entsog

european network
of transmission system operators
for gas

TEN-YEAR NETWORK DEVELOPMENT PLAN

2020

INFRASTRUCTURE REPORT

TABLE OF **CONTENTS**

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.

To facilitate and further support EU decarbonization targets, with the TYNDP 2020 ENTSOG has taken a step forward and has opened its TYNDP 2020 project data collection also to Energy Transition projects (ETR).

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 has been used by ENTSOG to improve the TYNDP 2020 Practical Implementation Document and the TYNDP 2020 project data collection process.

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 2020 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 2020"[1]. 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[2]. In line with ENTSOG Practical implementation document, 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 Practical implementation document was consulted in a dedicated workshop held on 24 November 2017.

Compared to the first version published for TYNDP 2018, the ENTSOG Practical implementation document for developing the TYNDP 2020 takes on board feedback received from relevant stakeholder and includes criteria for the new project category of Energy Transition (ETR) projects (**described in → section 5.3.4**). A webinar on the TYNDP 2020 ENTSOG Practical implementation document was held on 13 February 2019[3].

1 https://www.entsog.eu/sites/default/files/2019-05/TYNDP%202020_Practical_Implementation_Document_20190502_0.pdf

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

3 https://vimeo.com/318395705

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 in some specific areas 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. In this 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. It is therefore important that the European regulatory framework continue ensuring adequate support to infrastructure developments that will allow to meet current and future needs.

With regards to sustainability and renewable projects, nowadays there are supports and an adequate regulatory framework in place to promote renewable electricity projects. On the other hand, when referring to the TEN-E framework and the PCI process, there is a very limited room for projects and technologies enabling renewable and decarbonised gases. With regards to the gas PCI process there are no clear indications whether those projects could be eligible for the PCI label (Annex II). All technologies that contribute to the decarbonisation of the energy system, including those which enable renewable and decarbonised gases, should benefit from the same kind of treatment, assuring a level playing field between energy carriers (technology neutrality).

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.

To achieve climate goals under the European Green Deal in a cost-efficient way, a coordinated and coherent interaction between electricity and gases (including natural gas, biomethane, synthetic methane and hydrogen) is essential. Such an integrated approach should address how to develop the infrastructure necessary for the future in an efficient and technology neutral manner, which also reflects the increasing demand for hydrogen and the essential role of power-to-gas technologies.

3 EXISTING CAPACITIES AND 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[4] (for LNG regasification terminals and storage facilities). For TYNDP 2020 the existing capacity was collected as of 1 January 2019.

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.

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[5] with a handbook 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"[6]. Additionally, in order to ensure a more careful consistency check on submitted projects data, during the TYNDP 2020 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. The same information was also shared with the European Commission.

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.

To ensure as much consistency as possible, ENTSOG encouraged promoters intending to resubmit projects already part of the TYNDP 2018 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.

Promoters were also requested to provide comprehensive information including detailed project implementation scheduling (→ **section 5.5**) and estimated costs (→ **section 5.6**).

4 Gas Infrastructure Europe.

5 https://www.entsog.eu/sites/default/files/2019-05/Project Submission Handbook %286%29.zip

6 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.

The project submission phase took place from 30 May 2019 to 28 June 2019. The submission phase was followed by a check and validation phase (from 1 July 2019 to 26 July 2019) where both ENTSOG and promoters could verify and amend the submitted information. This TYNDP reflects therefore the project status as of July 2019. 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.

In addition to the regular submission phase, ENTSOG organized two dedicated project collection windows for Energy Transition projects (26–29 August, 2019 and 15 May–15 June, 2020) so as to facilitate the relevant promoters the necessary opportunities to submit their ETR projects for TYNDP 2020.

3.1 DIFFERENCE WITH ENTSOG TRANSPARENCY PLATFORM

Regulation (EC) No. 715/2009 and its amendments require ENTSOG to provide a Union-wide platform where all Transmission System Operators for gas shall make their relevant data publicly available.

The Transparency Platform provides technical and commercial data on gas transmission systems, which include interconnection points and connections with storages, LNG facilities, distribution networks, final consumers and production facilities.

The platform is available on web address: **https://transparency.entsog.eu** where the interested parties are able to access valuable information uploaded by all TSOs.

Capacities data collected and used for TYNDP might differ from the capacity data published on the ENTSOG Transparency Platform for the three main following reasons:

- though the modelling mostly uses the ENTSOG Transparency Platform topology, in some cases the topology used in the TYNDP differs from the latter. This is to better serve simulations purposes;
- both existing capacity and project capacities are not constantly updated during the TYNDP process but have a specific time stamp (1 January 2019 for existing infrastructure while for projects the closure day of the data collection);
- capacities are modelled in the TYNDP after the application of the Lesser-of-Rule.

4 PROJECT STATUS AND INFRASTRUCTURE LEVELS

4.1 PROJECT STATUS

Projects are categorised along two different project status: FID and non-FID. As for TYNDP 2018 the non-FID status has been sub-categorised into non-FID Advanced (hereafter Advanced) and non-FID Less-Advanced (hereafter Less Advanced).

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. Projects with FID status are identified in TYNDP project code with an F (e. g. TRA-F-000);
- 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. 2025 in case of TYNDP 2020, for which projects have been collected in 2019)
  - and
    - whose permitting phase has started ahead of the TYNDP project data collection

    OR
  - FEED[7] has started (or the project has been selected for receiving CEF[8] grants for FEED) ahead of the TYNDP project data collection.
- Projects with Advanced status are identified in TYNDP project code with an A (e. g. TRA-A-000)
- All projects which do not meet the FID or Advanced criteria are considered as having the Non-Advanced status. Projects with Non-Advanced status are identified in TYNDP project code with an N (e. g. TRA-N-000).

Based on the past TYNDP experience and the recommendations expressed by ACER in their Opinions, the Advanced status was already introduced in the 2017 edition[9] 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 4th 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.

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

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

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

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.

- **Existing infrastructure level:** existing infrastructures + infrastructure projects having their commissioning date not later than 31 December 2019[10]
- **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;

For the first time, in TYNDP 2020, ENTSOG has introduced the Existing infrastructure level. Its inclusion allows for a better identification of the infrastructure gaps and, together with the Low and Advanced infrastructure levels represents a basis for project-specific assessment.

As recommended in the ENSTOG 2nd CBA Methodology, another infrastructure level is considered in relation to the most recent PCI list i. e. the 4th Project of Common Interest List[11] in case of TYNDP 2020 which was adopted by the European Commission on 31 October 2019.

The **PCI infrastructure level** is composed by existing infrastructures, infrastructure projects having FID status (whatever their PCI status is) and infrastructure projects labelled PCIs according to the previous selection (not having their FID taken yet). Although it includes projects of very different maturity, 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 4th list of PCI projects.

For the first time, the Existing infrastructure level was also included, representing the minimum level of infrastructure development considered in the TYNDP infrastructure gaps identification.

Once the infrastructure gaps are identified, the assessment of the European gas system is complemented by assessing the overall further impact of the Low, Advanced and PCI infrastructure levels.

The Existing, Low and Advanced infrastructure levels are also used as basis for the PS-CBA assessment.

Figure 1 illustrates the different infrastructure levels and their role in the TYNDP 2020 assessment.

10 In case the projects create capacities in different year, the Existing infrastructure level includes only those capacities expected to be commissioned not later than 31 December 2019

11 https://ec.europa.eu/energy/sites/ener/files/c_2019_7772_1_annex.pdf

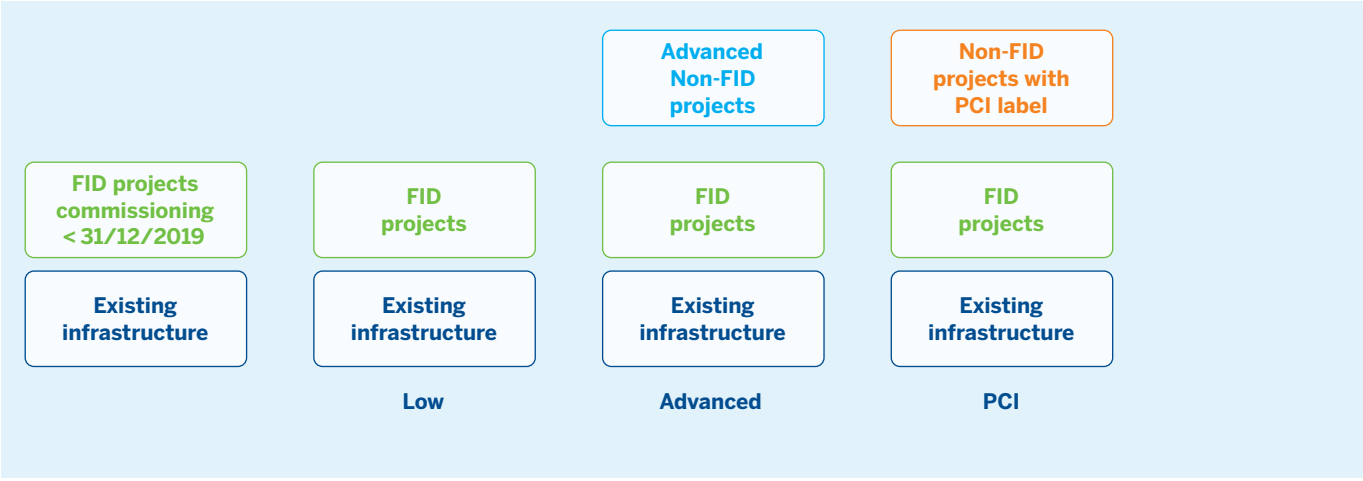

Figure 1: Infrastructure levels

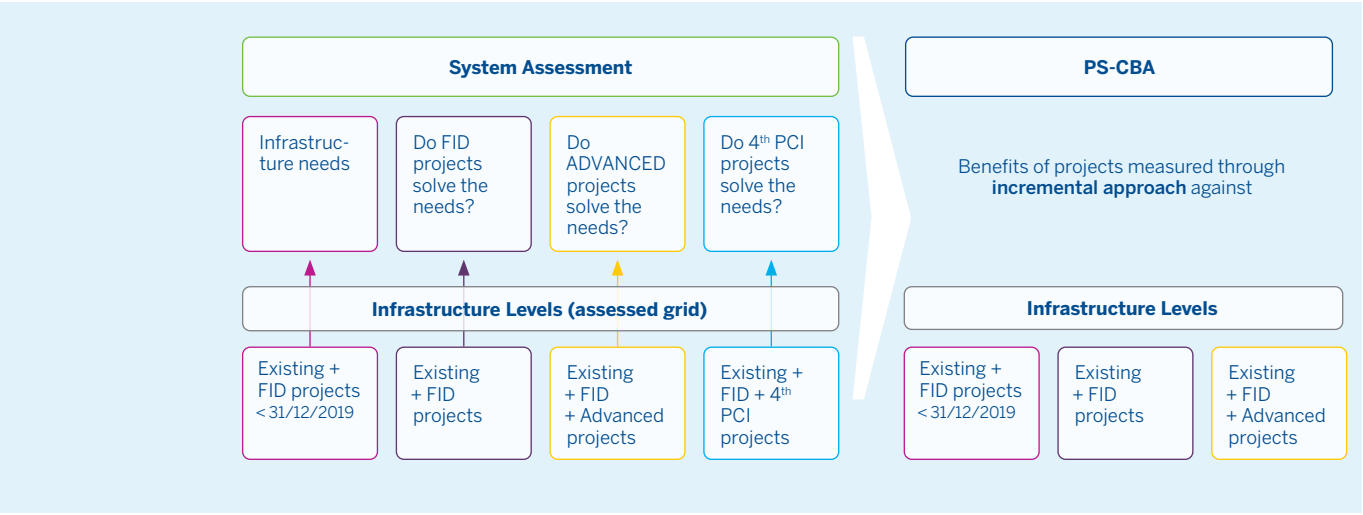

Figure 2: System Assessment and Project-Specific CBA in TYNDP 2020 process

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 non-Advanced projects from any infrastructure level does not prevent projects with a non-Advanced status to be assessed with a project-specific assessment against the Existing, 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 non-Advanced project.

Figure 2 shows the overall process of TYNDP 2020 system and project-specific assessment.


Picture courtesy of Teréga

5 ANALYSIS OF PROMOTERS' SUBMISSIONS

The full details of the project information included in the TYNDP 2020 can be found in Annex A of this Report. This section of the report provides a general overview of the received submissions.

5.1 TYPE OF INFRASTRUCTURES

Projects are classified in TYNDP 2020 according to the following infrastructure categories:

- TRA, Transmission (including Compressor Stations)
- LNG, LNG Terminal
- UGS, Underground Storage Facility
- ETR, Energy Transition projects

5.2 PROJECTS COMMISSIONED SINCE TYNDP 2018

The following map shows all projects that, from the last TYNDP edition, have been completed.

10 investments already part of TYNDP 2018 were completed and have no longer been submitted to TYNDP 2020. The commissioning of all these investments 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.

In addition to the 10 commissioned projects, 9 investments with commissioning year 2019 and 19 investments with commissioning year 2020 have been submitted to TYNDP 2020 (project collection took place between 30 May–26 July, 2019) with the former being part of the TYNDP 2020 Existing infrastructure level. A list of these projects is presented on the next page.

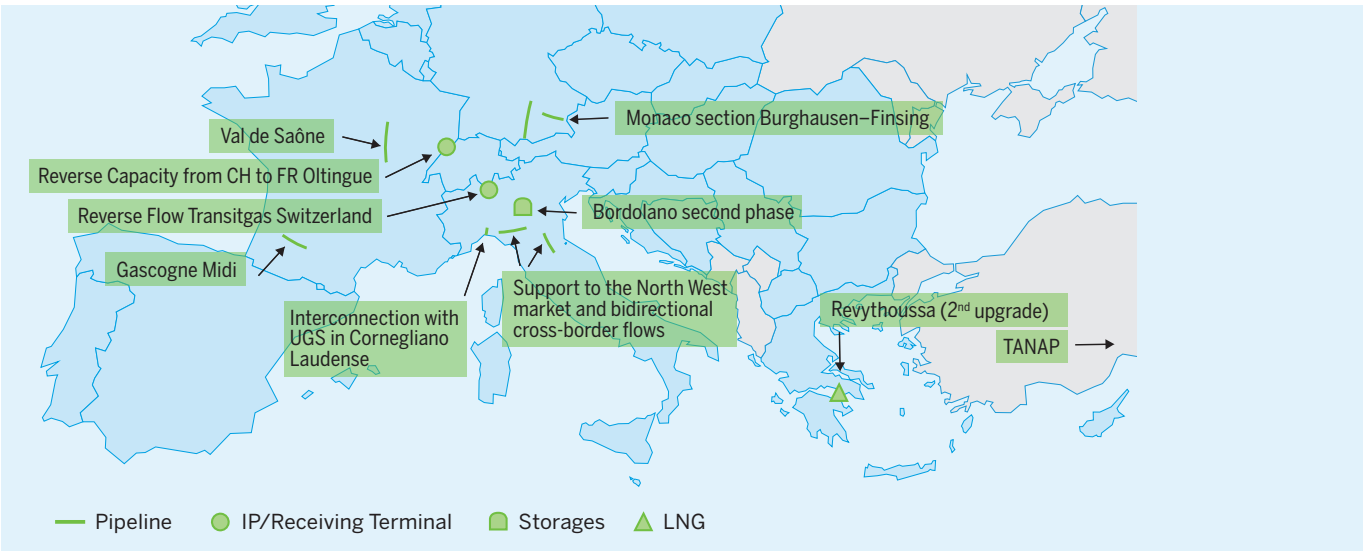

Figure 3: Map of projects commissioned since 2018

Project code	Project name	Promoter	Country	Commssioning year
TRA-F-918	Capacity4Gas – CZ/SK	NET4GAS, s.r.o.	CZ	2019
TRA-F-340	CS Wertingen	bayernets GmbH	DE	2019
TRA-F-1267	Upgrade Sülstorf station	NGT GmbH/GUD GmbH & Co. KG/Fluxys D GmbH	DE	2019
TRA-F-937	Nord Stream 2	Nord Stream 2 AG	DE	2019
TRA-F-915	Enhancement of Estonia-Latvia interconnection	Elering AS	EE	2019
ETR-F-587	West Grid Synergy	GRTgaz	FR	2019
TRA-F-334	Compressor station 1 at the Croatian gas transmission system	Plinacro Ltd	HR	2019
TRA-F-286	Romanian-Hungarian reverse flow Hungarian section 1st stage	FGSZ Ltd.	HU	2019
TRA-F-902	Capacity increase at IP Lanžhot entry	eustream,a.s.	SK	2019
TRA-A-1303	IAEF – Vlora ccgt	Albgaz Sha	AL	2020
TRA-F-954	TAG Reverse Flow	Trans Austria Gasleitung GmbH	AT	2020
TRA-F-291	NOWAL – Nord West Anbindungsleitung	GASCADE Gastransport GmbH	DE	2020
TRA-A-951	Embedding CS Folmhusen in H-Gas	Gasunie Deutschland Transport Services GmbH	DE	2020
TRA-F-208	Reverse Flow TENP Germany	Fluxys TENP GmbH & Open Grid Europe GmbH	DE	2020
TRA-F-895	Balticconnector	Elering AS	EE	2020
ETR-F-541	CORE LNGas hive and LNGHIVE2 Infrastructure and logistic solutions	Enagas Transporte S.A.U.	ES	2020
TRA-F-928	Balticconnector Finnish part	Baltic Connector Oy	FI	2020
ETR-F-546	Jupiter 1000: first industrial demonstrator of Power to Gas in France	GRTgaz, Teréga	FR	2020
TRA-F-941	Metering and Regulating station at Nea Messimvria	DESFA S.A.	GR	2020
TRA-F-51	Trans Adriatic Pipeline	Trans Adriatic Pipeline AG	GR	2020
TRA-F-90	LNG evacuation pipeline Omišalj – Zlobin (Croatia)	Plinacro Ltd	HR	2020
TRA-F-1193	TAP interconnection	Snam Rete Gas S.p.A.	IT	2020
TRA-F-1241	Interconnection with production in Gela	Snam Rete Gas S.p.A.	IT	2020
TRA-F-358	Development on the Romanian territory of the NTS (BG-RO-HU-AT)-Phase I	SNTGN Transgaz S.A.	RO	2020
TRA-A-1268	Romania-Serbia Interconnection	SNTGN Tranzgaz SA	RO	2020
TRA-F-139	Interconnection of the NTS with the DTS and reverse flow at Isaccea	SNTGN Transgaz SA	RO	2020
TRA-N-1064	Moffat Physical Reverse Flow	National Grid Gas plc	UK	2020

Table 1: Investments included in TYNDP 2020 whose commissioning year is 2019 or 2020

5.3 OVERVIEW OF THE PROMOTERS' SUBMISSIONS TO TYNDP 2020

Project code 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 entities;
- 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 for the overall project to materialise. It makes therefore sense to consider them as a single **"aggregated"** 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 2020 promoters submitted **142 gas infrastructure projects (excluding ETRs) i. e. transmission, UGS and LNG projects.** In TYNDP 2018 promoters submitted 155 gas infrastructure projects. In addition, a number of 68 Energy Transition projects have been included in TYNDP thus reaching a total number of 210 projects included in TYNDP 2020.

5.3.1 Transmission projects (including compressor stations)

Today in EU and UK there exist around 198,500 km of transmission pipelines and 9,500 MW of compressor stations.

