to the elevated number of less developed and competing initiatives included, had limited added-value. However, in the TYNDP 2017 the infrastructure level was maintained, in line with the 1st CBA methodology. With the release of ENTSOG 2nd CBA Methodology, for which TYNDP represents the main field of application, the High Infrastructure Level has been removed from the assessment at both energy system wide and project-specific level.

In line with the TEN-E Regulation and the 2nd CBA methodology, the TYNDP provides a common basis for the Project-Specific CBA of each PCI candidate. This involves the assessment of different infrastructure levels of the gas infrastructure based on the level of maturity and PCI status of the projects.

The exclusion of the Less-Advanced projects from any infrastructure level does not prevent projects with a Less-Advanced status to be assessed with a PS-CBA against the Low and Advanced Infrastructure Levels, while providing at the same time a more robust and credible analysis of the system infrastructure gaps and of the potential benefits stemming from the realisation of any Less-Advanced project.

Figure 4.2 shows the overall process of TYNDP 2018 system and project-specific assessment.

The TYNDP 2018 will be used by the Regional Groups as a background when considering the project-specific CBAs of the candidate projects for the 4th PCI List.

1) The High Infrastructure level was composed by existing infrastructures + infrastructure projects having a FID status (whatever their PCI status is) + infrastructure projects not having a FID status (whatever their PCI status is), both Advanced and Less-Advanced.

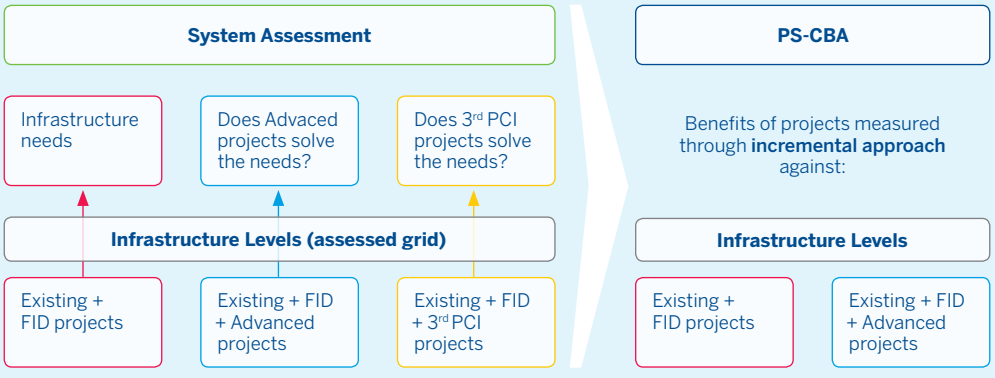


Figure 4.2: System Assessment and Project-Specific CBA in TYNDP 2018 process

5 ANALYSIS OF PROJECT SUBMISSION

The full detail of projects submitted for inclusion in the TYNDP 2018 can be found in Annex A of this Report. This section of the report provides a general overview of the submitted projects.

5.1 TYPE OF INFRASTRUCTURES

Projects are classified according to the infrastructure categories as defined in Regulation (EU) 347/2013 Annex II into the three following:

TRA Transmission, incl. Compressor Stations

LNG LNG Terminal

UGS Storage Facility

5.2 PROJECTS COMMISSIONED SINCE TYNDP 2017

19 projects already part of TYNDP 2017 were completed or are expected to be completed before the end of 2018 (information based on the date when the last version of this report was drafted). 3 completed projects were not part of TYNDP 2017 but of previous editions.

The commissioning of all these projects further contributes to the development of the European gas system, enhancing the level of market integration, security of supply and competition.

Still, as further elaborated in the Assessment chapters, there are some areas or instances where further development of gas infrastructure is needed.

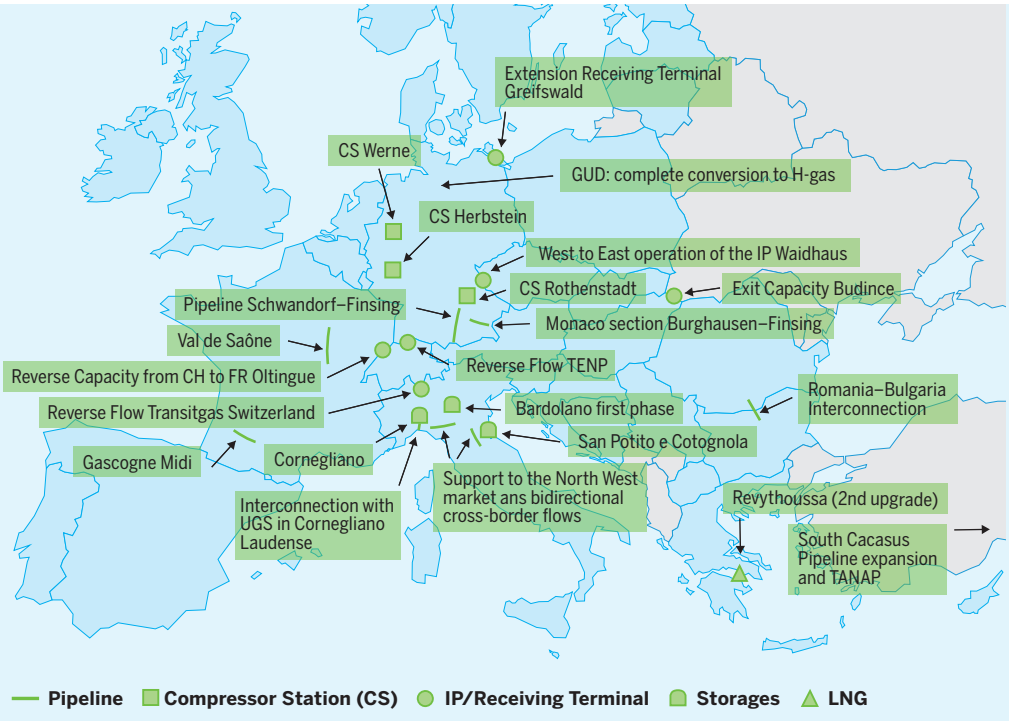


Figure 5.1: Map of projects with 2018 as commissioning year

5.3 OVERVIEW OF THE PROJECTS SUBMITTED TO TYNDP 2018

Following the information provided by promoters, ENTSOG has aggregated the submitted investment according to a strictly functional-related criteria.

For example:

- In case of an interconnector connecting two (or more) countries, two (or more) different promoters are usually involved;
- A new LNG terminal or storage may need a new evacuation pipeline to connect them to the gas network and in some cases the two investments might be promoted by different subjects;
- In some cases, projects connecting the EU to new supply sources are actually composed by different projects (and in some cases promoted by different subjects) whose full realisation is a prerequisite to connect the new source.

In all above cases, investments carried on by different promoters need to be implemented together in order for the overall project to materialise. It makes therefore sense to consider them as a single project. This aggregation represented also a useful basis for the identification of project groups on which the project-specific cost-benefit analysis has been performed.

Based on this, for TYNDP 2018 promoters submitted 155 gas infrastructure projects.

5.3.1 TRANSMISSION PROJECTS (INCLUDING COMPRESSOR STATIONS)

Today in Europe there exist around 225,000 km of transmission pipelines.

The data included in the map represent the total length of 46 TSO's transmission pipeline. The definition of transmission pipeline might differ country by country.

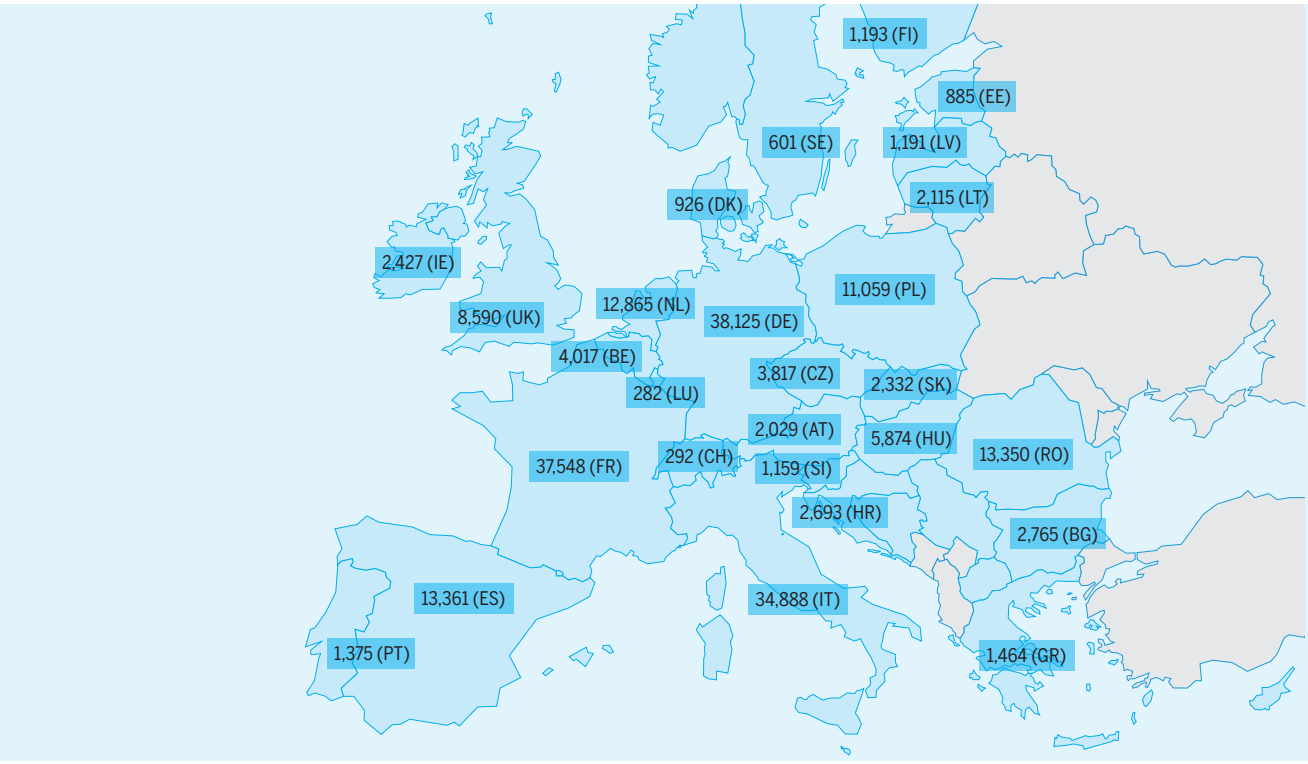
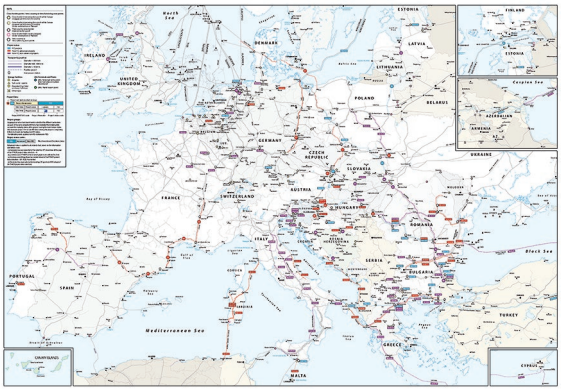


Figure 5.2: Transmission length in Europe in km (year 2018)

Around 120 transmission and compressor stations projects have been submitted to TYNDP 2018. These projects can be summarised according to the following categories:

- 46 interconnection projects between two or more countries. In some cases, only one side of the interconnection has been submitted since the other part is already existing;
- 21 projects related to the constructions of compressor or metering stations;
- 18 projects related to new import or production development;
- 21 projects concerning upgrade, modernisation or enhancement of the system
- 9 reverse flow projects;
- 4 infrastructure projects supporting the switch from low-calorific gas to high-calorific gas in Germany, France, Netherlands and Belgium;
- 2 projects concerning methanisation of new areas

The following map shows the list of all projects concerning transmission and compressor (or metering) stations development. Evacuation pipelines to connect regasification terminals or storages are considered as part of sections 5.2.2 or 5.2.3.



Please notice: You'll find all maps in high solution at the end of the document.

Just click on the icon to get there.

Figure 5.3: Map for transmission and compressor station projects in TYNDP 2018

5.3.2 LNG PROJECTS

For TYNDP 2018 promoters submitted 27 projects related to LNG terminals. For 6 of these projects the respective evacuation pipeline project connecting the terminal to the gas grid was submitted by different promoters.

Please notice: You'll find all maps in high solution at the end of the document.

Just click on the icon to get there.

Figure 5.4: Map for LNG reagsification terminals (including evacuation pipelines)

5.3.3 UGS PROJECTS

For TYNDP 2018 promoters submitted 11 projects related to UGS facilities. Only for one of these projects (Cornegliano UGS) the respective evacuation pipeline project connecting the storage plant to the gas grid was submitted by a different promoter.

Please notice: You'll find all maps in high solution at the end of the document.

Just click on the icon to get there.

Figure 5.5: Map for transmission and compressor station projects in TYNDP 2018

5.4 FURTHER DETAILS ON THE TYNDP 2018 PROMOTERS SUBMISSIONS

This chapter provides more details on the investments submitted to TYNDP 2018.

