ACER
European Union Agency for the Cooperation of Energy Regulators

PUBLIC

OPINION No 06/2023
OF THE EUROPEAN UNION AGENCY
FOR THE COOPERATION OF ENERGY REGULATORS

of 14 July 2023

on the ENTSOG draft Ten-Year Network Development Plan 2022

THE EUROPEAN UNION AGENCY FOR THE COOPERATION OF ENERGY REGULATORS,

Having regard to Regulation (EU) 2019/942 of the European Parliament and of the Council of 5 June 2019 establishing a European Union Agency for the Cooperation of Energy Regulators[1] (ACER), and, in particular, Articles 4(3) and 4(5) thereof,

Having regard to 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 and repealing Regulation (EC) No 1775/2005, and, in particular, Articles 8(3)(b), 8 (10)[2] and 9(2) thereof,

Having regard to the outcome of the consultation with the ACER's Gas Working Group,

Having regard to the favourable opinion of the Board of Regulators of 12 July 2023, delivered pursuant to Article 22(5) of Regulation (EU) 2019/942,

Whereas:

1. INTRODUCTION

(1) Pursuant to Article 8(3)(b) of Regulation (EC) No 715/2009, the European Network of Transmission System Operators for Gas (ENTSOG) shall adopt a non-binding Community-wide ten-year network development plan (TYNDP), including a European supply adequacy outlook, every two years.

[1] OJ L158, 14.6.2019, p. 22.
[2] As amended by Article 25 of Regulation (EU) 2022/869: *"The ENTSO for Gas shall adopt and publish a Community-wide network development plan referred to in paragraph 3, point (b), every two years. The Community-wide network development plan shall include the modelling of the integrated network, including hydrogen networks, scenario development, a European supply adequacy outlook and an assessment of the resilience of the system.'*.

(2) Pursuant to Article 9(2) of Regulation (EC) No 715/2009, ENTSOG shall submit the draft TYNDP, including the information regarding the consultation process, to ACER for its Opinion.

(3) ACER may provide an opinion to ENTSOG, in accordance with the first subparagraph of Article 9(2) of Regulation (EC) No 715/2009, on the draft TYNDP, taking into account the objectives of non-discrimination, effective competition and the efficient and secure functioning of the internal markets in electricity and natural gas.

(4) On 11 April 2023, ENTSOG published part of the draft TYNDP 2022. From 11 April 2023 until 19 May 2023, ENTSOG conducted a public consultation on the published part of the draft TYNDP 2022.

(5) On 26 May 2023, ENTSOG submitted the draft TYNDP 2022 to ACER for its Opinion, including the information regarding the public consultation of the draft TYNDP.

2. SUMMARY OF THE DOCUMENT

(6) The draft TYNDP 2022[3] includes an executive summary, a system assessment report, an infrastructure report, maps[4], a visualisation platform and several Annexes[5].

2.1. Overview of TYNDP 2022 projects

(7) The TYNDP 2022 contains a total of 358 investment items[6], of which 143 (40% of total) are conventional natural gas or methane infrastructure projects: 108 transmission lines (including compressor stations), 23 LNG terminals (incl. FSRU) and 12 UGS facilities. 152 investment items (42%) are hydrogen infrastructure projects, and the remaining are 11 (3%) biomethane injection projects, 13 retrofitting or blending projects (4%) and 39 (11%) other types of projects. The hydrogen infrastructure[7], biomethane and retrofitting projects are classified according to project subcategories.

[3] https://www.entsog.eu/tyndp#entsog-ten-year-network-development-plan-2022
[4] Transmission lines and compressor stations, including hydrogen and retrofitted infrastructure, liquefied natural gas (LNG) terminals, and underground gas storage (UGS) facilities and biomethane infrastructure.
[5] Annexes A to E. A - Project Tables; B - Investment Maps; C.1 - CH4 Capacities per Country and interconnection point; C.2 - H2 Capacities per Country and interconnection points; D – Methodology, covering the assessment framework, input data items, and indicators; D-1 Single Largest Infrastructure (SLI) values for methane and hydrogen.
[6] See pp. 13-28 of the TYNDP infrastructure report, and Annex A.
[7] Hydrogen projects present the following 9 subcategories: any equipment or installation essential for the hydrogen system to operate safely, securely and efficiently or to enable bi-directional capacity, including compressor stations; Hydrogen production with network related function; New liquefied hydrogen terminal incl. hydrogen embedded in other chemical substances with the objective of injecting the hydrogen into the grid; Other hydrogen related projects; Projects enabling the production, reception, injection, transportation or end-use supply

(8) The projects listed in the TYNDP are those collected by ENTSOG from project promoters which meet certain criteria (see Section 3.3). The projects listed in the TYNDP are an input to and not a result of the modelling exercise that ENTSOG performs.

(9) In terms of maturity level, only 11% of the proposed TYNDP 2022 investment items have (post) FID status[8], 26% have "advanced" status[9], and the majority of the projects (62%) have "less-advanced" status[10]. ENTSOG also groups the investment items into sets of "functional projects" by aggregating those investments which need to be jointly implemented for their benefits to materialise[11].

(10) ACER notes that the level of maturity of projects is clearly correlated with the type of infrastructure. Methane infrastructure projects (25% in post FID, 45% with advanced status and 30% with less-advanced status) are much more mature than hydrogen infrastructure projects (1% in post FID, 9% with advanced status and 91% with less-advanced status).

(11) The overall estimated capital expenditure (CAPEX) for all TYNDP projects, calculated as the sum of investment items in Annex A amounts to €110.3 billion[12] (+40% more than for the TYNDP 2022). By project type, hydrogen projects amount to almost €78 billion (70%), followed by €27 billion for methane transmission projects. However, the overall CAPEX for the TYNDP 2022 project significantly exceeds €110.3 billion, as a staggering more than 40% of the investment items have not provided any cost information (see Section 3.5.3 on cost transparency).

(12) Table 1 presents the basic statistics on investment items in the TYNDP 2022.

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of hydrogen; The construction of on- or offshore pipelines to enable the transport of pure hydrogen; The construction of storages to enable the storage of pure hydrogen; The repurposing of existing pipelines for hydrogen use; and The repurposing of existing storages to enable the storage of pure hydrogen.

[8] The "FID status" of a project denotes a project for which the final investment decision has been taken before the closure of the TYNDP project collection period.

[9] "Advanced status" denotes all non-FID projects that: — are expected to be commissioned by the last day (31 December) of the sixths year after the year of TYNDP project data collection, and for which at least one of the following occurred: — permitting started ahead of the TYNDP project data collection; front-end engineering and design (FEED) started; or the project has been selected for receiving CEF grants for FEED.

[10] All projects which do not meet the FID or advanced criteria are considered as being in "less advanced" status.

[11] For example, in case of an interconnector connecting two or more countries, more than one promoter are usually involved in implement the different sections of the same interconnector.

[12] Of which 84% relates to transmission lines, 7% to ET projects, 6% to LNG terminals, and 3% to UGS facilities

Table 1: Summary of the draft TYNDP 2022 investments items, projects by type, and CAPEX

	CH4 projects			H2 infra	BioCH4 injection	Blending	Other infra projects	
	TRA	LNG	UGS	HYD	BIO	RET	OTH	Total
TOTAL investment items, of which	108	23	12	152	11	13	39	358
FID	25	6	5	1	1		3	41
Advanced	46	14	4	13	2	3	12	94
Less Advanced	37	3	3	138	8	10	24	223
TOTAL functional project sets (total number of items included)	17	9	1	28	1	1		57
Sums of project costs in Annex A, in € million	26.9	2.0	1.0	77.5	1.2	1.6	0.1	110.3

2.2. ENTSOG's main conclusions

(13) ENTSOG states that[13] "*The Hydrogen and Natural Gas TYNDP' includes a dual gas system modelling approach that considers hydrogen and methane networks simultaneously, following contrasted scenarios reflecting the European climate and energy ambitions".*

(14) ENTSOG underlines the role of the gas system to contribute to a cost-efficient decarbonisation of the energy sector and to a hybrid gas system where methane and hydrogen coexist by stating[14] "*ENTSOG is developing its TYNDP towards a new standard for hydrogen and natural gas by collecting dedicated hydrogen projects submitted to TYNDP and the first PCI/PMI selection process, and by introduction of 'hydrogen infrastructure levels' for the system assessments. TYNDP 2022 includes import and production capacities of renewable and decarbonised gases, including hydrogen, as well as demand for hydrogen. For the first time, ENTSOG collected projects under four new categories to reveal development trends. These projects comprise new or repurposed infrastructure to carry hydrogen, projects for retrofitting infrastructure to further integrate hydrogen, biomethane development projects and other infrastructure-related projects that facilitate decarbonisation*" and that the *"TYNDP evaluates the benefit of relevant decarbonised gas projects and shows that the gas system is a resilient, efficient and cost-effective infrastructure".*

[13] ENTSOG's TYNDP 2022 Press Release PR0289-23, 21 April 2023.
[14] Ibid.