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

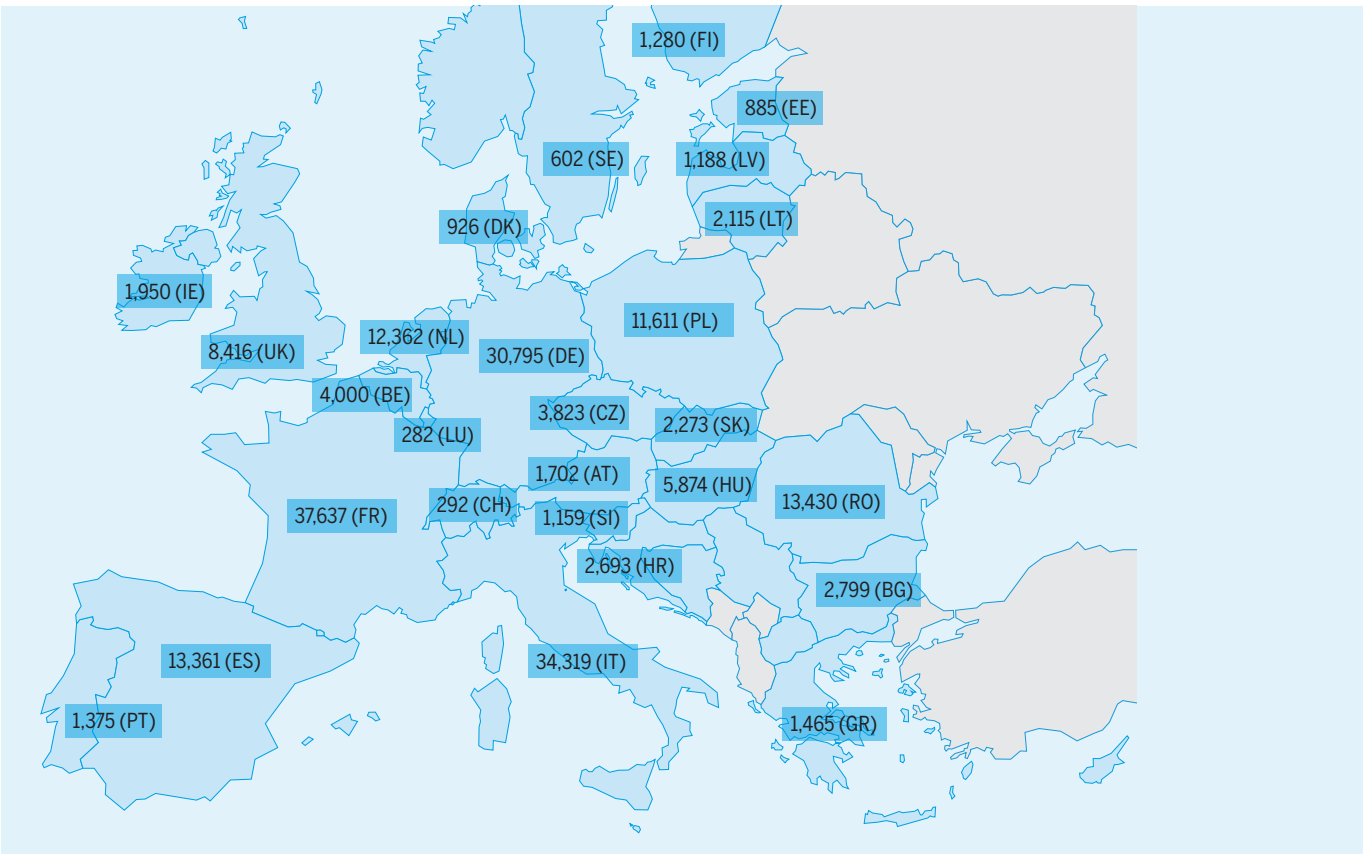

Figure 4: Transmission length in EU and UK in km (year 2020)

107 transmission and compressor stations projects have been submitted to TYNDP 2020. 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 or the project consist in the creation of additional capacity at the same IP where an interconnection already exists;
- 21 projects related to the constructions of compressor or metering stations;
- 22 projects related to new import or production development;
- 5 projects concerning upgrade, modernisation or enhancement of the system;
- 7 reverse flow projects;
- 5 infrastructure projects supporting the switch from low-calorific gas to high-calorific gas in Germany, France, Netherlands and Belgium;
- 1 project 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 5.3.2 or 5.3.3.**

MAP FOR TRANSMISSION AND COMPRESSOR STATION PROJECTS IN TYNDP 2020

TRANSPORT BY PIPELINES (INCL. COMPRESSOR STATIONS)

TRA-F-51	Trans Adriatic Pipeline		FID	PCI
TRA-F-90	LNG evacuation pipeline Omišalj – Zlobin (Croatia)	plinacro	FID	PCI
TRA-F-190	Poland – Slovakia interconnection	eustream	FID	PCI
TRA-F-212	Gas Interconnection Poland-Lithuania (GIPL) – PL section	GAZ-SYSTEM	FID	PCI
TRA-F-275	Poland – Slovakia Gas Interconnection (PL section)	GAZ-SYSTEM	FID	PCI
TRA-F-298	Modernization and rehabilitation of the Bulgarian GTS	BULGARTRANSGAZ	FID	PCI
TRA-F-334	Compressor station 1 at the Croatian gas transmission system	plinacro	FID	PCI
TRA-F-341	Gas Interconnection Poland-Lithuania (GIPL) (Lithuania's section)	Amber Grid	FID	PCI
TRA-F-358	Development on the Romanian territory of the NTS (BG–RO–HU–AT)–Phase I	TRANSGAZ	FID	PCI
TRA-F-378	Interconnector Greece-Bulgaria (IGB Project)	IGB	FID	PCI
TRA-F-500	L/H Conversion Belgium	fluxys	FID	PCI
TRA-F-941	Metering and Regulating station at Nea Messimvria	DESFA	FID	PCI
TRA-F-1193	TAP interconnection		FID	PCI
TRA-F-139	Interconnection of the NTS with the DTS and reverse flow at Isaccea	TRANSGAZ	FID	Non-PCI
TRA-F-208	Reverse Flow TENP Germany	fluxys OGE	FID	Non-PCI
TRA-F-247	North – South Gas Corridor in Western Poland	GAZ-SYSTEM	FID	Non-PCI
TRA-F-286	Romanian-Hungarian reverse flow Hungarian section 1st stage		FID	Non-PCI
TRA-F-291	NOWAL – Nord West Anbindungsleitung		FID	Non-PCI
TRA-F-307	H-gas exit OSZ GTG Nord	gasunie	FID	Non-PCI
TRA-F-329	ZEELINK	OGE Thyssengas	FID	Non-PCI
TRA-F-340	CS Wertingen	bayernets	FID	Non-PCI
TRA-F-357	NTS developments in North-East Romania	TRANSGAZ	FID	Non-PCI
TRA-F-409	Larino – Chieti	SGI	FID	Non-PCI
TRA-F-424	San Marco - Recanati	SGI	FID	Non-PCI
TRA-F-592	Necessary expansion of the Bulgarian gas transmission system	BULGARTRANSGAZ	FID	Non-PCI
TRA-F-752	Capacity4Gas – DE/CZ		FID	Non-PCI
TRA-F-755	CS Rimpar	bayernets	FID	Non-PCI
TRA-F-763	EUGAL Europäische Gasanbindungsleitung/European Gasline	fluxys gasunie ontras	FID	Non-PCI
TRA-F-814	Upgrade for IP Deutschneudorf et al. for More Capacity	ontras	FID	Non-PCI
TRA-F-895	Balticconnector	elering	FID	Non-PCI
TRA-F-902	Capacity increase at IP Lanžhot entry	eustream	FID	Non-PCI
TRA-F-915	Enhancement of Estonia–Latvia interconnection	elering	FID	Non-PCI
TRA-F-918	Capacity4Gas – CZ/SK		FID	Non-PCI
TRA-F-928	Balticconnector Finnish part	Gasgrid Finland	FID	Non-PCI
TRA-F-937	Nord Stream 2	Nord Stream 2	FID	Non-PCI
TRA-F-969	Oude(NL)–Bunde(DE) GTG H-Gas		FID	Non-PCI
TRA-F-954	TAG Reverse Flow	TAG	FID	Non-PCI
TRA-F-964	New NTS developments for taking over gas from the Black Sea shore	TRANSGAZ	FID	Non-PCI
TRA-F-1169	Trans-Balkan Bi-directional Flow		FID	Non-PCI
TRA-F-1241	Interconnection with production in Gela		FID	Non-PCI
TRA-F-1254	CS Etten	OGE Thyssengas	FID	Non-PCI
TRA-F-1267	Upgrade Sülstorf station	gasunie fluxys	FID	Non-PCI
TRA-F-1271	Compressor Station Krummhoern	OGE	FID	Non-PCI
TRA-F-1276	Compressor station at Nea Messimvria (3rd unit)	DESFA	FID	Non-PCI
TRA-F-1277	Upgrading GMS Isaccea 1 and GMS Negru Voda 1	TRANSGAZ	FID	Non-PCI

TRA-A-10	Poseidon Pipeline	IGI Poseidon	Advanced	PCI
TRA-A-31	Melita TransGas Pipeline		Advanced	PCI
TRA-A-123	Városföld CS		Advanced	PCI
TRA-A-271	Poland – Denmark interconnection (Baltic Pipe) – offshore section	GAZ-SYSTEM	Advanced	PCI
TRA-A-330	EastMed Pipeline	IGI Poseidon	Advanced	PCI
TRA-A-339	Trans-Caspian		Advanced	PCI
TRA-A-342	Enhancement of Latvia-Lithuania interconnection (Lithuania's part)	Amber Grid	Advanced	PCI
TRA-A-362	Development on the Romanian territory of the Southern Transmission Corridor	TRANSGAZ	Advanced	PCI
TRA-A-377	Romanian-Hungarian reverse flow Hungarian section 2nd stage		Advanced	PCI
TRA-A-382	Enhancement of Latvia-Lithuania interconnection (Latvian part)	conexus	Advanced	PCI
TRA-A-429	Adaptation L-gas – H-gas	Eurogaz storengy	Advanced	PCI
TRA-A-780	Baltic Pipe project – onshore section in Denmark	ENERGINET	Advanced	PCI
TRA-A-782	TANAP X – Expansion of Trans Anatolian Natural Gas Pipeline Project	SOCAR	Advanced	PCI
TRA-A-1173	Poland – Denmark interconnection (Baltic Pipe) – onshore section in Poland	GAZ-SYSTEM	Advanced	PCI
TRA-A-1322	Development on the Romanian territory of the NTS (BG–RO–HU–AT)–Phase II	TRANSGAZ	Advanced	PCI
TRA-A-12	GALSI Pipeline Project	Galsi	Advanced	Non-PCI
TRA-A-21	Bidirectional Austrian-Czech Interconnector (BACI) – AT section	GAS CONNECT AUSTRIA	Advanced	Non-PCI
TRA-A-68	Ionian Adriatic Pipeline	plinacro	Advanced	Non-PCI
TRA-A-70	Interconnection Croatia/Serbia (Slobodnica-Sotin–Bačko Novo Selo)	plinacro	Advanced	Non-PCI
TRA-A-133	Bidirectional Austrian Czech Interconnection (BACI) – CZ section		Advanced	Non-PCI
TRA-A-136	Czech-Polish Gas Interconnector (CPI)		Advanced	Non-PCI
TRA-A-273	Poland – Czech Republic Gas Interconnection (PL section)	GAZ-SYSTEM	Advanced	Non-PCI
TRA-A-283	3rd IP between Portugal and Spain (pipeline Celorico-Spanish border)	REN Gasodutos	Advanced	Non-PCI
TRA-A-302	Interconnection Croatia-Bosnia and Herzegovina (South)	plinacro	Advanced	Non-PCI
TRA-A-320	Carregado Compressor Station	REN Gasodutos	Advanced	Non-PCI
TRA-A-394	Norwegian tie-in to Danish upstream system	ENERGINET	Advanced	Non-PCI
TRA-A-408	Wilhelmshaven LNG-Terminal Anbindungsleitung	OGE	Advanced	Non-PCI
TRA-A-496	Increase of Gas Transport to the Netherlands	gasunie	Advanced	Non-PCI
TRA-A-561	Poland-Ukraine Interconnector (Ukrainian section)	GAZ-SYSTEM	Advanced	Non-PCI
TRA-A-621	Poland – Ukraine Gas Interconnection (PL section)	GAZ-SYSTEM	Advanced	Non-PCI
TRA-A-628	Eastring – Slovakia	eustream	Advanced	Non-PCI
TRA-A-654	Eastring – Bulgaria	BULGARTRANSGAZ	Advanced	Non-PCI
TRA-A-655	Eastring – Romania	TRANSGAZ	Advanced	Non-PCI
TRA-A-656	Eastring – Hungary		Advanced	Non-PCI
TRA-A-808	Additional transport of gas volumes to the Netherlands	gasunie	Advanced	Non-PCI
TRA-A-829	Physical Reverse Flow at Moffat interconnection point (IE/UK)	GNI	Advanced	Non-PCI
TRA-A-950	Guitiriz – Lugo – Zamora pipeline	reganosa	Advanced	Non-PCI
TRA-A-951	Embedding CS Folmhusen in H-Gas	gasunie	Advanced	Non-PCI
TRA-A-967	Nea-Messimvria to Evzoni/Gevgelija pipeline (IGNM)	DESFA	Advanced	Non-PCI
TRA-A-980	Interconnection North Macedonia-Greece (North Macedonian part)	NER JSC SKOPJE	Advanced	Non-PCI
TRA-A-1199	LNG Terminal Brunsbuettel – Grid Integration	gasunie	Advanced	Non-PCI
TRA-A-1268	Romania-Serbia Interconnection	TRANSGAZ	Advanced	Non-PCI
TRA-A-1303	IAEF – Vlora ccgt	albgaz	Advanced	Non-PCI

TRANSPORT BY PIPELINES (INCL. COMPRESSOR STATIONS)

TRA-A-10	Poseidon Pipeline	IGI Poseidon	Advanced	PCI
TRA-A-31	Melita TransGas Pipeline		Advanced	PCI
TRA-A-123	Városföld CS		Advanced	PCI
TRA-A-271	Poland – Denmark interconnection (Baltic Pipe) – offshore section	GAZ-SYSTEM	Advanced	PCI
TRA-A-330	EastMed Pipeline	IGI Poseidon	Advanced	PCI
TRA-A-339	Trans-Caspian		Advanced	PCI
TRA-A-342	Enhancement of Latvia-Lithuania interconnection (Lithuania's part)	Amber Grid	Advanced	PCI
TRA-A-362	Development on the Romanian territory of the Southern Transmission Corridor	TRANSGAZ	Advanced	PCI
TRA-A-377	Romanian-Hungarian reverse flow Hungarian section 2nd stage		Advanced	PCI
TRA-A-382	Enhancement of Latvia-Lithuania interconnection (Latvian part)	conexus	Advanced	PCI
TRA-A-429	Adaptation L- gas – H-gas	Eurogaz storengy	Advanced	PCI
TRA-A-780	Baltic Pipe project – onshore section in Denmark	ENERGINET	Advanced	PCI
TRA-A-782	TANAP X – Expansion of Trans Anatolian Natural Gas Pipeline Project	SOCAR	Advanced	PCI
TRA-A-1173	Poland – Denmark interconnection (Baltic Pipe) – onshore section in Poland	GAZ-SYSTEM	Advanced	PCI
TRA-A-1322	Development on the Romanian territory of the NTS (BG–RO–HU–AT)–Phase II	TRANSGAZ	Advanced	PCI
TRA-A-12	GALSI Pipeline Project	Galsi	Advanced	Non-PCI
TRA-A-21	Bidirectional Austrian-Czech Interconnector (BACI) – AT section	GAS CONNECT AUSTRIA	Advanced	Non-PCI
TRA-A-68	Ionian Adriatic Pipeline	plinacro	Advanced	Non-PCI
TRA-A-70	Interconnection Croatia/Serbia (Slobodnica-Sotin–Bačko Novo Selo)	plinacro	Advanced	Non-PCI
TRA-A-133	Bidirectional Austrian Czech Interconnection (BACI) – CZ section		Advanced	Non-PCI
TRA-A-136	Czech-Polish Gas Interconnector (CPI)		Advanced	Non-PCI
TRA-A-273	Poland – Czech Republic Gas Interconnection (PL section)	GAZ-SYSTEM	Advanced	Non-PCI
TRA-A-283	3rd IP between Portugal and Spain (pipeline Celorico-Spanish border)	REN Gasodutos	Advanced	Non-PCI
TRA-A-302	Interconnection Croatia-Bosnia and Herzegovina (South)	plinacro	Advanced	Non-PCI
TRA-A-320	Carregado Compressor Station	REN Gasodutos	Advanced	Non-PCI
TRA-A-394	Norwegian tie-in to Danish upstream system	ENERGINET	Advanced	Non-PCI
TRA-A-408	Wilhelmshaven LNG-Terminal Anbindungsleitung	OGE	Advanced	Non-PCI
TRA-A-496	Increase of Gas Transport to the Netherlands	gasunie	Advanced	Non-PCI
TRA-A-561	Poland-Ukraine Interconnector (Ukrainian section)	GAZ-SYSTEM	Advanced	Non-PCI
TRA-A-621	Poland – Ukraine Gas Interconnection (PL section)	GAZ-SYSTEM	Advanced	Non-PCI
TRA-A-628	Eastring – Slovakia	eustream	Advanced	Non-PCI
TRA-A-654	Eastring – Bulgaria	BULGARTRANSGAZ	Advanced	Non-PCI
TRA-A-655	Eastring – Romania	TRANSGAZ	Advanced	Non-PCI
TRA-A-656	Eastring – Hungary		Advanced	Non-PCI
TRA-A-808	Additional transport of gas volumes to the Netherlands	gasunie	Advanced	Non-PCI
TRA-A-829	Physical Reverse Flow at Moffat interconnection point (IE/UK)	GNI	Advanced	Non-PCI
TRA-A-950	Guitiriz – Lugo – Zamora pipeline	reganosa	Advanced	Non-PCI
TRA-A-951	Embedding CS Folmhusen in H-Gas	gasunie	Advanced	Non-PCI
TRA-A-967	Nea-Messimvria to Evzoni/Gevgelija pipeline (IGNM)	DESFA	Advanced	Non-PCI
TRA-A-980	Interconnection North Macedonia-Greece (North Macedonian part)	NER JSC SKOPJE	Advanced	Non-PCI
TRA-A-1199	LNG Terminal Brunsbuettel – Grid Integration	gasunie	Advanced	Non-PCI
TRA-A-1268	Romania-Serbia Interconnection	TRANSGAZ	Advanced	Non-PCI
TRA-A-1303	IAEF – Vlora ccgt	albgaz	Advanced	Non-PCI

TRA-N-7	Development for new import from the South (Adriatica Line)		Less-Adv.	PCI
TRA-N-63	LNG terminal in northern Greece / Alexandroupolis – Pipeline Section	gastrade	Less-Adv.	PCI
TRA-N-86	Interconnection Croatia/Slovenia (Lučko – Zabok – Jezerišče – Sotla)	plinacro	Less-Adv.	PCI
TRA-N-92	CS Ajdovščina, 1st phase of upgrade	Plinovod	Less-Adv.	PCI
TRA-N-94	CS Kidričevo, 2nd phase of upgrade	Plinovod	Less-Adv.	PCI
TRA-N-108	M3 pipeline reconstruction from CS Ajdovščina to Šempeter/Gorizia	Plinovod	Less-Adv.	PCI
TRA-N-112	R15/1 Pince – Lendava – Kidričevo	Plinovod	Less-Adv.	PCI
TRA-N-128	Compressor Station Kipi	DESFA	Less-Adv.	PCI
TRA-N-137	Interconnection Bulgaria – Serbia	BULGARTRANSGAZ	Less-Adv.	PCI
TRA-N-245	North – South Gas Corridor in Eastern Poland	GAZ-SYSTEM	Less-Adv.	PCI
TRA-N-325	Slovenian-Hungarian interconnector		Less-Adv.	PCI
TRA-N-361	GCA 2015/08. Entry/Exit Murfeld	GAS CONNECT AUSTRIA	Less-Adv.	PCI
TRA-N-389	Upgrade of Murfeld/Cersak interconnection (MT/3 Interconnection Cersak)	Plinovod	Less-Adv.	PCI
TRA-N-390	Upgrade of Rogatec interconnection (MT/A/1 Interconnection Rogatec)	Plinovod	Less-Adv.	PCI
TRA-N-524	Enhancement of Transmission Capacity of SK-HUinterconnector		Less-Adv.	PCI
TRA-N-971	Compressor station at Nea Messimvria	DESFA	Less-Adv.	PCI
TRA-N-1057	Compressor stations 2 & 3 / Croatian gas transmission system	plinacro	Less-Adv.	PCI
TRA-N-1090	Metering and Regulating Station at Alexandroupoli	DESFA	Less-Adv.	PCI
TRA-N-1091	Metering and Regulating station at Megalopoli	DESFA	Less-Adv.	PCI
TRA-N-1092	Metering and Regulating Station at UGS South Kavala	DESFA	Less-Adv.	PCI
TRA-N-1138	South Caucasus Pipeline Future Expansion (SCPFX)	SOCAR	Less-Adv.	PCI
TRA-N-1195	Matagiola – Massafra pipeline		Less-Adv.	PCI
TRA-N-1227	Gorizia plant upgrade		Less-Adv.	PCI
TRA-N-8	Import developments from North-East		Less-Adv.	Non-PCI
TRA-N-9	Additional Southern developments		Less-Adv.	Non-PCI
TRA-N-14	Komotini-Thesprotia pipeline	DESFA	Less-Adv.	Non-PCI
TRA-N-27	Physical reverse flow from NI to GB and IE via SNIP pipeline	Premier	Less-Adv.	Non-PCI
TRA-N-53	White Stream		Less-Adv.	Non-PCI
TRA-N-66	Interconnection Croatia-Bosnia and Herzegovina (Bosnian- Bosanski Brod)	plinacro	Less-Adv.	Non-PCI
TRA-N-75	LNG evacuation pipeline Zlobin-Bosiljevo-Sisak-Kozarac	plinacro	Less-Adv.	Non-PCI
TRA-N-192	Entry capacity expansion GATE terminal	gasunie	Less-Adv.	Non-PCI
TRA-N-224	Gaspipeline Brod – Zenica	BH-GAS	Less-Adv.	Non-PCI
TRA-N-258	Developments for Montoir LNG terminal 2.5 bcm expansion	Elengy	Less-Adv.	Non-PCI
TRA-N-269	Developments for Fosmax (Cavaou) LNG 8.25 bcm expansion	Elengy	Less-Adv.	Non-PCI
TRA-N-299	M3/1 Šempeter – Vodice	Plinovod	Less-Adv.	Non-PCI
TRA-N-303	Interconnection Croatia-Bosnia and Herzegovina (west)	plinacro	Less-Adv.	Non-PCI
TRA-N-336	Interconnection Croatia/Slovenia (Umag-Koper)	plinacro	Less-Adv.	Non-PCI
TRA-N-354	Interconnection with Slovenia		Less-Adv.	Non-PCI
TRA-N-402	TENP Security of Supply	fluxys OGE	Less-Adv.	Non-PCI
TRA-N-423	GCA Mosonmagyaróvár	GAS CONNECT AUSTRIA	Less-Adv.	Non-PCI
TRA-N-439	Stazione di Spinta "San Marco"	SGI	Less-Adv.	Non-PCI
TRA-N-502	Interconnector Romania – Ukraine	GAZ-SYSTEM TRANSGAZ	Less-Adv.	Non-PCI
TRA-N-596	Interconnection between RO & UA gas transmission systems	TRANSGAZ	Less-Adv.	Non-PCI
TRA-N-598	NTS developments in North-West Romania	TRANSGAZ	Less-Adv.	Non-PCI
TRA-N-809	Reallocation H-Gas towards NL (Bunde/Oude to Zone Oude Statenzijl H	gasunie	Less-Adv.	Non-PCI
TRA-N-810	TAP Expansion		Less-Adv.	Non-PCI
TRA-N-851	Southern Interconnection pipeline BiH/CRO	BH-GAS	Less-Adv.	Non-PCI
TRA-N-873	Additional import at Oude StatenZijl area	gasunie	Less-Adv.	Non-PCI
TRA-N-882	Transferring L-gas infrastructure to H-gas	gasunie	Less-Adv.	Non-PCI
TRA-N-910	West Interconnection BiH/CRO	BH-GAS	Less-Adv.	Non-PCI
TRA-N-955	GUD: Complete conversion to H-gas	gasunie	Less-Adv.	Non-PCI
TRA-N-959	Further enlargement of BG—RO—HU—AT transmission corridor (BRUA) phase 3	TRANSGAZ	Less-Adv.	Non-PCI
TRA-N-1058	LNG Evacuation Pipeline Kozarac-Slobodnica	plinacro	Less-Adv.	Non-PCI
TRA-N-1063	Export to Malta		Less-Adv.	Non-PCI
TRA-N-1064	Moffat Physical Reverse Flow	nationalgrid	Less-Adv.	Non-PCI
TRA-N-1129	Compressor Station Kipi Increment	DESFA	Less-Adv.	Non-PCI
TRA-N-1181	Connecting pipe to LNG terminal in Latvia	conexus	Less-Adv.	Non-PCI
TRA-N-1194	Sardinia Methanization	Enura	Less-Adv.	Non-PCI
TRA-N-1202	GCP GAZ-SYSTEM/ONTRAS – incremental capacity project	GAZ-SYSTEM	Less-Adv.	Non-PCI
TRA-N-1235	Firm transmission capacity increase at the IP Veľké Zlievce	eustream	Less-Adv.	Non-PCI
TRA-N-1244	Greece – Italy interconnection		Less-Adv.	Non-PCI
TRA-N-1265	Biomethane productions interconnection		Less-Adv.	Non-PCI
TRA-N-1278	Compressor station at Ambelia	DESFA	Less-Adv.	Non-PCI