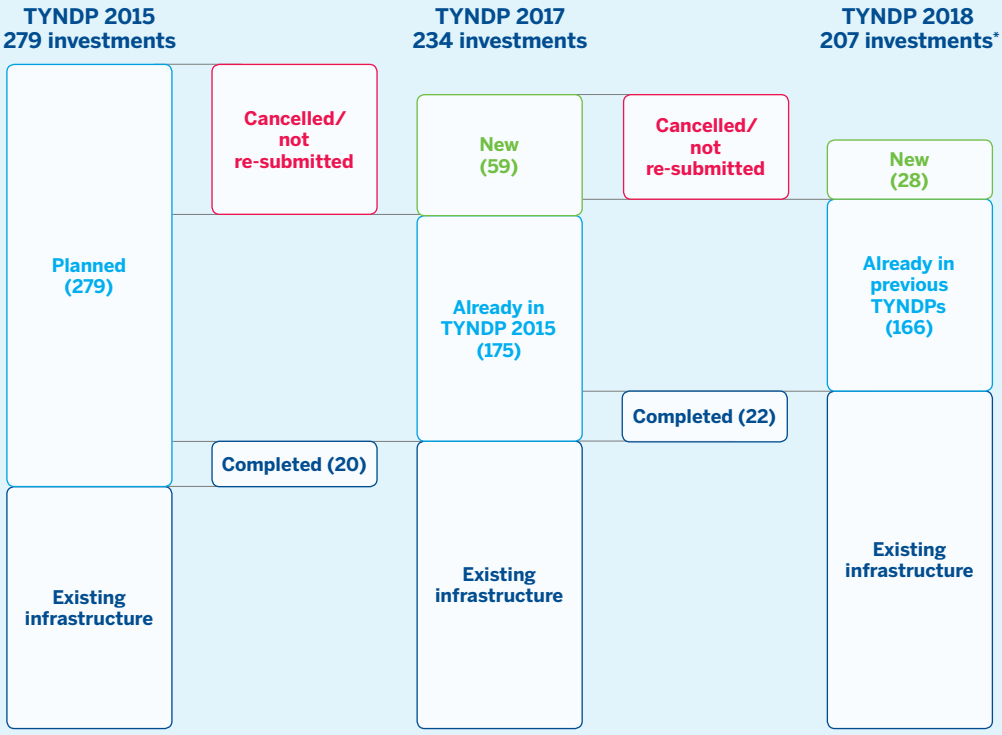
In order to provide more detailed and transparent information, all the statistics described in the following sections consider:

- Individual investments submitted by different promoter not aggregated as described in section 5.3 but considered as many projects as promoters submitting the investment. To each of these projects an individual TYNDP code is in fact assigned. For example, for an interconnector between two countries here we will consider two separate projects. The same for LNG terminals (or UGS projects) and the evacuation pipeline(s) needed to connect the terminal (or the storage) to the gas grid;
- For projects developed in different phases, each phase as an individual investment and the whole project as multiple projects;
- As seen in section 5.3, some promoters have submitted individual facilities as separate projects (e. g. compressor station and pipe as individual project submissions) whereas others have joined together a number of investment in one project (e. g. compressor station and pipe under a single project submission).

Therefore, the high level of projects has to be understood in the light of the above considerations.

Overall 207 investments have been submitted to TYNDP 2018 by 96 different project promoters.

Figure 5.6 provides the overview for this submission, compared to the previous TYNDP editions.



* 13 projects out of 2017 are considered as "Completed" having 2018 as commissioning year

Figure 5.6: Comparison between TYNDP 2015 and TYNDP 2017

From the graph the following conclusions can be drawn:

- Thanks to the completion of 22 projects[1)] in 2018 the European infrastructure is re-inforced;
- The number of projects submitted for TYNDP 2017 has been reduced for TYNDP 2018 due to projects that have been completed, canceled or not resubmitted;
- As further elaborated in the assessment chapters, the aggregated number of existing and planned infrastructures in TYNDP 2018 confirms that more infrastructure development is needed.

5.4.1 OVERVIEW PER STATUS

When compared to the 234 submissions in TYNDP 2017 we observe a reduction to 207 in the 2018 edition. This reduction stems from:

- The requirement introduced by ENTSOG already in TYNDP 2017 that projects being part of the previous TYNDP need to be actively resubmitted in order to be considered in the current TYNDP;
- The application, for the first time, of the ENTSOG PID that set clear administrative and technical criteria to be matched by promoters and projects in order to be considered eligible for inclusion in the TYNDP.

The following figures and tables provide a statistical overview of the promoters submissions (see TYNDP Annex A for further details) based on information such as the type of infrastructure or the FID/PCI status. Those reports reflect all details entered as part of the data collection process by project promoters.

Figure 5.7 shows a general reduction in all type of projects.

Figure 5.8 shows the breakdown of TYNDP 2018 projects by infrastructure type and project status.

1) Some are expected to be commissioned by the end of 2018 as explained in section 5.2

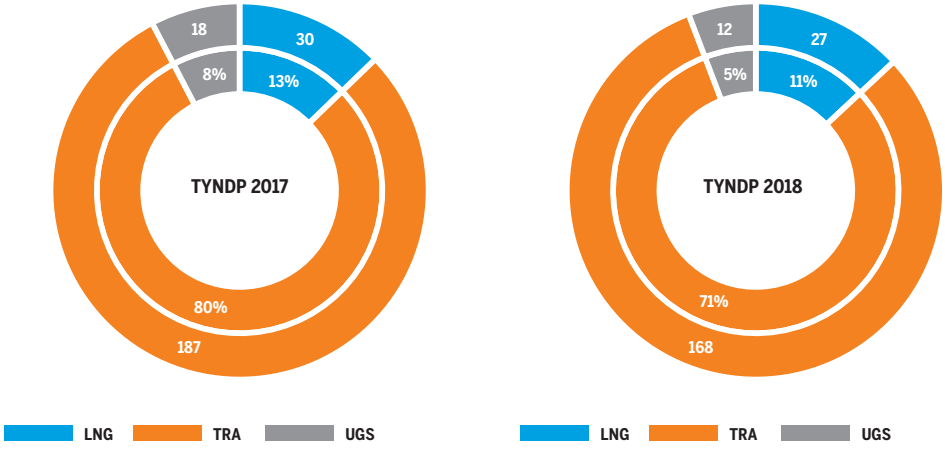


Figure 5.7: Comparison of project submission in TYNDP 2018 and TYNDP 2017 per type of infrastructure. The inner circle represents the share of each project type; the outer circle represents absolute numbers.

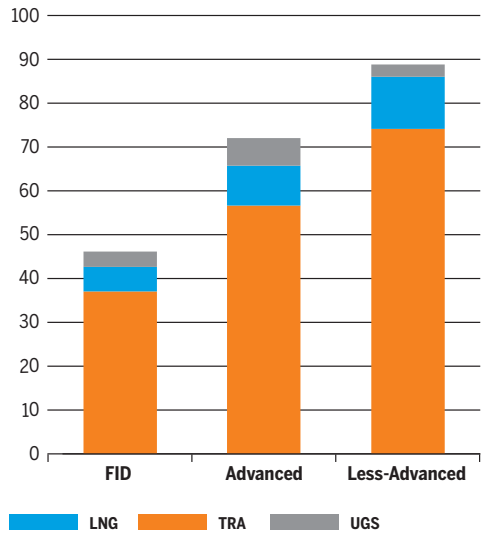


Figure 5.8: Breakdown of promoters submissions in TYNDP 2018 by infrastructure type and project status

	Total	TRA	LNG	UGS
Completed	5	4	0	1
Still planned	178	146	23	9
Cancelled	16	14	1	1
Not resubmitted	32	19	6	7
New projects	29	25	2	3

Table 5.1: Number of investments from TYNDP 2017 completed, still planned, not-re-submitted and cancelled

Thanks to the information collected, it has been possible to identify investments submitted for TYNDP 2018 that were not active anymore but for which promoters had missed to previously report the information to ENTSOG or that were deleted or not re-submitted.

Among the cancelled ones there are 2 investments having in TYNDP 2017 the Advanced status and 14 projects having in TYNDP 2017 the Less-Advanced status.

With regards to transmission (including compressor stations), the 30 new submission for TYNDP 2018 do not overall compensate the number of investments that were cancelled or not resubmitted (33 in total). Additionally, 17 transmission projects were commissioned between TYNDP 2017 and TYNDP 2018 or are expected to be commissioned by 2018.

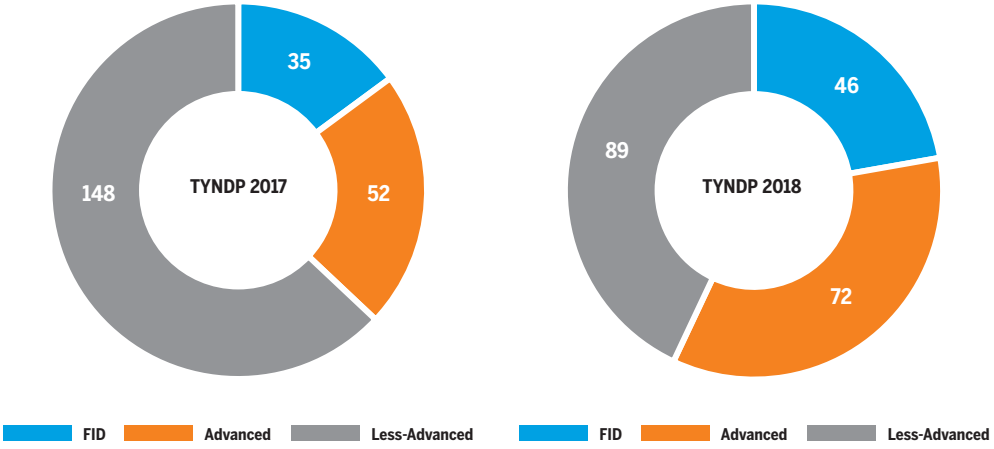


Figure 5.9: Comparison of submissions in TYNDP 2018 and TYNDP 2017 per FID status.

Compared to the TYNDP 2017 submission:

- TRA-N-1322[1)] was already in TYNDP 2017 but, together with the first phase of the project, as part of TRA-N-358. Consistently with the 3rd PCI List, for TYNDP 2018 the project was submitted as two separate phases allowing for a more precise PS-CBA grouping and assessment. The first phase of the project is still associated to the TYNDP code TRA-N-358;
- TRA-N-1173[2)] was already in TYNDP 2017 but as part of project TRA-N-271. In order to reflect the maturity of the project, the promoter split the TYNDP 2017 projects in two parts, one onshore and one offshore. The new code TRA-N-1173 refers to the onshore section in Poland while the offshore section is still associated to the code TRA-N-271.
- LNG-N-1146 was already in TYNDP 2017 but labelled as TRA-N-1146. Based on the most recent data available to the promoter at the time of the TYNDP 2018 project collection, the project now focuses on two technological options, whose main option is considered being a Floating solution (FSRU) for LNG imports to Cyprus, including reception, storage and regasification for liquefied natural gas either onshore or nearshore in Cyprus.

1 LNG terminal related project (Revithoussa 2nd upgrade) is expected to be commissioned before the end of 2018 while 7 projects were cancelled or not resubmitted. 2 new LNG projects were submitted for Germany and Ireland (respectively LNG-N-1198[3)] and LNG-N-1231[4)]).

Among the 18 UGS submissions to TYNDP 2017, one in Italy (UGS-F-259[5)]) was completed and one (UGS-F-242[6)])) is expected to be commissioned before the end of 2018. 8 TYNDP 2017 projects have been cancelled or not resubmitted. 3 new investments are planned in Slovakia (UGS-N-356[7)]) and Albania (UGS-N-1229[8)]) including the Italian UGS-F-242 that was already part of TYNDP 2015 but not resubmitted for TYNDP 2017. Additionally, another UGS facility in Italy (San Potito Cotognola) was commissioned in 2017 but is not accounted in the table above since it was part of the TYNDP 2015 (and already not resubmitted in TYNDP 2017).

Figure 5.9 shows promoters submissions based on their maturity status.

Compared to TYNDP 2017, an increase in the number of FID can be observed, especially among transmission, with 20 projects hav-

1) Development on the Romanian territory of the NTS (BG–RO-HU–AT) – Phase II, from Transgaz
2) Poland-Denmark interconnection (Baltic Pipe) – onshore section in Poland, from GAZ-SYSTEM
3) Brunsbuettel LNG Terminal, from Gasunie Deutschland Transport Service GmbH
4) Inisfree LNG in Cork, from NextDecade LNG
5) Bordolano first phase, from STOGIT S.p.A.
6) Cornegliano UGS, from ITALGas Storage
7) UGS Velke Kapusany, from NAFTA a.s.
8) UGS Dumrea, from Ministry of Infrastructure and Energy of Albania and Albgaz sh.a.