(15) ENTSOG stresses the key role of the TYNDP 2022 in the on-going 6th PCI selection process led by the European Commission. Finally, ENTSOG mentions that the TYNDP 2022 development process was adjusted and modified to include the REPowerEU objectives: *"the TYNDP 2022 scenarios for 2030 were adjusted by ENTSOG and ENTSOG exceptionally reopened its project collection for TYNDP. The project collection process also included hydrogen projects submitted to the first PCI selection process under the revised TEN-E Regulation".*

3. ASSESSMENT OF THE DRAFT TYNDP 2022

(16) ACER assessed the draft TYNDP 2022 with due consideration of the requirements of Article 8(10) of Regulation (EC) No 715/2009, the objectives set out in Article 4(3)(b) and 4(5) of Regulation (EU) 2019/942 and Article 9(2) of Regulation (EC) No 715/2009, and the degree of implementation of ACER's recommendations as provided in its previous Opinion No 02/2021 on the draft TYNDP 2020[15].

(17) For matters related to TYNDP scenarios, ACER refers mainly to its recent scenarios framework guidelines for the development of future TYNDPs. ACER highlights that there is currently not a European hydrogen network. ACER notes this is the first TYNDP covering hydrogen projects, at a moment when there is only a nascent hydrogen market not able to commit to develop additional transmission capacities to connect hydrogen demand and supply centres and a regulatory framework to be developed. Therefore, future TYNDP should evolve once market signals become more concrete as well as hydrogen regulation and competences for NRAs are established.

3.1. Improvements noted

(18) ACER welcomes ENTSOG's introduction of some improvements and features for the TYNDP 2022 and the continuation of improvements already implemented in previous TYNDPs. More specifically, ACER highlights:

a. A better presentation of the TYNDP features via dedicated visualisation tools.

b. The implementation of a common ENTSO-E and ENTSOG process for the development of scenarios for the TYNDP 2022 and the preparation of a stand-alone "scenario report".

c. The provision of a window of opportunity for NRAs to check input data for the submitted TYNDP candidate projects at an early stage, during December 2021.

15 https://acer.europa.eu/Official_documents/Acts_of_the_Agency/Opinions/Opinions/ACER%20Opinion%2002-2021%20on%20the%20ENTSOG%20draft%20Ten-Year%20Network%20Development%20Plan%202020.pdf

d. The increased focus of the TYNDP on Energy Transition aspects and better alignment with the Green Deal decarbonisation goals. This is manifested by a dual gas system modelling approach that considers hydrogen and methane networks simultaneously and through collection of different types of hydrogen projects and network projects aimed at the injection of biomethane.

e. The consideration of the REPowerEU objectives reflected in the scenarios, even though not representing mandatory targets, and the projects eventually included in the TYNDP.

f. An open and transparent process for the collection of projects and detailed information and analysis of the projects' implementation schedule by type of project.

g. Information related to projects included in the last edition of the TYNDP and triggered by the incremental capacity process.

h. The collection and publication of methane emission mitigation measures for methane infrastructure projects.

3.2. Development process and consultation with stakeholders

Stakeholders should be consulted at an early stage

(19) ACER notes that ENTSOG organised several webinars and workshops for the consultation of stakeholders together with ENTSO-E for the development of joint scenarios [16], and for project promoters for the development of a Practical Implementation Document (PID) and guidelines for the submission of TYNDP 2022 project candidates[17].

(20) However, beyond these consultations on practicalities related to the submission of projects for the TYNDP, ENTSOG interacted less with stakeholders (other than project promoters) in comparison with TYNDPs before the year 2020, which used to organise workshops at an early development stage of the TYNDP[18]. In particular, the assumptions and the methodology used for the TYNDP 2022 were never discussed with stakeholders, despite ENTSOG's methodology was enlarged in order to cover also hydrogen. ACER is of the view that ENTSOG should attempt to engage stakeholders more actively during the early phases of the TYNDP development

[16] https://2022.entsos-tyndp-scenarios.eu/
[17] https://www.entsog.eu/sites/default/files/2021-09/TYNDP0075-21_TYNDP_2022_PID_FINAL.pdf
https://www.entsog.eu/sites/default/files/2021-10/Webinar%20Project%20Collection_0.pdf

[18] Except for consultations and webinars on scenarios, ENTSOG conducted during the TYNDP 2022 development process two webinars on 20 and 25 October 2021 to assist promoters with project submissions and one webinar on 2 June 2021 on the Practical Implementation Document.

process to discuss strategic directions and methodological choices for the TYNDP in order to have a European wide network plan catering to the needs of network users, market participants and other stakeholders, as required by Article 10 of Regulation (EC) No 715/2009[19].

(21) ACER welcomes ENTSOG's presentation on the draft TYNDP 2022 analysis in a dedicated webinar[20] with stakeholders and the insights provided during the Regional Meetings held for the 6th selection process of PCIs.

The stakeholders' consultation of the draft TYNDP 2022 received limited feedback

(22) ENTSOG conducted a public consultation on the draft TYNDP 2022 from 11 April 2023 until 19 May 2023[21]. During the consultation, thirteen responses were received, of which three participants indicated their responses could not be disclosed. Of those non-confidential responses, one was from a research centre, one from one European association of electricity market players, three from energy companies, two from national industry associations, one from the European association of gas distributor operators and one from an independent advisor.

(23) Some stakeholders provided some suggestions for improving the TYNDP:

a. The critical parameters of project analysis (e.g. CBA results) should be presented and be part of the TYNDP;

b. Need for a more detailed representation of the biomethane sector and projects in operation;

c. Need to include assumptions and details related to scenarios and visualisation of results;

d. Analyse the possibilities of repurposing existing infrastructures for hydrogen;

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[19] *"While preparing TYNDP, ENTSOG shall conduct an extensive consultation process, at an early stage and in an open and transparent manner, involving all relevant market participants, and, in particular, the organisations representing all stakeholders. That consultation shall also involve NRAs and other national authorities, supply and production undertakings, network users including customers, distribution system operators, including relevant industry associations, technical bodies and stakeholder platforms. It shall aim at identifying the views and proposals of all relevant parties during the decision-making process".*

[20] Held on 25.4.2022 https://www.entsog.eu/tyndp-2022-public-consultation-until-19-may-2023-and-presentation-day-25-april-2023

[21] https://forms.office.com/pages/responsepage.aspx?id=_YQFgflpN0GmocDjMoCxXFGZGdmuBPxGpIvakp91PntUQ0dKSEMxSDdJSE1URFRQSFBMNjlaUTZXVC4u&wdLOR=cF9BF3306-E49D-4CE6-BEBE-25F1629C6B6A

e. Suggestions to revise the infrastructures categories, in particular for hydrogen projects;

f. Improvements related to Annex D – TYNDP methodology, in particular for network and market modelling assumptions; and

g. More focus on gas developments at distribution level, by better representing the interplay between gas transmission and distribution projects in the TYNDP.

(24) ACER notes a low level of responses by stakeholders to the draft TYNDP 2022, which is however better to the ones observed for the TYNDPs 2020 and 2018 (6 and 7 responses respectively). ACER is concerned by the lack of stakeholders' engagement and the very limited feedback from gas network users and gas supply and production undertakings during the public consultation.

(25) Notwithstanding the limited interest in the TYNDP 2022, most of the gas infrastructure operators proactively engaged in highlighting the role of the hydrogen infrastructure in enabling the development of a competitive, liquid, pan-European renewable and low-carbon hydrogen market in the framework of the European Hydrogen Backbone (EHB) initiative[22].

(26) ACER notes that the EHB activities and deliverables are closely related to network planning and that the recast TEN-E regulation already adds hydrogen networks and supply developments within ENTSOG's TYNDP scope[23]. ACER expects that operators' activities related to hydrogen networks would be catered to preferably within the TYNDP process, in order to increase the interest of stakeholders and avoid parallel and overlapping activities outside the regulatory oversight from ACER and other institutions.

(27) ACER recommends that ENTSOG:

a. Ensure that the PS-CBA results become available to all stakeholders within the TYNDP and before the opening of the public consultation[24].

b. Provide a detailed evaluation of responses to the feedback received by stakeholders in the final TYNDP 2022 publication and to the recommendations contained in the present ACER Opinion.

c. Consider ways for increasing the interest of stakeholders in the TYNDP development process, including the gas and hydrogen network operators, by planning early consultation actions on critical aspects, proactively reaching out

[22] EHB initiative has published several reports (covering backbone infrastructure, corridors, and supply and demand developments) since July 2020.
[23] Article 8(10) of Regulation (EC) No 715/2009, as amended by Article 25 of Regulation (EU) 2022/869.
[24] The project-specific (PS) Cost-Benefit Analysis (CBA) results of TYNDP projects are not available.

to EU associations of gas network users and of producers and suppliers, and making sure that stakeholder engagement can influence the TYNDP process and outcome.

d. Promotes that participants to the public consultation disclose their responses, at least in an anonymous manner.

Recurrent delays in the TYNDP process calls for better planning for the next TYNDP, which will be the first under the revised TEN-E regulation.

(28) ACER regrets that the TYNDP 2022 process was significantly delayed compared to the schedule presented in 2022[25], with some activities (e.g. the publication of the draft TYNDP) postponed by 10 months. The COVID-19 crisis created a challenging environment during the year 2021. The invasion of Ukraine by Russia in February 2022 generated a political push to reduce the Union's dependency on Russian gas[26]. ENTSOG, together with other organisations, had to shift their priorities to respond to the energy crises, and assessed the impact of a possible long-term supply disruption of all Russian gas pipeline and projects contributing to the reduction of the dependency on Russian gas. ACER acknowledges that the impact of the war on the reconfigured gas flows and the analysis of needed investments have impacted the TYNDP priorities and its timeline.

(29) Notwithstanding this, the TYNDP delays created uncertainty and time constraints in activities which depend on the availability of the results from the TYNDP 2022 modelling and analytics. This applies for example to the late availability of the results of the PS-CBAs documents, which were not made timely available to NRAs for the evaluation during the selection process of PCIs.