Figure 5: Map for transmission and compressor station projects in TYNDP 2020

Download the map from ENTSOG website:

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
Cross-border interconnection point with third country (import)
Cross-border third country (import) Under construction or Planned
Intra-country or Intra balancing zone points
Third country cross-border interconnection point
Gas Reserve areas
Drilling platform
Gas field
Countries
ENTSOG Member Countries
ENTSOG Associated Partner
ENTSOG Observers
Other Countries
Transport by pipeline
Pipeline diameters:
Diameter < 600 mm
Diameter 600 – 900 mm
Diameter > 900mm
Project categories:
FID projects
Non-FID, advanced projects
Non-FID, less-advanced projects
Project is part of 4th PCI list:
FID projects
Non-FID, advanced projects
Non-FID, less-advanced projects
Project identification:
ENTSOG project code
LNG Terminals and Plants
LNG Terminals' entry point intro transmission system Operational
LNG Plants' export point
Project categories:
FID projects
Non-FID, advanced projects
Non-FID, less-advanced projects
Project is part of 4th PCI list:
FID projects
Non-FID, advanced projects
Non-FID, advanced export projects
Non-FID, less-advanced projects
Project identification:
ENTSOG project code
Storage facilities
Acquifer
Salt cavity – cavern
Depleted (Gas) field on shore / offshore
Other type
Unknown
Project categories:
FID projects
Non-FID, advanced projects
Non-FID, less-advanced projects
Project is part of 4th PCI list:
FID projects
Non-FID, advanced projects
Non-FID, less-advanced projects
Project identification:
ENTSOG project code
Compressor stations
Project categories:
FID projects
Non-FID, advanced projects
Non-FID, less-advanced projects
Project is part of 4th PCI list:
FID projects
Non-FID, advanced projects
Non-FID, less-advanced projects
Project identification:
ENTSOG project code
TRA-F-51 Trans Adriatic Pipeline FID PCI
Project ENTSOG code
Project Name
Project Promoter
Project status codes
Project not marked on map
Exact project location is not available or is marked as confidential
Exact project locations not marked on map
Project has several locations/points. The indicated location is for representation purposes only and does not indicate the exact location of the project
Project ENTSOG codes / color:
TRA-N-000 Project is part of 4th PCI list
TRA-N-000 Project is not part of 4th PCI list
Project status codes:
PCI
Non-PCI
PCI status (Project of Common Interest) :
FID
Advanced
Less-Adv.
FID status (Final Investment Decision) :
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. 2026 in case of TYNDP 2020, for which projects are collected in 2020)
- 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)
ENTSOG currently comprises 44 TSO members,
3 Associated Partners from 27 European Countries and 9 Observers
When the same point is affected by several projects, the point is shown with the highest project status (operational, FID, advanced, non-FID), the status from single projects can vary from that.
The projects are shown with the planning status reported in their TYNDP 2020 submission.
All data provided on this map is for information purposes and shall be treated as indicative and non-contractual in nature, without pre-empting different outcomes of any possible discussion held at regional level. Under no circumstances shall it be regarded as information intended for commercial use.
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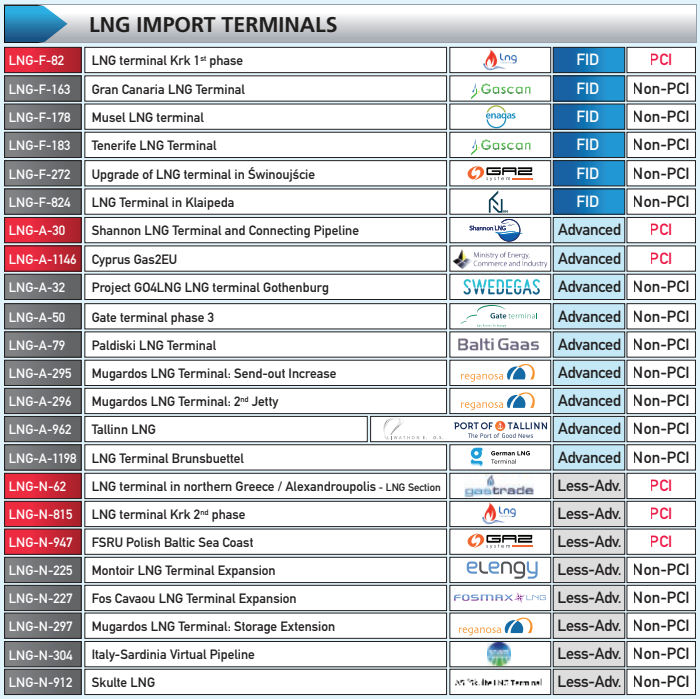
WGS 84 / Pseudo-Mercator projection
North Sea
DENMARK
LATVIA
RUSSIA
CIS
LITHUANIA
RUSSIA
IRELAND
UNITED KINGDOM
THE NETHERLANDS
GERMANY
POLAND
BELGIUM
CZECH REPUBLIC
SLOVAKIA
AUSTRIA
HUNGARY
MOLDOVA
SWITZERLAND
FRANCE
ROMANIA
ITALY
CROATIA
BOSNIA AND HERZEGOVINA
SERBIA
MONTENEGRO
BULGARIA
NORTH MACEDONIA
ALBANIA
GREECE
TURKEY
PORTUGAL
SPAIN
CORSICA
SARDINIA
MALTA
TUNISIA
CYPRUS
CANARY ISLANDS
Atlantic Ocean
Bay of Biscay
English Channel
Irish Sea
Baltic Sea
Black Sea
Adriatic Sea
Tyrrhenian Sea
Ionian Sea
Aegean Sea
Mediterranean Sea
Balearic Sea
Ligurian Sea
Gulf of Lion
Gulf of Riga
Skagerrak
Kattegat

5.3.2 LNG projects

For TYNDP 2020 promoters submitted 22 projects related to LNG terminals. For 7 of these projects the respective evacuation pipeline projects connecting the terminal to the gas grid were submitted by different promoters. In one case (TRA-A-408) only the connecting pipe was submitted but not the LNG terminal.

MAP FOR LNG REAGSIFICATION TERMINALNS (including evacuation pipelines)



LNG IMPORT TERMINALS				
LNG-F-82	LNG terminal Krk 1st phase		FID	PCI
LNG-F-163	Gran Canaria LNG Terminal	Gascan	FID	Non-PCI
LNG-F-178	Musel LNG terminal	enagas	FID	Non-PCI
LNG-F-183	Tenerife LNG Terminal	Gascan	FID	Non-PCI
LNG-F-272	Upgrade of LNG terminal in Świnoujście	GAZ-SYSTEM	FID	Non-PCI
LNG-F-824	LNG Terminal in Klaipeda		FID	Non-PCI
LNG-A-30	Shannon LNG Terminal and Connecting Pipeline	Shannon LNG	Advanced	PCI
LNG-A-1146	Cyprus Gas2EU	Ministry of Energy, Commerce and Industry	Advanced	PCI
LNG-A-32	Project G04LNG LNG terminal Gothenburg	SWEDEGAS	Advanced	Non-PCI
LNG-A-50	Gate terminal phase 3	Gate terminal	Advanced	Non-PCI
LNG-A-79	Paldiski LNG Terminal	Balti Gaas	Advanced	Non-PCI
LNG-A-295	Mugardos LNG Terminal: Send-out Increase	reganosa	Advanced	Non-PCI
LNG-A-296	Mugardos LNG Terminal: 2nd Jetty	reganosa	Advanced	Non-PCI
LNG-A-962	Tallinn LNG	PORT OF TALLINN The Port of Good News	Advanced	Non-PCI
LNG-A-1198	LNG Terminal Brunsbuettel	German LNG Terminal	Advanced	Non-PCI
LNG-N-62	LNG terminal in northern Greece / Alexandroupolis - LNG Section	gastrade	Less-Adv.	PCI
LNG-N-815	LNG terminal Krk 2nd phase		Less-Adv.	PCI
LNG-N-947	FSRU Polish Baltic Sea Coast	GAZ-SYSTEM	Less-Adv.	PCI
LNG-N-225	Montoir LNG Terminal Expansion	elengy	Less-Adv.	Non-PCI
LNG-N-227	Fos Cavaou LNG Terminal Expansion	FOSMAX LNG	Less-Adv.	Non-PCI
LNG-N-297	Mugardos LNG Terminal: Storage Extension	reganosa	Less-Adv.	Non-PCI
LNG-N-304	Italy-Sardinia Virtual Pipeline		Less-Adv.	Non-PCI
LNG-N-912	Skulte LNG		Less-Adv.	Non-PCI

Figure 6: Map for LNG reagsification terminals (including evacuation pipelines)

Download the map from ENTSOG website:

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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*
- Cross-border Interconnection point with third country (Import)
- Cross-border third country (Import) *Under construction or Planned*
- Intra-country or Intra balancing zone points
- Third country cross-border Interconnection point

Gas Reserve areas

- Drilling platform
- Gas field

Countries

- ENTSOG Member Countries
- ENTSOG Associated Partner
- ENTSOG Observers
- Other Countries

Transport by pipeline

Pipeline diameters:
- Diameter < 600 mm
- Diameter 600 – 900 mm
- Diameter > 900mm

Project categories:
- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project is part of 4th PCI list:
- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project identification:
- TRA-N-000 — ENTSOG project code

LNG Terminals and Plants

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

Project categories:
- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project is part of 4th PCI list:
- FID projects
- Non-FID, advanced projects
- Non-FID, advanced export projects
- Non-FID, less-advanced projects

Project Identification:
- LNG-N-01 — ENTSOG project code

Storage facilities

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

Project categories:
- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project is part of 4th PCI list:
- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project Identification:
- UGS-N-01 — ENTSOG project code

Compressor stations

Project categories:
- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project is part of 4th PCI list:
- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project Identification:
- CMA-N-01 — ENTSOG project code

TRA-F-01 | Trans Adriatic Pipeline | FID | PCI

Project ENTSOG code | Project Name | Project Promoter | Project status codes

Project not marked on map
Exact project location is not available or is marked as confidential

Exact project locations not marked on map
Project has several locations/points. The indicated location is for representation purposes only and does not indicate the exact location of the project

Project ENTSOG codes / color:
- TRA-N-000 Project is part of 4th PCI list
- TRA-N-000 Project is not part of 4th PCI list

Project status codes:

PCI	Non-PCI		PCI status (Project of Common Interest) :
FID	Advanced	Less-Adv.	FID status (Final Investment Decision) :

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. 2026 in case of TYNDP 2020, for which projects are collected in 2020)*
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When the same point is affected by several projects, the point is shown with the highest project status (operational, FID, advanced, non-FID), the status from single projects can vary from that.

The projects are shown with the planning status reported in their TYNDP 2020 submission.

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CANARY ISLANDS

North Sea
Irish Sea
Baltic Sea
Gulf of Riga
Skagerrak
Kattegat
North Channel
Bristol Channel
English Channel
Atlantic Ocean
Bay of Biscay
Gulf of Lion
Ligurian Sea
Tyrrhenian Sea
Adriatic Sea
Balearic Sea
Mediterranean Sea
Ionian Sea
Aegean Sea
Black Sea

IRELAND
UNITED KINGDOM
DENMARK
GOTLAND
LATVIA
RIGA
LITHUANIA
RUSSIA
CIS
Kaliningrad
THE NETHERLANDS
AMSTERDAM
BELGIUM
BRUSSELS
GERMANY
BERLIN
POLAND
WARSAW
CZECH REPUBLIC
PRAGUE
SLOVAKIA
BRATISLAVA
AUSTRIA
VIENNA
HUNGARY
BUDAPEST
SWITZERLAND
BERN
FRANCE
PARIS
SLOVENIA
LJUBLJANA
ZAGREB
CROATIA
BOSNIA AND HERZEGOVINA
SARAJEVO
SERBIA
BELGRADE
ROMANIA
BUCHAREST
BULGARIA
SOFIA
MONTENEGRO
PODGORICA
PRISTINA UNMI KOSOVO
NORTH MACEDONIA
SKOPJE
ALBANIA
TIRANA
GREECE
ATHENS
TURKEY
ANKARA
CYPRUS
NICOSIA
CRETA
ITALY
ROME
CORSICA
SARDINIA
PORTUGAL
SPAIN
MADRID
LISBON
TUNISIA
ALGIERS
TUNIS
MALTA
LA VALETTA
RABAT
COPENHAGEN
LONDON
DUBLIN
BRUSSELS
AMSTERDAM
PRAGUE
VIENNA
BUDAPEST
BUCHAREST
SOFIA
ATHENS
ANKARA
BERN
PARIS
MADRID
LISBON
ROME
BERLIN
WARSAW
COPENHAGEN
RIGA
BRATISLAVA
LJUBLJANA
ZAGREB
SARAJEVO
BELGRADE
PODGORICA
SKOPJE
TIRANA
PRISTINA
NICOSIA
LA VALETTA
TUNIS
ALGIERS
RABAT

5.3.3 UGS projects

For TYNDP 2020 promoters submitted 13 projects related to gas storage facilities (UGS).

MAP FOR GAS STORAGE PROJECTS IN TYNDP 2020

UNDERGROUND GAS STORAGE FACILITIES

UGS-F-374	Enhancement of Incukalns UGS	conexus	FID	PCI
UGS-F-260	System Enhancements – Stogit – on-shore gas fields		FID	Non-PCI
UGS-F-311	Bilciuresti daily withdrawal capacity increase		FID	Non-PCI
UGS-A-138	UGS Chiren Expansion	BULGARTRANSGAZ	Advanced	PCI
UGS-A-233	Depomures	ENGIE	Advanced	PCI
UGS-A-294	Islandmagee Gas Storage Facility	islandmagee	Advanced	Non-PCI
UGS-A-356	Underground Gas Storage Velke Kapusany	nafta	Advanced	Non-PCI
UGS-N-371	Sarmasel underground gas storage in Romania		Less-Adv.	PCI
UGS-N-385	South Kavala Underground Gas Storage facility		Less-Adv.	PCI
UGS-N-347	Gas storage facility Grubisno Polje	PSP	Less-Adv.	Non-PCI
UGS-N-398	Ghercesti underground gas storage in Romania		Less-Adv.	Non-PCI
UGS-N-399	Falticeni UGS		Less-Adv.	Non-PCI
UGS-N-914	UGS Damasławek	GAZ-SYSTEM	Less-Adv.	Non-PCI

Figure 7: Map for gas storage projects in TYNDP 2020

Download the map from ENTSOG website:

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*
- Cross-border interconnection point with third country (import)
- Cross-border third country (import) *Under construction or Planned*
- Intra-country or intra balancing zone points
- Third country cross-border interconnection point

Gas Reserve areas

- Drilling platform
- Gas field

Countries

- ENTSOG Member Countries
- ENTSOG Associated Partner
- ENTSOG Observers
- Other Countries

Transport by pipeline

Pipeline diameters:

- Diameter < 600 mm
- Diameter 600 – 900 mm
- Diameter > 900mm

Project categories:

- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project is part of 4th PCI list:

- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project Identification:

- TRA-A-202 — ENTSOG project code

LNG Terminals and Plants

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

Project categories:

- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project is part of 4th PCI list:

- FID projects
- Non-FID, advanced projects
- Non-FID, advanced export projects
- Non-FID, less-advanced projects

Project Identification:

- LNG-N-01 — ENTSOG project code

Storage facilities

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

Project categories:

- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project is part of 4th PCI list:

- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project Identification:

- UGS-N-01 — ENTSOG project code

Compressor stations

Project categories:

- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project is part of 4th PCI list:

- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project Identification:

- CMP-A-201 — ENTSOG project code

TRA-F-51 | Trans Adriatic Pipeline | FID | PCI

Project ENTSOG code | Project Name | Project Promoter | Project status codes

Project not marked on map
Exact project location is not available or is marked as confidential

Exact project locations not marked on map
Project has several locations/points.
The indicated location is for representation purposes only and does not indicate the exact location of the project

Project ENTSOG codes / color:

- TRA-N-000 Project is part of 4th PCI list
- TRA-N-000 Project is not part of 4th PCI list

Project status codes:

PCI | Non-PCI

FID | Advanced | Less-Adv.

PCI status (Project of Common Interest) :

FID status (Final Investment Decision) :

- 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. 2026 in case of TYNDP 2020, for which projects are collected in 2020)*
- 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)*

ENTSOG currently comprises 44 TSO members,
3 Associated Partners from 27 European Countries and 9 Observers

When the same point is affected by several projects, the point is shown with the highest project status (operational, FID, advanced, non-FID), the status from single projects can vary from that.

The projects are shown with the planning status reported in their TYNDP 2020 submission.

All data provided on this map is for information purposes and shall be treated as indicative and non-contractual in nature, without pre-empting different outcomes of any possible discussion held at regional level. Under no circumstances shall it be regarded as information intended for commercial use.

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polaris

CANARY ISLANDS

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

IRELAND
UNITED KINGDOM
DENMARK
COPENHAGEN
GOTLAND
LATVIA
RIGA
RUSSIA
CIS
LIT
RUSSIA
THE NETHERLANDS
AMSTERDAM
BELGIUM
BRUSSELS
GERMANY
BERLIN
POLAND
WARSAW
CZECH REPUBLIC
PRAGUE
SLOVAKIA
BRATISLAVA
VIENNA
AUSTRIA
HUNGARY
BUDAPEST
SWITZERLAND
BERN
FRANCE
PARIS
SLOVENIA
LJUBLJANA
CROATIA
ZAGREB
BOSNIA AND HERZEGOVINA
SARAJEVO
SERBIA
BELGRADE
ROMANIA
BUCHAREST
MOLDOVA
CHISINAU
ODESSA
ITALY
ROME
CORSICA
SARDINIA
MONTENEGRO
PODGORICA
PRISTINA
UNMIK KOSOVO
NORTH MACEDONIA
SKOPJE
ALBANIA
TIRANA
BULGARIA
SOFIA
GREECE
ATHENS
TURKEY
ANKARA
CYPRUS
NICOSIA
CRETA
MALTA
LA VALETTA
PORTUGAL
SPAIN
LISBON
MADRID
TUNISIA
ALGIERS
TUNIS
RABAT
LONDON
BRUSSELS
AMSTERDAM
PARIS
ROME
ATHENS
VIENNA
PRAGUE
BUDAPEST
BUCHAREST
SOFIA
ANKARA
LISBON
MADRID
RABAT
ALGIERS
TUNIS
LA VALETTA
BERN
BRATISLAVA
LJUBLJANA
ZAGREB
SARAJEVO
BELGRADE
PODGORICA
SKOPJE
TIRANA
CHISINAU
NICOSIA
CANARY ISLANDS

5.3.4 ETR

ENTSOG TYNDP 2020 includes for the first time also Energy Transition projects.

ETR projects are defined in the TYNDP 2020 Practical Implementation Document as follows: a project which facilitates the integration of renewables, the achievement of decarbonisation and efficiency targets, reduction of other air pollutants, sector coupling initiatives and, more generally, all projects specifically aimed at the energy system transformation for reaching sustainability goals and not already included in the previous project categories.

A total of 68 ETR aggregated projects (75 submissions) are included in TYNDP 2020:

- 44 Hydrogen and synthetic methane
- 7 Biomethane developments
- 6 CCS/CCU
- 5 CNG/LNG for transport (road, train, sea)
- 2 Reverse flow DSO-TSO
- 1 Hybrid compressor stations
- 1 Micro liquefaction
- 1 Smart multi energy system
- 1 Methane emissions reduction

Please read → **section 6** for more details on ETR projects.