TYNDP Code	Project Type	Name	TYNDP 2017 Status	FID taken on
TRA-F-341	TRA	Gas Interconnection Poland-Lithuania (GIPL) (Lithuania's section)	Advanced Non-FID	May-18
TRA-F-212	TRA	Gas Interconnection Poland-Lithuania (GIPL)–PL section	Advanced Non-FID	May-18
TRA-F-275	TRA	Poland–Slovakia Gas Interconnection (PL section)	Advanced Non-FID	Apr-18
TRA-F-190	TRA	Poland–Slovakia interconnection	Advanced Non-FID	Apr-18
TRA-F-298	TRA	Rehabilitation, Modernisation and Expansion of the NTS	Less-Advanced Non-FID	Jan-18
TRA-F-329	TRA	ZEELINK	Less-Advanced Non-FID	Jan-18
LNG-F-272	LNG	Upgrade of LNG terminal in Świnoujście	Less-Advanced Non-FID	Jan-18
TRA-F-902	TRA	Capacity increase at IP Lanžhot entry	Advanced Non-FID	Dec-17
TRA-F-247	TRA	North - South Gas Corridor in Western Poland	Advanced Non-FID	Nov-17
TRA-F-941	TRA	Metering and Regulating station at Nea Messimvria	Less-Advanced Non-FID	Sep-17
TRA-F-286	TRA	Romanian-Hungarian reverse flow Hungarian section 1st stage	Less-Advanced Non-FID	Jun-17
TRA-F-752	TRA	Capacity4Gas–DE/CZ	Advanced Non-FID	Mar-17
TRA-F-918	TRA	Capacity4Gas–CZ/SK	Advanced Non-FID	Mar-17
TRA-F-358	TRA	Development on the Romanian territory of the NTS (BG–RO-HU-AT)-Phase I	Advanced Non-FID	Nov-16
TRA-F-895	TRA	Balticconnector	Advanced Non-FID	Oct-16
TRA-F-915	TRA	Enhancement of Estonia-Latvia interconnection	Advanced Non-FID	Oct-16
TRA-F-928	TRA	Balticconnector Finnish part	Advanced Non-FID	Oct-16
TRA-F-954	TRA	TAG Reverse Flow	Less-Advanced Non-FID	Sep-16
TRA-F-340	TRA	CS Wertingen	Less-Advanced Non-FID	May-16
TRA-F-1138	TRA	South Caucasus Pipeline - (Future) Expansion - SCP-(F)X	Less-Advanced Non-FID	Dec-13

Table 5.2: TYNDP 2017 submissions having gotten FID status in TYNDP 2018

ing taken the FID status between TYNDP 2017 and TYNDP 2018 (see table 5.2).

In more detail, of the 46 FID initiatives in TYNDP 2018:

- 21 were already FID in TYNDP 2017
- 12 with Advanced status in TYNDP 2017 took the FID
- 8 with Less-Advanced status in TYNDP 2017 took the FID
- 5 were not submitted for TYNDP 2017

TRA-F-1138 includes both South Caucasus Pipeline Expansion (SCPX) and South Caucasus Pipeline Further Expansion (SCPFX). The date of the FID (December 2013) refers only to the SCPX.

There is an increase in the number of TYNDP 2017 submissions having reached the Advanced status.

Initiatives having the Less-Advanced status show a sensible decrease since some of them have reached a higher level of maturity or have been cancelled.

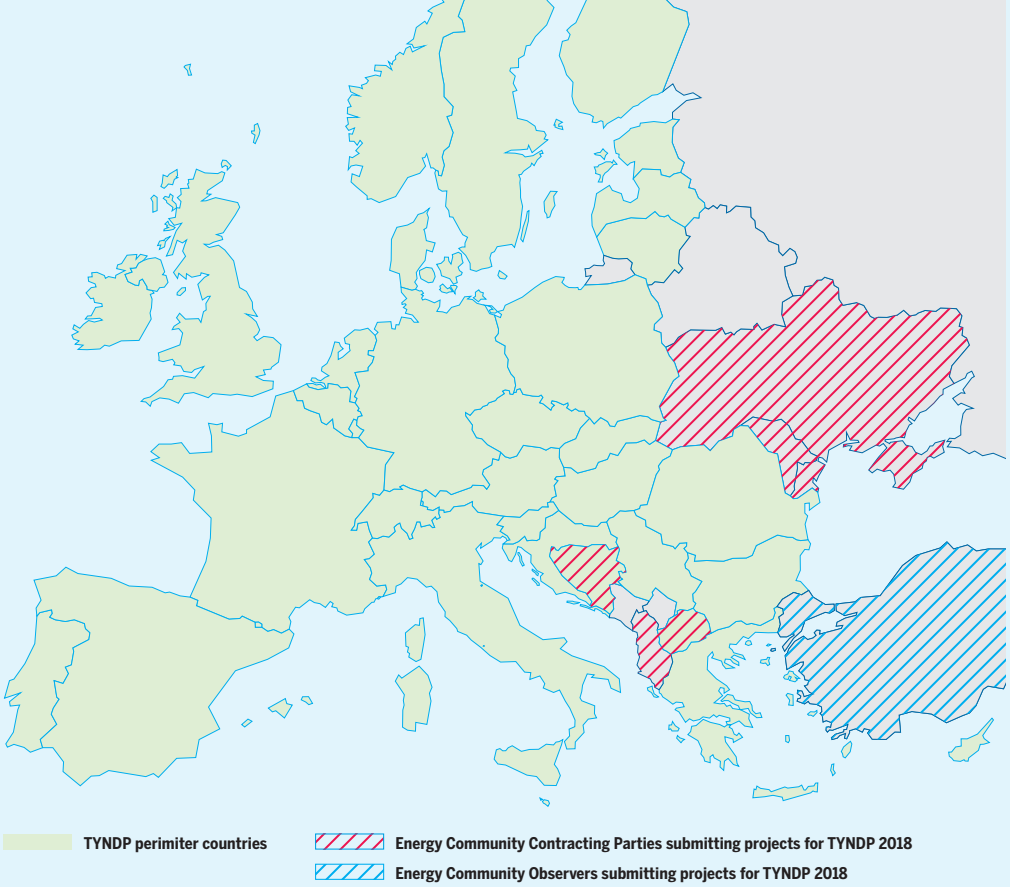


Figure 5.10: Countries inside and outside European Union for which initiatives were submitted in TYNDP 2018

5.4.2 OVERVIEW OF PROMOTERS INVESTMENTS PER GEOGRAPHICAL LOCATION

The following charts provide a summary of promoters submissions based on their geographical location, infrastructure type and maturity status.

For this TYNDP edition, 207 initiatives were submitted concerning 37 countries, of which 10 countries[1)] not being part of the European Union.

Some of these countries are part of the Energy Community[2)] (as contracting parties or observers).

Non-EU projects can in fact be submitted to TYNDP in the below cases:

- Projects at least partially located in one of the TYNDP geographical perimeter countries;
- Supply chain projects bringing additional gas sources to EU border;
- Projects whose promoter is an ENTSOG Observer;

Non-EU investments can be subject to project-specific assessment in the below cases:

- The investment is fully located within the TYNDP perimeter (as defined in the ENTSOG Practical Implementation Document);
- The investment is an applicant to the upcoming PCI selection process and all the data required for the simulations are available to ENTSOG.

However, only 9 % of the total submissions actually refer to non-EU Member State.

Most of the submitted investments (190 in total) remain focused in the European Union countries and almost 40 % are planned in those countries that have joined most recently the European Union[3)].

1) Albania, Azerbaijan, Bosnia Herzegovina, Georgia, Moldova, FYROM, Switzerland, Turkey, Turkmenistan and Ukraine.

2) The Energy Community is an international organisation which brings together the European Union and its neighbours to create an integrated pan-European energy market (https://www.energy-community.org/)

3) The European Union (EU) was established on 1November 1993 with 12 Member States, and 3 other countries (Austria, Finland and Sweden) joined it. From 1 May 2004 the European Union was further enlarged to other 13 countries (with Croatia joining EU from 1 July 2013).

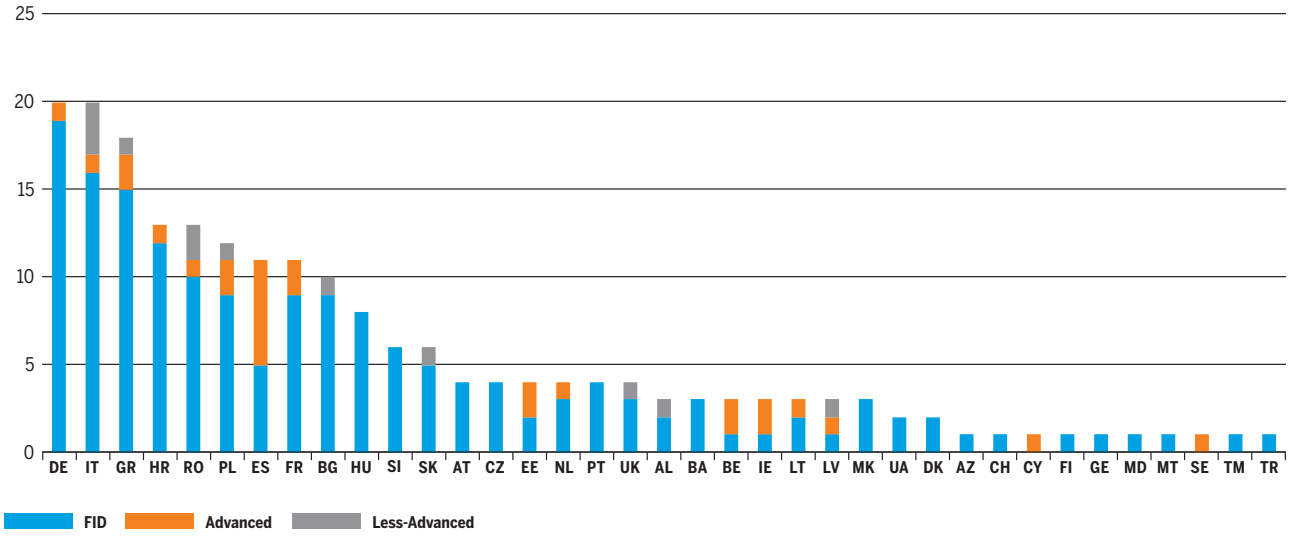


Figure 5.11: Number of projects per country and type of infrastructure

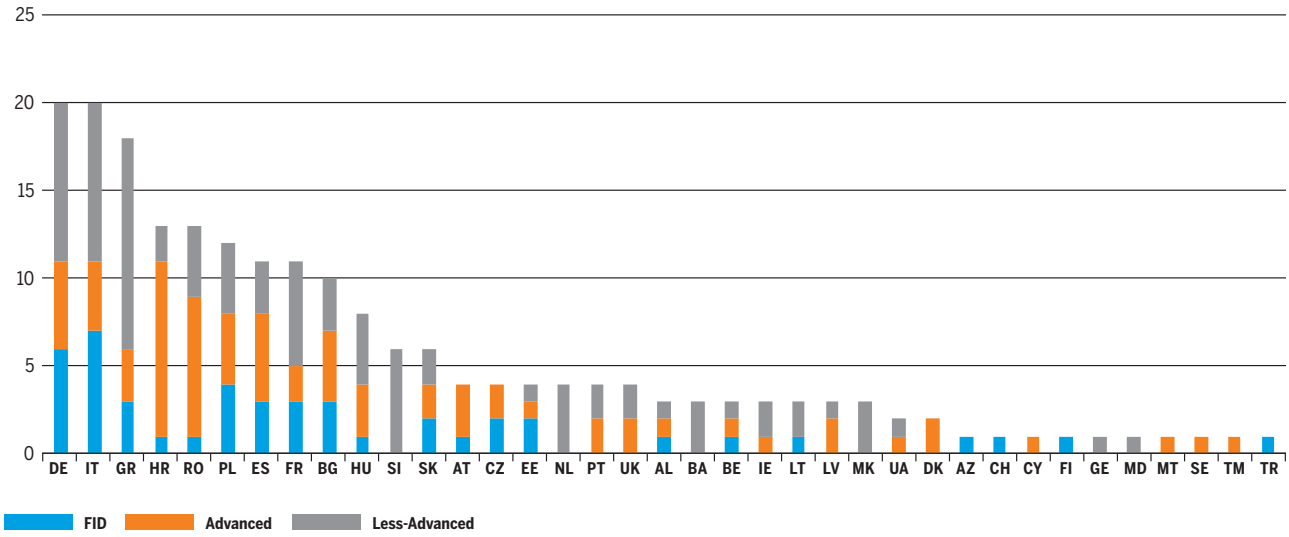


Figure 5.12: Number of projects per country and maturity status

In these countries the share of projects having reached the FID before the end of the TYNDP project collection is around 20 % (17 out of 84 investments). Projects with FID or Advanced status represent instead more than 65 % of the overall submitted projects in these countries.

Still, 50 % of the submissions concerns countries in Europe where the infrastructure is generally more developed, indicating that also in these countries there is still need for some further development. This is also confirmed by the fact that, in line with the rest of Europe, 24 % of the submitted initiatives in these countries (25 out of 106 projects) are well advanced, having already taken the FID and are planned to be commissioned in the upcoming years.

The high number of submissions has to be understood also in the light of the fact that, in some countries, TSOs are required to ensure some consistency between projects included in the National Development Plans and projects included in the ENTSOG TYNDP.