(30) Therefore, ACER calls, once again, on ENTSOG to assess the root causes of continued delays in the TYNDP development process and to identify lessons learnt for a better planning. In ACER's views, the timely availability of the TYNDP is critical, as delays create constraints and impede a meaningful involvement of stakeholders in the TYNDP process and the selection process of PCIs.

(31) ACER expects that all elements of future draft TYNDPs are released on time for consultation (targeting July 2024 for the next TYNDP 2024). In addition, ACER notes that the revised TEN-E Regulation introduced new steps on the consultation of deliverables pertaining to the TYNDP 2024, namely: the joint scenario development

[25] Cf. slide 7 of Webinar on TYNDP practical implementation document. The draft TYNDP for public consultation was expected in September 2022, despite ACER recommended its publication by July 2022. https://www.entsog.eu/sites/default/files/2021-06/Webinar%20Practical%20Implementation%20Document%20for%20TYNDP%202022.pdf

[26] REPowerEU Action plan, p.1. *"In March 2022, EU leaders agreed in the European Council to phase out Europe's dependency on Russian energy imports as soon as possible."* https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN&qid=1653033742483

report [27] and the infrastructure gaps identification report [28]. ENTSOG's careful planning of activities and timely implementation will become more critical than ever in order to comply with the revised TEN-E Regulation. In view of the challenging timeline and schedule of deliverables required by the TEN-E Regulation, ENTSOG should investigate possibilities to simplify and speed-up its internal processes for approvals of documents, in order to meet the regulatory deadlines.

3.3. Project data collection

Data collection process, projects codes

(32) Data collection of transmission, LNG and UGS projects took place from 18 October to 12 November 2021 in a transparent and open process, enabling the participation of third-party (non-TSOs) project promoters. ENTSOG reopened the project collection process between 30 May and 24 June 2022 to allow for promoters' submission of additional projects aiming to reduce Russian gas supply dependence and contribute to the REPower EU objectives, as well as to update already existing projects with the latest available information. ENTSOG's updated list of TYNDP projects was published on 21 October 2022. In addition, ENTSOG opened a final call between 18 October and 15 December 2022 to allow for further submissions of hydrogen projects or updates on project status.

(33) ACER positively notes ENTSOG's consistent use of TYNDP identification projects' codes from the previous TYNDP, in order to ease the progress monitoring of projects between TYNDP editions.

(34) ACER recommends that in the future ENTSOG strive to implement a single data collection process with a common cut-off date for all types of projects, which should

[27] Article 12 of revised TEN-E Regulation: "*[….] 4. The ENTSO for Electricity and the ENTSO for Gas shall publish and submit the draft joint scenarios report to the Agency, the Member States and the Commission for their opinion*. […]".

[28] Article 12 of revised TEN-E Regulation: *"1. Within six months of approval of the joint scenarios report pursuant to Article 12(6) and every two years thereafter, the ENTSO for Electricity and the ENTSO for Gas shall publish the infrastructure gaps reports developed within the framework of the Union-wide ten-year network development plans. [….] Prior to publishing their respective reports, the ENTSO for Electricity and the ENTSO for Gas shall conduct an extensive consultation process involving all relevant stakeholders, including the EU DSO entity, associations involved in electricity, gas and hydrogen markets, heating and cooling, carbon capture and storage and carbon capture and utilisation stakeholders, independent aggregators, demand-response operators, organisations involved in energy efficiency solutions and, energy consumer associations, civil society representatives, the Agency and all the Member States' representatives that are part of the relevant energy infrastructure priority corridors that are set out in Annex I. [….]*
2. The ENTSO for Electricity and the ENTSO for Gas shall submit their respective draft infrastructure gaps report to the Agency and the Commission and Member States for their opinion.[…]"

be as close to the publication date of the TYNDP as possible, in order to ensure that the TYNDP becomes timely and based on up-to-date project information.

Guidelines for the inclusion of projects in the TYNDP 2022 to filter out clearly unrealistic projects

(35) ACER notes that the updated Practical Implementation Document (PID) for the TYNDP 2022 is generally in line with 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[29].

(36) ACER recalls its recommendation to ENTSOG as provided in its Opinions on the draft TYNDP, namely that ENTSOG proposes adequately updated eligibility guidelines to filter out unrealistic projects from future TYNDPs. In this sense, ACER regrets that the PID was once again ineffective in filtering out unrealistic projects in view of the unprecedentedly high number of collected projects.

Guidelines for hydrogen, retrofitting, biomethane and other investments

(37) The previous TYNDP 2020 was the first to allow for the first time the submission of energy transition (ET) projects to decarbonise the gas sector. The TYNDP 2022 includes a new classification of ET projects into the four main groups: new or repurposed infrastructure to carry hydrogen (HYD); projects for retrofitting infrastructure to further integrate hydrogen (RET)[30]; biomethane development projects (BIO); other infrastructure related projects (OTH). ENTSOG has additionally collected production facilities (such as electrolysers) in the TYNDP on a voluntarily basis, as well as projects related to the transport sector (e.g. refuelling stations not already included as part of a network development submissions).

(38) ACER observes that the TYNDP group of hydrogen projects contains a significant amount of project subtypes and finds that the TYNDP collection of projects should become more aligned with the infrastructure categories in the recast TEN-E regulation.

(39) For the next TYNDP, ACER proposes ENTSOG to consider collecting projects along the following groups, with a focus on network-related projects:

[29] Commission Recommendation of 24 July 2018 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 of the European Parliament and of the Council. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0727(01)&from=EN

[30] Under ENTSOG's definition, retrofitting refers to adapting existing methane infrastructure for methane-hydrogen blending.

a. CH4 infrastructure projects

   i. Transmission pipelines, including compressor stations.

   ii. Storage facilities

   iii. Liquefied methane terminals

b. Hydrogen infrastructure projects (new or repurposed and on-shore and offshore as project attributes)

   i. Transmission pipelines, including compressor stations.

   ii. Storage facilities

   iii. Liquefied hydrogen terminals, including hydrogen embedded in other chemical substances with the objective of injecting the hydrogen into the grid

c. Network related biomethane injection projects

   i. Physical reverse flow projects from distribution to transmission level

   ii. Direct injections to transmission level

d. Network related hydrogen blending projects (admixtures of hydrogen into methane grids).

e. Other types of network related projects

f. Other projects

(40) At the same type, in light of the expected decline of methane demand and its associated transportation services, the TYNDP should allow for the submission of projects related to gas infrastructure decommissioning. In any case, decommissioning of gas infrastructures should be considered as last possible option, since an infrastructure that may be considered not very important in a certain context may become essential in another context (e.g. the value LNG infrastructure has evolved as a result of the need to phase out dependency on Russian gas).

(41) As electrolysers are relevant assets for the gas, hydrogen and electricity sectors, ACER proposes that the data collection is organised jointly by both ENTSOs following a dedicated data collection window, and that the needs assessment of electrolysers projects is also jointly performed by both ENTSOs.

(42) Therefore, ACER calls on ENTSOG to update its Practical Implementation Document (PID) for the TYNDP 2024 for the collection of projects.

3.4. Consistency of NDPs and EU TYNDP

(43) ACER welcomes that ENTSOG collected and provided country-level information about the degree of consistency of the NDPs and the TYNDP projects. For projects not included in NDPs, a justification is provided by the promoters. Approximately 44% of the TYNDP 2022 projects are listed in the relevant NDPs. The level of consistency of TYNDP-NDP projects has deteriorated in this TYNDP, as well as in previous releases. This decrease in consistency between the NDPs and the TYNDP projects is largely explained by the inclusion of an increased number of Energy Transition projects (i.e. hydrogen, biomethane injection, retrofitting and other projects) in recent TYNDPs, most of which have not been included in the most recent NDPs.

(44) There are several possible causes for not including energy transition projects in the last NDPs: for example, the national legal framework does not allow for the inclusion of hydrogen or retrofitting projects and /or such energy transition projects are in a conceptual or demonstration phase (e.g. only 1% of hydrogen projects have reached the FID status, the vast majority (91%) being in a "less-advanced" status).

(45) For conventional methane infrastructure projects, the level of consistency of NDPs and the TYNDP 2022 (76%) is similar to the one observed in recent TYNDPs.

Table 2: Draft TYNDP 2022 investments items part of NDPs

Projects are part of NDPs		**TRA**	**LNG**	**UGS**	**HYD**	**BIO**	**RET**	**OTH**	**Total**
Yes	Number	88	12	9	34	4	4	6	157
	%	81%	52%	75%	22%	36%	31%	15%	44%
No	Number	20	11	3	118	7	9	33	201
	%	19%	48%	25%	78%	64%	69%	85%	56%
Total	Number	108	23	12	152	11	13	39	358

(46) ACER is of the view that implementing its recent recommendations[31] to increase the consistency of NDPs and the TYNDP will further improve the level of project consistency.

[31] Agency's Opinion No 8/2022 on the review of national network development plans to assess their consistency with the EU TYNDP, https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Opinions/Opinions/ACER_Opinion_08-2022.pdf.

3.5. Methodology

Assessment of the infrastructure needs (or gaps)

(47) ACER appreciates that ENTSOG's system assessment includes, for the first time, both gas and hydrogen infrastructure needs. However, ACER notes that the methodological approach for hydrogen is the same as for methane.