MAP FOR ETR PROJECTS IN TYNDP 2020

ENERGY TRANSITION PROJECT (ETR)

ETR-F-516	CNG and L-CNG stations	FID	ETR
ETR-F-523	Biomethane plants development	FID	BIOM
ETR-F-541	CORE LNGas hive and LNGHIVE2 Infrastructure & logistic solutions	FID	ETR
ETR-F-546	Jupiter 1000 first industrial demonstrator of Power to Gas in France	FID	H2-SM
ETR-F-587	West Grid Synergy	FID	REV-F
ETR-F-599	Sector coupling: hybrid compressor station	FID	ETR
ETR-F-632	Railway project roadmap. Transformation to LNG	FID	ETR
ETR-F-728	Biomethane: connection of prod. units & reverse flow projects	FID	BIOM
ETR-F-743	Impulse 2025	FID	ETR
ETR-A-64	Biomethane reverse flow Denmark	Advanced	REV-F
ETR-A-312	P2G Velke Kapusany	Advanced	H2-SM
ETR-A-430	Porthos	Advanced	CCS-CCU
ETR-A-437	Supercritical water gasification facilities	Advanced	BIOM
ETR-N-20	GNI Renewable Gas Central Grid Injection Project	Less-Adv.	BIOM
ETR-N-22	Ervia Cork CCUS	Less-Adv.	CCS-CCU
ETR-N-80	Power to Gas Production w. infrastr. building/enhancement in Latvia	Less-Adv.	H2-SM
ETR-N-125	Biomethane Production w. infrastr. building/enhancement in Latvia	Less-Adv.	BIOM
ETR-N-226	Fos Tonkin LNG Terminal Evolution	Less-Adv.	ETR
ETR-N-300	HyOffWind Zeebrugge	Less-Adv.	H2-SM
ETR-N-305	PEGASUS	Less-Adv.	H2-SM
ETR-N-306	Greening of Gas (GoG)	Less-Adv.	H2-SM
ETR-N-315	G2F – Gas to Future	Less-Adv.	H2-SM
ETR-N-322	North Sea Wind Power Hub	Less-Adv.	H2-SM
ETR-N-370	Hydrogen transmission backbone Netherlands	Less-Adv.	H2-SM
ETR-N-396	Djewels	Less-Adv.	H2-SM
ETR-N-401	Antwerp@C	Less-Adv.	CCS-CCU
ETR-N-406	Hybridge – gas grid infrastructure	Less-Adv.	H2-SM
ETR-N-427	P2G integrated in Reganosa NG Transmission Grid	Less-Adv.	H2-SM
ETR-N-432	Athos	Less-Adv.	CCS-CCU
ETR-N-452	Element Eins	Less-Adv.	H2-SM
ETR-N-483	L2DG (LNG to Decarbonised Gas)	Less-Adv.	H2-SM
ETR-N-504	Sun2Hy	Less-Adv.	H2-SM
ETR-N-528	Microliquefaction plants	Less-Adv.	ETR
ETR-N-537	Green Crane (Spain)	Less-Adv.	H2-SM
ETR-N-562	Energy Park Bad Lauchstädt	Less-Adv.	H2-SM
ETR-N-591	Power to gas plant in the south of Italy	Less-Adv.	H2-SM
ETR-N-595	Transport of hydrogen into natural gas network for industrial customers	Less-Adv.	H2-SM
ETR-N-616	Renewable Methane according to NEP2020	Less-Adv.	H2-SM
ETR-N-617	Project to facilitate biomethane production plants interconn.	Less-Adv.	BIOM
ETR-N-622	Renewable Hydrogen according to NEP2020	Less-Adv.	H2-SM
ETR-N-624	Biomethane: Reverse flow projects	Less-Adv.	REV-F
ETR-N-633	GETH2-ETR 1	Less-Adv.	H2-SM
ETR-N-828	Green Hydrogen Hub Denmark	Less-Adv.	H2-SM
ETR-N-830	Green Hydrogen Hub Zuidwending	Less-Adv.	H2-SM
ETR-N-833	Green Hydrogen Hub Drenthe	Less-Adv.	H2-SM
ETR-N-846	Green Hydrogen Hub Harsefeld	Less-Adv.	H2-SM
ETR-N-852	Green Hydrogen Hub Ahaus-Epe	Less-Adv.	H2-SM
ETR-N-874	Green Hydrogen Hub Leer	Less-Adv.	H2-SM
ETR-N-883	Green Hydrogen Hub Moeckow	Less-Adv.	H2-SM
ETR-N-894	Green Hydrogen Hub Etzel	Less-Adv.	H2-SM
ETR-N-896	P2G4A	Less-Adv.	H2-SM
ETR-N-898	CNG filling station system development (CroBlueCorr project)	Less-Adv.	ETR
ETR-N-899	mosaHYc (Mosel Saar Hydrogen Conversion)	Less-Adv.	H2-SM
ETR-N-900	Hydrogen injection into the gas network in Lithuania	Less-Adv.	H2-SM
ETR-N-901	HyGéo	Less-Adv.	H2-SM
ETR-N-903	Conversion of Natural Gas pipelines to Hydrogen	Less-Adv.	H2-SM
ETR-N-904	Hydrogen import via Oude Statenzijl	Less-Adv.	H2-SM
ETR-N-905	Vlieghuis (NL)/ Emlichheim (DE) Capacity for Hydrogen / NDP	Less-Adv.	H2-SM
ETR-N-911	Zevenaar (NL)/ Elten (DE) Capacity of Hydrogen / NDP	Less-Adv.	H2-SM
ETR-N-913	Modification of NP23 MW turboset to a hydrogen-ready low-emissions at CS04	Less-Adv.	H2-SM
ETR-N-916	Measures for achieving hydrogen blending readiness of the transmission system	Less-Adv.	H2-SM
ETR-N-920	Measures for the reduction of methane emissions	Less-Adv.	ETR
ETR-N-921	Circular economy: waste to biomethane	Less-Adv.	BIOM
ETR-N-922	Green Gas Lolland-Falster	Less-Adv.	BIOM
ETR-N-923	Interconnected hydrogen network	Less-Adv.	H2-SM
ETR-N-924	Power to Methanol Antwerp	Less-Adv.	CCS-CCU
ETR-N-929	Carbon Connect Delta	Less-Adv.	CCS-CCU
ETR-N-938	H2-Import Coalition	Less-Adv.	H2-SM
ETR-N-939	H2morrow Steel	Less-Adv.	H2-SM
ETR-N-942	Lacq Hydrogen	Less-Adv.	H2-SM
ETR-N-945	Conversion of Natural-Gas-Pipelines to Hydrogen-Pipelines	Less-Adv.	H2-SM
ETR-N-948	New hydrogen pipeline projects of german gas NDP 2020-2030	Less-Adv.	H2-SM
ETR-N-952	Hydrogen pipeline system conversion projects of german gas NDP 2020-2030	Less-Adv.	H2-SM
ETR-N-956	Hydrogen export/import Oude Statenzijl	Less-Adv.	H2-SM
ETR-N-958	Green Crane (Italy)	Less-Adv.	H2-SM

Figure 8: Map for ETR projects in TYNDP 2020

Download the map from ENTSOG website:

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*
- Cross-border interconnection point with third country (import)
- Cross-border third country (import) *Under construction or Planned*
- Intra-country or intra balancing zone points
- Third country cross-border interconnection point

Gas Reserve areas

- Drilling platform
- Gas field

Countries

- ENTSOG Member Countries
- ENTSOG Associated Partner
- ENTSOG Observers
- Other Countries

Transport by pipeline

Pipeline diameters:
- Diameter < 600 mm
- Diameter 600 ~ 900 mm
- Diameter > 900mm

Project categories:
- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project identification:
- TRA-N-123 — ENTSOG project code

LNG Terminals and Plants

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

Project categories:
- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project identification:
- LNG-N-123 — ENTSOG project code

Storage facilities

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

Project categories:
- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project identification:
- UGS-N-123 — ENTSOG project code

Compressor stations

Project categories :
- FID projects
- Non-FID, advanced projects
- Non-FID, less-advanced projects

Project identification :
- TRA-N-123 — ENTSOG project code

Energy Transition Projects

Project categories:
- (BIOM) Biomethane developments
- (H2-SM) Hydrogen & synthetic methane
- (REV-F) Reverse flow project
- (CCS-CCU) CCS / CCU project
- (ETR) Energy Transition project of different type
  - FID projects
  - Non-FID, advanced projects
  - Non-FID, less-advanced projects

Project Identification:
- ETR-N-123 — ENTSOG project code

Project ENTSOG codes / color:

ETR-F-914 | CNG and L-CNG stations | Shell | FID | ETP

Project ENTSOG code | Project Name | Project Promoter | Project status codes

Project not marked on map
Exact project location is not available or is marked as confidential

Exact project locations not marked on map
Project has several locations/points. The indicated location is for representation purposes only and does not indicate the exact location of the project

Project status codes:

FID | Advanced | Less-Adv | FID status (Final Investment Decision):

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. 2026 in case of TYNDP 2020, for which projects are collected in 2020)
- 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)

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3 Associated Partners from 27 European Countries and 9 Observers

When the same point is affected by several projects, the point is shown with the highest project status (operational, FID, advanced, non-FID), the status from single projects can vary from that.

The projects are shown with the planning status reported in their TYNDP 2020 submission.

All data provided on this map is for information purposes and shall be treated as indicative and non-contractual in nature, without pre-empting different outcomes of any possible discussion held at regional level. Under no circumstances shall it be regarded as information intended for commercial use.

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polaris energy consulting

WGS 84 / Pseudo-Mercator projection

CANARY ISLANDS

North Sea
Skagerrak
Kattegat
Baltic Sea
Gulf of Riga
Irish Sea
English Channel
Bristol Channel
North Channel
Sea of the Hebrides
Atlantic Ocean
Bay of Biscay
Gulf of Lion
Ligurian Sea
Adriatic Sea
Balearic Sea
Tyrrhenian Sea
Mediterranean Sea
Ionian Sea
Aegean Sea
Black Sea
Strait of Gibraltar

IRELAND
UNITED KINGDOM
DENMARK
COPENHAGEN
GOTLAND
LATVIA
RIGA
LITHUANIA
RUSSIA
CIS
Kaliningrad (FSRU)
RUSSIA
THE NETHERLANDS
AMSTERDAM
BELGIUM
BRUSSELS
LUX.
GERMANY
BERLIN
POLAND
WARSAW
CZECH REPUBLIC
PRAGUE
SLOVAKIA
BRATISLAVA
VIENNA
AUSTRIA
HUNGARY
BUDAPEST
SWITZERLAND
BERN
FRANCE
PARIS
SLOVENIA
LJUBLJANA
CROATIA
ZAGREB
BOSNIA AND HERZEGOVINA
SARAJEVO
SERBIA
BELGRADE
ROMANIA
BUCHAREST
ITALY
ROME
CORSICA
SARDINIA
MONTENEGRO
PODGORICA
PRISTINA
UNMIK KOSOVO
ALBANIA
TIRANA
NORTH MACEDONIA
SKOPJE
BULGARIA
SOFIA
GREECE
ATHENS
TURKEY
ANKARA
CYPRUS
NICOSIA
CRETA
MALTA
LA VALETTA
PORTUGAL
SPAIN
MADRID
LISBON
ALGIERS
TUNIS
TUNISIA
RABAT
LONDON
BRUSSELS
PRAGUE
VIENNA
BUDAPEST
BERLIN
WARSAW
ROME
ATHENS
ANKARA
SOFIA
BUCHAREST
BELGRADE
ZAGREB
LJUBLJANA
SARAJEVO
SKOPJE
TIRANA
PODGORICA
PRISTINA
NICOSIA
LA VALETTA
RIGA
VILNIUS
TALLINN
MINSK
KIEV
MOSCOW
ST. PETERSBURG
KALININGRAD
WARSAW
BERLIN
COPENHAGEN
OSLO
STOCKHOLM
HELSINKI
DUBLIN
LISBON
MADRID
PARIS
BRUSSELS
AMSTERDAM
LUXEMBOURG
BERN
VIENNA
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BUDAPEST
BUCHAREST
BELGRADE
SARAJEVO
SKOPJE
TIRANA
SOFIA
ATHENS
ANKARA
ROME
LONDON
BRUSSELS
VIRTUALYS

5.4 FURTHER DETAILS ON THE TYNDP 2020 PROMOTERS' SUBMISSIONS

This chapter provides more details on the investments submitted to TYNDP 2020.

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 investments an individual TYNDP code is in fact assigned. For example, for an interconnector between two countries here we will consider two separate investments. 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 investments (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 investments has to be understood in the light of the above considerations.

Overall 262 investments (of which 75 ETR projects) have been submitted to TYNDP 2020 by 91 different project promoters including both TSOs and third party promoters. Figure 9 provides the overview for this submission, compared to the previous TYNDP editions.

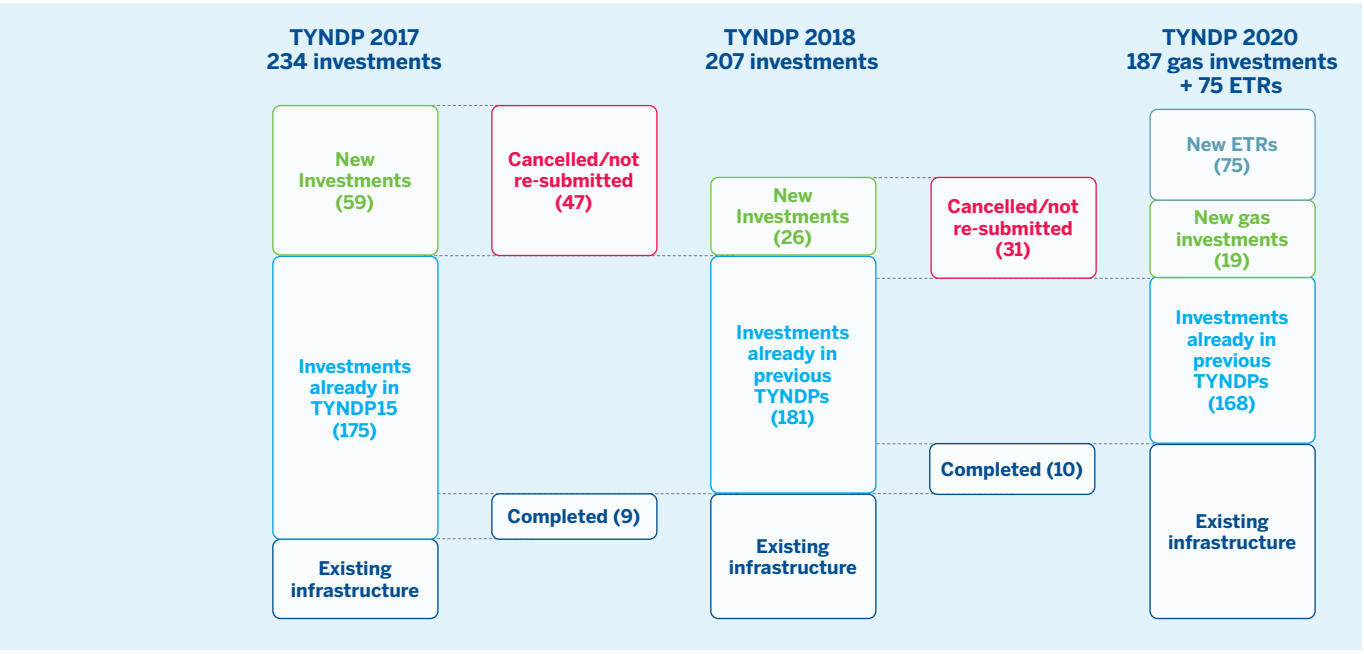

Figure 9: Comparison between TYNDP 2017, TYNDP 2018 and TYNDP 2020

The following conclusions can be drawn from figure 9:

- Thanks to the completion of 10 investments since TYNDP 2018 and to the investments with commissioning years 2019/2020 the European infrastructure is reinforced;
- The number of gas investments excluding ETRs (i. e. transmission, LNG, UGS), submitted for TYNDP 2018 has been reduced for TYNDP 2020 due to investments that have been completed, canceled or not resubmitted;
- For the first time, a number of 75 Energy Transition investments have been included in the TYNDP 2020 edition, which makes a total of 262 submissions included in TYNDP;
- As further elaborated in the assessment chapters, the aggregated number of existing and planned infrastructures in TYNDP 2020 confirms that more infrastructure development is needed in some specific areas.

5.4.1 Overview per status

Considering all submitted investments but ETRs, when compared to the 207 submissions in TYNDP 2018 we observe a reduction to 187 in the 2020 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 of the ENTSOG PID that sets clear administrative and technical criteria to be matched by promoters and projects in order to be considered eligible for inclusion in the TYNDP;
- Completed projects have in the meantime further contributed to the reduction of the infrastructure gaps.

The following figures and tables provide a statistical overview of 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 the details entered as part of the data collection process by project promoters.

Figure 10 presents an overview of all the investments accepted for inclusion in TYNDP 2020 per type of infrastructure.

When comparing the investments inclusion in TYNDP 2018 and TYNDP 2020, figure 11 shows a general reduction in all type of projects.

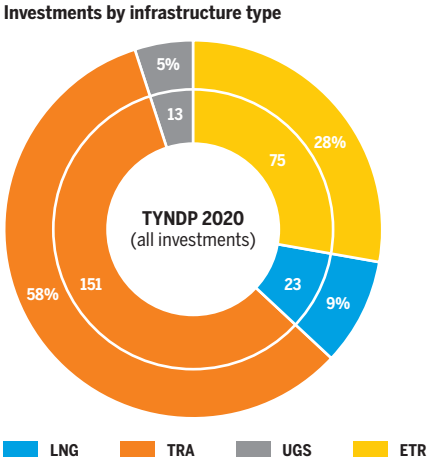

Figure 10: Investments inclusion in TYNDP 2020 per type of infrastructure. The inner circle represents absolute numbers of investments; the outer circle represents the share of each project type.

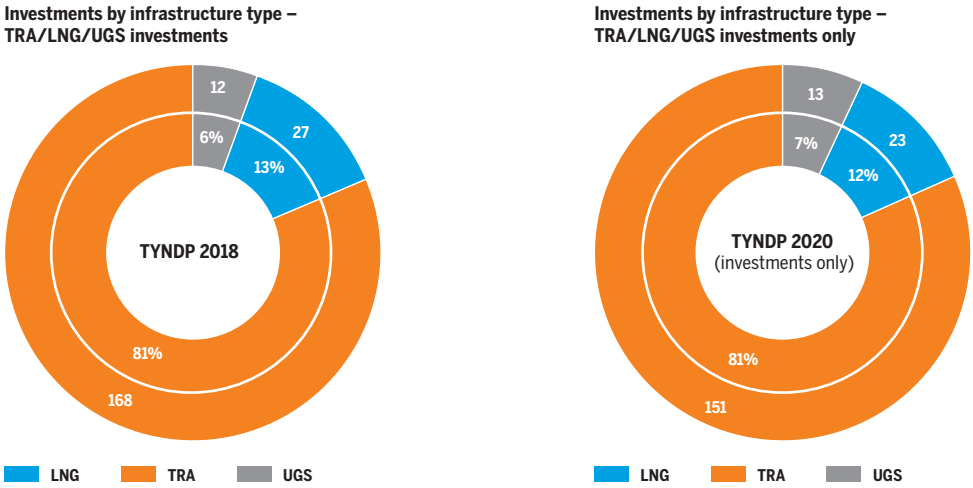

Figure 11: Comparison of investments submission (excluding ETRs) in TYNDP 2020 and TYNDP 2018 per type of infrastructure. The inner circle represents the share of each project type; the outer circle represents absolute numbers.

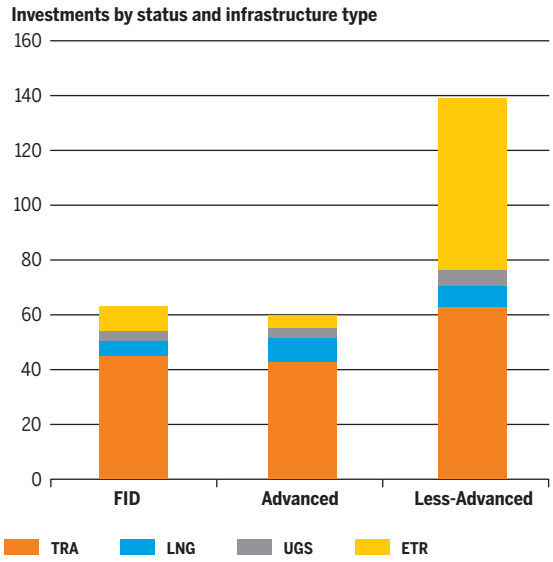

Figure 12: Breakdown of promoters' submissions in TYNDP 2020 by infrastructure type and project status.

	Total	TRA	LNG	UGS	ETR
Completed	10	8	1	1	0
Still planned	166	136	21	9	0
Cancelled	2	2	0	0	0
Not resubmitted	29	22	5	2	0
New projects	94	13	2	4	75

Table 2: Number of investments from TYNDP 2018 completed, still planned, not-resubmitted and cancelled

Figure 12 shows the breakdown of TYNDP 2020 projects by infrastructure type and project status.

Thanks to the information collected, it has been possible to identify investments submitted for TYNDP 2020 that were not active anymore but for which promoters had missed to previously report the information to ENTSOG or that were deleted or not resubmitted.

The two cancelled projects are investments of REN Gasodutos having in TYNDP 2018 the Less-Advanced status and are related to the 3rd IP between Spain and Portugal.

Out of the 93 new submissions, 75 are ETR investments, 13 are related to transmission, 2 are LNG investments while 3 are UGS. With regards to the gas investments not including ETRs, the 18 new investments in TYNDP 2020 do not overall compensate the number of investments that were cancelled or not resubmitted (31 in total). Additionally, 10 investments were commissioned between TYNDP 2018 and TYNDP 2020.

Compared to TYNDP 2018 submission:

- LNG-N-815[12] was already in TYNDP 2018 but, together with the first phase of the project, as part of LNG-F-82. Consistently with the 4th PCI List, for TYNDP 2020 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 LNG-F-82;
- TRA-N-1138[13] was already in TYNDP 2018 under the same TYNDP code that included two phases of the same project. Since TYNDP 2018 the first phase of the project (SCPX) has been completed therefore, the submission for TYNDP 2020 refers only to phase two of the project (SCPFX).

Regarding transmission investments, 8 have been completed since TYNDP 2018, while 24 investments have been cancelled or not resubmitted and 13 new TRA investments have been submitted.

Considering LNG projects, 1 LNG terminal related investment (Revithoussa 2nd upgrade) has been commissioned since TYNDP 2018 while 5 investments were not resubmitted. However, 2 new LNG investments were submitted for Croatia and Italy (respectively LNG-N-815[14] and LNG-N-304[15]).

12 LNG terminal Krk 2nd phase, from LNG Croatia.

13 South Caucasus Pipeline Future Expansion (SCPFX), from SOCAR Midstream Operations

14 LNG terminal Krk 2nd phase, from LNG Croatia.

15 Italy-Sardinia Virtual Pipeline, from SNAM

Among the 12 UGS submissions to TYNDP 2018, one in Italy (UGS-F-1045[16]) was completed. Moreover, 2 TYNDP 2018 investments have been not resubmitted while 4 new investments are planned, 3 in Romania (UGS-F-311[17], UGS-N-398[18], UGS-N-399[19]) and 1 in Croatia (UGS-N-347[20]).

Figure 13 shows the total projects included in TYNDP 2020 based on their maturity status.

In order to be able to make a comparison at the maturity level between TYNDP 2018 and TYNDP 2020 submission, figure 14 shows for TYNDP 2020 the project status only for the gas projects which does not include ETRs i. e. transmission, LNG and UGS.

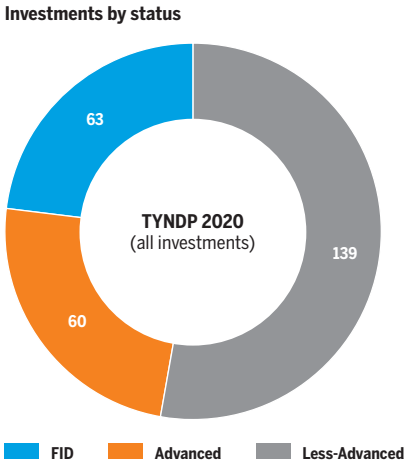

Figure 13: Breakdown of promoters submissions in TYNDP 2020 by maturity status.

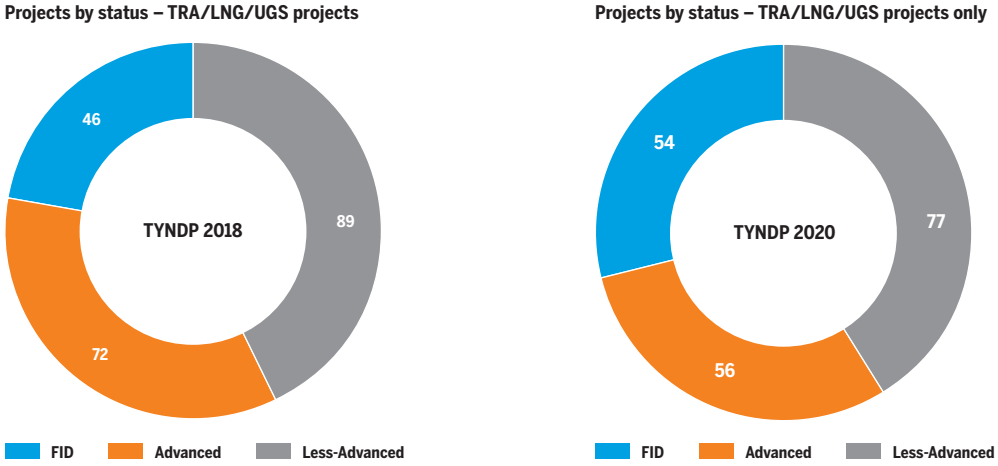

Figure 14: Comparison of submissions in TYNDP 2020 and TYNDP 2018 per FID status.