5.5 ANALYSIS OF INVESTMENTS SCHEDULE

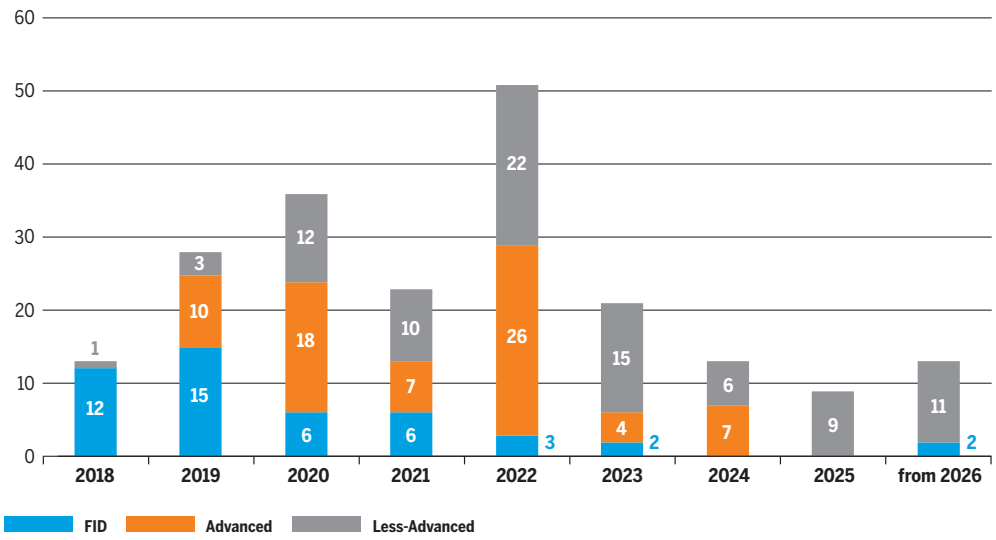


Figure 5.13: Investments by commissioning year and by project status

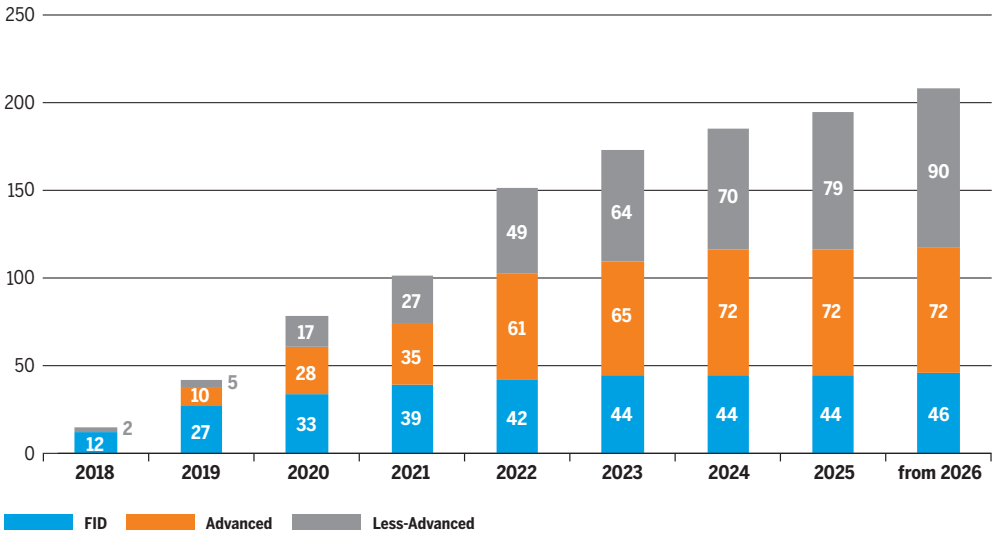


Figure 5.14: Investments by commissioning year (cumulative) and by infrastructure level

The graphs above show the distribution of promoters submissions according to the expected commissioning year, also in an aggregated way.

Almost 75 % of the submitted initiatives are expected to be commissioned not later than 2022 for a total of 152 projects out of the 207 submitted. Among these, 103 projects are well underway, presenting FID or Advanced status.

Most of the ones having FID or Advanced status are expected to be commissioned in the next 6 years.

ENTSOG has analysed the advancement of aubmitted investments between TYNDP 2017 and TYNDP 2018.

	Completed	FID	Advanced	Less Advanced	Cancelled or not resubmitted
FID (T2017)	5	25	2	1	1
Advanced (T2017)	–	12	30	5	5
Less-Advanced (T2017)	–	8	33	66	14

Table 5.3: Evolution of submitted investments from TYNDP 2017 to TYNDP 2018

Of the 34 investments already having the FID status in TYNDP 2017:

- 17 were completed or are expected to be completed at the end of 2018
- 13 are still planned
- 3 are still planned but no more FID:
  - TRA-N-291[1] and TRA-N-017[2] present in TYNDP 2018 have respectively an Advanced and Less-Advanced status while in TYNDP 2017 they both had FID status. These two projects consist of several smaller stages with different level of maturity. Since some of this stage have been already commissioned or will be commissioned in 2018 the project promoters have indicated the maturity level of the remaining steps to be built. These steps haven't taken the FID yet;
  - TRA-N-086[3] presents in TYNDP 2018 an Advanced status while in TYNDP 2017 appeared as having an FID status due to a misprint in the TYNDP 2017 edition.
- TRA-F-025[4] was not resubmitted

Of the 52 investments having the Advanced status in TYNDP 2017:

- 12 got the FID after TYNDP 2017 project collection
- 30 are still planned
- 5 moved from Advanced to Less-Advanced:
  - Transmission projects TRA-N-429[5], TRA-N-808[6] and LNG terminal LNG-N-079[7] are now expected to be commissioned beyond 2024
  - LNG terminal projects LNG-N-912[8] and transmission project TRA-N-390[9] whose permitting phase or FEED is now expected to start in 2019 (i.e. after the TYNDP 2018 project collection)
- 3 were not resubmitted (UGS-N-235[10], UGS-N-237[11] and TRA-N-919[12])
- 2 were cancelled (TRA-N-801[13] and TRA-N-807[14])

Of the 121 TYNDP 2017 investments having Less-Advanced status:

- 8 got the FID after TYNDP 2017 project collection
- 33 moved from Less-Advanced to Advanced status

1) Nowal, from Gascade
2) System Enhancement, from Eustream
3) Interconnection HR – SI, from Plinacro
4) Industrial Emissions Directive (IPPC), from National Grid
5) Adaptation L-gas/H-gas, from GRTgaz, GRDF and Storengy
6) Transport of gas volumes to the Netherlands, from Gasunie Deutschland Transport Services GmbH
7) Paldiski LNG, from Balti Gaas plc
8) Skulte LNG, from AS Skulte LNG Terminal
9) Upgrade of Rogatec interconnection (M1A/1 Interconnection Rogatec), from Plinovodi d.o.o.
10) Nuovi Sviluppi Edison Stoccaggio, from Edison Stoccaggio S.p.A.
11) Palazzo Moroni, from Edison Stoccaggio S.p.A.
12) Capacity4Gas (C4G) – CZ/AT, from NET4GAS, s.r.o.
13) Břeclav – Baumgarten Interconnection (BBI) AT, from Gas Connect Austria
14) Expansion NEL, from Gasunie Deutschland Transport Services GmbH

- 66 are still planned and present Less-Advanced status
- 14 were cancelled

For initiatives having already reached the FID before their submission to TYNDP 2018 the analysis of project submissions shows:

- 27 initiatives whose construction phase is expected to end within 3 years from when the FID was taken;
- 1 initiative whose construction phase is expected to end within 7 years from when the FID was taken;
- 18 initiatives did not indicate the expected end of the construction phase;

Most of the FID projects are expected to be completed within 5 years from when the construction works will start.

The way FID is taken by each promoter may differ. Some may take FID after the granting of permits and some before initiating the permitting procedure. Those permitting procedures often make out the longest phase of the whole project schedule which often lasts more than 5 years. Therefore, the above analysis is not necessarily indicative of the project lead time for any future projects as there are, among the projects, some small and some very complex ones.

For investments not having gotten the FID yet but presenting an Advanced status the analysis shows:

- Investments for which promoters were able to provide the relevant information are expected to be commissioned within 5 years from when the FID is expected to be taken and only one project within 8 years;
- An average of 3 years between the year when the construction works are expected to start and when the project is expected to be commissioned.

Finally, with regards to investments presenting a Less-Advanced status, information may not be always fully available making it de facto impossible to build any statistics. In this case, for example, most of the project promoters were not able to provide indication of the expected date when the FID will be taken.

Figure 5.15 illustrates the status of those common projects according to TYNDP 2017 and TYNDP 2018 submissions. The charts show the share of those projects for which a delay has been reported regarding their expected commissioning date and the length of this delay.

Among the projects without delay (39 % in total), 5 have been submitted with an earlier commissioning date.

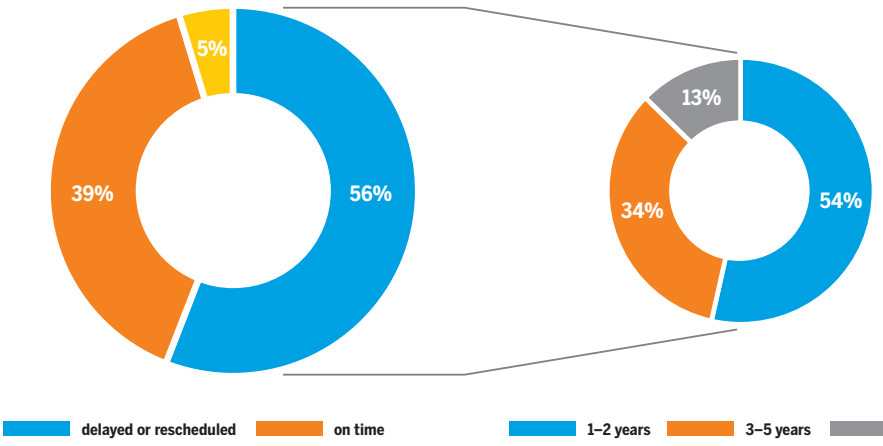


Figure 5.15: Share of common projects in TYNDP 2017 and TYNDP 2018 by commissioning status

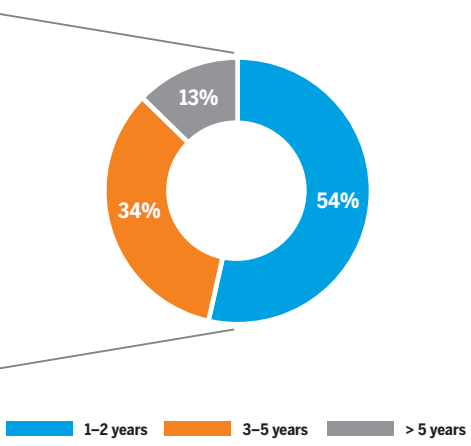


Figure 5.16: Reported delays of projects from TYNDP 2017 to TYNDP 2018

More than half of the submissions in TYNDP 2017 have reported experiencing delays since the last edition. Listed below are the main reasons for delays indicated by project promoters:

- Worsened and uncertain market conditions
- Delays in permitting/authorisations from competent authorities
- Lack of coordination between hosting countries/political uncertainties
- Delays in contract award procedure
- Lack of funds/financing
- Delay following findings from concluded pre-feasibility study

5.5.1 TYNDP 2018 AND PROJECT OF COMMON INTEREST LISTS

According to Regulation (EU) 347/2013 Annex III.2 *"[…] proposed gas infrastructure projects falling under the categories set out in Annex III.2 shall be part of the latest available 10-year network development plan for gas, developed by the ENTSO for Gas pursuant Article 8 of Regulation (EC) No 715/2009".*

Every TYNDP edition ENTSOG collects information also related to projects having already the PCI status and projects that intend to apply to the following PCI selection process. For TYNDP 2018, after the closure of the project collection, ENTSOG ran further check and contacted all promoters whose project was part of the 3rd PCI List but was not resubmitted to TYNDP.

In total 70 initiatives from the 3rd PCI List were re-submitted to TYNDP 2018.

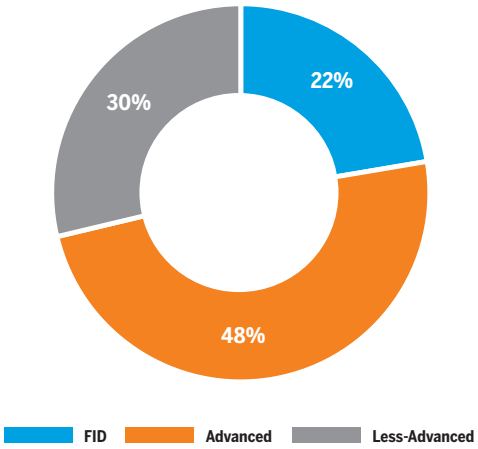


Figure 5.17: Projects having PCI status in the 3rd PCI List by maturity status

Only 3 projects having the PCI label in the 3rd PCI List were not resubmitted for TYNDP 2018:

- TRA-N-018 – Városföld-Ercsi-Győr pipeline (PCI label 6.24.4.1)
- TRA-N-061 – Ercsi-Százhalombatta pipeline (PCI label 6.24.4.2)
- TRA-N-957 – Metering Station at Komotini to IGB (PCI label 6.8.1)

In the first 2 cases, promoter indicated that the projects have been cancelled while on the third case the project is now included in the submission of TRA-F-378.

During the TYNDP project collection, promoters were asked to indicate whether they intend to apply to the next PCI selection process (i. e. the 4th PCI List). This information, collected from January to March 2018, represents only a declaration of intention and does not automatically translates into the application of the project to the next PCI round. The PCI selection is in fact a process completely separated from the TYNDP process and under the responsibility of the TEN-E Regional Groups led by the European Commission to which ENTSOG provides technical support.

In line with ENTSOG 2nd CBA Methodology, based on this declaration of intention ENTSOG has run a project-specific assessment on all these projects. The final list of the groups of projects on which ENTSOG has run a project-specific assessment was published on 26 October 2018[1)].

The results of the project-specific assessments will be published with the final TYNDP publication in 2019 in the form of a project fiche.

1) https://www.entsog.eu/public/uploads/files/publications/TYNDP/2018/Copy%20of%20Project%20grouping_TYNDP%202018_FINAL.xlsx

5.6 INVESTMENT COSTS

Investment costs are for project promoters in many cases commercially sensitive information and might have the potential to negatively affect the competitive position of project promoters vis-à-vis contractors.

However, as part of the transparency process adopted, ENTSOG has collected information from promoters on indicative investment costs for the submitted projects.

For the first time, cost information was provided by promoters for all submitted projects, further increasing the transparency of this Report.

Figure 5.18 shows the total cost (CAPEX) per project status. The bar chart also offers a comparison between cost information published for TYNDP 2018 and TYNDP 2017.