(48) ACER notes that conclusion that hydrogen demand curtailment is observed due to infrastructure limitations is misleading and does not realistically reflect the uncertainty related to the development of the hydrogen demand, which assessment in TYNDP is based on policy-driven aspirational scenarios.

(49) ACER considers that the big differences of maturity between methane and hydrogen markets and infrastructures, the former quite mature and the later at an early conceptual stage, requires a new approach for the identification of the system needs for hydrogen and methane.

(50) ACER notes that the TYNDP is a statement of investments based on ENTSOG's collection of projects as submitted by promoters. In other words, the TYNDP projects collection is not an outcome of ENTSOG's identification of infrastructure needs and some of the projects may not match any apparent infrastructure need. The methodology of the TYNDP is limited to assess whether the projects (input to the process) are able to meet the aspirational demand and supply energy policy scenarios for hydrogen (e.g. REPowerEU).

(51) ACER believes that ENTSOG should revisit its current approach for the identification of gaps. The infrastructure gap report foreseen in the recast TEN-E Regulation[32] should aim at identifying and quantifying the future (cross-border) capacity needs and it should be based on conservative methane and hydrogen reference networks, i.e. depicting a realistic and prudent estimation of projects expected to be implemented[33]. The gaps assessment could build on the already available "scenario expansion simulations", jointly run by the ENTSOs, which should allow for the identification of (cross-border) hydrogen and methane capacities needed to meet demand and supply levels (i.e. "capacity targets"), as well as to ensure further consistency and interlinkages with the electricity TYNDP.

(52) As part of the overall TYNDP deliverables, the Infrastructure Gap Report could be complemented with a system assessment analysis where less conservative hydrogen

[32] Article 13 of Regulation (EU) No 2022/869.
[33] In this sense, experience shows that only a fraction of projects at conceptual stage in sectors where the demand and supply projections are highly uncertainty will eventually be implemented as scheduled.

and methane networks are assessed against the identified infrastructure gaps to capture the overall contribution of possible different future infrastructure developments.

Framework of analysis of the hydrogen infrastructure

(53) The TYNDP 2022 introduces, for the first time, hydrogen infrastructure levels: the "infrastructure level 1" (composed of all hydrogen projects submitted to the TYNDP and having applied to the PCI selection) and the "infrastructure level 2" (which includes, on top, also additional capacities and is determined by ENTSOG).

(54) ACER believes that the two infrastructure levels considered in the TYNDP 2022 do not represent contrasted visions of the future development of hydrogen networks, as both are deemed as quite optimistic.

(55) ACER also notes that the approach underpinning the identification of the hydrogen infrastructure levels was not consulted with stakeholders.

(56) Starting from the next TYNDP 2024, ACER recommends ENTSOG to use a conservative reference network for hydrogen, consisting of projects having undergone market testing and/or included in the NDPs. Beyond the TYNDP 2024, ENTSOG should consider applying similar principles to the construction of hydrogen reference networks as for methane. Also, ENTSOG should ensure that the lesser-of-rule[34] is consistently applied to all methane and hydrogen projects submitted and included in the respective infrastructure levels. ACER notes that the inclusion and identification of internal projects is particularly important since today, with the exception of a few non-regulated networks serving industrial sites, there is no national infrastructure for hydrogen unlike for methane.

(57) The repurposing of methane networks for transporting pure hydrogen will impact the capacities of the methane networks. Hence, ACER encourages ENTSOG to analyse and publish the impact of hydrogen repurposing projects on the different methane infrastructure levels capacities, including the existing infrastructure level.

Sustainability

(58) ACER appreciates that ENTSOG's TYNDP 2022 focuses more on analysing sustainability than its previous edition. However, ACER finds that the TYNDP, and in particular its Annex D, should provide more explanations on how sustainability benefits are calculated in the system assessment. The goal should be to make the sustainability assessments and indicator(s) more transparent, replicable, objective and accepted by most stakeholders.

[34] Lesser-of-rule means that, in case of different processed quantities at either side of an interconnection point, the confirmed quantity will be equal to the lower of the two processed quantities. This also means that, in case there is no project submission on one side of the interconnection point, the resulting capacity should be zero.

(59) The TYNDP 2022 simulations seem to only partially capture the contribution to sustainability of methane and hydrogen infrastructures, by not calculating the impact of those infrastructures on the reduction of emissions through potential demand fuel switch from more carbon-intensive fuels (e.g. coal and oil) to methane or to hydrogen. If these effects cannot be directly modelled, they should be at least calculated ex-post[35].

(60) In any case, ACER calls for caution regarding the interpretation of the emission savings associated with methane and hydrogen projects, as such savings are subject to the inherent uncertainty of scenarios and to potential double-counting of cross-sectoral aspects.

(61) A refined sustainability approach, one that accounts for linkages between gas, hydrogen and electricity - and generally other sector integration effects - would require at least a truly integrated gas and electricity network and market model. It is also important to align the approach to sustainability of gas with the one applied in the electricity CBA methodology, to the extent possible, and incorporate broader energy system integration issues in the evaluation of infrastructure projects.

(62) ACER reiterates that a net positive contribution to sustainability of methane and hydrogen infrastructures is, in principle, only possible when gas or hydrogen clearly substitutes more polluting fossil fuels (e.g. oil, coal) or when gas use is combined with carbon capture and storage/use or when the project enables more renewable and low carbon gases (e.g. bio-methane and renewable hydrogen).

(63) The current ENTSOG CBA methodology does not provide guidelines on how to assess methane and hydrogen emissions associated with gas and hydrogen infrastructures. ACER notes that the TYNDP 2022 lacks clarity on whether methane and hydrogen emissions leaks were considered when quantifying the sustainability benefits. ACER notes that infrastructures may have a limited impact on the overall methane and hydrogen emissions and that the assessment of the emissions may be challenging, but this is an effort which ENTSOG and TSOs should continue to pursue and to propose methodologies for their estimation.

Security of supply

(64) ACER takes note of the main conclusions of ENTSOG's assessment in terms of security of supply for the methane sector, and in particular that:

a. EU's gas infrastructure is largely resilient to high demand situations caused by a 2-week cold spell, a 2-week *Dunkelflaute* effect, and a peak day, while, in some specific scenarios and years, the Balkan region, Poland, Sweden, and

[35] ACER also notes that ENTSOG already applied in TYNDP 2020 (Annex D, chapter 3.2.3.1) a methodology to derive sustainability benefits from gas replacing other carbon-intensive fuels outside the modelled simulations.

Northern Ireland show limited exposure to demand curtailment because of infrastructure limitations. This exposure is almost entirely alleviated by projects with an advanced maturity level;

b. with existing and soon-to-be-commissioned infrastructures, because of the significant natural gas demand reduction in the Distributed Energy and Global Ambition scenarios, Europe shows no significant dependency on Russian gas, while, in the Best Estimate (year 2025) and in National Trends[36] scenarios, a supply disruption of Russian gas would lead in many cases to methane demand curtailment not only in extreme situations but also during the year under normal conditions. Additional infrastructures would alleviate the situation for Best Estimate and National Trends scenarios, while the remaining methane curtailment, under those additional investments would lie within a range of the demand response observed in reaction to the high gas prices in 2022.

(65) ACER invites the NRAs, the TSOs and the Competent Authorities of the concerned countries to take due note of ENTSOG's findings and consider possible actions addressing the limited identified risks to security of gas supply in the coming years.

(66) ACER notes that, when comparing the methane demand assessments under the hydrogen infrastructure levels, on several occasions there has been methane demand curtailment as a result of higher hydrogen production through SMR[37]s (or similar technologies). In ACER's view, considering the current higher uncertainty related to the development of the hydrogen sector, for the time being avoided methane demand curtailment should always be prioritised over avoided hydrogen demand curtailment.

(67) As mentioned, the TYNDP 2022 concludes that certain infrastructure limitations still prevent some countries from fully mitigating the remaining infrastructure gaps. ACER believes that the TYNDP should complement the numerical results showing curtailed demand with a visual representation of all identified relevant infrastructure limitations and invites ENTSOG to consider, for future TYNDPs, how to improve the maps and the visualisation platform accordingly[38].

(68) ACER believes that, like LNG, also liquefied hydrogen (LH2) – if it were to take off - might be characterised in the future by multiple supply sources and multiple receiving countries. In the medium-term (i.e. beyond TYNDP 2024) the observed geographical specificities should be taken into account in the calculation of the indicator S-1.

[36] ENTSOG clarifies in its TYNDP that the Best Estimate and National Trends scenarios are based on information collected before the war in Ukraine.
[37] Steam Methane Reforming.
[38] See as an example the Figures in p. 35 of TYNDP 2020 (https://www.entsog.eu/sites/default/files/2021-07/TYNDP2020_System_Assessment.pdf)

Market integration needs and competition needs

(69) ACER notes that ENTSOG TYNDP 2022 does not include an assessment of market integration and competition[39]. ACER acknowledges that an accurate assessment of market integration and competition needs for the hydrogen sector, in terms of price convergence and supply diversification, would require extensive and reliable assumptions (e.g. prices for imports, prices of production, tariffs, etc.). ACER understands that ENTSOG was not able to consider these aspects for the hydrogen sector in this TYNDP given the uncertainty of the development of hydrogen market and the fact that this is the first TYNDP covering hydrogen. However, it regrets that there is no assessment of market integration and competition needs for the methane sector, unlike for previous TYNDPs. ACER points out that successful European gas market integration significantly contributed to security of supply during last year's energy crisis.