16 Bordolano second phase, from SNAM

17 Bilciuresti daily withdrawal capacity increase, from Depogaz

18 Ghercesti underground gas storage in Romania, from Depogaz

19 Falticeni UGS, from Depogaz

20 Gas storage facility Grubisno Polje, from Podzemno skladiste plina Ltd

Compared to TYNDP 2018, an increase in the number of FID can be observed, especially among transmission, with 16 investments having taken the FID status between TYNDP 2018 and TYNDP 2020. Here below the list:

Project code	Project name	Promoter	Country	Type	Maturity status 2018	FID taken
TRA-F-964	New NTS developments for taking over gas from the Black Sea shore	SNTGN Transgaz SA	RO	TRA	Advanced	12.02.19
TRA-F-755	CS Rimpar	GRTgaz Deutschland	DE	TRA	Less-Advanced	01.07.18
LNG-F-824	LNG Terminal in Klaipeda	Klaipedos Nafta	LT	LNG	Less-Advanced	18.12.18
TRA-F-1169	Trans-Balkan Bi-directional Flow	LLC Gas TSO of Ukraine	UA	TRA	Less-Advanced	23.09.19
TRA-F-1254	CS Elten	Thyssengas GmbH	DE	TRA	Less-Advanced	01.03.16
TRA-F-1276	Compressor station at Nea Messimvria (3rd unit)	DESFA S.A.	GR	TRA	Less-Advanced	28.06.19
LNG-F-82	LNG terminal Krk 1st phase	LNG Hrvatska	HR	LNG	Advanced	31.01.19
TRA-F-90	LNG evacuation pipeline Omišalj – Zlobin (Croatia)	Plinacro Ltd	HR	TRA	Advanced	11.06.19
TRA-F-949	Oude(NL)-Bunde(DE) GTG H-Gas	Gastransport Nord GmbH	DE	TRA	Less-Advanced	09.04.18
TRA-F-763	EUGAL – Europaeische Gasanbindungsleitung (European Gaslink)	GASCADE Gastransport GmbH	DE	TRA	Advanced	01.06.18
TRA-F-814	Upgrade for IP Deutschneudorf et al. for More Capacity	ONTRAS Gastransport GmbH	DE	TRA	Advanced	31.12.18
TRA-F-139	Interconnection of the NTS with the DTS and reverse flow at Isaccea	SNTGN Transgaz SA	RO	TRA	Advanced	25.04.18
TRA-F-291	NOWAL – Nord West Anbindungsleitung	GASCADE Gastransport GmbH	DE	TRA	Advanced	01.05.19
TRA-F-357	NTS developments in North-East Romania	SNTGN Transgaz SA	RO	TRA	Advanced	12.12.18
UGS-F-374	Enhancement of Incukalns UGS	Conexus Baltic Grid	LV	UGS	Advanced	06.03.19
TRA-F-500	L/H Conversion Belgium	Fluxys Belgium	BE	TRA	Advanced	28.12.18
TRA-F-592	Necessary expansion of the Bulgarian gas transmission system	Bulgartransgaz EAD	BG	TRA	Advanced	31.01.19
TRA-F-1267	Upgrade Sülstorf station	GASCADE Gastransport GmbH	DE	TRA	Advanced	01.03.19
TRA-F-1277	Upgrading GMS Isaccea 1 and GMS Negru Voda 1	SNTGN Transgaz SA	RO	TRA	Advanced	18.12.18

Table 3: TYNDP 2018 submissions having gotten FID status in TYNDP 2020

More in details, of the 54 FID initiatives in TYNDP 2020 (after excluding ETR FID projects):

- 31 were already FID in TYNDP 2018
- 13 with Advanced status in TYNDP 2018 took the FID
- 6 with Less-Advanced status in TYNDP 2018 took the FID
- 4 were not submitted for TYNDP 2018

Submissions having the Advanced and Less-Advanced status show a decrease mainly because some of them reached the FID status. A similar decrease can be also observed in case of Less-Advanced initiatives because many projects with this maturity status have not been resubmitted for TYNDP 2020.

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, 262 initiatives were submitted concerning 35 countries, of which 10 countries[21] not being part of the European Union.

Some of these countries are part of the Energy Community[22] (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.

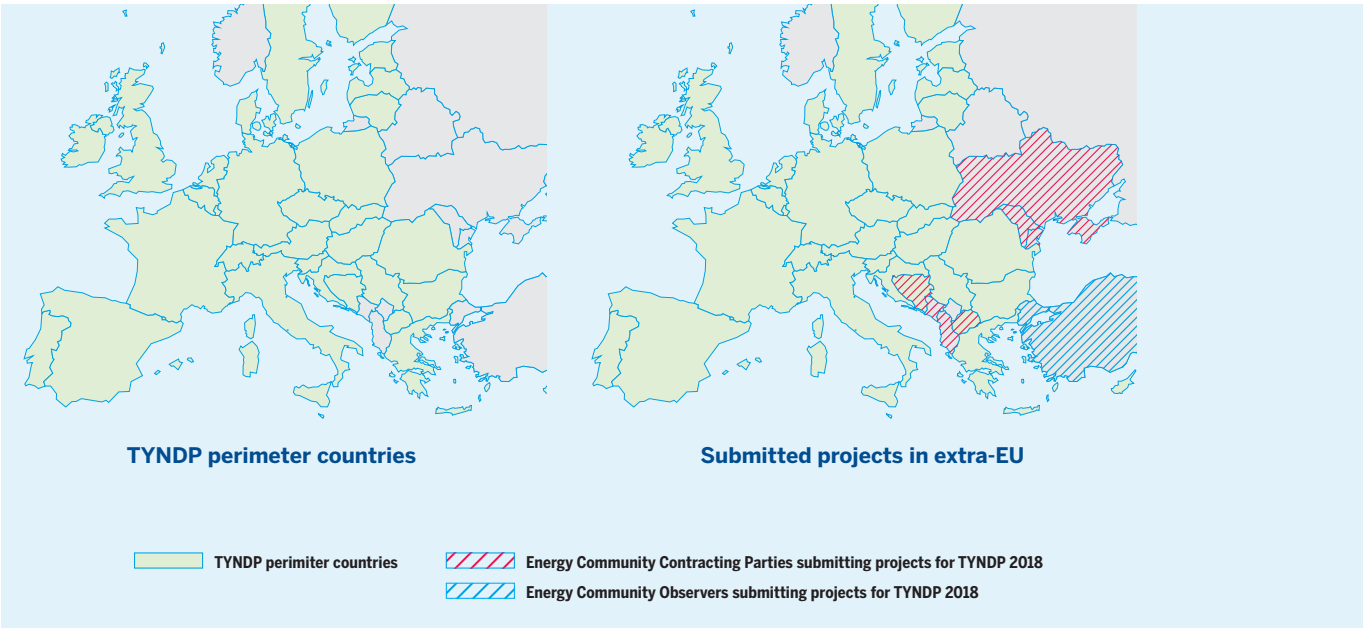

Figure 15: TYNDP perimeter countries and countries outside European Union for which initiatives were submitted in TYNDP 2020

21 Albania, Azerbaijan, Bosnia Herzegovina, Georgia, Montenegro, North Macedonia, Turkey, Turkmenistan, United Kingdom and Ukraine.

22 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/)

However, only 6 % of the total submissions actually refers to non-EU Member State.

Most of the submitted investments, including the ETRs, (247 in total) remain focused in the European Union countries and 36 % are planned in those countries that have joined most recently the European Union.[23] In these countries the share of projects having reached the FID before the end of the TYNDP project collection is around 41 % (26 out of 63 investments).

Still, more than 50 % of the submissions concern 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 (36 out of 152 investments) are well advanced, having already taken the FID and are planned to be commissioned in the upcoming years. It is still to be mentioned that for this part of Europe, 43 % of the submissions (65 out of 152 investments) are related to Energy Transitions projects, most of them having a less-advanced maturity due to relatively recent development of this type of projects.

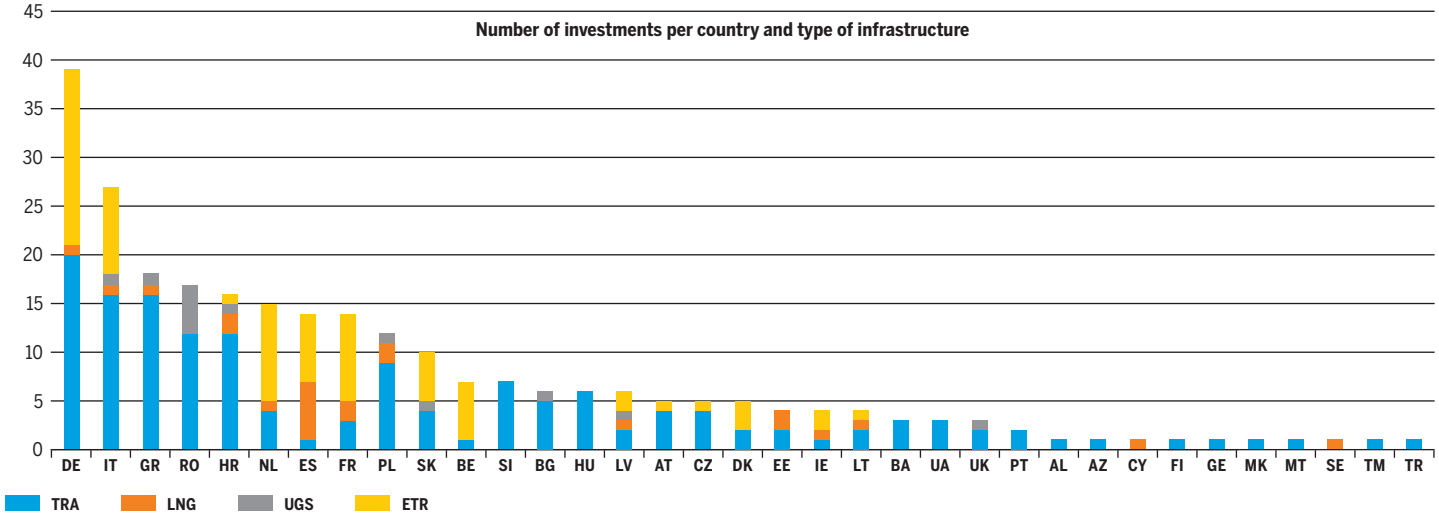

Figure 16: Number of investments per country and type of infrastructure

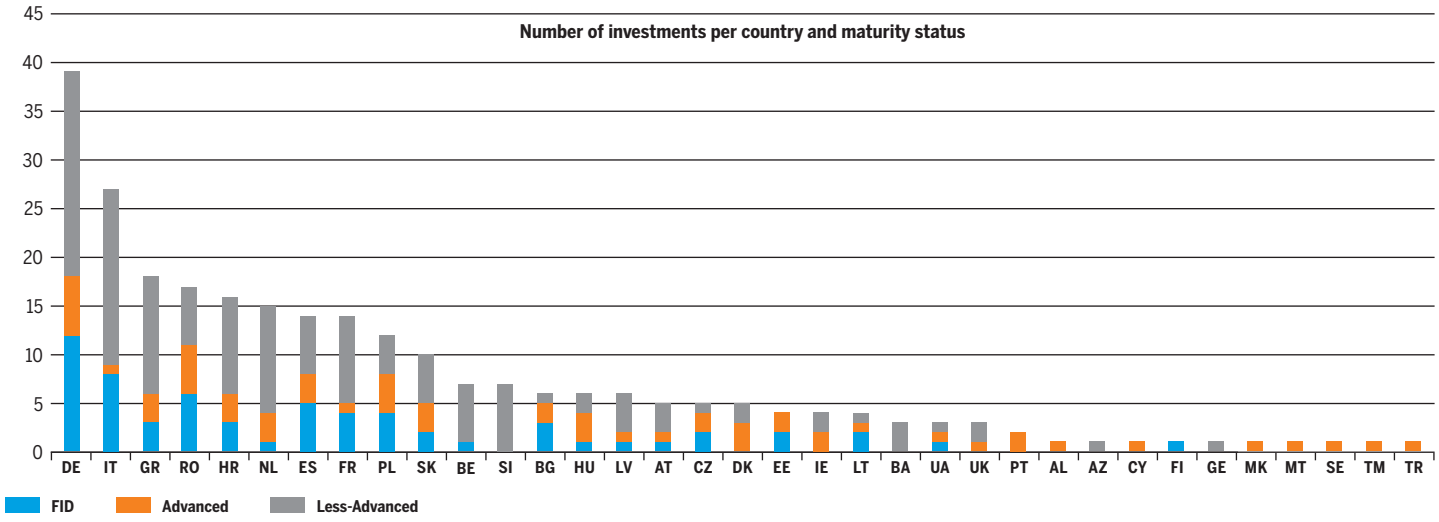

Figure 17: Number of investments per country and maturity status

23 The European Union (EU) was established on 1 November 1993 with 12 Member States, and 3 other countries (Austria, Finland and Sweden) joined it. From 1 May 2004 the EU was further enlarged with 11 more countries and from 1 January 2007 to Romania and Bulgaria (with Croatia joining EU from 1 July 2013).

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.

In addition, in case of some countries, the relatively high number of projects includes also ETR projects. As such, Germany submitted 18 ETRs, Netherlands –10, France –9, Italy –9 and Spain –7.

5.5 ANALYSIS OF PROJECTS SCHEDULE

Figures 18 and 19 show the distribution of projects included in TYNDP according to the expected (first) commissioning year, also in an aggregated way.

Around 76 % of the submitted initiatives are expected to be commissioned not later than 2025 for a total of 199 investments out of the 262 submitted. Among these, 110 investments are well underway, presenting FID or Advanced status.

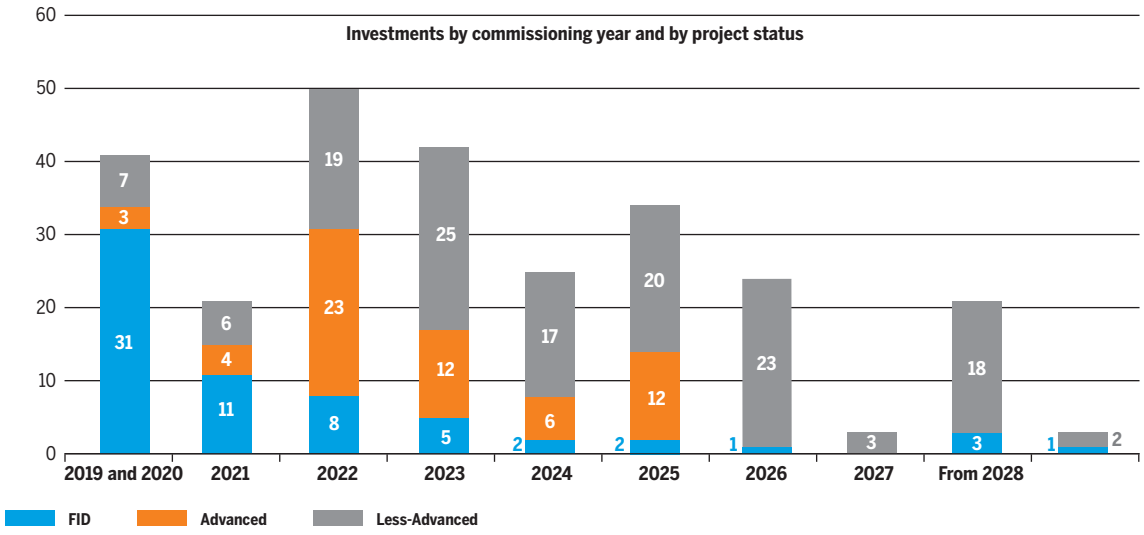

Figure 18: Investments by commissioning year and by project status

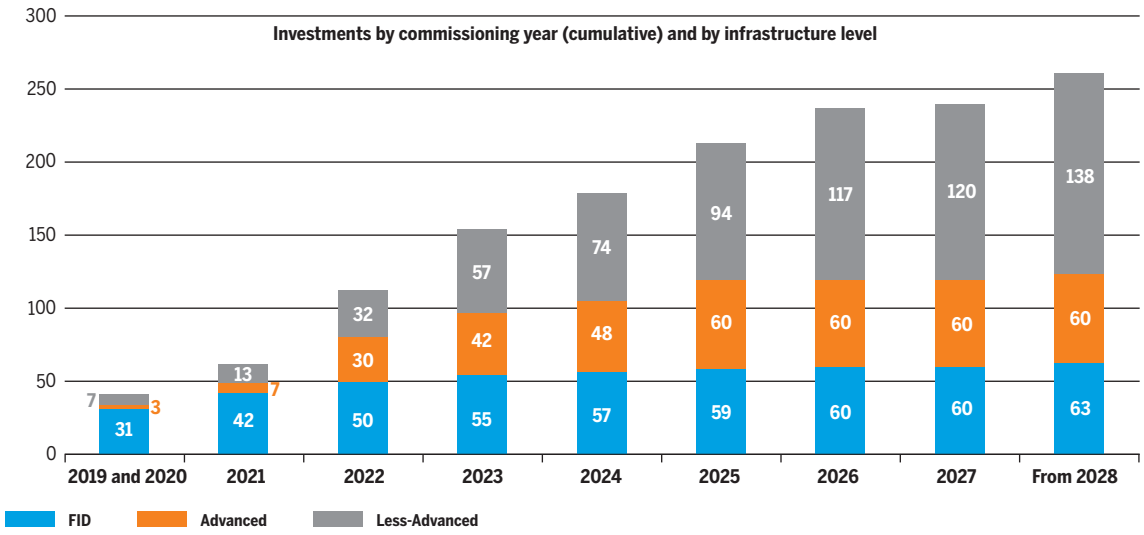

Figure 19: Investments by commissioning year (cumulative) and by infrastructure level

Most of the ones having FID or Advanced status are expected to be commissioned in the next 5 years.

As part of the project collection, promoters have to provide information (except for some specific situations) about the projects' schedules of the main project phases and milestones (Feasibility, FEED, Permitting, FID, Construction and Commissioning). ENTSOG has analysed these data with the purpose to have an overview on the average duration for each project phase and the average completion date for the main milestones.

In case of the Feasibility Study phase, the start and end dates, either past or expected, have been provided for 199 investments. The average duration of the Feasibility Study phase for these projects is 13 months, between December 2016 and January 2018, with the highest average duration in case of UGS projects (15 months) while the other types of projects have the same average duration of 12 months).

Figure 21 shows the distribution of projects per end of Feasibility Study phase. The average Feasibility end date is 14/01/2018 and 86 investments have completed the Feasibility Study before this date while the remaining 113 investments for which data have been provided are expected to complete it after the average Feasibility end date.

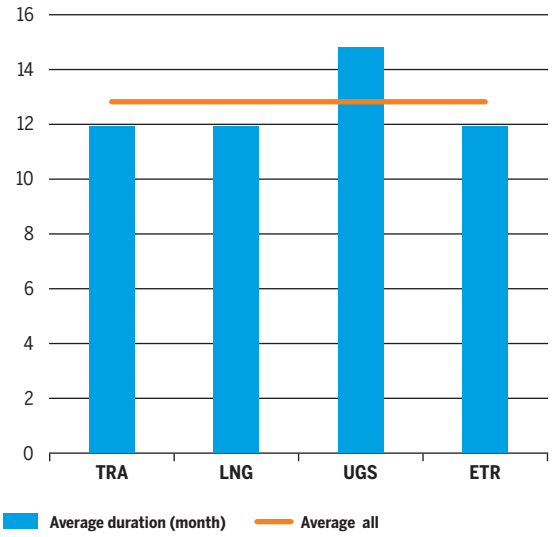

Figure 20: Average duration of the Feasibility Study phase per type of infrastructure

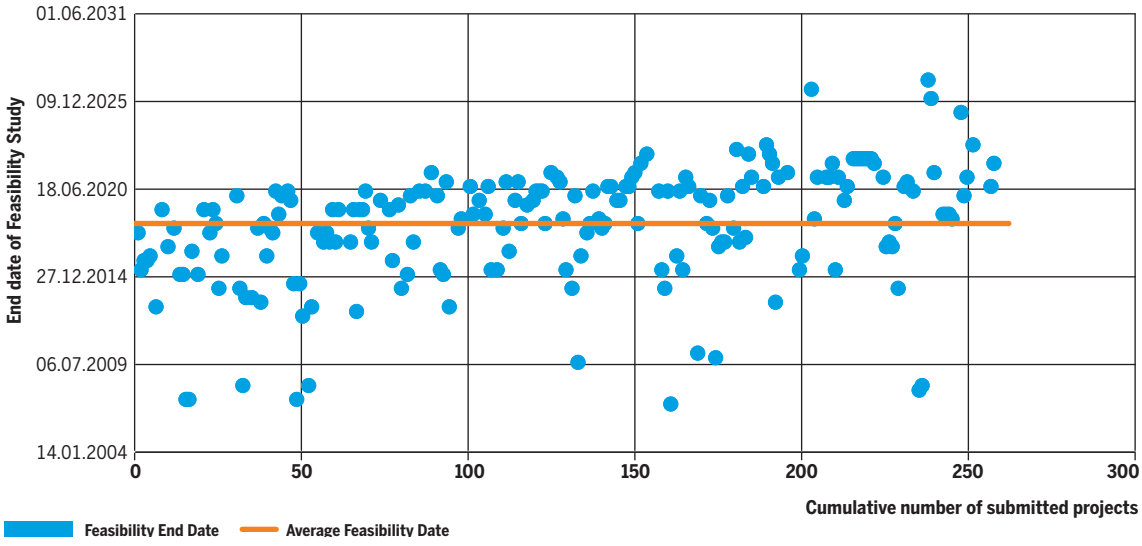

Figure 21: Distribution of projects per end of Feasibility Study phase

Regarding the FEED phase, the start and end dates, either past or expected, have been provided for 194 investments. The average duration of the FEED phase for these projects is 18 months, between November 2018 and May 2020, with the highest average duration in case of TRA projects (19 months) and the lowest average duration in case of LNG projects (12 months). UGS and ETR projects have an average duration of 16 months.

Figure 23 shows the distribution of projects per end of FEED phase. The average FEED end date is 19/05/2020 and 89 investments have completed the FEED before this date while the remaining 105 investments for which data have been provided are expected to complete it after the average FEED end date.

