



ANNUAL WORK PROGRAMME

2023

TABLE OF CONTENTS

1	INTRODUCTION	5
1.1	Summary of ENTSOG's activities in 2023	6
2	NETWORK CODES AND GUIDELINES	11
2.1	Capacity Allocation Mechanisms Network Code	11
2.2	Balancing Network Code	13
2.3	Tariff Network Code	14
2.4	Interoperability and Data Exchange Network Code	15
2.5	Congestion Management Procedures Guidelines	19
2.6	Transparency Guidelines	20
2.7	Functionality Process	22
2.8	Supporting Activities	23
3	SCENARIOS AND INFRASTRUCTURE	25
3.1	Objectives	26
3.2	Key Deliverables and Activities	26
3.3	Supporting Activities	28
3.4	Programme of Activities	29
4	SECURITY OF SUPPLY	31
4.1	Objectives	31
4.2	Key Deliverables and Activities	31
4.3	Supporting Activities	34
4.4	Programme of Activities	35
5	ENERGY TRANSITION	37
5.1	Objectives	37
5.2	Key Activities and Deliverables	38
5.3	Programme of Activities	39
6	RESEARCH & DEVELOPMENT	41
6.1	Objectives	41
6.2	Key Deliverables and Activities	41
6.3	Programme of Activities	43
7	ENTSOG SUPPORTING ACTIVITIES	45
7.1	Objectives	45
7.2	Key Deliverables and Activities	45
8	ANNEX: OVERVIEW OF ENTSOG'S REGULATORY FRAMEWORK FOR ITS TASKS	51
9	ABBREVIATIONS	55
10	ADDITIONAL NOTE	56
11	IMPRINT	56



Picture courtesy of SGI

1 INTRODUCTION

ENTSOG was created in December 2009 as part of the implementation of the European Union's Third Energy Package. This document represents the 2023 edition of the Annual Work Programme (AWP), as required by Regulation (EC) 715/2009. An annex has been included to provide an overview on the legal basis for ENTSOG's primary tasks.

ENTSOG's main tasks have included the monitoring of Network Code implementation, development of its Ten-Year Network Development Plans (TYNDP) (in cooperation with ENTSO-E) and assessment of European security of supply, through preparation of Summer Supply Outlook Summer and Winter Supply Outlook reports. ENTSOG has also been tasked with the coordination of network operations under normal and emergency conditions.

Looking to 2023, ENTSOG and its Members will fulfil the requirements of Regulation (EU) 2022/869 on Guidelines for Trans-European Energy Infrastructure (TEN-E), which tasks ENTSOG to establish a harmonised energy system-wide cost-benefit analysis, publish framework guidelines for the TYNDP joint scenarios together with ENTSO-E, and develop jointly with ENTSO-E infrastructure gaps reports. ENTSOG will also address the requirements of Regulation (EU) 2022/1032 on Gas Storage and will actively implement, once published, the requirements of the Hydrogen and Decarbonised Gas Markets package (Regulation and Directive), an EU framework to decarbonise gas markets, promote hydrogen and reduce methane emissions.

ENTSOG will undertake work to facilitate the objectives of the RePowerEU Plan, which aims to reduce Europe's dependence on Russian gas and accelerate the rollout of renewable gases. The Regional Coordination System for Gas (ReCo System for Gas) will continue its 24/7 exchange platform to address security of supply challenges in Europe. ENTSOG's Transparency Platform, gas flow and seasonal supply dashboards will provide up-to-date and relevant data to inform gas market stakeholders.

ENTSOG will continue to work on strategic topics, specifically those required to facilitate gas grids' constructive role in the energy transition, e.g., the repurposing, retrofitting and refurbishment of the gas grids for the transport of hydrogen. As for previous years, and to continuously improve its way of working and developing its relations with key stakeholders, ENTSOG will continue with regular engage-

ment with European Commission (EC), ACER, stakeholders and ENTSOG's members to ensure a constructive and effective mutual dialogue. The ENTSOG team will continue to work to strengthen the synergies between the gas and electricity sectors, and those between natural gas and low carbon gases - including hydrogen - to facilitate energy flexibility, storage, international transportation capacity and security of supply.