(70) At the early phases of the hydrogen market development, local networks are likely to primarily be established around industrial hydrogen demand centres, with limited cross-border connections. In this situation, the realisation of any cross-border interconnection between Member States would potentially contribute to market integration. ACER invites ENTSOG to incorporate an indicator for market integration in the TYNDP 2024 to evaluate the need for interconnectivity among countries and for ending isolation.

(71) ENTSOG's analysis of hydrogen system needs in the TYNDP is mostly related to security of supply assessments. However, ACER is of the view that for hydrogen, where there is no existing market and developed network yet, the main driver justifying the development of hydrogen infrastructure projects should be the interest of market players to develop capacities and transportation services to connect hydrogen demand and supply centres. Security of supply assessments should not play such a prominent role in the TYNDP assessments in a hydrogen market that is yet to be developed. The implementation of the hydrogen infrastructure should be triggered first by compelling hydrogen market commitments or reasonable expectations, backed by serious and detailed market studies of potential industrial consumers of hydrogen and producers matching such supply needs.

(72) ACER notes that in ENTSOG's modelling tool for liquified natural gas (LNG) and liquified hydrogen (LH2) are more expensive than piped gas and hydrogen, so that LNG and LH2 are resorted to only after pipelines[40]. However, the methodology does not provide either evidence or reasoning for such a methodological choice. ACER invites ENTSOG to provide proper justification for the choices made in TYNDP concerning supply prices and to further work, engaging market participants, on how

[39] Article 4 and Annex IV of Regulation (EU) 2022/869 identifies market integration and competition as two of the criteria for the assessment of infrastructures.
[40] With exception for pipelines importing Russian gas. See page 12 of TYNDP 2022 Annex D.

to properly reflect in future TYNDPs differences in supply prices[41] and, to the extent possible, to align those with the price assumptions already used in the TYNDP scenarios.

Assumptions concerning storages

(73) The TYNDP 2022 System Assessment and its related Annex D provides very limited information on how storages are modelled under the different assessed configurations and how storages contribute to match the identified needs. Methane and hydrogen storages might differ from a technical perspective and in terms of withdrawal/injection behaviour[42]. ENTSOG should further elaborate on the role of storages in the system needs identification and on how storages are modelled.

Level of utilisation of the infrastructures

(74) ACER finds yet again that an analysis of the level of utilisation and congestion of the existing infrastructure is missing in the TYNDP 2022. ACER deems that the level of use and congestion of the existing infrastructure, together with the market demand for additional capacities, should be factored in the assessment of the system needs.

(75) Concerning hydrogen infrastructure, ENTSOG should also analyse and include the level of utilisation resulting from the simulations in the TYNDP, as this being an essential parameter to be considered when developing (reasonable) hydrogen infrastructure levels.

(76) In line with Article 11(6) of the revised TEN-E Regulation, ACER recommends the inclusion in the online visualisation platform of the flows (and related capacities) resulting from the TYNDP simulations.

3.5.1. TYNDP model and model implementation

General approach to modelling

(77) The modelling used for the draft TYNDP 2022 is based on a dual gas (methane and hydrogen) system modelling approach using commercial energy modelling software which builds on previous ENTSOG's previous nodal network model used for the TYNDPs. ACER appreciates that Annex D of the TYNDP 2022 provides an overview of the modelling approach used, with a general description of input, output, assumptions, variables and constants.

[41] Different supply prices were assumed in TYNDP 2020 (see Figure 12 of TYNDP 2020 Annex D).
[42] While methane storages would typically show a seasonal behaviour along one year, hydrogen storages profiles might vary on a day-to-day basis since influenced by the type of hydrogen production and the availability of renewable energy.

(78) The primary objective of the modelling is to identify, via simulations, a feasible flow pattern under which gas supply and demand are balanced at every node, by using the available and expected system capacities represented by the arcs between the nodes. The objective function of the algorithm seeks to achieve such balance at lowest delivered cost, with the solver trying to minimise the carbon emissions once that demand curtailed is also minimised and storage targets are met.

(79) ACER welcomes that the chosen modelling tool should allow for more integrated assessment of the gas and electricity systems and that the same tool is used also by ENTSO-E, potentially allowing for further interaction and consistency with the electricity TYNDP.

(80) ACER encourages ENTSOG to ensure that all technical documentation and requirement of the tools are provided to those stakeholders wishing to replicate and reproduce the analysis.

Implementation of interlinked model

(81) ACER notes that the implementation of the interlinked model of electricity, gas and hydrogen is still mostly limited to a joint ENTSO-E and ENTSOG TYNDP scenario development. ACER regrets that the dual assessment methodology of the needs identification and projects' assessment described in the interlinked model progress report is not yet planned by the ENTSOs[43]. ACER calls on ENTSO-E and ENTSOG to continue their work to timely deliver on the interlinked model as envisaged by the recast TEN-E Regulation and to involve early in the process all relevant stakeholders.

(82) ACER notes that in the context of the ongoing process for the selection of projects of common interest (PCIs) and of mutual interest (PMIs) the ENTSOs were asked to work jointly on the assessment of electrolysers project candidates. ACER deems that the ENTSOs should also include electrolysers in the system needs analysis of the electricity, gas and hydrogen TYNDPs by assessing the potential impact of electrolysers on the grid. The results of such joint analysis should be published as a joint ENTSOG and ENTSO-E report in the framework of the respective infrastructure gap reports to be published in accordance with Article 13 of the recast TEN-E Regulation.

3.5.2. Display of TYNDP assessment results

(83) ACER appreciates the way in which the results of the analyses are provided and the availability of an online visualisation platform, which enables a swift overview of some results. ACER encourages ENTSOG to seek ways to further improve the way in which the input and output of TYNDP simulations are shared in order to ensure those are easily accessible and downloadable. On a practical note, ACER notes that

[43] https://www.entsog.eu/sites/default/files/2021-05/ILM%20Investigation%20Document.pdf

the TYNDP pdf deliverables files are too heavy and difficult to work, and it recommends ENTSOG to make future TYNDPs files lighter (e.g. images and maps could be published separately).

3.5.3. Cost transparency

(84) ACER appreciates the analysis and overview of the investment costs provided in the infrastructure report. However, ACER regrets that there is a worrying deterioration in the level of project costs transparency in recent TYNDPs, starting with the TYNDP 2018. In the TYNDP 2018, project costs were available for 81% of the investment items, and it decreased to 65% of the investment items in the TYNDP 2020[44].

(85) In the current draft TYNDP 2022, the level of project cost transparency has decreased further to 58%, with significant differences depending on the type of project: 28% of transmissions projects declare projects costs "confidential", increasing to 45% of hydrogen projects, 55% of biomethane projects and 74% of LNG projects.

(86) ACER also notes that while the TYNDP 2022 PID[45] indicates that "[…] *in case of projects having indicated their intention to participate to the PCI process, the project costs are fully disclosed.*", this rule was largely not implemented by ENTSOG in the draft TYNDP.

(87) ACER notes that the sum of project investment costs for projects included in Annex A of the TYNDP 2022 is unprecedentedly hight (€110 billion, +40% vs the TYNDP 2020) and still incomplete, as many promoters declared projects costs confidential.

Table 3: Draft TYNDP 2022: confidentiality and overall project costs, per type of infrastructure

Project CAPEX are		**TRA**	**LNG**	**UGS**	**HYD**	**BIO**	**RET**	**OTH**	**Total**
Confidential	Number	30	17	3	66	6	3	25	150
	%	28%	74%	25%	43%	55%	23%	64%	42%
Total CAPEX (only when declared non confidential)	€ bln	26.9	2.0	1.0	77.5	1.2	1.6	0.1	110.3
Total projects	Number	108	23	12	152	11	13	39	358

(88) ACER reiterates once again its view that maximum reasonable level of cost transparency is necessary for *all* TYNDP candidate projects, including those not intending to apply for PCI status.

[44] Including costs either provided by the promoters (50%) or as estimated by using available references (15%)
[45] https://www.entsog.eu/sites/default/files/2021-09/TYNDP0075-21_TYNDP_2022_PID_FINAL.pdf

(89) ACER reiterates its view that for future TYNDPs all promoters of regulated infrastructure should provide their best estimate of investment costs and the estimated yearly OPEX for each investment item. The provision of best cost estimates should be a requirement for all regulated TYNDP projects and not an option for project promoters. For competitive investment projects and projects where the type of regulation has not been decided yet, ACER would welcome that cost estimates are provided at least in an aggregated way.

(90) In addition, this lack of transparency on cost data for gas and hydrogen projects is in direct contrast to the electricity TYNDP[46], where CAPEX and annual OPEX costs values are provided and published for each investment item.

(91) The lack of cost estimates for 150 investments items provides an incomplete picture of the amount of investment included in the TYNDP to stakeholders and network planners' reviewers. Best available costs estimates are essential for any serious network plans and should be requested for all investments items for the next TYNDP 2024 and beyond.

3.5.4. Implementation of previous TYNDP projects

(92) ACER welcomes the provision of information on 32 investments items included in the TYNDP 2020 which have been completed by the end of 2022 and on 25 items which are expected to be commissioned in 2023.