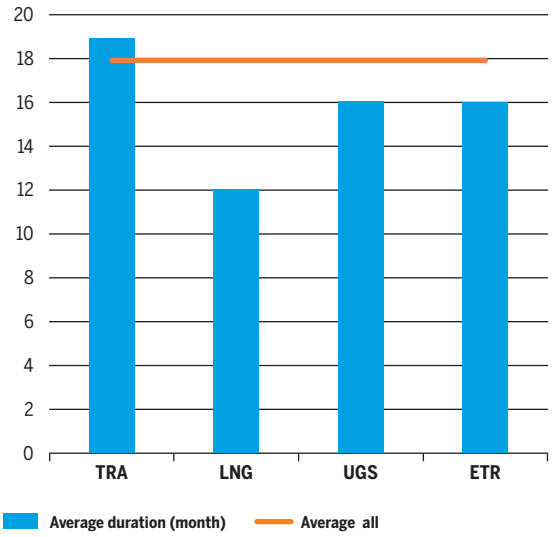

Figure 22: Average duration of the FEED phase per type of infrastructure

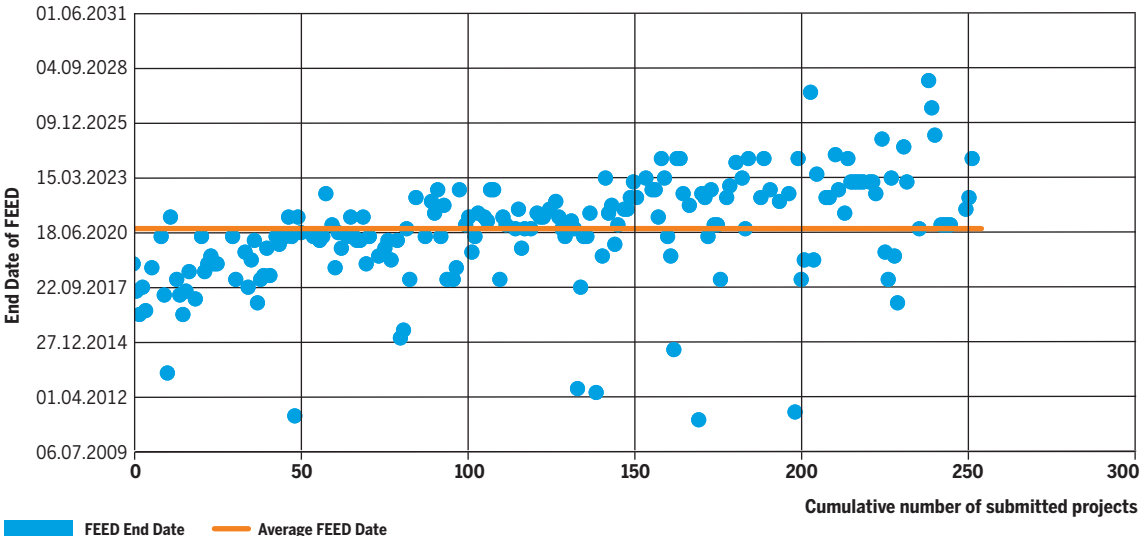

Figure 23: Distribution of projects per end of FEED phase

In case of the Permitting phase, the start and end dates, either past or expected, have been provided for 193 investments. The average duration of the Permitting phase for these projects is 29 months, between October 2018 and March 2021, with the highest average duration in case of LNG projects (33 months) and the lowest average duration in case of ETR projects (22 months). TRA and UGS projects have an average duration of 31, respectively 30 months.

Figure 25 shows the distribution of projects per end of Permitting phase. The average Permitting end date is 20/03/2021 and 95 investments are supposed to complete the Permitting phase before this date while the remaining 98 investments for which data have been provided will complete it after the average Permitting end date.

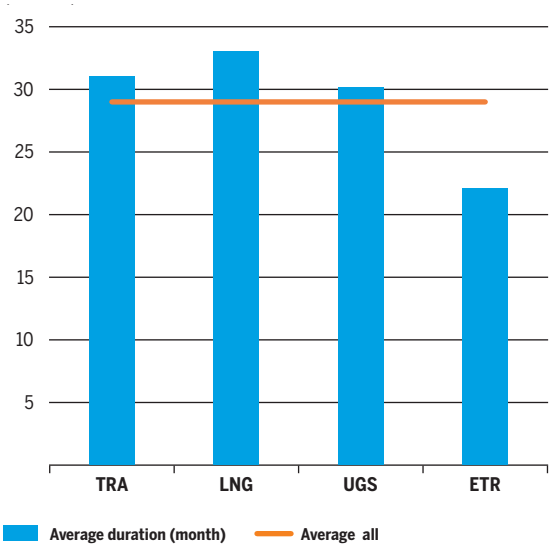

Figure 24: Average duration of the Permitting phase per type of infrastructure

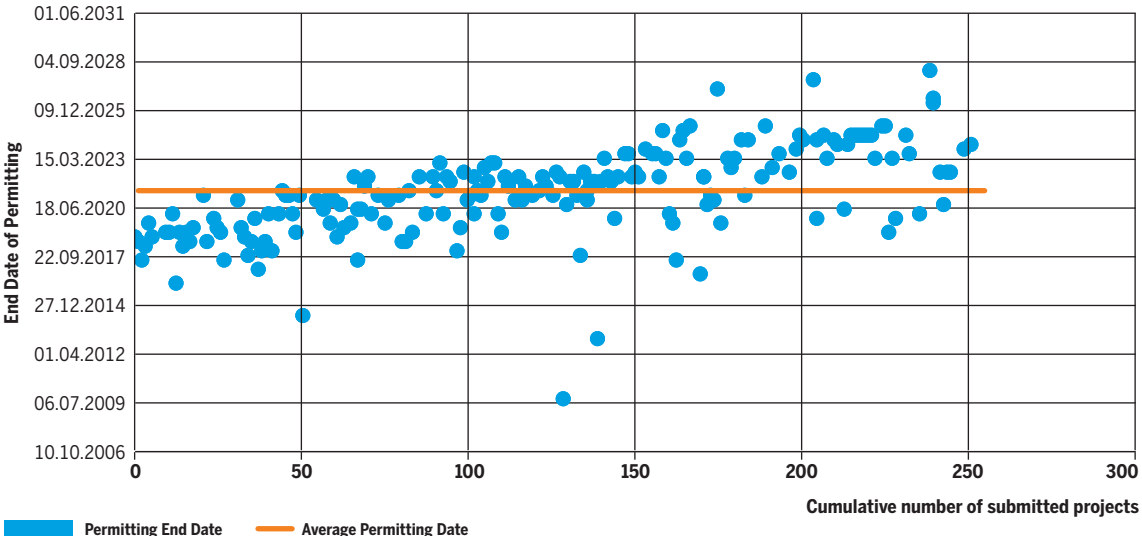

Figure 25: Distribution of projects per end of Permitting phase

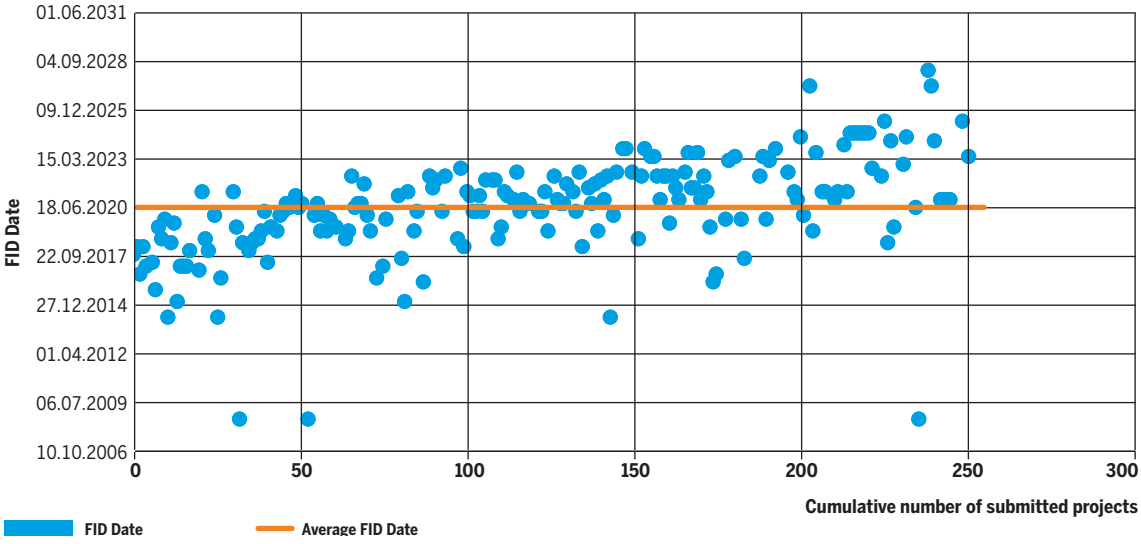

Figure 26: Distribution of projects per FID date

The FID date, either past or expected, has been provided for 198 investments. Figure 26 shows the distribution of projects per FID date. The average FID date is 26/03/2020 and 89 investments have completed the FID before this date while the remaining 109 investments for which data have been provided are expected to complete it after the average FID date.

Regarding the Construction phase, the start and end dates, either past or expected, have been provided for 201 investments. The average duration of the Construction phase for these projects is 28 months, between June 2021 and October 2023, with the highest average duration in case of UGS projects (39 months) and the lowest average duration in case of ETR projects (25 months). TRA and LNG projects have an average duration of 27, respectively 33 months.

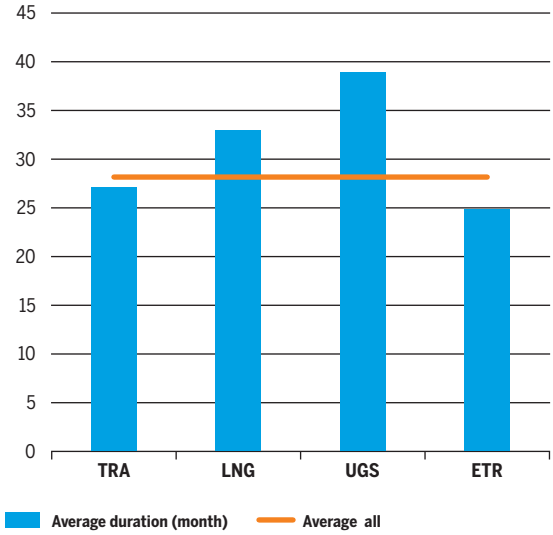

Figure 27: Average duration of the Construction phase per type of infrastructure

Figure 28 shows the distribution of projects per end of Construction phase. The average Construction end date is 17/10/2023 and 105 investments are supposed to complete the Construction phase before this date while the remaining 96 investments for which data have been provided will complete it after the average Construction end date.

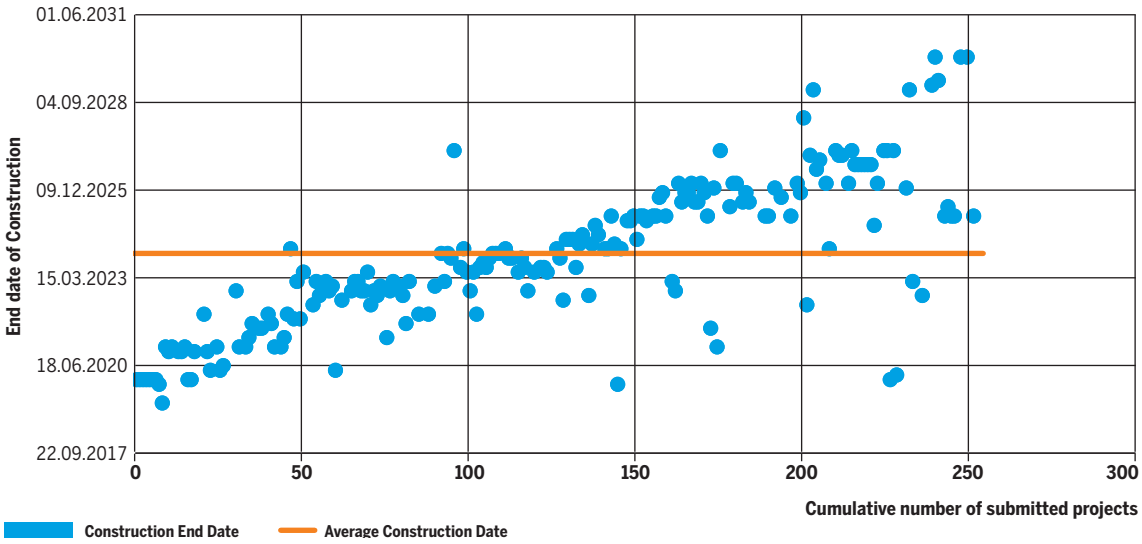

Figure 28: Distribution of projects per end of Construction phase

The Commissioning date, either past or expected, has been provided for 261 investments out of 262 included in TYNDP 2020. The average Commissioning year for these projects is 2024 with 156 investments expected to be commissioned by the end of 2024 while the remaining 105 will be commissioned after 2024.

ENTSOG has analysed the advancement of submitted investments between TYNDP 2018 and TYNDP 2020.

	Completed in T2020	FID in T2020	Advanced in T2020	Less-Advanced in T2020	Cancelled/ Not-resubmitted	Total
FID (T2018)	11	31		2	2	**46**
Advanced (T2018)		13	37	12	10	**72**
Less-Advanced (T2018)		6	16	49	18	**89**
Total	11	50	53	63	30	**207**

Table 4: Evolution of projects from TYNDP 2018 to TYNDP 2020

Of the 46 investments already having the FID status in TYNDP 2018:

- 11 were completed
- 31 are still planned with FID status in TYNDP 2020
- 2 are still planned but no more FID:
  - TRA-N-137[24] and TRA-N-1138[25] present in TYNDP 2020 have a Less-Advanced status while in TYNDP 2018 they both had FID status. In case of project TRA-N-137, the promoter has changed since TYNDP 2018 from Ministry of Energy in Bulgaria to Bulgartransgaz. The new promoter states that FID depends on finalising the transfer of the project to Bulgartransgaz and the timeline for the implementation of the preparatory activities. As for TRA-N-1138, project South Caucasus Pipeline – (Future) Expansion –SCP-(F)X included two phases of the same project while the FID was assigned to first phase (SCPX) which was completed in the meanwhile. Therefore, the submission for TYNDP 2020 refers only to the second part of the project (SCPFX) which has not yet taken FID and is Less-Advanced.
- 2 projects have not been resubmitted (TRA-F-1028[26] and UGS-F-242[27]).

Of the 72 investments having the Advanced status in TYNDP 2018:

- 13 got the FID after TYNDP 2018 project collection;
- 37 still have the Advanced status;
- 12 moved from Advanced to Less-Advanced mainly because the projects have been delayed or rescheduled (TRA-N-86, TRA-N-75, TRA-N-1058, TRA-N-66, TRA-N-809, LNG-N-62, TRA-N-63, TRA-N-325, LNG-N-297, TRA-N-361, TRA-N-423 and TRA-N-1057)
- 10 were not resubmitted (TRA-N-161, TRA-N-252, TRA-N-256, TRA-N-727, LNG-N-198, TRA-N-593, TRA-N-594, TRA-N-974, TRA-N-975 and UGS-N-1229)

Of the 89 TYNDP 2018 investments having Less-Advanced status:

- 6 got the FID after TYNDP 2018 project collection;
- 16 moved from Less-Advanced to Advanced status;
- 49 are still planned and present Less-Advanced status;
- 18 were cancelled/not-resubmitted.

For initiatives having already reached the FID before their submission to TYNDP 2020 (63 projects) the analysis of project submissions shows:

- 29 initiatives whose construction phase is expected to end within 3 years from when the FID was taken;
- 21 initiatives whose construction phase is expected to end within 4 to 7 years from when the FID was taken;
- 2 initiatives whose construction phase is expected to end after more than 7 years from when the FID was taken;
- 11 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.

24 Interconnection Bulgaria – Serbia, from Bulgartransgaz

25 South Caucasus Pipeline Future Expansion (SCPFX), from SOCAR

26 Albania – Kosovo Gas Pipeline from Ministries in Albania

27 Cornegliano UGS from ITAL Gas Storage

For investments not having gotten the FID yet but presenting an Advanced status (60 projects) the analysis shows:

- 43 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 while other 8 submissions between 6 and 10 years;
- An average of almost 4 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.

The following chart illustrates the status of those common projects according to TYNDP 2018 and TYNDP 2020 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 (42 % in total), 3 have been submitted with an earlier commissioning date.

Share of common projects in TYNDP 2018 and TYNDP 2020 by commissioning status

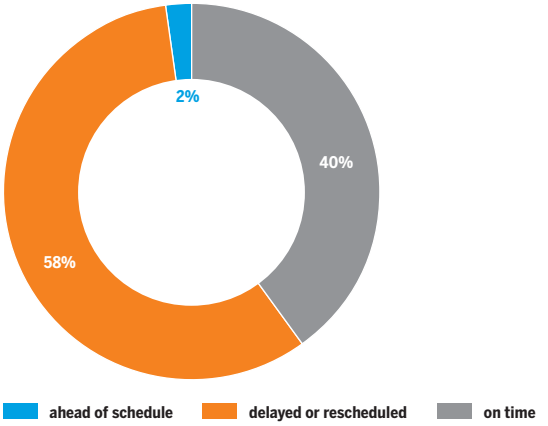

Figure 29: Share of common projects in TYNDP 2018 and TYNDP 2020 by commissioning status

Reported delays of projects from TYNDP 2018 to TYNDP 2020

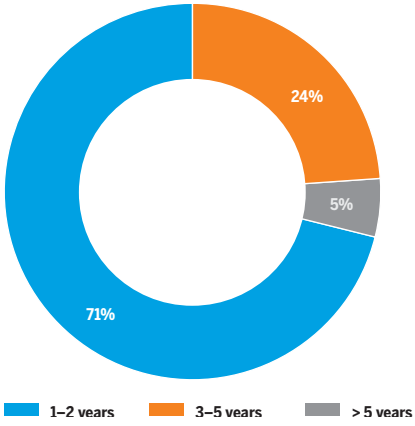

Figure 30: Advancement of projects from TYNDP 2018 to TYNDP 2020

More than half of the submissions in TYNDP 2020 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/authorizations from competent authorities
- Lack of coordination between hosting countries/political uncertainties
- Delays in contract award procedure and/or procurement process
- Lack of funds/financing
- Interdependencies with other (delayed) projects;
- Delay following findings from concluded pre-feasibility study

5.5.1 TYNDP 2020 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 2020 project collection, project promoters provided PCI information based on the latest approved PCI list at the time of the project collection (June, 2019) which was 3rd PCI List. The PCI process for the 4th PCI List was ongoing at the time. Subsequently, European Commission published the 4th PCI List on 31 October 2019 therefore ENTSOG updated the relevant project PCI information accordingly.

From the 106 submissions in TYNDP 2018 which had the 3rd PCI status, 82 were re-submitted for TYNDP 2020, while of the remaining of 14 submissions 2 were completed, 2 cancelled and 10 not resubmitted.

In TYNDP 2020 there are 62 submissions which are part of the 4th PCI List. Figure 31 and 32 show the split of these projects per maturity status and infrastructure type.

Projects with PCI status in the 4th PCI List by maturity status

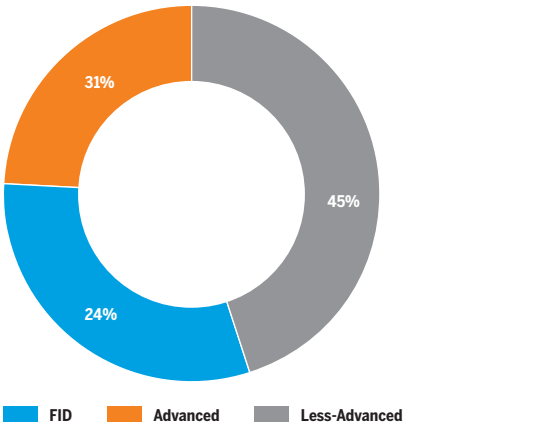

Figure 31: Projects having PCI status in the 4th PCI List by maturity status

Projects with PCI status in the 4th PCI List by infrastructure type

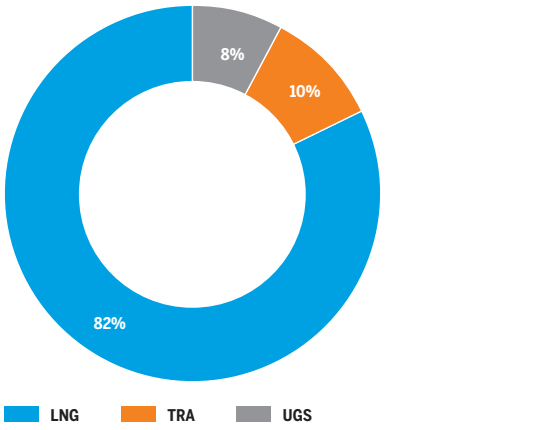

Figure 32: Projects having PCI status in the 4th PCI List by infrastructure type

During the TYNDP project collection, promoters were asked to indicate whether they intend to apply to the next PCI selection process (i. e. the 5th PCI List). This information, collected from May to June 2019, represents only a declaration of intention and does not automatically translate 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 ENTSOG website[28].

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

28 https://www.entsog.eu/sites/default/files/2020-05/PS-CBA%20groups_for_publication_0_5.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.

The chart below shows the total cost (CAPEX) per project status. The bar chart also offers a comparison between cost information published for TYNDP 2020 and TYNDP 2018.

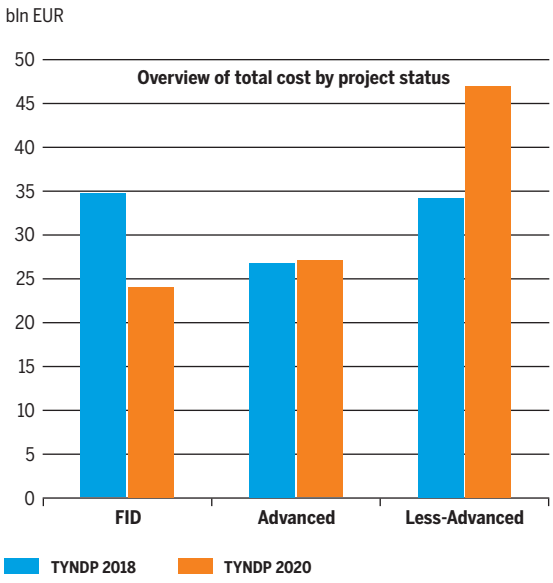

Figure 33: Overview of total cost by project status (Billion €) and comparison with TYNDP 2018

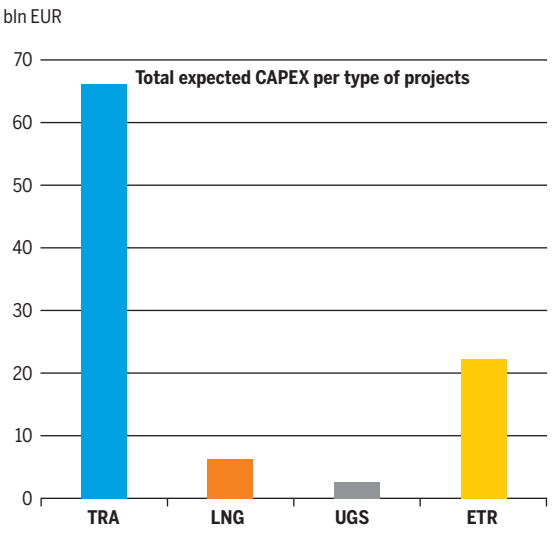

Figure 34: Overview of total cost by type of projects (Billion €)

Promoters submitted projects to TYNDP 2020 for a total of around 97 bn€.