Promoters submitted projects to TYNDP 2018 for a total of around 96 Billion €.

According to available information, for FID and Advanced projects the total costs amount to approximately 62 Billion €. The distribution of the total expected CAPEX across different categories of projects is displayed in figure 5.19.

Compared to TYNDP 2017 an increase is observed in the total cost of submitted projects. This can be explained by the following reasons:

- In TYNDP 2017 promoters provided cost information only for 81 % of the submitted projects while in TYNDP 2018 costs have been provided for all submitted projects since mandatory;
- For the missing cost information, the data published in TYNDP 2017 included cost approximations directly estimated by ENTSOG on the basis of provided project technical information while in cases where such information was not available at all costs could not be established;
- In TYNDP 2018 several projects have become more mature, bringing also more clarity on the expected costs.

According to project promoters submission, investments are highly concentrated in 2018 – 2022, with around 60% of the total expected cost to be experienced in those years.

In this period more than 80% of projects having FID or Advanced status are in fact expected to be implemented.

Transmission projects, representing also the majority of the submitted projects, cover 85 % of the total costs.

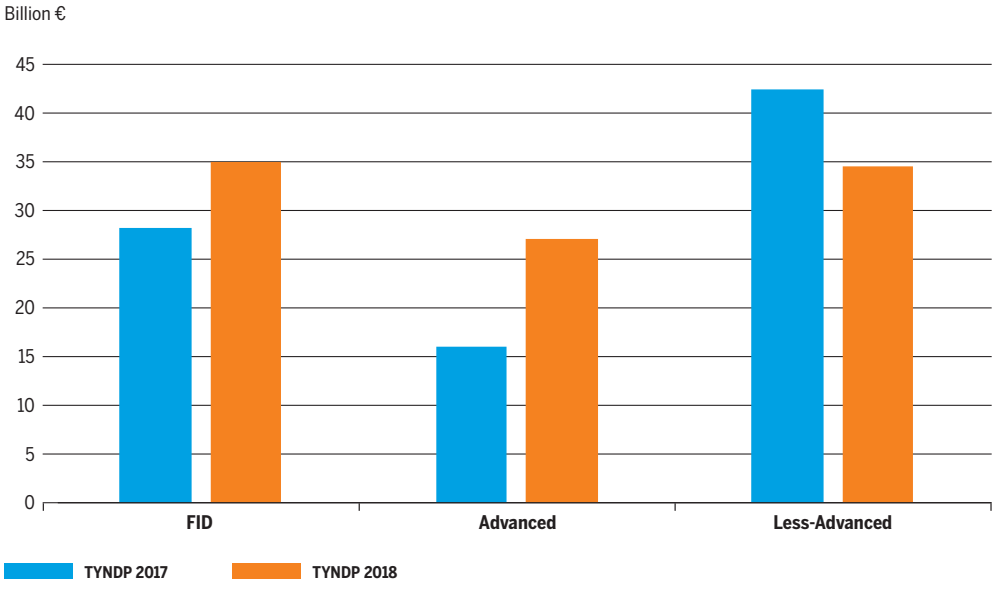


Figure 5.18: Overview of total cost by project status (Billion €) and comparison with TYNDP 2017

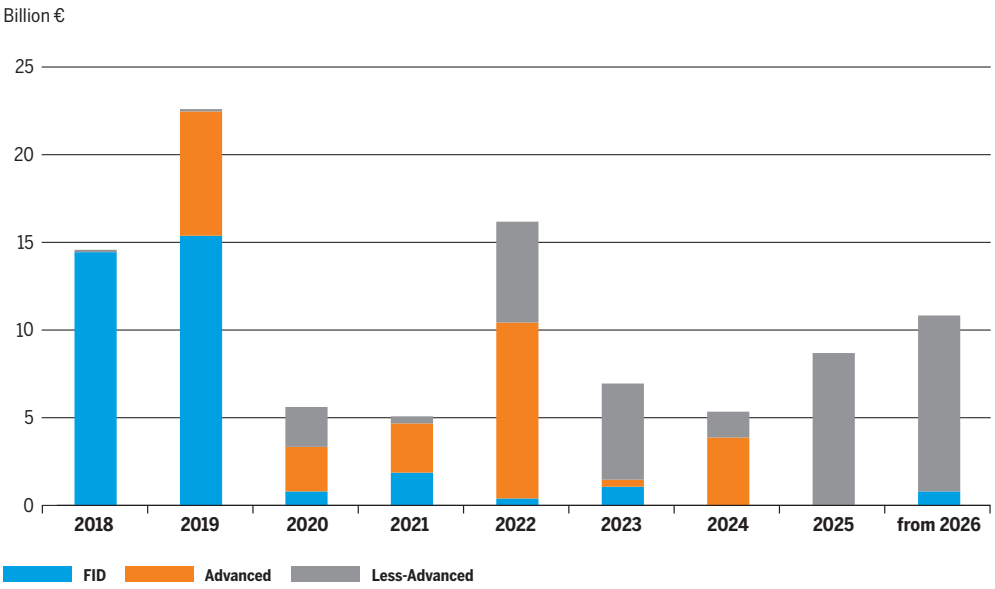


Figure 5.19: Overview of total cost by commissioning year and project status (Billion €)*

* The graph excludes the eight projects for which a commissioning year was not provided.

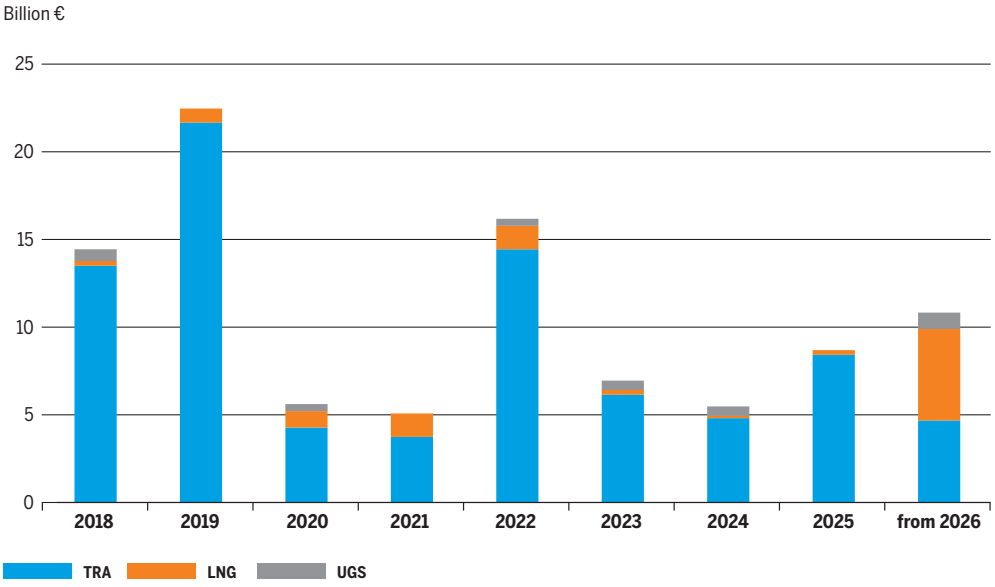


Figure 5.20: Overview of total cost by commissioning year and type of project (Billion €)*

* The graph excludes the eight projects for which a commissioning year was not provided.

In line with the ENTSOG Practical Implementation Document, the cost data submitted by the project promoters for the projects to be included in the TYNDPs is made public by ENTSOG unless the data is deemed confidential by the respective project promoters.

While fully acknowledging the importance and the right of promoters to keep project cost information confidential, at the same time, it is important that projects interested in applying for the PCI label ensure the highest possible level of transparency and level-playing field.

On this basis, for projects whose promoters have indicated their intention to participate to the PCI process during the TYDNP 2018 project data collection and have marked their expected costs as confidential, alternative figures have been calculated by ENTSOG[1)] or have been directly provided be

1) For TYNDP 2018 ENTSOG has built alternative costs based on the ACER UIC Methodology published in 2015 (link) and based on the project technical information provided by the project promoters.

the promoters. Those alternative figures built by ENTSOG have to be considered purely indicative. These figures, per project, will be in fact used only for publicity reasons in order to ensure as much transparency as possible.

In the PS-CBA phase ENSTOG has considered only the project costs provided by the promoters during the project collection (and not the alternative ones), being each promoter the ultimate responsible of the submitted and most accurate data. Annex A clearly distinguish the origin of the costs published.

5.7 TYNDP 2018 SUMISSIONS AND NATIONAL DEVELOPMENT PLANS

According to Article 8 of Regulation (EC) No. 715/2009, the Community-wide network development plan shall build on national investment plans. This does not prevent, from a legal perspective, that projects are submitted to the TYNDP although they are not (yet) part of a national development plan (NDP), being the TYNDP a non-binding exercise.

Following ACER recommendation, as part of the TYNDP 2018 project data collection, project promoters have been requested to always indicate if their initiatives are part of the national development plan. If not, the project promoters had to indicate the reason for its project not being part of the National Development Plan.

Country	Part of NDP	not Part of NDP
Albania	3	
Austria	4	
Azerbaijan		1
Belgium	3	
Bosnia Herzegovina	3	
Bulgaria	9	1
Croatia	13	
Cyprus		1
Czechia	4	
Denmark		2
Estonia	4	
Finland		1
FYR of Macedonia	3	
France	11	
Georgia		1
Germany	11	9
Greece	9	9
Hungary	8	
Ireland	3	
Italy	16	4
Latvia		3
Lithuania	2	1
Malta	1	
Moldavia		1
Netherlands	4	
Poland	11	1
Portugal	4	
Romania	9	4
Slovakia	6	
Slovenia	6	
Spain	7	4
Sweden		1
Switzerland		1
Turkey		1
Turkmenistan		1
Ukraine		3
United Kingdom	3	1

Table 5.4: Overview of projects being part or not of NDPs by country

About 75 % of the TYNDP projects are reported as listed in NDPs.

For projects reported as not part of any NDP, promoters have generally indicated one of the following reasons:

- The NDP was prepared at an earlier date and the project will be proposed for inclusion in the next NDP edition;
- No NDP exists in the country where the project will be built;
- The operators are not required to prepare and publish an NDP;
- There is no obligation at national level for such a project to be part of the NDP or the country is outside the European Union;
- The project will be included in the national development plan following the positive result of the economic test of incremental capacity cycle;
- The projects will be applying for inclusion in the national developments plan upon connection with the National Natural Gas Transmission System.

The above provided reasons show that, in most of the cases, a project is not part of any NDP for reasons lying outside the control of the project promoters himself. For further details, please refer to TYNDP 2018 Annex A.

5.8 INCREMENTAL CAPACITY PROCESS

An incremental capacity procedure has been introduced by the Regulation (EU) 2017/459 ("CAM Network Code") for a streamlined and harmonised Union-wide process to react to possible market based capacity requests with an increase in technical capacity. The requested incremental capacity may be offered based on market commitment and subsequently built subject to the positive outcome of an economic test, in the following cases:

(a) at existing interconnection points;

(b) when establishing a new interconnection point;

(c) with physical reverse flow capacity at an interconnection point, which has not been offered before.

The aim on setting rules for incremental capacity was to propose an EU-wide harmonised and market-based approach to identify the need for new/incremental capacity based on market demand and to allocate both existing and incremental capacity in an integrated way. Therefore, the process is not suitable for those projects having a key-relevance for the system but based on benefits for which users' commitments cannot be gathered ex-ante via a market assessment (e. g. Security of supply or flexibility needs).

The provisions on Incremental capacity are specifying how to develop a potential offer of Newmarket based capacity, how to offer and allocate it as well as how to determine the economic and regulatory conditions justifying the feasibility of such a project. The Incremental capacity process is now harmonised on a European-wide level by defining specific steps for the involved TSOs and National Regulatory Authorities that have to be followed when going through the Incremental capacity process.

The incremental process is a two-year process and consists of 2 phases: a non-binding phase and a binding phase.

The non-binding phase starts with the assessment of demand for incremental capacity. The network user(s) will provide TSOs with their non-binding capacity demand (with regards to volume, duration, location of their interest), including possible conditionality[1]. The TSOs will aggregate the demand within 16 weeks after the annual yearly auction[2] and will publish a demand assessment report with a conclusion whether the indicated non-binding demand may be satisfied by existing capacity. If a credible and consistent capacity demand cannot be satisfied by existing available capacity, the conclusion of relevant TSOs will be to initiate Incremental capacity process. The demand assessment report shall take into account several issues, among others, whether the TYNDP identifies

1) Conditional demand indications are any conditions which TSOs received from the network user(s) with respect to the non-binding demand (like e. g. demand for incremental capacity along a route with more than two adjacent entry-exit systems involved, demand for removal of existing restrictions, etc.)

2) In the annual yearly capacity auction, yearly standard capacity products are offered. This represents the capacity which may be applied, in a given amount, by a network user for all gas days in a particular gas year. As from 2018, annual yearly capacity auctions shall start on the first Monday of July each year unless otherwise specified in the ENTSOG's auction calendar.

a physical capacity gap whereby a specific region is undersupplied in a reasonable peak scenario and where offering incremental capacity at the interconnection point in question could close the gap; or a national network development plan identifies a concrete and sustained physical transport requirement. If the demand cannot be satisfied by existing available capacity, the conclusion of relevant TSOs will be to initiate Incremental capacity process.

In that case the next phase will be a design phase (concerning development of capacity offer levels[1)], technical studies and, generally, the preparation of a project proposal). There will be a public consultation of key parts of the project proposal where stakeholders will have an opportunity to provide a feedback to TSOs' proposals about the identified key parameters of the incremental project. A key milestone in the non-binding phase is to submit a comprehensive incremental project proposal to relevant NRAs.