(93) ACER notes that the number of "conventional" TYNDP projects (i.e. methane transmission, storage and LNG projects) and investment items has been reduced in the last editions, from 279 items in 2015, to 234 in 2017, 207 in 2018, 187[47] in 2020 and 143 in 2022. This is mainly due to the completion, cancellation, or withholding of the re-submission of several projects. This reduction (-48% over the period 2015-2022) in the number of "conventional" projects is not proportionate to a much more drastic reduction in the number of gas projects (approximately -80%) included in the PCI lists. Such large number of traditional methane projects does not correspond well with the declining scenarios for gas demand. Also, the REPowerEU plan foresees a very limited role for "conventional" gas infrastructure projects once the phase out of the dependency on Russian gas has been addressed.

(94) ACER would encourage a further careful and critical review of the merits of including a high number of methane projects in the TYNDP 2022 and in future editions, considering that the current FID projects and advanced projects expected for commissioning in the next years to come may well address all existing infrastructure gaps, as confirmed by ENTSOG's analysis.

[46] https://tyndp.entsoe.eu/documents/
[47] Excluding 75 "Energy Transition Projects", a new category of project included for the first time in the draft TYNDP 2020.

(95) ACER recalls that the projects listed in the TYNDP are an input to the process and not a result of the modelling exercise which ENTSOG carries out. Therefore, many of the TYNDP projects of the so-called "less-advanced" infrastructure level do not match any apparent need, as identified by ENTSOG in the infrastructure needs assessment. In ACER's view, the TYNDP should not include projects that do not address any apparent need.

(96) The TYNDP 2022 provides statistics on methane infrastructure projects per type and status, geographical location, and project schedule. It estimates, based on the project schedules provided by promoters, the average duration of each implementation stage per type of infrastructure category. ACER welcomes and encourages ENTSOG to continue this analysis for methane projects, and to extend it for hydrogen projects in future TYNPDs. ENTSOG should also monitor deviations between the TYNDP project schedules provided by promoters with those actually taking place, with the aim of estimating how accurate the initial project schedules were.

3.6. Projects candidates vs market needs

(97) ACER appreciates that ENTSOG made the provision of information related to the incremental capacity process obligatory for promoters, in order to include a list of projects triggered by the market (commitments from market players for additional transportation capacity) in the TYNDP. As result of the Demand Assessment Reports (DAR), the design phase was triggered only for six borders[48] during the 2021 cycle.

(98) ACER notes that during the annual capacity auctions, the TSOs which offered incremental capacity did not receive any binding commitments from network users during the last incremental capacity process cycle in 2021, and that therefore no incremental capacity project proceeded to implementation. ACER stresses that gas network expansions should be primarily driven by the market demand for capacity. Additionally, ACER recalls its recommendation from the ACER report on incremental capacity[49] to provide better tracking information of the incremental capacity process. For the final TYNDP 2022, ENTSOG should include information on how the incremental capacity process initiated in 2021 has evolved since June 2022.

(99) Moreover, the support of public institutions such as the European Investment Bank (EIB) and the EU (e.g. CEF-energy funds) to traditional gas infrastructure projects will come to an end soon[50], in view of the new priorities under the Green Deal and the revised TEN-E Regulation, which excludes "conventional" gas infrastructure projects from EU funding. In addition, ENTSOG and many other parties foresee a significant

[48] Infrastructure report, p. 60.
[49] *"The Agency recommends ENTSOG to become a central point of information by keeping a record of DARs per unique border, avoiding duplication per country/TSO, and to report on the conclusion about the demand indications and whether the process is closed or continued. This record should be updated every year to have a transparent overview of which incremental processes are alive and in what stage of the process they are."*
[50] See p.3, https://www.eib.org/attachments/strategies/eib_energy_lending_policy_en.pdf

reduction of natural gas demand in Europe from the year 2030 onwards. In this context, it is difficult to understand why the TYNDP still includes a large portfolio of "conventional" gas infrastructure projects which is likely to exceed the reasonable needs for such infrastructure.

(100) As the needs of future hydrogen network users should be a key driver for the development of the hydrogen infrastructure[51], ACER encourages ENTSOG to mandatorily require information from hydrogen infrastructure promoters on the status of market testing and consultations and to consider such information for the identification of needs of hydrogen infrastructure projects. This information should be published in the TYNDP.

4. RECOMMENDATIONS

(101) In view of the foregoing, ACER recommends the following to ENTSOG:

Short-term recommendations (for the final TYNDP 2022)

(102) ACER urges ENTSOG to consider for the final version of the TYNDP 2022:

a. The comments and remarks of NRAs on the TYNDP 2022 projects[52], as contained in Annex I to this Opinion.

b. Review and re-publish Annex D (methodology) with the aim of enhancing its comprehensiveness. This annex should provide detailed explanations of the assumptions and calculation steps underlying the methodology, particularly with regard to sustainability, and include practical examples illustrating how to interpret the indicators.

c. Complement Annex D by publishing all underlying data sets, qualitative assumptions, and formal hypotheses, as granular and disaggregated as possible, in an appropriate and predefined format, in line with Article 11(6) of the recast TEN-E Regulation.

d. The publication of a summary document indicating how the feedback from the public consultation and from ACER's Opinion are taken into account for the final TYNDP 2022 and will be considered in future TYNDPs.

e. Publish the project-specific CBA assessments results, including the Economic Performance Indicators, in line with Article 11(6) and Annex V of the recast TEN-E Regulation.

[51] VIS consultancy study on ENTSOG cost-benefit analysis for hydrogen infrastructure, p. 12 https://www.acer.europa.eu/Publications/Study_on_ENTSOG_CBA_for_hydrogen_infrastructure_ACER.pdf

[52] As the majority of NRAs are not competent for hydrogen yet, they may not be in a position or prefer not to comment on TYNDP hydrogen projects.

f. Publish the "enhanced capacities"[53] as well as the related conditions for these capacities to be made available by the respective TSOs.

g. Update information on how the incremental capacity process initiated in 2021 has evolved since June 2022.

Mid- and long-term recommendations (for the TYNDP 2024)

(103) ACER encourages ENTSOG to consider for future TYNDPs:

Scenarios, planning and consultation of the next TYNDP

a. Implementing ACER's recommendations regarding scenarios, as provided in its framework guidelines for the joint TYNDP to be developed by ENTSOs[54].

b. Improving the planning process, in order to avoid the recurrent delays in the development and the release of TYNDPs. The draft TYNDP should be published earlier for stakeholders' consultation, aiming for July 2024 for next edition to better align the TYNDP and the PCI selection processes. Assess the root causes of continued delays in the TYNDP and identity lessons learnt for a better planning of future TYNDP processes, including contingency measures in case of delays.

c. Plan carefully the new TYNDP activities and consultations introduced by the revised TEN-E Regulation, namely the joint scenario development report and the infrastructure gaps identification report and deliver on these timely.

d. Increase the involvement of stakeholders and of gas and hydrogen network operators in the TYNDP development process, by planning early consultations on critical aspects, proactively reaching out to EU associations of gas and hydrogen network users, existing and new producers and mid-streamers, and making sure that stakeholders' engagement can influence the TYNDP methodology for the identification of system needs and infrastructure placement choices.

Collection of TYNDP projects

e. Implement within a single data collection process a common cut-off date for all types of projects which should be as close to the publication date of the TYNDP as possible.

[53] According to TYNDP 2022 Annex D, "*two types of capacity were provided by some TSOs for the simulations, firm capacity and enhanced capacity. The enhanced capacity is only applied in the case of S-1 no Russia*".

[54] https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Framework_Guidelines/Framework%20Guidelines/FG_For_Joint_TYNDP_Scenarios.pdf

f. Improve the alignment of new project categories collected for the TYNDP (e.g. hydrogen, retrofitting, etc.) with the infrastructure categories defined in the recast TEN-E regulation.

g. Include only "conventional" gas infrastructure projects in the TYNDP needed to address the assessed gaps. This could be achieved up-front by refocusing the Practical Implementation Document in order to flag and filter out unrealistic projects (e.g. not addressing any gap in previous TYNDP(s), not connected with critical security of supply projects under the REpower EU plan and/or not progressing during the last 2 years) during the data collection process. Projects with unrealistic timelines or not addressing any apparent need should not be included in the TYNDP.

h. Require information from hydrogen infrastructure promoters on the status of market testing and consultations on a mandatory basis and to consider such information for the identification of needs of hydrogen infrastructure projects.

Implementation of CBA and cost transparency

i. Develop an updated draft CBA methodology for the hydrogen infrastructure that will take utmost account of the future Opinion of ACER, as well as the Member States' and other stakeholders' Opinions.

j. Requiring CBA project assessments for all TYNDP projects instead of only for projects having declared their intention to apply for a PCI status.

k. Requiring promoters to provide the same (maximum) level of cost transparency for all TYNDP regulated projects, irrespective of their intention to apply for PCI status.

Identification of infrastructure needs (or gaps)

l. For methane projects, analyse the level of utilisation and physical congestion of interconnection points[55], as an essential parameter to be taken into account when analysing the need for additional gas infrastructure, in order to avoid the risk of stranded or inefficient investments.

m. Redesign the approach for the identification of infrastructure gaps which should primarily aim at quantifying the future (cross-border) capacity needs based on conservative methane and hydrogen reference networks.

[55] See the Agency's Annual Report on Contractual Congestion at Interconnection Points for 2017 https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/Congestion%20Report%205th%20ed.pdf

Modelling assumptions for the system assessment

n. Adapt the sustainability indicator in order to capture also the contribution of methane and hydrogen infrastructures to enable a potential demand fuel switch from more carbon-intensive fuels (e.g. coal and oil) to methane or hydrogen.

o. Adapt the assumption under all SoS indicators by prioritising avoided methane demand curtailment over hydrogen demand curtailment.

p. Incorporate an indicator for market integration to evaluate the need for interconnectivity among countries and for ending isolation.

q. Properly reflect differences in gas and hydrogen supply prices and, to the extent possible, align those with the price assumptions used in the scenarios.

r. Further develop the role and contribution of methane and hydrogen storages in the modelling.