According to available information, for FID and Advanced projects the total costs amount to approximately 50 bn €.

The distribution of the total expected CAPEX across different categories of projects is displayed in Figure 34.

Compared to TYNDP 2018 the total cost of submitted projects in TYNDP 2020 is about the same, in spite of 55 more projects included in TYNDP 2020 (considering also the 75 ETRs).

This can be explained by the fact that:

- ETR projects represent 29 % of the total submissions and the average cost per ETR is about 70 % of the average cost of a transmission project;
- There are 17 less transmission projects in TYNDP 2020 compared to TYNDP 2018, while the number of UGS and LNG projects in the two TYNDPs is very similar, and
- The average cost per projects excluding ETRs is about 15 % higher in TYNDP 2018 compared to TYNDP 2020.

According to project promoters submission, investments are highly concentrated in 2020–2025 (with a peak in 2025 of almost 25 bn €), with around 72 % of the total expected cost to be experienced in those years. In this period 90 % of projects having FID or Advanced status are in fact expected to be implemented.

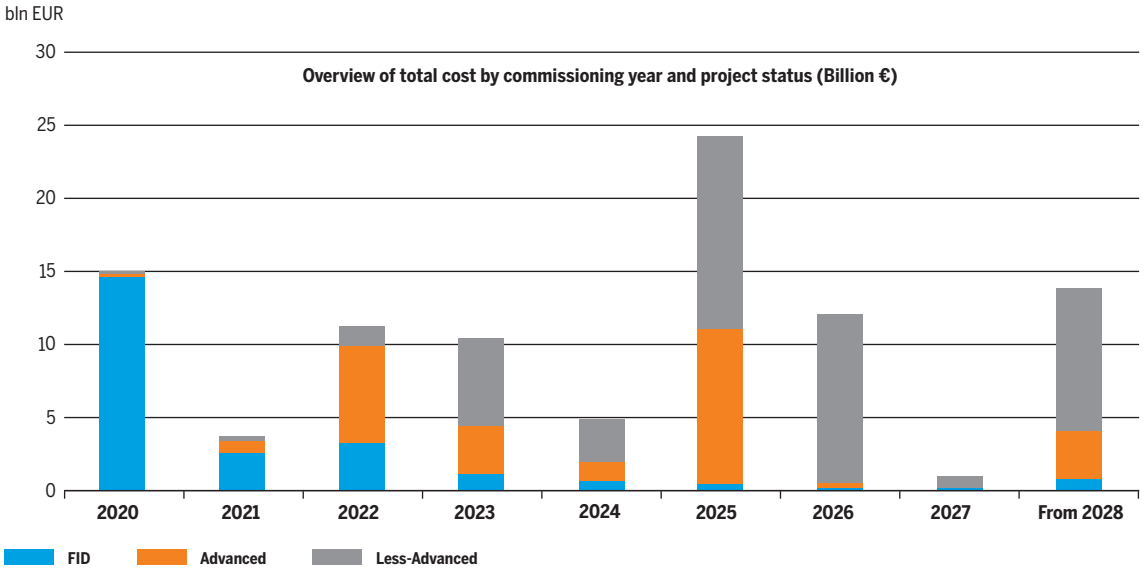

Figure 35: Overview of total cost by last commissioning year and project status (Billion €)

Transmission projects, representing also the majority of the submitted projects (58 %), cover 68 % of the total costs.

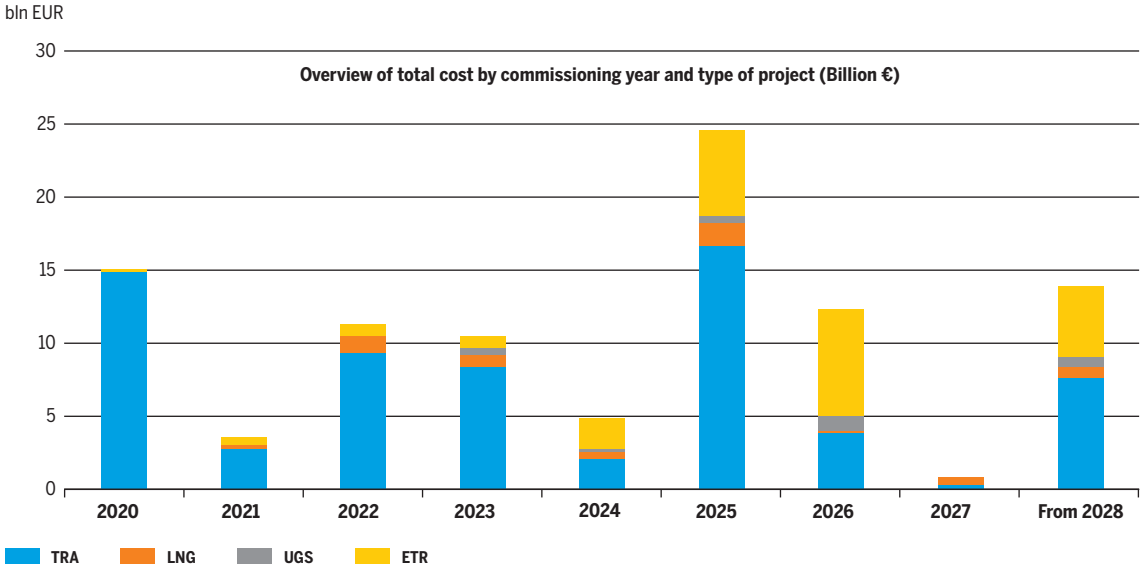

Figure 36: Overview of total cost by last commissioning year and type of project (Billion €).
The graph excludes eight projects for which a commissioning year was not provided.

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 for which promoters expressed interest in applying for the PCI label during the TYNDP 2020 project collection 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 2020 project data collection and have marked their expected costs as confidential, alternative figures have been directly provided by the promoters based on reference costs. These figures, per project, will be used only for publicity reasons in order to ensure as much transparency as possible.

In the PS-CBA phase ENTSOG 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. In Annex A the origin of the costs published is clearly distinguished.

5.7 TYNDP 2020 SUBMISSIONS 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 part of a national development plan (NDP), being the TYNDP a non-binding exercise.

Following ACER recommendation, project promoters have been requested[29] 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.

77 % of the TYNDP projects (**excluding ETRs**) are reported as listed in NDPs.

Country	Part of NDP	NOT Part of NDP	Country	Part of NDP	NOT Part of NDP
AL	1	–	IE	2	–
AT	4	–	IT	16	2
AZ	–	1	LT	3	–
BA	3	–	LV	–	4
BE	1	–	MK	1	–
BG	6	–	MT	1	–
CY	–	1	NL	5	–
CZ	4	–	PL	11	1
DE	16	5	PT	2	–
DK	–	2	RO	11	6
EE	4	–	SE	–	1
ES	5	2	SI	7	–
FI	–	1	SK	5	–
FR	5	–	TM	–	1
GE	–	1	TR	–	1
GR	9	9	UA	–	3
HR	14	1	UK	2	1
HU	6	–			

Table 5: Overview of projects being part or not of NDPs by country (excluding ETRs)

29 For TYNDP 2020 edition, ENTSOG did not collect information on the inclusion in NDPs in case of ETR projects.

For the 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 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 2020 Annex A.

6 ENERGY TRANSITION PROJECTS

In terms of sustainability, Regulation (EU) 347/2013 defines that projects "*involving two or more MSs or located on the territory of one MSs but with significant cross-border impact*", need contributing significantly "*through reducing emissions, supporting intermittent renewables generation and enhancing deployments of renewable gas*" in order to be labelled as PCI. Renewable and decarbonised gases projects enhance GHG emissions reductions that, by definition, represent cross-border benefits.

Other cross-border effects are determined by the positive externalities generated by technology and innovation diffusion across EU countries via energy transition projects implementation and scaling-up.

Anticipating those needs and considering that projects that want to apply for the PCI label must be included in the latest available TYNDP, the TYNDP 2020 for the first time opened to the submission of Energy Transition (ETR) projects: "any project which facilitates the integration of renewables, the achievement of decarbonisation and efficiency targets, reduction of other air pollutants, sector coupling initiatives and, more generally, all projects specifically aimed at the energy system transformation for reaching sustainability goals and not already included in the previous project categories". In TYNDP 2020 ETR projects represent 30 % of the overall submitted projects (28 % if considering the overall submissions before their aggregation[30]).

Support to sustainability through renewables penetration is vital to achieve the decarbonisation targets therefore ENTSOG believes that the PCI assessment should consider these activities too.

In its TYNDP 2020 Opinion, also ACER welcomed the final Practical Implementation Document 2020 allowing the submission of Energy Transition projects. In its Opinion, ACER acknowledges the potential importance of renewable gas projects for the decarbonisation of the gas sector and its contribution to the climate objectives of the European Union.

See table 6 for a complete list of TYNDP 2020 ETR projects divided by type.

30 For more details on how promoters' submissions are further aggregated in TYNDP please consult section 5.3.

TYNDP 2020 code	TYNDP 2020 ETR Name	Promoter	Country	Status	First Commissioning Year	Last Commissioning Year
Hydrogen and synthetic methane						
ETR-F-546	Jupiter 1000: first industrial demonstrator of Power to Gas in France	GRTgaz, Terega	France	FID	2020	2020
ETR-A-504	Sun2Hy	Enagas S.A.	Spain	Less-Advanced	2024	2024
ETR-N-80	Power to Gas Production with infrastructure building/ enhacement in Latvia	JSC "Conexus Baltic Grid"	Latvia	Less-Advanced	2030	2030
ETR-N-300	HyOffWind Zeebrugge	Fluxys, Eoly, Parkwind	Belgium	Less-Advanced	2022	2022
ETR-N-305	PEGASUS	S.G.I. SpA	Italy	Less-Advanced	2024	2024
ETR-N-306	Greening of Gas (GoG)	NET4GAS, s.r.o.	Czech Republic	Less-Advanced	2023	2023
ETR-N-315	G2F – Gas to Future	NAFTA a.s. (joint stock company)	Slovakia	Less-Advanced	2025	2025
ETR-N-322	North Sea Wind Power Hub	N.V. Nederlandse Gasunie	Netherlands	Less-Advanced	2032	2032
ETR-N-370	Hydrogen transmission backbone Netherlands	N.V. Nederlandse Gasunie	Netherlands	Less-Advanced	2030	2030
ETR-N-396	Djewels	Nouryon	Netherlands	Less-Advanced	2030	2030
ETR-N-406	hybridge – gas grid infrastructure	Open Grid Europe GmbH	Germany	Less-Advanced	2023	2023
ETR-N-427	P2G integrated in Reganosa NG Transmission Grid	Reganosa	Spain	Less-Advanced	2024	2024
ETR-N-452	Element Eins	Thyssengas GmbH, Gasunie Deutschland Transport Services GmbH, Tennet TSO GmbH	Germany	Less-Advanced	2022	2028
ETR-N-483	L2DG (LNG to Decarbonised Gas)	Reganosa	Spain	Less-Advanced	2024	2024
ETR-N-537	Green Crane – Spain	Enagas S.A.	Spain	Less-Advanced	2024	2024
ETR-N-958	Green Crane – Italy	Snam	Italy	Less-Advanced	2025	2025
ETR-N-562	Energy Park Bad Lauchstädt	ONTRAS Gastransport GmbH	Germany	Less-Advanced	2023	2023
ETR-N-591	Power to gas plant in the south of Italy	Snam Rete Gas S.p.A.	Italy	Less-Advanced	2025	2025
ETR-N-595	Transport of hydrogen into natural gas network	Snam Rete Gas S.p.A.	Italy	Less-Advanced	2025	2025
ETR-N-622	Renewable Hydrogen according to NEP2020	Gasunie Deutschland Transport Services GmbH	Germany	Less-Advanced	2020	2030
ETR-N-633	GETH2-ETR 1	Nowega GmbH	Germany	Less-Advanced	2022	2022
ETR-N-828	Green Hydrogen Hub Denmark	Corre Energy Ltd	Denmark	Less-Advanced	2025	2025
ETR-N-830	Green Hydrogen Hub Zuidwending	Corre Energy Limited	Netherlands	Less-Advanced	2026	2026
ETR-N-833	Green Hydrogen Hub Drenthe	Corre Energy Limited	Netherlands	Less-Advanced	2026	2026
ETR-N-846	Green Hydrogen Hub Harsefeld	Corre Energy Limited	Germany	Less-Advanced	2026	2026
ETR-N-852	Green Hydrogen Hub Ahaus-Epe	Corre Energy Limited	Germany	Less-Advanced	2026	2026
ETR-N-874	Green Hydrogen Hub Leer	Corre Energy Limited	Netherlands	Less-Advanced	2026	2026
ETR-N-883	Green Hydrogen Hub Moeckow	Corre Energy Limited	Germany	Less-Advanced	2026	2026
ETR-N-894	Green Hydrogen Hub Etzel	Corre Energy Limited	Germany	Less-Advanced	2026	2026
ETR-N-900	Hydrogen injection into the gas network in Lithuania	AB Amber Grid	Lithuania	Less-Advanced	2024	2024
ETR-N-896	P2G4A	Gas Connect Austria GmbH	Austria	Less-Advanced		
ETR-N-899	mosaHYc (Mosel Saar Hydrogen Conversion)	GRTgaz, CREOS Deutschland	France	Less-Advanced	2024	2024
ETR-N-956	Hydrogen export/import Oude Statenzijl	Gasunie Transport Services B.V.	Netherlands	Less-Advanced	2030	2030
ETR-N-913	Modification of NP23 MW turboset to a hydrogen-ready low-emissions at CS04	eustream, a.s.	Slovakia	Less-Advanced	2023	2023
ETR-N-916	Measures for achieving hydrogen blending readiness of the transmission syst	eustream, a.s.	Slovakia	Less-Advanced	2024	2024
ETR-N-939	H2morrow Steel	Open Grid Europe GmbH; Thyssengas GmbH	Germany	Less-Advanced	2026	2026
ETR-N-948	New hydrogen pipeline projects of german gas NDP 2020-2030	Nowega GmbH; Open Grid Europe GmbH; Thyssengas GmbH	Germany	Less-Advanced	2030	2030
ETR-N-952	Hydrogen pipeline system conversion projects of german gas NDP 2020-2030	Open Grid Europe GmbH	Germany	Less-Advanced	2030	2030
ETR-N-923	Interconnected hydrogen network	Fluxys Belgium	Belgium	Less-Advanced	2025	2025
ETR-N-903	Coversion of Natural Gas pipelines to Hydrogen	Gasunie Deutschland Transport Services GmbH	Germany	Less-Advanced	2030	2030
ETR-N-904	Hydrogen import via Oude	Gasunie Deutschland Transport Services GmbH	Germany	Less-Advanced	2030	2030

TYNDP 2020 code	TYNDP 2020 ETR Name	Promoter	Country	Status	First Commissioning Year	Last Commissioning Year
ETR-N-905	Vlieghuis (NL)/Emlichheim (DE) Capacity for Hydrogen according to the NDP	Thyssengas GmbH	Germany	Less-Advanced	2025	2025
ETR-N-911	Zevenaar (NL)/Elten (DE) Capacity of Hydrogen according to the NDP	Thyssengas GmbH and Open Grid Europe GmbH	Germany	Less-Advanced	2029	2029
ETR-N-945	Conversion of Natural-Gas-Pipelines to Hydrogen-Pipelines	Thyssengas GmbH	Germany	Less-Advanced	2025	2025
ETR-N-901	HyGéo	Teréga	France	Less-Advanced	2024	2024
ETR-N-942	Lacq Hydrogen	Teréga	France	Less-Advanced	2020	2020
ETR-N-616	Renewable Methane according to NEP2020	Gasunie Deutschland Transport Services GmbH	Germany	Less-Advanced	2025	2025
ETR-A-312	P2G Velke Kapusany	NAFTA a.s. (joint stock company)	Slovakia	Advanced	2023	2023
ETR-N-938	H2-Import Coalition	Deme, Engie, Exmar, Fluxys, Port of Antwerp, Port of Zeebrugge,WaterstofNet	Belgium	Less-Advanced	2020	2020
Biomethane Developments						
ETR-F-523	Biomethane plants development	Snam4mobility	Italy	FID	2023	2023
ETR-A-437	Supercritical water gasification facilities	N.V. Nederlandse Gasunie	Netherlands	Advanced	2021	2021
ETR-N-20	GNI Renewable Gas Central Grid Injection Project	Gas Networks Ireland	Ireland	Less-Advanced	2023	2028
ETR-N-125	Biomethane production with infrastructure building/ enhancement in Latvia	JSC "Conexus Baltic Grid"	Latvia	Less-Advanced	2026	2026
ETR-N-617	Project to facilitate biomethane production plants inteconnection	Snam Rete Gas	Italy	Less-Advanced	2022	2022
ETR-N-728	Biomethane: connecting production units and reverse flow projects	Teréga	France	FID	2030	2030
ETR-N-922	Green Gas Lolland-Falster	Energinet	Denmark	Less-Advanced	2023	2023
ETR-N-921	Circular economy: waste to biomethane	Reganosa	Spain	Less-Advanced	2022	2022
CCS/CCU						
ETR-A-430	Porthos	N.V. Nederlandse Gasunie	Netherlands	Advanced	2023	2023
ETR-N-22	Ervia Cork CCUS	Ervia (parent company of Gas Networks Ireland)	Ireland	Less-Advanced	2028	2028
ETR-N-401	Antwerp@C	Fluxys and Antwerp Port Authority	Belgium	Less-Advanced	2026	2026
ETR-N-432	Athos	N.V. Nederlandse Gasunie	Netherlands	Less-Advanced	2026	2026
ETR-N-924	Power to Methanol Antwerp	Power to Methanol Antwerp BV	Belgium	Less-Advanced	2022	2022
ETR-N-929	Carbon Connect Delta	Smart Delta Resources	Belgium	Less-Advanced	2025	2025
Reverse flow DSO-TSO						
ETR-F-587	West Grid Synergy	GRTgaz	France	FID	2019	2019
ETR-A-64	Biomethane reverse flow Denmark	Energinet	Denmark	Advanced	2021	2021
ETR-N-624	Biomethane: Reverse flow projects	GRTgaz	France	Less-Advanced	2028	2028
CNG/LNG for transport (road, train, sea)						
ETR-F-516	CNG and L-CNG stations	Snam4mobility	Italy	FID	2022	2022
ETR-F-541	CORE LNGas hive and LNGHIVE2 Infrastructure and logistic solutions	Enagas Transporte S.A.U.	Spain	FID	2020	2020
ETR-F-632	Railway project roadmap. Transformation to LNG	Enagas Transporte S.A.U.	Spain	FID	2022	2022
ETR-N-226	Fos Tonkin LNG Terminal Evolution	Elengy	France	Less-Advanced	2022	2022
ETR-N-898	CNG filling station system development (CroBlueCorr project)	Plinacro Ltd	Croatia	Less-Advanced	2026	2026
Smart multi energy system to create sinergies between sectors						
ETR-F-743	Impulse 2025	Teréga	France	FID	2025	2025
Hybrid compressor stations						
ETR-F-599	Sector coupling: hybrid compressor station	Snam Rete Gas S.p.A.	Italy	FID	2024	2024
Micro liquefaction						
ETR-N-528	Microliquefaction plants	Snam4mobility	Italy	Less-Advanced	2022	2022
Methane Emissions						
ETR-N-920	Measures for the reduction of methane emissions	eustream, a.s.	Slovakia	Less-Advanced	2024	2024

Table 6: ETR projects included in TYNDP 2020 divided per type

If compared, for example, to traditional cross-border interconnections, in many cases ETR projects could be represented by smaller-capacity-size projects and more geographically distributed within a country. This is the case for example of many biomethane production facilities whose location is mostly dependent on the location of the biogas production location.

For this reason, for TYNDP 2020, promoters of Energy Transition Projects submitted their ETR projects as a virtual aggregation of more projects, when possible.

As mentioned in → **section 5.3.4**, most of the submissions can be identified under one of the following categories: power-to-gas (P2G) and hydrogen related projects; biomethane production and injection; carbon capture and storage/use; further enable of use of gas in the form of CNG and LNG in transport sectors; reverse flow DSO-TSO.

The main technologies related to ETR projects are briefly presented below:

- Power-to-Gas is an instrument allowing for optimisation of the overall energy system since it deals with excess of renewable electricity (compared to the demand) which is difficult to store in large quantities for a long time. The advantages based of producing renewable gases like hydrogen and synthetic methane are to provide seasonal flexibility and storage, building on existing gas network and underground storage. Already today the gas system offers over 1100 TWh of underground storage capacity. Existing gas Infrastructure – after technical adaption – can be used for long-term energy storage and transportation. In addition, renewable gases allow the decarbonisation of hard-to-abate sectors (heavy industry) and a more efficient use of the expected increase in generation potential coming from RES in the future.

  Power-to-Gas means a conversion of electrical power into a gaseous energy carrier. In a first step, electricity from renewable energy sources is used in an electrolyser to split water into hydrogen and oxygen. This process is called Electrolysis. An additional Methanation step can be used to synthesise the hydrogen with carbon dioxide into synthetic methane.
- Biogas is a mixture of methane, CO_2 and small quantities of other gases produced by anaerobic digestion of organic matter in an oxygen-free environment. The precise composition of biogas depends on the type of feedstock and the production pathway.
- Biomethane is an almost pure source of methane produced either by "upgrading" biogas (a process that removes any CO_2 and other contaminants present in the biogas) or through the gasification of solid biomass followed by methanation. Biomethane can be injected and transported through the gas grid without additional upgrades of the transmission system.
- CCS and CCU aim to capture CO_2 emissions from point sources such as power plants and industrial processes, to prevent the release into the atmosphere. The difference between CCS and CCU is in the final destination of the captured CO_2. In CCS, captured CO_2 is transferred to a suitable site for long-term storage, while in CCU, captured CO_2 is converted into commercial products. This technology can be used also in the production of hydrogen following the Steam Methane Reforming process (SMR).
  CO_2 can be transported for storage or use via pipelines, road or maritime.

More detailed information related to project description and technical details can be found for each ETR in the Annex A of TYNDP 2020.