The NRAs will then have 6 months to issue coordinated decision about the project proposal.

After the decision, the binding allocation phase will start, and network users will send their binding commitments for incremental capacity are collected.

In a next step the economic viability of the incremental capacity project will be assessed trough the economic test, which is defined in Art. 22 of the CAM Network Code. Only after a positive economic test, incremental capacity projects can moved forward.

The incremental proposal offers flexibility to ways of allocation. An alternative capacity allocation mechanism may be designed and used. The following conditions have to be met to apply for the alternative allocation mechanism: the incremental project involves more than two entry-exit zones and capacity for a duration of more than one year is requested. The alternative allocation

1) Offer level means the sum of the available capacity and the respective level of incremental capacity offered for each of the yearly standard capacity products at an interconnection point, Art. 3(5) NC CAM.

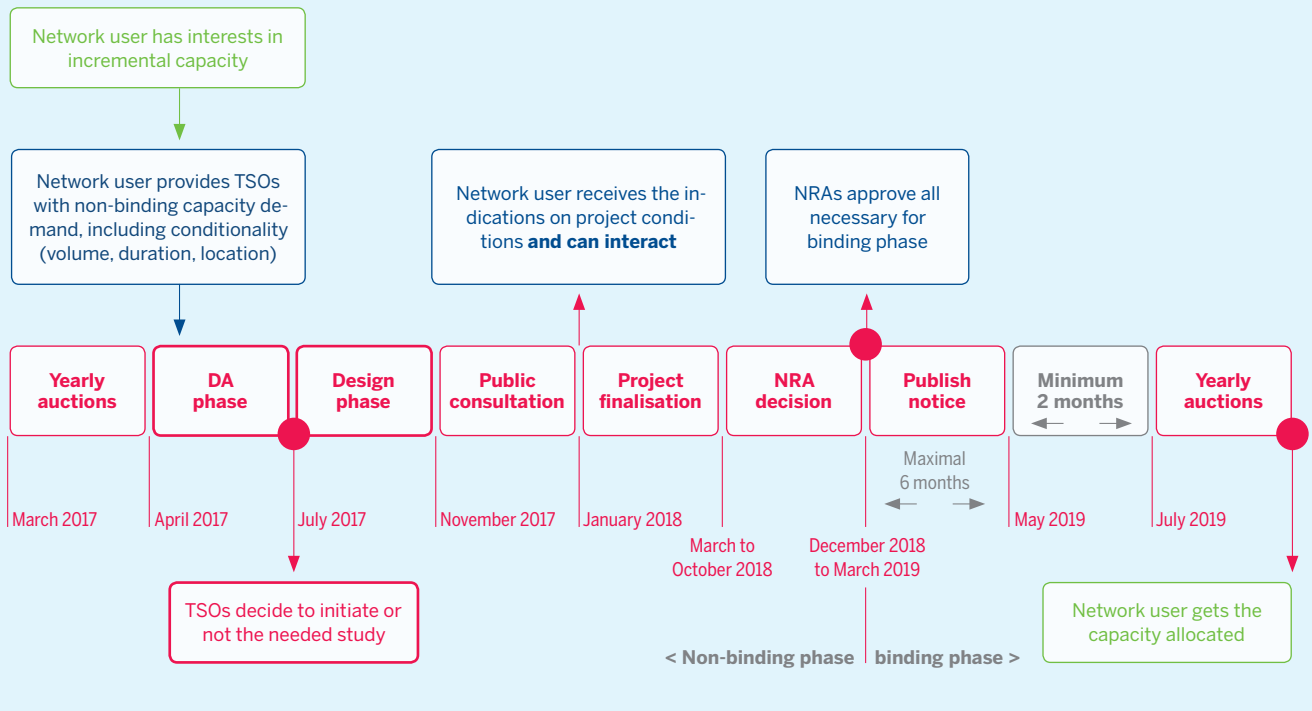


Figure 5.21: Overview of the 1st initiated incremental capacity project in April 2017

mechanism must be approved by the relevant NRAs.

The first Incremental process according to the CAM Network Code amendment was initiated in April 2017. Most of the Incremental capacity projects initiated in 2017 will have a binding allocation and economic test in 2019.

For TYNDP 2018 ENTSOG collected information regarding projects triggered by the Incremental Capacity process. For the purpose of TYNDP 2018 the provision of such information was not compulsory and left to the discretion of each single promoter.

These are the projects submitted to TYNDP 2018 that indicated as being a result of the demand assessment in the context of the Incremental Capacity process:

- TRA-F-902, Capacity increase at IP Lanžhot: the entry Market demand survey was executed according to the CAM NC rules but before factual effectiveness of the CAM NC. Capacity was auctioned via the PRISMA platform in March 2017 yearly auction;
- TRA-N-14, Komotini – Thesprotia pipeline: the Project is now related to an application for the establishment of an IP between Greece and Italy in the context of Incremental Capacity. The project existed already in the previous editions of the TYNDP, due to a different rationale, but lacked market support[1];
- TRA-N-31, Connection of Malta to the European Gas Network-Pipelines: following the launch of the Incremental Capacity Procedure according to Regulation (EU) NO. 2017/459 by Snam Rete Gas on 6 April 2017, the Project Promoter submitted a "Request for new incremental capacity" in May 2017. The demand assessment report (DAR) was published in July 2017. The incremental process has been closed upon request of the subject who submitted the non-binding demand indication[2];
- TRA-N-423, GCA Mosonmagyaróvár: the demand assessment report for incremental capacity between Austria (Market Area East) and Hungary was published on 27 July 2017;
- TRA-N-873, Additional capacity at OSZ from Germany to the Netherlands: FNB Gas received a demand indication from Gazprom Export on the Gaspool-TTF border[3];
- TRA-N-1235, Firm transmission capacity increase at the IP Veľké Zlievce: Eustream and Magyar Gaz Transit received non-binding inquiries for IP Balassagyarmat/Veľké Zlievce between Hungary and Slovakia, in both direction[4]. In case of direction Slovakia-Hungary the indicative demand does not require further investment as it can be handled by existing technical conditions;
- TRA-N-1246, Greece – Italy interconnection: during the non-binding phase of the Incremental Capacity cycle that started in April 2017, Snam and Desfa received a request for the creation of an interconnection between the two countries[5]. As a consequence, also the location of the interconnection point is not defined yet. The related DAR has been published on TSOs website on 27 July 2017, followed by a coordinated public consultation opened the 18 October 2017 and closed the 18 December 2017.
- TRA-N-1202, GCP GAZ-SYSTEM/ ONTRAS – incremental capacity project: during the first Incremental Capacity cycle that started in April 2017, GAZ-SYSTEM and ONTRAS received non-binding demand indications for firm incremental capacity at the IP between the market border of Poland and GASPOOL. Consequently, the TSOs prepared a draft project proposal, which was subject to public consultations. Following the receipt of coordinated decisions of the respective NRAs, the binding allocation and economic test will be conducted in July 2019. The incremental project requires dedicated investments on both Polish and German side.

1) http://desfa.gr/userfiles/5fd9503d-e7c5-4ed8-9993-a84700d05071/DAR-for-incremental-capacity-between-Greece-and-Italy.pdf
2) http://www.snamretegas.it/export/sites/snamretegas/repository/file/ENG/Thermal_Year_20162017/Capacity_booking_and_transactions/request_incremental_capacity/demand-assessment/DAR_for_incremental_capacity_between_Italy_and_Malta.pdf
3) http://www.gasunietransportservices.nl/en/shippers/shippers-information/incremental-capacity-process
4) http://www.eustream.sk/files/docs/eng/DAR_2017/DAR_EUS_MGT_EN.pdf
5) http://www.snamretegas.it/en/business-services/Online_Processes/Allacciamenti/procedure-module/incremental-capacity/request_incremental_capacity.html.html

MAPS

MAP FOR TRANSMISSION AND COMPRESSOR STATION PROJECTS IN TYNDP 2018

TRANSPORT BY PIPELINES (INCL. COMPRESSOR STATIONS)

005	CZ/SK Capacity4Gas Project - Capacity increase at IP Lanžhot		FID
	TRA-F-902	Capacity increase at IP Lanžhot entry	FID
	TRA-F-918	Capacity4Gas - CZ/SK	FID
008	Poland – Slovakia Gas Interconnection		FID
	TRA-F-190	Poland - Slovakia interconnection (Slovak section)	FID
	TRA-F-275	Poland - Slovakia Gas interconnection (PL section)	FID
011	Interconnection Estonia – Finland		FID
	TRA-F-895	Balticconnector	FID
	TRA-F-928	Balticconnector Finnish part	FID
017	Gas Interconnection Poland-Lithuania (GIPL)		FID
	TRA-F-212	Gas Interconnection Poland-Lithuania (GIPL) - PL section	FID
	TRA-N-341	Gas Interconnection Poland-Lithuania (GIPL) (Lithuania's section)	FID
	TRA-F-051	Trans Adriatic Pipeline	FID
	TRA-F-137	Interconnection Bulgaria - Serbia	FID
	TRA-F-221	TANAP - Trans Anatolian Natural Gas Pipeline Project	FID
	TRA-F-247	North - South Gas Corridor in Western Poland	FID
	TRA-F-298	Rehabilitation, Modernization and Expansion of the National Transmission System	FID
	TRA-F-329	ZEELINK	FID
	TRA-F-334	Compressor station 1 at the Croatian gas transmission system	FID
	TRA-F-340	VDS Wertingen	FID
	TRA-F-358	Development on the Romanian territory of the NTS on the Bulgaria – Romania – Hungary – Austria Corridor	FID
	TRA-F-378	Interconnector Greece-Bulgaria (IGB Project)	FID
	TRA-F-915	Enhancement of Estonia-Latvia interconnection	FID
	TRA-F-937	Nord Stream 2	FID
	TRA-F-941	Metering and Regulating station at Nea Messimvria	FID
	TRA-F-954	TAG Reverse Flow	FID
	TRA-F-1028	Albania - Kosovo Gas Pipeline	FID
	TRA-F-1138	South Caucasus Pipeline - (Future) Expansion - SCP-(F)X	FID
	TRA-N-1193	TAP interconnection	FID
	TRA-F-1241	Interconnection with production in Gela	FID
	TRA-F-1271	Compressor Station Krummhoern	FID

002	Bidirectional Austrian - Czech Interconnection (BACI)		Advanced
	TRA-N-021	Bidirectional Austrian-Czech Interconnector (BACI, formerly LBL project)	Advanced
	TRA-N-133	Bidirectional Austrian Czech Interconnection (BACI)	Advanced
003	Interconnection Slovenia-Croatia (Gas pipeline Lučko-Zabok-Rogatec)		Advanced
	TRA-N-086	Interconnection Croatia/Slovenia (Lučko - Zabok - Rogatec)	Advanced
	TRA-N-390	Upgrade of Rogatec interconnection (M1A/1 Interconnection Rogatec)	Advanced
021	Baltic Pipe Project		Advanced
	TRA-N-271	Poland - Denmark interconnection (Baltic Pipe) offshore section	Advanced
	TRA-N-780	Baltic Pipe project - onshore section in Denmark	Advanced
	TRA-N-1173	Poland - Denmark interconnection (Baltic Pipe) onshore section in Poland	Advanced
022	Poland - Czech Republic Interconnection		Advanced
	TRA-N-136	Czech-Polish Gas Interconnector (CPI)	Advanced
	TRA-N-273	Poland - Czech Republic interconnection (PL section)	Advanced
028	Poland - Ukraine Gas Interconnection		Advanced
	TRA-N-561	Poland-Ukraine Interconnector (Ukrainian section)	Advanced
	TRA-N-621	Poland - Ukraine Gas interconnection (PL section)	Advanced
034	More capacity – DE/CZ Capacity4Gas Project		Advanced
	TRA-F-752	Capacity4Gas - DE/CZ	FID
	TRA-N-763	EUGAL - Europaeische Gasanbindungsleitung (European Gaslink)	Advanced
	TRA-N-809	Additional East-West transport NL	Advanced
	TRA-N-814	Upgrade for IP Deutschneudorf et al. for More Capacity	Advanced
039	STEP (South Transit East Pyrenees)		Advanced
	TRA-N-161	South Transit East Pyrenees (STEP) - ENAGAS	Advanced
	TRA-N-252	South Transit East Pyrenees (STEP) - TEREGA	Advanced
044	MidCat (Iberian-French corridor, Eastern Axis – MidCat project)		Advanced
	TRA-N-256	Iberian-French corridor: Eastern Axis - Midcat Project	Advanced
	TRA-N-727	Iberian-French corridor: Eastern Axis - Midcat Project	Advanced
047	RO-HU Transmission Corridor		Advanced
	TRA-F-286	Romanian-Hungarian reverse flow Hungarian section 1st stage	FID
	TRA-N-377	Romanian-Hungarian reverse flow Hungarian section 2nd stage	Advanced
060	Hungary – Slovenia interconnection		Advanced
	TRA-N-325	Slovenian-Hungarian interconnector	Advanced
	TRA-N-112	R15/1 Pince - Lendava - Kidričevo	Advanced
	TRA-N-010	Poseidon Pipeline	Advanced
	TRA-N-012	GALSI Pipeline Project	Advanced
	TRA-N-031	Connection of Malta to the European Gas Network Pipelines	Advanced
	TRA-N-068	Ionian Adriatic Pipeline	Advanced
	TRA-N-070	Interconnection Croatia/Serbia (Slobdnica-Sotin-Bačko Novo Selo)	Advanced
	TRA-N-094	CS Kidričevo, 2nd phase of upgrade	Advanced
	TRA-N-123	Városföld CS	Advanced
	TRA-N-139	Interconnection of the NTS with the DTS and reverse flow at Isaccea	Advanced
	TRA-N-291	NOWAL - Nord West Anbindungsleitung	Advanced
	TRA-N-320	Carregado Compressor Station	Advanced
	TRA-N-357	NTS developments in North-East Romania	Advanced
	TRA-N-361	GCA 2015/08: Entry/Exit Murfeld	Advanced
	TRA-N-362	Development on the Romanian territory of the Southern Transmission Corridor for taking over the Black Sea gas	Advanced
	TRA-N-389	Upgrade of Murfeld/Ceršak interconnection (M7/3 Interconnection Ceršak)	Advanced
	TRA-N-394	Norwegian tie-in to Danish upstream system	Advanced
	TRA-N-423	GCA Mosonmagyaróvár	Advanced
	TRA-N-500	L/H Conversion Belgium	Advanced
	TRA-N-592	Looping CS Valchi Dol - Line valve Novi Iskar	Advanced
	TRA-N-593	Varna-Oryahovo gas pipeline	Advanced
	TRA-N-594	Construction of a Looping CS Provadia– Rupcha village	Advanced
	TRA-N-950	Guitiriz - Lugo - Zamora pipeline	Advanced
	TRA-N-964	New NTS developments for taking over gas from the Black Sea shore	Advanced
	TRA-N-974	LARINO - RECANATI Adriatic coast backbone	Advanced
	TRA-N-975	Sardinia Gas Transportation Network	Advanced
	TRA-N-1057	Compressor stations 2 and 3 at the Croatian gas tranmission system	Advanced
	TRA-N-1169	Trans-Balkan Bi-directional Flow	Advanced
	TRA-N-1194	Sardinia Methanization	Advanced
	TRA-N-1265	Biomethane productions interconnection	Advanced
	TRA-N-1267	Upgrade Sülstorf station	Advanced
	TRA-N-1277	Upgrading GMS Isaccea 1 and GMS Negru Voda 1	Advanced
	TRA-N-1303	IAEF - Vlora ccgt	Advanced
	TRA-N-1322	Development on the Romanian territory of the NTS (BG-RO-HU-AT) - Phase II	Advanced