Network adaptations for decarbonised gases and emissions

s. Devote more attention to the analysis of necessary adaptations of the gas infrastructure to enable the injection of higher shares of renewable and de-carbonised gases and the costs, implications and challenges associated.

t. Consider ways for analysing and addressing the issue of methane and hydrogen emissions from transmission pipelines, compressor stations, LNG terminals and UGS facilities in the TYNDP, going beyond the projects' inventory of methane mitigation measures.

Interlinked assessment with electricity network planning

u. Implement the interlinked model in a timely manner and analyse jointly with ENTSO-E electrolysers in the system needs analysis of the electricity, gas and hydrogen TYNDPs by assessing the potential impact of electrolysers on the grid.

Display of results

v. Publish all relevant input and output of TYNDP simulations and make them easily accessible and downloadable,

HAS ADOPTED THIS OPINION:

1. ACER welcomes the increased focus of the TYNDP on the Energy Transition, as well as the consideration of the REPower EU plan in some scenarios. This is manifested by a dual gas system modelling approach that considers hydrogen and methane networks

simultaneously and by the collection of different types of hydrogen projects and network projects aimed for the injection of biomethane.

2. ACER is aware that due to the lack of or incomplete legal framework both at European and (with a few exceptions) at national level for hydrogen regulation, the majority of NRAs may not be in a position to assess infrastructure projects for transport, storage and regasification of hydrogen.

3. ACER finds that the draft TYNDP 2022 assessments and the projects included in it generally contribute to the objectives of effective competition and secure functioning of the internal gas market referred to in Article 8(2) of Regulation (EC) No 715/2009. However, ACER notes that the draft TYNDP 2022 does not sufficiently contribute to the objectives of non-discrimination and efficient functioning of the market, mainly due to the following shortcomings:

    a. In the applied methodologies, such as a lack of a complete quantitative needs assessment, doubtful quality of ENTSOG CBA methodology for methane projects and its application, and lack of cost information for a significant number of methane and hydrogen projects.

    b. Concerning the methane sector, the lack of analysis of the existing and forecasted use of gas infrastructure, including the expected level of future physical congestion, which is a critical criterion to take into account when analysing the need for additional gas infrastructure. The lack of appetite of network users to develop additional capacities via incremental capacity infrastructure projects does not fit well with the large portfolio of investment items included in the draft TYNDP 2022.

    c. Concerning the hydrogen sector, the lack of consideration of the interest of market players to develop transportation capacities to connect hydrogen demand and supply in the methodology for the identification of hydrogen infrastructure needs. This information should be collected in future TYNDPs.

    d. The asymmetric treatment of candidate TYNDP projects, whereby the assessment of some TYNDP projects is incomplete since they are not subject to a CBA, while other projects are subject to a CBA, and consequently creating classes of projects for which the level of analysis and the quality of information differ within the TYNDP.

4. Based on the assessment in Section 3 of the Opinion, ACER encourages ENTSOG to consider implementing the recommendations in Section 4 of this Opinion for the final TYNDP 2022 and future TYNDPs.

This Opinion is addressed to ENTSOG.

Done at Ljubljana, on 14 July 2023.

- SIGNED -

For the Agency
The Director
C. ZINGLERSEN

Annexes:

Annex I – NRA comments on draft TYNDP 2022 projects

Annex I – NRA comments on draft TYNDP 2022 projects

NOTE: The majority of NRAs are not competent for hydrogen yet, and therefore currently they may not be in a position or prefer not to comment on hydrogen projects[56].

By 21 June 2023, 9 NRAs provided input, of which:
-7 NRAs had comments on the TYNDP 2022 projects: NRAs of Czech Republic, Germany, Hungary, Italy, Latvia, Portugal and Spain
-2 NRAs had **no** comments on the TYNDP 2022 projects: NRAs of Slovenia and Sweden

Reporting NRA's MS	TYNDP project code	TYNDP project name	NRA comment
Czech Republic	OTH-N-306	Greening of Gas (GoG)	The GoG project is not incorporated in the final version of NDP 2023-2032, which was approved by The Energy Regulatory Office (ERO) and officially released on 29 December 2022, since the inclusion of projects in NDP adheres to the Energy Act of the Czech Republic, which provides a definitive list of project categories eligible for inclusion. The GoG project does not meet these legislative categorizations, hence its exclusion from NDP. This decision is not a discretionary decision of ERO or TSO, but it represents an endeavour to fulfil legislative requirements.
Czech Republic	TRA-N-1059	Czech-Austrian Interconnection (CZ)	The project is not included in the final version of NDP 2023-2032. The project of Czech-Austrian Interconnection (NDP number: TRA-N-134) was prepared to provide incremental capacity on the basis of a market demand assessment carried out in 2019. It was excluded from NDP due to its cancellation following an unsuccessful auction of incremental capacity in July 2022.

[56] Source: ACER Report on Investment Evaluation, Risk Assessment and Regulatory Incentives for Energy Network Projects, June 2023. *"ACER notes that in only five Member States (DE, LT, MT, PT, RO), NRAs reported competence (e.g. evaluation and/or tariff approval) for hydrogen infrastructure. In the remaining Member States, NRAs have no competence over hydrogen infrastructure or the legal basis giving competence over hydrogen infrastructure to NRAs has not been established yet. In some Member States the legislative framework on how to organise the hydrogen market and system development is under discussion."*

Reporting NRA's MS	TYNDP project code	TYNDP project name	NRA comment
Czech Republic	HYD-N-990	Central European Hydrogen Corridor (CZ part)	The exclusion of the project, focused on hydrogen transmission, from the final version of NDP 2023-2032, as approved by ERO, was mandated by the existing legislative framework in the Czech Republic. This framework, as stipulated in the Energy Act, does not currently extend to the transmission of hydrogen. ERO emphasises that, as per the legislative framework (Energy Act), the TSO's license is limited to gas transmission. The Energy Act comprehensively lists the gaseous substances considered as gas under its provisions. Given this stringent regulatory context, it cannot be implicitly assumed that hydrogen falls within the purview of the current legislation. Consequently, projects related to hydrogen transmission cannot feasibly be incorporated in the NDP under the existing legislative framework. Despite the possible merits of the project, without the appropriate legislative framework, ERO lacks the authority to approve it for inclusion in NDP. ERO maintains its support for the use of renewable and low carbon energy sources, including the transmission of hydrogen and construction of related infrastructure. However, any inclusion of this project in NDP presently surpasses its legislative competencies.
Czech Republic	TRA-A-1009	Czech-Polish Bidirectional Interconnection	The project is included in the final version of NDP, which was approved by ERO and officially released on 29 December 2022, but does not encompass all information presented in TYNDP 2022 (project impact, etc.).

Reporting NRA's MS	TYNDP project code	TYNDP project name	NRA comment
Czech Republic	HYD-N-1034	Czech German Hydrogen Interconnector (CZ part)	The project, focused on hydrogen transmission, was not included in NDP by TSO and therefore could not be incorporated in the final version of NDP 2023-2032, which was approved by ERO and officially released on 29 December 2022. ERO emphasises that, as per the legislative framework (Energy Act), the TSO's license is limited to gas transmission. Consequently, projects related to hydrogen transmission cannot feasibly be incorporated in NDP under the existing legislative framework. Despite the possible merits of the project, its absence from NDP precluded its approval by the ERO. Even if TSO had proposed its inclusion, approval from ERO would have remained unattainable under the existing legislative framework. Despite these regulatory constraints, the ERO continues to support the use of renewable and low carbon energy sources, including the development of hydrogen transmission and related infrastructure. However, any inclusion of this project in NDP presently surpasses its legislative competencies.
Germany	TRA-A-1060		The Project was confirmed in the NDP 2020-2030 and is still included in the current NDP 2022-2032 but the work is limited to the absolutely necessary as the measures were planned for the transport of gas volumes from Nord Stream 2.
Germany	TRA-A-1109		The Project was confirmed in the NDP 2020-2030 and is still included in the current NDP 2022-2032 but the work is limited to the absolutely necessary as the measures were planned for the transport of gas volumes from Nord Stream 2.
Germany	TRA-F-1118		The Project was confirmed in the NDP 2020-2030 and is still included in the current NDP 2022-2032 but the work is limited to the absolutely necessary as the measures were planned for the transport of gas volumes from Nord Stream 2.
Hungary	BIO-A-1107	Energy conversion of waste organic materials to biomethane in Zsana	We don't have comment on this project.
Hungary	HYD-N-1065	HU hydrogen corridor I HU/UA	In general terms we support this project, however we believe that hydrogen pipeline construction needs further examination.