7 INCREMENTAL CAPACITY PROCESS

7.1 DESCRIPTION OF THE INCREMENTAL CAPACITY PROCESS

The incremental capacity process has been introduced by the Commission Regulation (EU) 2017/459[31] for a streamlined and harmonised Union-wide process to react to possible market-based capacity requests for an increase in technical capacity or creation of new capacity. The requested incremental capacity may be offered based on market demand. Building the capacity is based on binding market commitments and subject to the positive outcome of an economic test, in the following cases:

(a) At existing interconnection points (IPs);
(b) When establishing a new IP;
(c) With physical reverse flow capacity at an IP, which has not been offered before.

The aim of setting rules for incremental capacity is to identify the need for new/incremental capacity and to allocate both existing and incremental capacity in an integrated way.

This process lasts two years and is divided in two phases, a non-binding phase in which the demand for incremental capacity is assessed, and a binding phase where network users provide binding commitments for incremental capacity.

The non-binding phase starts after the annual yearly auction, at least in each odd-numbered year, with the assessment of demand indications for incremental capacity. The network users provide TSOs with their non-binding capacity demand (with regards to volume, direction, duration, location of their interest) including possible conditionality and other relevant documentation. No later than 8 weeks after the start of the annual yearly auction, TSOs shall produce market demand assessment reports (DARs) which shall be published within 16 weeks after the start of the annual yearly auction. The DARs should consider, among other things, whether the TYNDP identifies 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 DAR identifies demand for incremental capacity that cannot be satisfied by existing available capacity, the concerned TSOs will follow the incremental capacity process further. If no demand has been identified, the process stops here.

In the next phase, the design phase, TSOs conduct technical studies for incremental capacity projects and coordinated offer levels based on technical feasibility and the DARs. No later than 12 weeks after the start of the design phase, a public consultation on the key parts of the draft project proposal is conducted and stakeholders have an opportunity to provide feedback on the TSOs' proposals. A key milestone after the design phase and public consultation is to submit a comprehensive incremental capacity project proposal to the relevant National Regulatory Authorities (NRAs). The NRAs will then have 6 months to issue coordinated decisions on the project proposal.

After the NRAs' decisions, the binding allocation phase will start and binding commitments for incremental capacity from network users will be collected during the annual yearly auction. As a default, auctions are used. However, an alternative capacity allocation mechanism can be employed, subject to NRA's approval, where the market demand assessment shows that the ascending clock auction is not suitable and that the incremental capacity project fulfils both of the following conditions: (a) the incremental project involves more than two entry-exit systems and bids are requested along several interconnection points during the allocation procedure; and (b) bids with a duration of more than 1 year are requested.

After receiving binding commitments for the incremental capacity offered in the annual yearly auction, the economic viability of the incremental capacity project will be assessed trough the economic test. If the outcome of the economic test is positive on both sides of an interconnection point for at least one offer level that includes incremental capacity, an incremental capacity project will be initiated.

31 COMMISSION REGULATION (EU) 2017/459 of 16 March 2017 establishing a network code on capacity allocation mechanisms in gas transmission systems and repealing Regulation (EU) No 984/2013

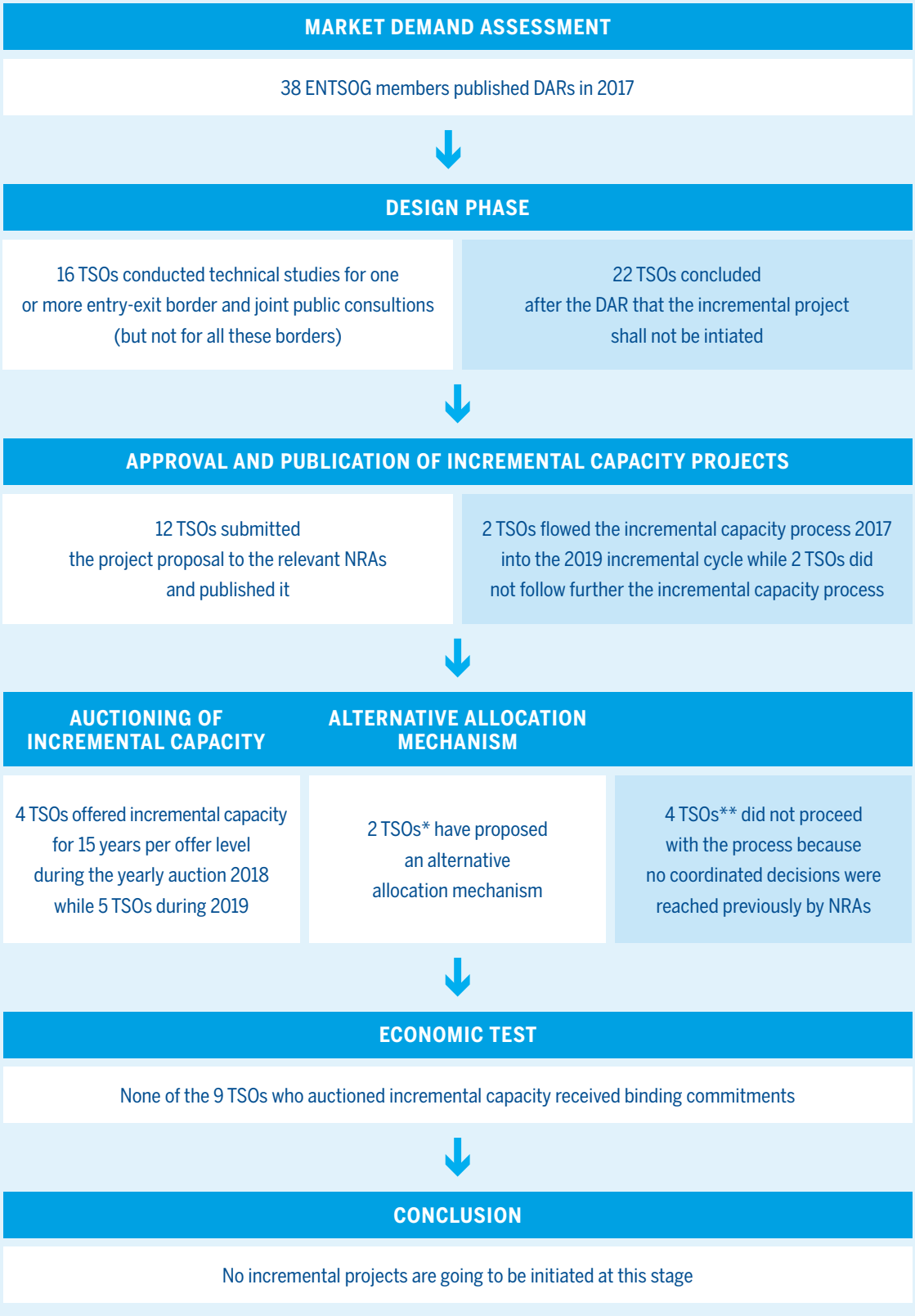

Figure 37: Summary of the results of the first incremental process

7.2 FIRST INCREMENTAL CAPACITY PROCESS INITIATED IN 2017

The first incremental capacity process was initiated in April 2017 following Chapter 5 (Articles 22 to 31) of the Capacity Allocation Mechanisms Network Code (CAM NC).

In order to analyze the progress of the incremental capacity process and to identify if new capacity projects were going to be initiated as a result of the incremental capacity process, data from 38 out of 44 ENTSOG members was collected. Based on that data and further interactions with the TSOs, a report on the first incremental capacity process[32] was produced and published. Additional information on the incremental process can be also found in the annexes, especially in annex 2[33] which contains the responses of the TSOs to the questionnaire launched.

Figure 37 is a summary of the results of the first incremental process which shows the number of TSOs involved during the different steps of the incremental capacity process as well as the outcome of each phase.

The initial step in the incremental capacity process is for the TSOs to perform common DARs at each entry-exit border based on the non-binding demand received by network users. The DARs for the first incremental capacity process are available at ENTSOG webpage[34]. On those cases in which a demand for incremental capacity was identified in the DARs, the respective TSOs continued with the incremental capacity process. Table 7 refers to those projects and provides information on the entry-exit borders covered by them, the TSOs involved, the specific TYNDP reference number for the projects that were included in the 2018 TYNDP and informs whether the different steps of the incremental capacity process were performed or not.

During the annual yearly auctions, the TSOs who offered incremental capacity did not received any binding commitments from network users. This fact implied that there was no need to determine the economic viability for these projects and therefore no individual economic tests nor single economic tests were carried out. Consequently, there were no proposals of redistribution of revenues for any of the TSOs. Therefore, the report on the first incremental capacity process concluded that no incremental capacity projects were going to be started at that point.

32 https://www.entsog.eu/sites/default/files/2020-01/entsog_incremental_capacity_report_2017_lux%20version.pdf

33 https://www.entsog.eu/sites/default/files/2020-01/Annex%202%20-%20Incremental%20monitoring%20responses_final.xlsx

34 https://www.entsog.eu/capacity-allocation-mechanisms-nc#incremental-capacity-demand-assessment-2017

TYNDP 2018 reference number	Entry-exit border	TSO(s) involved that reported the progress of the Incremental Capacity Process	Performance of technical studies	Launch of a public consultation	Submission of the project proposal to the NRA	Publication of coordinated decisions by the NRAs	Yearly auctions for incremental capacity	Economic test
Project not included	AT – SK	GCA	✘ on the Austrian side there was enough technical capacity available	✔	✔	✔	Alternative allocation mechanism	Not performed because binding commitments were not received from network users
Project not included	SK – AT	Eustream	✔	✔	✔	✔	Alternative allocation mechanism	Not performed because binding commitments were not received from network users
Project not included	DE – AT	Bayernets, GRTgaz Deutschland, OGE	✔	✔	✔	✔	✔ Yearly auction 2018	Not performed because binding commitments were not received from network users
Project not included	AT – DE	GCA	✔	✔	✔	✔	✔ Yearly auction 2018	Not performed because binding commitments were not received from network users
Project not included	GR – IT	DESFA	✔	✔	✔	The incremental capacity process 2017 flowed into the 2019 incremental cycle		
TRA-N-1246	IT – GR	SNAM	✔	✔	✔	The incremental capacity process 2017 flowed into the 2019 incremental cycle		
Project not included	AT – SL	GCA	✔	✔	✔	✘	✘	Not performed because binding commitments were not received from network users
TRA-N-873	DE – NL	Gascade, Gasunie Deutschland	✔	✔	✔	✔	✔ Yearly auction 2019	Not performed because binding commitments were not received from network users
Project not included	NL – DE	Gasunie Transport Services	✔	✔	✔	✔	✔ Yearly auction 2019	Not performed because binding commitments were not received from network users
Project not included	DE – Russian Federation	Gascade, Gasunie Deutschland, NEL, Ontras	✔	✔	✔	✘	✘	Not performed because NRA rejected the project proposal.
Project not included	AT – CZ	GCA	✔	✘ The BACI project covered all the demand indicated by the network users				
TRA-N-423	AT – HU	GCA	✔	✔	✔	✘ ACER decision No 05/2019*	✔ The yearly auction was completed in July 2020	
Project not included	HU – AT	FGSZ	✔	✔	✔	✘ ACER decision No 05/2019	✔ The yearly auction was completed in July 2020.	
TRA-N-1202	PL – DE	GAZ-SYSTEM	✔	✔	✔	✘ ACER decision No 13/2019**		

TYNDP 2018 reference number	Entry-exit border	TSO(s) involved that reported the progress of the Incremental Capacity Process	Performance of technical studies	Launch of a public consultation	Submission of the project proposal to the NRA	Publication of coordinated decisions by the NRAs	Yearly auctions for incremental capacity	Economic test
Project not included	DE – PL	Ontras	✔	✔	✔	✘ ACER decision No 13/2019		
TRA-N-86	HR – SL	Plinacro	✔	✔	✘ The process itself was non-binding and the received non-binding feedback was small. Physical flow from Croatia to Slovenia had to be enabled on 1st January 2019 regardless the incremental process due to the obligation of stablishing reverse flow in accordance with regulation 2017/1938 (security of supply)			
TRA-N-390	SL – HR	Plinovodi	✔	✔	✘ The process itself was non-binding and the received non-binding feedback was small. Physical flow from Croatia to Slovenia had to be enabled on 1st January 2019 regardless the incremental process due to the obligation of stablishing reverse flow in accordance with regulation 2017/1938 (security of supply)			
Project not included	SL – IT	Plinovodi	✔	✘ No joint consultation was conducted for the border between Italy and Slovenia as only Plinovodi received non-binding indications				
TRA-F-1235	HU – SK	MGT (now FGSZ)	Performed on HU side with SK assistance	✔	✔	✔	Alternative allocation mechanism.	Performed but with no binding commitments received from network user.
TRA-F-1235	SK – HU	EUSTREAM	SK assistance to the HU partner	✔	✔	✔	Alternative allocation mechanism.	Performed but with no binding commitments received from network user.

* Because of the absence of an agreement between the involved NRAs, ACER became the competent authority to decide on this matter and issued the decision No 05/2019 where the parameters of the economic test were defined and it was concluded that the TSOs should continue with the incremental capacity process by marketing the incremental capacity at two offer levels. This decision was appealed. However, the Board of Appeal of ACER dismissed the appeal against the Contested Decision as partly inadmissible and unfounded. The Board of Appeal decision was also appealed to the ECJ. The ECJ case is still pending for a final resolution.

** ACER found the application for an approval of the incremental capacity project for the market border of Poland (E-Gas Transmission System) and GASPOOL as inadmissible. This is due to the absence of an operational prerequisite for implementing the incremental capacity project related to the joint capacity booking platform. Additionally, the project has become obsolete after being supersede by a new incremental cycle.

Table 7: Projects for which a demand for incremental capacity was identified in the DARs

7.3 INCREMENTAL CAPACITY PROCESS INITIATED IN 2019

Immediately after the start of the annual yearly capacity auctions in July 2019, a new cycle of the incremental capacity process was initiated. Figure 38 illustrates the timeline for this process, according to the time periods stipulated in the CAM NC, which shows that at the time of publication of the TYNDP 2020, TSOs should be in the stage of submitting their project proposals for an incremental capacity project to the relevant NRAs for coordinated approvals. This means that the previous steps of the process, which include the collection of non-binding demands, development of DARs, conduction of technical studies for incremental capacity projects and conduction of a public consultation on the draft project proposal should be finalised by this time.

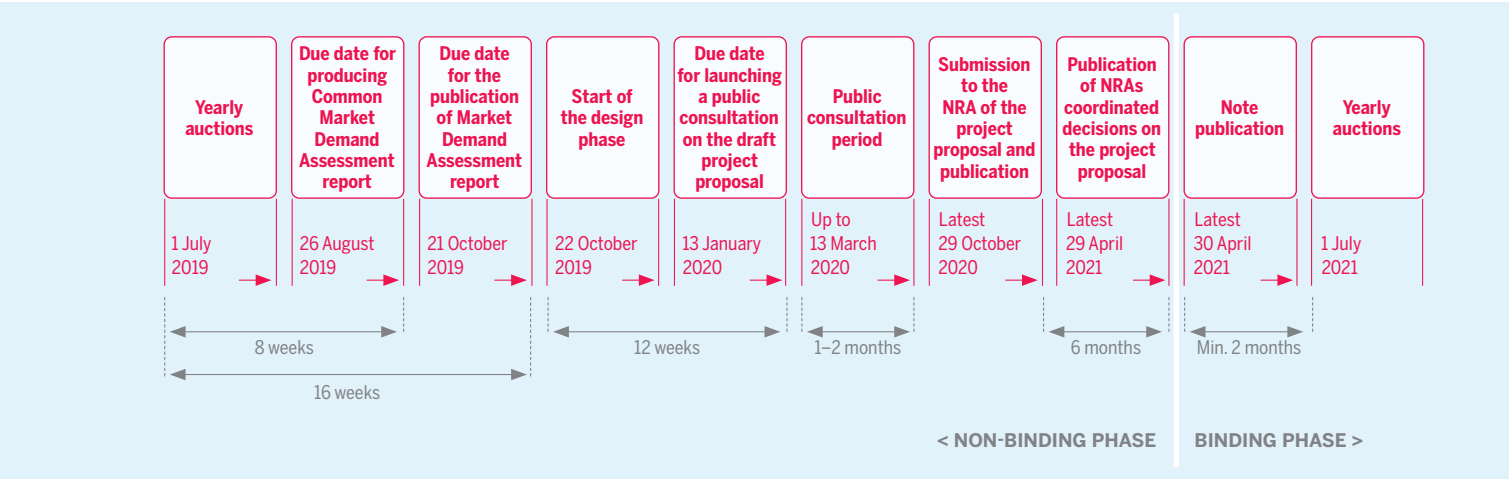

Figure 38: Timeline for the incremental capacity process initiated in 2019

As for the incremental capacity process initiated in 2017, the beginning of the process for 2019 has been marked by the development and publication of the DARs which are available at ENTSOG webpage[35] together with a summary table[36]. In this initial step, network users had the option to send non-binding demand indications for incremental capacity at interconnection points to the TSOs. These demand indications were collected and evaluated by the TSOs, the results of which are described in the DARs together with the provisional timelines for the incremental capacity projects. These reports also contemplate whether technical studies of incremental capacity projects are going to be initiated and if is the case, an assessment of the expected amount, direction and duration of demand for incremental capacity at the affected interconnection points is undertaken.

No later than 12 weeks after the start of the design phase, the concerned TSOs had to conduct joint public consultations on the draft project proposals which covered at least the elements listed in Article 27(3) of the CAM NC. Information and links to the public consultations are available in the table[37] published at ENTSOG webpage.

For TYNDP 2020 ENTSOG collected information regarding projects triggered by the Incremental Capacity process. For the purpose of TYNDP 2020 the provision of such information was mandatory.

It is to be mentioned that the TYNDP 2020 project data collection took place in June 2019 i. e. before the Demand Assessment Reports related to the Incremental Capacity 2019 have been published.

35 https://www.entsog.eu/capacity-allocation-mechanisms-nc#incremental-capacity-demand-assessment-2019

36 https://www.entsog.eu/sites/default/files/2020-04/MC0099-19_Demand Assessment Reports summary_updated.xlsx

37 https://www.entsog.eu/capacity-allocation-mechanisms-nc#incremental-capacity-process-2019-joint-consultation

As such, all TYNDP 2018 projects listed in table 7 above have been submitted for TYNDP 2020 as well. In addition to these projects, 1 project submitted to TYNDP 2020 in October 2019 indicated as being a result of the demand assessment in the context of the 2019 Incremental Capacity process. The concerned project is TRA-N-810, TAP Expansion and the related Demand Assessment Report was published on 21 October 2019 by TAP. It indicates that TAP will proceed to the coordinated design phase and to investigate an expansion of TAP up to Total Capacity of TAP of 20 BCMA[38].

38 https://www.tap-ag.com/assets/07.reference_documents/english/Market%20Test/Demand%20Assessment_TAP_DESFA_SNAM_28%2010%202019_revised_topublish.pdf

LIST OF **FIGURES**

LIST OF **TABLES**

LIST OF **ABBREVIATIONS**

ACER	Agency for the Cooperation of Energy Regulators
Bcm/Bcma	Billion cubic meters/Billion cubic meters per annum
CAM NC	Capacity Allocation Mechanism Network Code
CAPEX	Capital expenditure
CBA	Cost-Benefit Analysis
CIS	Commonwealth of Independent States
DIR-73	Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC.
EBP	European Border Price
EC	European Commission
EIA	Energy Information Administration
ENTSO-E	European Network of Transmission System Operators for Electricity
ENTSOG	European Network of Transmission System Operators for Gas
ETS	European Trading Scheme
EU	European Union
FEED	Front End Engineering Design
FID	Final Investment Decision
GCV	Gross Calorific Value
GIE	Gas Infrastructure Europe
GHG	Greenhouse Gases
GLE	Gas LNG Europe
GRIP	Gas Regional Investment Plan
GSE	Gas Storage Europe
GWh	Gigawatt hour
e-GWh	Gigawatt hour electrical
GQO	Gas Quality Outlook
HHI	Herfindahl-Hirschman-Index
H-gas	High calorific gas
HDV	Heavy duty vehicles
HGV	Heavy goods vehicles
IEA	International Energy Agency
IP	Interconnection Point
ktoe	A thousand tonnes of oil equivalent. Where gas demand figures have been calculated in TWh (based on GCV) from gas data expressed in ktoe, this was done on the basis of NCV and it was assumed that the NCV is 10 % less than GCV.
L-gas	Low calorific gas
LDV	Light Duty Vehicles
LNG	Liquefied Natural Gas

mcm	Million cubic meters
MMBTU	Million British Thermal Unit
MS	Member State
MTPA	Million Tonnes Per Annum
mtoe	A million tonnes of oil equivalents. Where gas demand figures have been calculated in TWh (based on GCV) from gas data expressed in mtoe, this was done on the basis of NCV and it was assumed that the NCV is 10 % less than GCV.
MWh	Megawatt hour
e-MWh	Megawatt hour electrical
NDP	National Development Plan
NCV	Net Calorific Value
NERAP	National Energy Renewable Action Plans
OECD	Organisation for Economic Co-operation and Development
OPEC	Organisation of the Petroleum Exporting Countries
OPEX	Operational expenditure
PCI	Project of Common Interest
P2G	Power-to-Gas
REG-703	REGULATION (EU) 2015/703 of 30 April 2015 establishing a network code on interoperability and data exchange rules
REG-347	Regulation (EU) No 347/2013 of the European Parliament and of the council of 17 April 2013 on guidelines for trans-European energy infrastructure and repealing Decision No 1364/2006/EC and amending Regulations (EC) No 713/2009, (EC) No 714/2009 and (EC) No 715/2009
REG-715	Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks.
REG-SoS	Regulation (EU) No 994/2010 of the European Parliament and of the Council of 20 October 2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC.
RES	Renewable Energy Sources
SIF/SWF	Seasonal Injection Factor/Seasonal Withdrawal Factor
SoS	Security of Supply
Tcm	Tera cubic meter
TSO	Transmission System Operator
TWh	Terawatt hour
e-TWh	Terawatt hour electrical
TYNDP	Ten-Year Network Development Plan
UGS	Underground Gas Storage (facility)
WI	Wobbe Index

COUNTRY CODES (ISO)

AL	Albania
AT	Austria
AZ	Azerbaijan
BA	Bosnia and Herzegovina
BE	Belgium
BG	Bulgaria
BY	Belarus
CH	Switzerland
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
DZ	Algeria
EE	Estonia
ES	Spain
FI	Finland
FR	France
GR	Greece
HR	Croatia
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LU	Luxembourg
LV	Latvia
LY	Libya
MA	Morocco
ME	Montenegro
MK	FYROM
MT	Malta
NL	Netherlands, the
NO	Norway
PL	Poland
PT	Portugal
RO	Romania
RS	Serbia
RU	Russia
SE	Sweden
SI	Slovenia
SK	Slovakia
TM	Turkmenistan
TN	Tunisia
TR	Turkey
UA	Ukraine
UK	United Kingdom

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