Back to page 12:

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KEYS

Cross-border points / intra-country or intra balancing zone points

- Cross-border interconnection point within Europe or export point to non-EU country
- Cross-border interconnection point within Europe or export point to non-EU country Under construction or Planned
- Third country cross-border interconnection point
- Cross-border third country (import) Under construction or Planned
- Intra-country or intra balancing zone points

Project status

- FID projects
- Non-FID, advanced projects
- Non-FID, non-advanced projects

Transport by pipeline

- Diameter < 600 mm
- Diameter 600 - 900 mm
- Diameter > 900mm
- Pipeline project
- Compressor station

Storage facilities

- Acquifer
- Salt cavity - cavern
- Depleted (Gas) field on shore / offshore
- Other type

LNG Terminals and Plants

- LNG Terminals' entry point intro transmission system *Operational*
- LNG Plants' export point

Project Data :

Project not (yet) marked on map

000	Project Group name		FID
	TRA-F-902	Project name	eustream	FID
	TRA-F-918	Project name		FID

Project ENTSOG code | Project Promoter | Project status code

Project groups :

Aggregation: when two investments submitted by different promoters are part of the same projects, ENTSOG has modelled them taking into account the maturity status of the project having the least mature status (For example: project 034 is non-FID since among the projects composing it there is at least one having non-FID status.
The following rule is applied: non-FID<Advanced<FID)

Project status codes :

FID | Advanced | Non-FID – Final Investment Decision status

Advanced status is applied to all projects that, based on the information submitted, have:
- commissioning year expected at the latest by 31st December of the year of the TYNDP project data collection + 6
(e.g. 2024 in case of TYNDP 2018, for which projects are collected in 2018)
- and whose permitting phase has started ahead of the TYNDP project data collection - OR - FEED has started
(or the project has been selected for receiving CEF grants for FEED ahead of the TYNDP project data collection)

North Sea
Irish Sea
Bristol Channel
English Channel
Bay of Biscay
Mediterranean Sea
Strait of Gibraltar
Skagerrak
Baltic Sea
Gulf of Riga
Gulf of Finland
Gulf of Lion
Ligurian Sea
Adriatic Sea
Tyrrhenian Sea
Ionian Sea
Aegean Sea
Black Sea
Sea of Azov
Caspian Sea

IRELAND
UNITED KINGDOM
DENMARK
NORWAY
SWEDEN
FINLAND
ESTONIA
LATVIA
LITHUANIA
RUSSIA
BELARUS
POLAND
THE NETHERLANDS
BELGIUM
LUX.
GERMANY
FRANCE
SWITZERLAND
AUSTRIA
CZECH REPUBLIC
SLOVAKIA
HUNGARY
UKRAINE
MOLDOVA
ROMANIA
SLOVENIA
CROATIA
BOSNIA HERZEGOVINA
SERBIA
MONTENEGRO
UNMI KOSOVO
BULGARIA
ITALY
CORSICA
SARDINIA
PORTUGAL
SPAIN
GREECE
TURKEY
ALBANIA
SKOPJE FYROM
MALTA
CYPRUS
CANARY ISLANDS
AZERBAIJAN
ARMENIA

AMSTERDAM
BRUSSELS
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STOCKHOLM
HELSINKI
TALLINN
RIGA
VILNIUS
MINSK
WARSAW
PRAGUE
VIENNA
BRATISLAVA
BUDAPEST
LJUBLJANA
ZAGREB
BELGRADE
SARAJEVO
BUCHAREST
SOFIA
TIRANA
SKOPJE
ATHENS
CHISINAU
LONDON
DUBLIN
MADRID
LISBON
ROME
BERN
PRAGUE
ANKARA
NICOSIA
LA VALETTA
ALGIERS
TUNIS
BAKU
TBILISI
YEREVAN

Gas Connect Austria
Nord Stream
Nord Stream 2
Baltic Pipe
Yamal-Europe
Europipe I
Europipe II
Norpipe
Zeepipe
Frampipe
Langeled South
Seal
Cats
Interconnector
Bbl
Nogat
Net
Megal
Stegal
Opal
Eugal
Medgaz
Galsi
Transmed
Trans-Austria Gasleitung
Trans Austria Pipeline
Trans Adriatic Pipeline
Trans Anatolian Pipeline (TANAP)
South Caucasus Pipeline (SCP)
Baku-Tbilisi-Erzurum
Eastring
Poseidon
East Med
Interconnector Greece-Bulgaria
Interconnector Greece-Turkey
Interconnector Turkey-Bulgaria
Interconnector Greece-Italy
Interconnector Greece-Albania
Interconnector Greece-FYROM
Interconnector Bulgaria-Romania
Interconnector Bulgaria-Serbia
Interconnector Hungary-Romania
Interconnector Hungary-Slovakia
Interconnector Hungary-Croatia
Interconnector Slovenia-Croatia
Interconnector Slovenia-Hungary
Interconnector Austria-Slovenia
Interconnector Austria-Hungary
Interconnector Austria-Czech Republic
Interconnector Czech Republic-Slovakia
Interconnector Czech Republic-Poland
Interconnector Poland-Slovakia
Interconnector Poland-Lithuania
Interconnector Poland-Belarus
Interconnector Lithuania-Belarus
Interconnector Lithuania-Latvia
Interconnector Latvia-Estonia
Interconnector Finland-Estonia
Interconnector Finland-Sweden
Interconnector Sweden-Denmark
Interconnector Sweden-Norway
Interconnector Denmark-Germany
Interconnector Germany-Poland
Interconnector Germany-Czech Republic
Interconnector Germany-Austria
Interconnector Germany-Switzerland
Interconnector Germany-Luxembourg
Interconnector Germany-Belgium
Interconnector Germany-Netherlands
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Interconnector Belgium-France
Interconnector Belgium-Luxembourg
Interconnector Luxembourg-France
Interconnector France-Switzerland
Interconnector France-Spain
Interconnector Spain-Portugal
Interconnector Spain-Morocco
Interconnector Spain-Algeria
Interconnector Italy-Switzerland
Interconnector Italy-Austria
Interconnector Italy-Slovenia
Interconnector Italy-France
Interconnector Italy-Tunisia
Interconnector Italy-Malta
Interconnector Italy-Greece
Interconnector Ireland-UK
Interconnector UK-France
Interconnector UK-Belgium
Interconnector UK-Netherlands
Interconnector UK-Norway
Interconnector UK-Ireland
Interconnector Cyprus-Greece
Interconnector Cyprus-Egypt
Interconnector Cyprus-Israel
Interconnector Cyprus-Lebanon
Interconnector Cyprus-Syria
Interconnector Cyprus-Turkey
Interconnector Malta-Italy
Interconnector Malta-Libya
Interconnector Malta-Tunisia
Interconnector Malta-Greece
Interconnector Malta-Egypt
Interconnector Malta-Israel
Interconnector Malta-Lebanon
Interconnector Malta-Syria
Interconnector Malta-Turkey
Interconnector Malta-Cyprus
Interconnector Malta-Greece
Interconnector Malta-Italy
Interconnector Malta-Libya
Interconnector Malta-Tunisia

MAPS

MAP FOR LNG REGASIFICATION TERMINALS (INCLUDING EVACUATION PIPELINES)

LNG IMPORT TERMINALS			
LNG-F-163	Gran Canaria LNG Terminal	Gascan	FID
LNG-F-178	Musel LNG terminal	enagas	FID
LNG-F-183	Tenerife LNG Terminal	Gascan	FID
LNG-F-229	Zeebrugge LNG Terminal - 5th Tank & 2nd Jetty	FLUXYS | BE	FID
LNG-F-272	Upgrade of LNG terminal in Świnoujście	GAZ-SYSTEM	FID
004	Krk LNG terminal with connecting and evacuation pipelines towards Hungary and beyond		Advanced
TRA-N-075	LNG evacuation pipeline Zlobin-Bosiljevo-Sisak-Kozarac	plinacro	Advanced
LNG-N-082	LNG terminal Krk	lng	Advanced
TRA-N-090	LNG evacuation pipeline Omišalj - Zlobin (Croatia)	plinacro	Advanced
TRA-N-1058	LNG Evacuation Pipeline Kozarac-Slobodnica	plinacro	Advanced
055	LNG terminal in northern Greece / Alexandroupolis		Advanced
LNG-N-062	LNG terminal in northern Greece / Alexandroupolis LNG Section	gastrade	Advanced
TRA-N-063	LNG terminal in northern Greece / Alexandroupolis Pipeline Section	gastrade	Advanced
LNG-N-030	Shannon LNG Terminal and Connecting Pipeline	Shannon LNG	Advanced
LNG-N-032	Project GO4LNG LNG terminal Gothenburg	SWEDEGAS	Advanced
LNG-N-198	Porto Empedocle LNG	Nuove Energie	Advanced
LNG-N-296	Mugardos LNG Terminal: 2nd Jetty	reganosa	Advanced
LNG-N-297	Mugardos LNG Terminal: Storage Extension	reganosa	Advanced
LNG-N-962	Tallinn LNG	Vopak	Advanced
LNG-N-1146	Cyprus Gas2EU		Advanced
023	PRJ LNG Terminal Brunsbuettel		Less-Advanced
LNG-N-1198	LNG Terminal Brunsbuettel	gasunie	Non-FID
TRA-N-1199	LNG Terminal Brunsbuettel - Grid Integration	gasunie	Non-FID
049	Fos Cavaou LNG Terminal Expansion		Less-Advanced
LNG-N-227	Fos Cavaou LNG Terminal Expansion	FOSMAX LNG	Non-FID
TRA-N-269	Developments for Fosmax (Cavaou) LNG 8.25 bcm expansion	GRTgaz	Non-FID
050	Montoir LNG Terminal Expansion		Less-Advanced
LNG-N-225	Montoir LNG Terminal Expansion	elengy	Non-FID
TRA-N-258	Developments for Montoir LNG terminal 2.5 bcm expansion	GRTgaz	Non-FID
054	GATE terminal expansion		Less-Advanced
LNG-N-050	Gate terminal phase 3	Gate terminal	Non-FID
TRA-N-192	Entry capacity expansion GATE terminal	gasunie Transport Services	Non-FID
LNG-N-079	Paldiski LNG Terminal	Balti Gaas	Non-FID
LNG-N-295	Mugardos LNG Terminal: Send-out Increase	reganosa	Non-FID
LNG-N-376	Azerbaijan, Georgia, Romania Interconnector - AGRI	AGRI	Non-FID
LNG-N-742	Zeebrugge LNG Terminal - 3rd Jetty	FLUXYS | BE	Non-FID
LNG-N-824	LNG Terminal in Klaipeda	KN LNG TERMINAL	Non-FID
LNG-N-912	Skulte LNG		Non-FID
LNG-N-947	FSRU Polish Baltic Sea Coast	GAZ-SYSTEM	Non-FID
LNG-N-1231	Inisfree LNG	NEXTDECADE	Non-FID

Back to page 12:

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Project Data :

Project not (yet) marked on map

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TRA-F-918	Project name		FID

Project ENTSOG code | Project Promoter | Project status code

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North Sea
Irish Sea
English Channel
Bristol Channel
North Channel
Skagerrak
Kattegat
Baltic Sea
Gulf of Riga
Gulf of Finland
Bay of Biscay
Gulf of Lion
Ligurian Sea
Adriatic Sea
Tyrrhenian Sea
Ionian Sea
Aegean Sea
Mediterranean Sea
Strait of Gibraltar
Balearic Sea
Black Sea
Sea of Azov
Caspian Sea