Reporting NRA's MS	TYNDP project code	TYNDP project name	NRA comment
Hungary	HYD-N-1066	HU hydrogen corridor II HU/HR	In general terms we support this project, however we believe that hydrogen pipeline construction needs further examination.
Hungary	HYD-N-1206	HU hydrogen corridor IV-1. HU/SK	In general terms we support this project, however we believe that hydrogen pipeline construction needs further examination.
Hungary	HYD-N-1259	HU hydrogen corridor V-1. HU/RO	In general terms we support this project, however we believe that hydrogen pipeline construction needs further examination.
Hungary	HYD-N-1281	HU hydrogen corridor III, Slovenian-Hungarian interconnector	In general terms we support this project, however we believe that hydrogen pipeline construction needs further examination.
Hungary	HYD-N-732	HU hydrogen corridor IV HU/SK	In general terms we support this project, however we believe that hydrogen pipeline construction needs further examination.
Hungary	HYD-N-789	HU hydrogen corridor V HU/RO	In general terms we support this project, however we believe that hydrogen pipeline construction needs further examination.
Hungary	OTH-A-1043	Power conversion with fuel cell in Kardoskút Underground Gas Storage	We don't have comment on this project.
Hungary	OTH-A-1046	Replacement of boilers in Zsana and Hajduszoboszlo Underground Gas storages	We don't have comment on this project.
Hungary	OTH-A-1073	Sector-coupling with installing and relocating compressor units	We don't have comment on this project.
Hungary	OTH-A-1104	Synthetic methane production in Zsana UGS with electricity balancing	We don't have comment on this project.
Hungary	OTH-A-1110	Reduction of methane emission with portable compressor	We don't have comment on this project.
Hungary	OTH-N-1069	Methane emission reduction booster compressor at Városföld CS	We support this project.
Hungary	OTH-N-1070	Methane emission reduction at 7 compressor station	We support this project.
Hungary	OTH-N-1071	Hydrogen production for fuelgas at Mosonmagyaróvár CS	In general terms we support this project, however we believe that hydrogen

Reporting NRA's MS	TYNDP project code	TYNDP project name	NRA comment
			infrastructure constructions need further examination.
Hungary	OTH-N-1338	Hydrogen production for fuelgas at Szőreg-1 UGS	In general terms we support this project, however we believe that hydrogen infrastructure constructions need further examination.
Hungary	OTH-N-453	Hydrogen production for fuel gas at Városföld CS	In general terms we support this project, however we believe that hydrogen infrastructure constructions need further examination.
Hungary	OTH-N-560	Establishing a power plant capable to use max. 25% hydrogen at Szőreg-1 UGS	We don't have comment on this project.
Hungary	OTH-N-972	Methane emission reduction booster compressor at Mosonmagyaróvár CS	We support this project.
Hungary	OTH-N-982	Portable compressor to reduce methane emission	We support this project.
Hungary	RET-A-1003	Power recovery with a turboexpander in Kardoskut Underground Gas Storage	In general terms we support this project, however we believe that this infrastructure construction needs further examination.
Hungary	RET-A-1044	Upgrade of compressor control system of TH-W compressor units for Hydrogen	In general terms we support this project, however we believe that hydrogen infrastructure constructions needs further examination.
Hungary	RET-N-1113	Replacement of chromatographs	We support this project.
Hungary	RET-N-1135	Retrofitting pipelines	In general terms we support this project, however we believe that hydrogen pipeline construction needs further examination
Hungary	TRA-A-656	Eastring - Hungary	We've examined the viability of this project an we support more in-depth examination.
Hungary	TRA-N-325	Slovenian-Hungarian interconnector (HU hydrogen corridor III)	The prerequisite for the construction of this project is financial support and market need.
Hungary	TRA-N-377	Romanian-Hungarian reverse flow Hungarian section 2nd stage	This project could make GR, TR, AZ and BRUA sources available for the region.
Hungary	TRA-N-524	Enhancement of Transmission Capacity of Slovak-Hungarian interconnector	This project could make GR, TR, AZ and BRUA sources available for the region.

Reporting NRA's MS	TYNDP project code	TYNDP project name	NRA comment
Italy	LNG-A-304	Italy-Sardinia Virtual Pipeline	ARERA has launched a specific procedure to assess this project and define the scope of infrastructures to be included in the virtual pipeline. The procedure is still ongoing
Italy	TRA-A-505	Lucera - San Paolo (SGI)	In the most recent decision on NDP evaluation (resolution 696/2022/R/gas), ARERA has acknowledged the positive results of the project CBA. However, it has also requested the project promoter to provide further sensitivity analysis on the impact of certain variables (namely, demand for CNG in the automotive and industrial sectors, and biomethane supply potential) on the project overall benefits
Italy	TRA-N-1194	Sardinia Methanization (ENURA)	The project was positively evaluated by the Authority only with reference to the development of the transport network strictly necessary to connect the regasification terminals to the main consumption basins, without building the backbone or networks to serve isolated locations (possibly reachable by LNG transport on rubber).
Latvia	BIO-N-125	Implementation of smart solutions for injection of renewable gases	PUC has currently not enough information to evaluate the project. Project is related to the Green Deal implementation and will be evaluated within the process of inclusion in NDP (second half of 2023), in a more mature stage.
Latvia	HYD-N-1098	Hydrogen seasonal storage in Latvia	PUC has not enough information to evaluate the project. Project is related to the Green Deal implementation and will be evaluated within the process of inclusion in NDP (2023 second half), in a more mature stage.
Latvia	HYD-N-1280	Nordic-Baltic Hydrogen Corridor - LV section	PUC has not enough information to evaluate the project. Project is related to the Green Deal implementation and will be evaluated within the process of inclusion in NDP (2023 second half), in a more mature stage.
Latvia	LNG-A-912	Skulte LNG	PUC has no information on the progress of the project, the project in 2023 will not be realized.
Latvia	RET-N-1081	Cross border gas transmission system retrofitting for hydrogen	PUC has not enough information to evaluate the project. Project aims to the Green Deal implementation and will be evaluated within the process of inclusion in NDP (2023 second half), in a more mature stage.

Reporting NRA's MS	TYNDP project code	TYNDP project name	NRA comment
Latvia	TRA-A-1181	Connecting pipe to LNG terminal in Latvia	Skulte LNG (code of the project LNG-A-912) will not be into operation in 2023, the connecting pipe commissioning time should be coordinated with the Skulte LNG project. PUC has no information on the progress of the project, project will not be realized till 2023. If project would continue the inclusion in NDP should follow.
Latvia	TRA-F-382	Enhancement of Latvia-Lithuania interconnection (Latvian part)	Project is at the end of construction stage
Latvia	UGS-F-374	Enhancement of Incukalns UGS	Project is on construction stage.
Portugal	HYD-N-1156	H2Med/CelZa	These projects were included in the proposal of the NPD 2023 (2024 to 2033) which was submitted by the TSO on 31/mar. That NDP is currently under a public consultation process. These projects do not belong to an approved NDP. There are several doubts about them, namely in terms of costs and demand. In this particular issue, it seems to derive from national objectives and not from the market.
Portugal	HYD-N-978	Portuguese Hydrogen Backbone	
Portugal	RET-N-1049	H2RENGRID - Transport Network	
Portugal	RET-N-1050	H2RENGRID - Carriço UGS	
Spain	HYD-A-427	H2Pole	CNMC is not competent on H2 (the competences correspond to the Ministry of Ecological Transition and Demographic Challenge), and does not receive information on the H2 projects. Therefore, CNMC cannot confirm or deny if the project information submitted by the promoters is correct or not, nor make an assessment of the H2 projects. Up to date, in Spain, there is only a H2 roadmap that does not detail H2 related infrastructure and there is not a NDP for the H2 projects. Additionally, there is not a NDP that integrates H2 and other energy vectors yet. CNMC is concerned about possible overinvestment, as we are not aware (or have certainty) of the forecast demand the projects are going to supply.
Spain	HYD-N-1149	Spanish hydrogen backbone	
Spain	HYD-N-508	H2 storage North-1	
Spain	HYD-N-1152	H2 storage North-2	
Spain	HYD-N-1153	H2Med-BarMar (Enagás)	
Spain	HYD-N-1151	H2Med-BarMar (GRTgaz)	
Spain	HYD-N-819	H2Med-BarMar (Teréga)	
Spain	HYD-N-1324	H2Med-CelZa (Enagás)	
Spain	HYD-N-1273	Guitiriz - Zamora H2 Pipeline	
Spain	TRA-N-612	ES-IT Offshore-Interconnector	CNMC has not information about this project or is aware of it.
Spain	BIO-A-921	Circular economy: waste to biomethane	CNMC is not competent on biomethane up to date (the competences correspond to the Ministry of Ecological Transition and Demographic Challenge), and does not receive information. Therefore, CNMC cannot

Reporting NRA's MS	TYNDP project code	TYNDP project name	NRA comment
			confirm or deny if the project information submitted by the promoters is correct or not. CNMC is concerned about possible overinvestment, as we are not aware (or have certainty) of the forecast demand the projects are going to supply.
Spain	LNG-F-178	Musel LNG terminal	This LNG terminal was previously mothballed. The approval of the entry into force is ongoing and its expected date is at the end of July
Spain	OTH-F-541	CORE LNGas hive and LNGHIVE2 Infrastructure and logistic solutions	CNMC doesn´t receive official information on this project. Therefore, CNMC can´t confirm or deny if the project information submitted by the promoters is correct or not.
Spain	OTH-F-632	Railway Project roadmap. Transformation to LNG, Biogas, e-fuels and H2	CNMC doesn´t receive official information on this project. Therefore, CNMC can´t confirm or deny if the project information submitted by the promoters is correct or not.
Spain	OTH-N-993	LNG Hub: 2nd jetty for maritime fuel	The need for this project relies on its demand.
Spain	RET-N-483	L2DG (LNG to Decarbonised Gas)	CNMC doesn´t receive official information on this project. Therefore, CNMC can´t confirm or deny if the project information submitted by the promoters is correct or not.