IRELAND
UNITED KINGDOM
FRANCE
BELGIUM
THE NETHERLANDS
LUX.
GERMANY
DENMARK
NORWAY
SWEDEN
FINLAND
ESTONIA
LATVIA
LITHUANIA
RUSSIA
BELARUS
POLAND
UKRAINE
MOLDOVA
SLOVAKIA
CZECH REPUBLIC
AUSTRIA
SWITZERLAND
ITALY
HUNGARY
SLOVENIA
CROATIA
BOSNIA HERZEGOVINA
SERBIA
MONTENEGRO
UNMI KOSOVO
ROMANIA
BULGARIA
GREECE
ALBANIA
TURKEY
PORTUGAL
SPAIN
CORSICA
SARDINIA
MALTA
CYPRUS
CANARY ISLANDS

DUBLIN
LONDON
AMSTERDAM
BRUSSELS
PARIS
BERLIN
COPENHAGEN
OSLO
STOCKHOLM
HELSINKI
TALLINN
RIGA
VILNIUS
MINSK
WARSAW
PRAGUE
VIENNA
BRATISLAVA
BUDAPEST
ZAGREB
LJUBLJANA
BELGRADE
SARAJEVO
BUCHAREST
CHISINAU
SOFIA
SKOPJE
TIRANA
ATHENS
ANKARA
BAKU
TBILISI
YEREVAN
MADRID
LISBON
ROME
BERN
ALGIERS
TUNIS
LA VALETTA
NICOSIA

Shannon LNG
Dragon LNG
Milford Haven
Isle of Grain
Dunkerque LNG
Zeebrugge
Gate Terminal
Dornum
Emden
Wilhelmshaven (Rynasharnn)
Göteborg GOALNG
Klaipėda LNG (FSRU)
Świnoujście
FSRU Polish Baltic Sea Coast
Gdańsk
Montoir de Bretagne
Fos Tonkin
Fos Cavaou
Panigaglia
OLT Offshore LNG Toscana
Livorno
Porto Viro
Cavarzere Porto Levante
Krk LNG
Omišalj
Split
Ploče
Porto Empedocle LNG
Agrigento
Gela
Malta LNG (FSRU)
Arzew
Skikda
Annaba
Koudiet Eddraouch
Bejaia
El Hacouaria
Mazara del Vallo
Palermo
Messina
Gioia Tauro
Catanzaro
Cartagena
Sagunto
Barcelona
Huelva
Sines
Cádiz
Tarifa
Ceuta
Melilla
Beni Saf
Oran
Las Palmas
Santa Cruz de Tenerife
Arico-Granadilla LNG (Tenerife)
Arinaga LNG (Gran Canaria)
Paldiski
Inkoo
Hanko
Lohja
Espoo
Helsinki (Helsinki)
Porvoo
Hamnholmen
Lappeenranta
Imatra
Kouvola
Kotka
Hamina
Mäntsälä
Loviisa
Turku
Åland
Vyborg
Primorsk
Sosnovy Bor
St. Petersburg
Kolchino
Ust-Luga
Narva
Slantsy
Gulf of Finland
Baltic Connector
Nord Stream
Velikiye Novgorod
Pskov
Izborsk
Kunda
Sillamäe
Kohtla-Järve
Narva
Jõhvi
Tartu
Valga
Võru
Pärnu
Riga
Jelgava
Ogre
Jēkabpils
Daugavpils
Rēzekne
Ludza
Liepāja
Skulte
Ventspils
Šiauliai
Panevėžys
Klaipėda
Jurbarkas
Šilutė
Kaunas
Jonava
Kėdainiai
Visaginas
Ignalina
Utena
Molėtai
Švenčionys
Naftan
Polotsk
Vitebsk
Orsha
Mogilev
Gomel
Mozyr
Brest
Baranavichy
Lida
Grodno
Hrodna
Navapolatsk
Salihorsk
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Nyasvizh
Kletsk
Pinsk
Kobryn
Tsyelyekhany
Kamenets
Biaroza
Ivatsevichy
Luninyets
Stolin
Ivanava
Kamyanyets
Damaslawek
Eurohub
Włocławek
Rembelszczyzna
Wysokie
Tietierowka
Konotopy
Sienkiewicze
Nowosiolki
Kalinkowicze
Mikashevichy
Rechytsa
Dobrush
Zhlobin
Kalinkavichy
Svetlahorsk
Rahachow
Chavusy
Mstsislaw
Krasnapolle
Klimavichy
Slawharad
Cherykaw
Krychaw
Bykhaw
Asipovichy
Babruysk
Mahilyow
Shklow
Dubrowna
Orsha
Talachyn
Lepel
Vitebsk
Polotsk
Haradok
Miory
Braslaw
Dzyarzhynsk
Navahrudak
Lida

MAPS

MAP FOR UGS FACILITIES PROJECTS IN TYNDP 2018

UNDERGROUND GAS STORAGE FACILITIES			
UGS-F-260	System Enhancements - Stogit - on-shore gas fields		FID
UGS-F-1045	Bordolano Second Phase		FID
UGS-N-138	UGS Chiren Expansion	BULGARTRANSGAZ	Advanced
UGS-N-233	Depomures	ENGIE	Advanced
UGS-N-294	Islandmagee Gas Storage Facility	InfraStrata	Advanced
UGS-N-356	Underground Gas Storage Velke Kapusany	nafta	Advanced
UGS-N-374	Enhancement of Incukalns UGS	conexus BALTIC GRID	Advanced
UGS-N-1229	Underground Gas Storage Dumrea		Advanced
UGS-N-371	Sarmasel underground gas storage in Romania		Non-FID
UGS-N-385	South Kavala Underground Gas Storage facility		Non-FID
UGS-N-914	UGS Damasławek	GAZ-SYSTEM	Non-FID

Back to page 13:

Just click on the icon to get there.

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Just click on the icon.

KEYS

Cross-border points / intra-country or intra balancing zone points

- Cross-border interconnection point within Europe or export point to non-EU country
- Cross-border interconnection point within Europe or export point to non-EU country Under construction or Planned
- Third country cross-border interconnection point
- Cross-border third country (import) Under construction or Planned
- Intra-country or intra balancing zone points

Project status

- FID projects
- Non-FID, advanced projects
- Non-FID, non-advanced projects

Transport by pipeline

- Diameter < 600 mm
- Diameter 600 - 900 mm
- Diameter > 900mm
- Pipeline project
- Compressor station

Storage facilities

- Acquifer
- Salt cavity - cavern
- Depleted (Gas) field on shore / offshore
- Other type

LNG Terminals and Plants

- LNG Terminals' entry point intro transmission system *Operational*
- LNG Plants' export point

Project Data :

- Project not (yet) marked on map

000	Project Group name		FID
TRA-F-902	Project name	eustream	FID
TRA-F-918	Project name		FID

Project ENTSOG code · Project Promoter · Project status code

Project groups :

Aggregation: when two investments submitted by different promoters are part of the same projects, ENTSOG has modelled them taking into account the maturity status of the project having the least mature status (For example: project 034 is non-FID since among the projects composing it there is at least one having non-FID status.
The following rule is applied: non-FID<Advanced<FID)

Project status codes :

FID | Advanced | Non-FID – Final Investment Decision status

Advanced status is applied to all projects that, based on the information submitted, have:
- commissioning year expected at the latest by 31st December of the year of the TYNDP project data collection + 6
(e.g. 2024 in case of TYNDP 2018, for which projects are collected in 2018)
- and whose permitting phase has started ahead of the TYNDP project data collection - OR - FEED has started
(or the project has been selected for receiving CEF grants for FEED ahead of the TYNDP project data collection)

North Sea
Irish Sea
English Channel
Bristol Channel
North Channel
Bay of Biscay
Mediterranean Sea
Strait of Gibraltar
Baltic Sea
Skagerrak
Kattegat
Gulf of Riga
Gulf of Finland
Gulf of Lion
Ligurian Sea
Adriatic Sea
Tyrrhenian Sea
Ionian Sea
Aegean Sea
Black Sea
Sea of Azov
Caspian Sea
IRELAND
DUBLIN
UNITED KINGDOM
LONDON
FRANCE
PARIS
BELGIUM
THE NETHERLANDS
AMSTERDAM
LUX.
GERMANY
DENMARK
COPENHAGEN
POLAND
WARSAW
BERLIN
CZECH REPUBLIC
PRAGUE
SLOVAKIA
BRATISLAVA
AUSTRIA
VIENNA
SWITZERLAND
BERN
HUNGARY
BUDAPEST
SLOVENIA
LJUBLJANA
ZAGREB
CROATIA
BOSNIA HERZEGOVINA
SARAJEVO
ITALY
ROME
CORSICA
SARDINIA
SERBIA
BELGRADE
MONTENEGRO
PODGORICA
UNMI KOSOVO
ALBANIA
TIRANA
SKOPJE FYROM
GREECE
ATHENS
BULGARIA
SOFIA
ROMANIA
BUCHAREST
MOLDOVA
CHISINAU
UKRAINE
ESTONIA
LATVIA
RIGA
LITHUANIA
VILNIUS
RUSSIA
BELARUS
MINSK
FINLAND
HELSINKI
TALLINN
STOCKHOLM
TURKEY
ANKARA
AZERBAIJAN
BAKU
ARMENIA
YEREVAN
AZ.
SPAIN
PORTUGAL
LISBON
MADRID
MALTA
LA VALETTA
CYPRUS
NICOSIA
CANARY ISLANDS
Santa Cruz de Tenerife
Las Palmas
ALGIERS
TUNIS
MALLORCA
MENORCA
IBIZA
EUROPIPE II
NORPIPE
NORD STREAM
BBL
INTERCONNECTOR
LANGELED SOUTH
CATS
SEAL
ZEEPIPE
FRANPIPE
MEGAL
TENP
TIGF
GRTG
STEGAL
OPAL
NEL
GASCADE
GUD
TAG
TRANSMED
MEDGAZ
GALSI
ELGIN FRANKLIN
GLYDA
EKOFISK
VALHALL
HOD
ULA
LUFITA HARALD
SYD ARNE
TYRA
B/13
EVEREST
BREAGH
MURDOCH
W.SOLE
AUDREY
GALLEOT
MARKHAM
LANCELOT
HEWETT
LEMAN
DEUDAN
NGT
NOGAT
WGT
Dunkerque
Zeebrugge
Gate Terminal
Rotterdam
Eemshaven
Dornum
Emden
Oude Statenzijl
Dragon LNG
South Hook LNG
Isle of Grain
Dublin
Belfast
Cork
Waterford
Limerick
Galway
Milford Haven
Kinsale Head
Seven Heads
Moffat
Glasgow
Edinburgh
Londonderry / Derry
Twynholm
Barrow
Point of Ayr
Leeds
Manchester
Warrington
Birmingham
Cardiff
Bacton
Easington
Theddlethorpe
Barrow
Corrib
Bellanaboy
Shannon LNG
Inishtrahull
Moneypoint
Kilroot
Ballylumford
Coolkeeragh
Castledargan
Lough Ree
Tynagh
Aghada
Whitegate
Ballycotton
Kinsale
Gormanston
Brunsbüttel LNG
Wilhelmshaven
Etzel
Jemgum
Rysum
Emsbüren
Drohne
Ahlten
Steinbrink
Steinitz
Quarmbeck
Westerstede
Hamburg
Stolzenau
Kraak
Lubmin
Greifswald
Nybro
Egtved
Ellund
Aalborg
Aabenraa
Fredericia
Nybro
Varberg
Halmstad
Gnosjö
Jönköping
Göteborg
Lysekil
Stenungsund
Skoghall
Karlskoga
Hallsberg
Örebro
Kumla
Ludvika
Gävle
Sundsvall
Hudiksvall
Bollnäs
Ljusdal
Brunsvikholmen (Nynäshamn)
Nynäshamn
Skulte
Ventspils
Liepaja
Klaipeda LNG (FSRU)
Klaipeda
Kuršėnai
Šiauliai
Panevėžys
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Ventspils
Skulte
Iecava
Valka
Valga
Võru
Tartu
Pärnu
Viljandi
Rakvere
Narva
Kohtla-Järve
Sillamäe
Paldiski
Haapsalu
Kuressaare
Kingisepp
Velikiy Novgorod
Pskov
Luga
Gdańsk
Świnoujście
FSRU Polish Baltic Sea Coast
Kaliningrad
Kamminke
Police
Szczecin
Gryfino
Lwówek
Pogan
Włocławek
Rembelszczyzna
Wysokie
Konotopy
Kobryn
Nizvitskaya
Ostrovets
Sianów
Kozienice
Tietierowka
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Jyväskylä
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Iisalmi
Kajaani
Oulu
Raahe
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Pietarsaari
Vaasa
Seinäjoki
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Imatra
Savonlinna
Joensuu
Kuopio
Varkaus
Mikkeli
Lahti
Hyvinkää
Tampere
Nokia
Pori
Rauma
Uusikaupunki
Turku

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BY	Belarus
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DK	Denmark
DZ	Algeria
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ES	Spain
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GR	Greece
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PL	Poland
PT	Portugal
RO	Romania
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RU	Russia
SE	Sweden
SI	Slovenia
SK	Slovakia
TM	Turkmenistan
TN	Tunisia
TR	Turkey
UA	Ukraine
UK	United Kingdom

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