In 2023, ENTSOG will contribute to the Madrid Forum and Copenhagen Energy Infrastructure Forum, both hosted by the EC. The Madrid Forum gathers key stakeholders across the European energy sector to discuss opportunities and challenges related to the further development and decarbonisation of the internal EU gas market and to its integration with other energy sectors. The Copenhagen Energy Infrastructure Forum addresses the different aspects of infrastructure planning and development for both electricity and gas. ENTSOG will also participate in the EC's Gas and Electricity Policy Exchange Meetings.

And finally, ENTSOG will continue its work as a proactive, trusted adviser on gas transmission related topics on a European level in 2023 and beyond, to support the achievement of the EU goals of competitiveness, security of supply and sustainability. ENTSOG recognises the urgency to diversify gas supply, to enable a robust and uninterrupted energy delivery, but also the necessity of grids' readiness for renewable and low carbon gases. The structure of ENTSOG with the embedded expertise of its members, as well as of its Brussels office, will continue to play a pivotal role in the further development of the European gas markets, hydrogen agenda, and the future of gas grids.



Picture courtesy of Enagás

1.1 SUMMARY OF ENTSOG'S ACTIVITIES IN 2023

ENTSOG's main activities can be described using the following four headings:

- ▲ Networks Codes and Guidelines (Section 2)
- ▲ Scenarios and Infrastructure (Section 3)
- ▲ Security of Supply (Section 4)
- ▲ Energy Transition (Section 5)

The Annual Work Programme (AWP) had previously focused primarily on the regulatory tasks assigned by the Third Energy Package, including the development process of the network codes, a cornerstone of the organisation's activities. ENTSOG's efforts continue on monitoring the implementation and effects of the Congestion Management Procedure (CMP) Guidelines, Capacity Allocation Mechanisms Network Code (CAM NC), Tariff Network Code (TAR NC), Balancing Network Code (BAL NC) and implementation of the Interoperability and Data Exchange Network Code (INT NC) – these are addressed in Section 2 of this document. The joint activity of managing the Functionality Process with ACER and Transparency Guidelines (including REMIT) is also included in Section 2.

Other regulatory tasks include the elaboration of the Ten-Year Network Development Plan (TYNDP), providing regular information on gas supply and demand for the European market and delivering common operational tools to ensure network security and reliability. These are described in Sections 3 and 4. Section 5 outlines ENTSOG's decarbonisation efforts to address the climate targets and describe how the gas grid can facilitate the transport of renewable gases, including biomethane and hydrogen.

Research and Development activities undertaken by ENTSOG are described in Section 6. Details on ENTSOG's internal supporting organisation are provided in Sections 7 of this document.

Each topic in Section 2–6 includes objectives, key deliverables and activities and a programme of activities for 2023. ENTSOG's key work areas and deliverables are highlighted in Sections 1.1.1 to 1.1.6 below and summarised in the 'Programme of Activities' tables in each section.

A summary of regulatory references is included in the Annex – Section 8.



1.1.1 NETWORK CODES AND GUIDELINES

ENTSOG will continue in 2023 to provide help and support to its Members and other interested parties on Network Code and Guideline related topics and will continue with monitoring activities. ENTSOG will work with ACER in providing joint solutions to issues posted by the stakeholders on the Gas Network Codes Functionality Platform.

Interoperability work in 2023 includes the development, support, and maintenance of Common Network Operation Tools (CNOTs) for data exchange. ENTSOG will continue to work in close cooperation with ACER, EC, Energy Community, EASEE-gas and other stakeholders on all matters relating to Network Code and Guidelines.

Activities undertaken for the Transparency Guidelines and REMIT topics relate mainly to the

management of the transparency and reporting obligations including TSOs' publications on their websites, on the ENTSOG Transparency Platform (TP) and data reporting to ACER REMIT Information System (ARIS). From a TP perspective, work will be undertaken to analyse stakeholder feedback and implement new functionalities on the Platform that will improve the usability and user-friendliness of the published data. ENTSOG and its TSO members will continue their efforts to improve data quality and completeness and delivering on their REMIT obligations. Additional support will be provided to the TSOs from Energy Community Contracting Parties as they advance their efforts on transparency publications, including potential publication on ENTSOG's TP.

1.1.2 SCENARIOS AND INFRASTRUCTURE

During 2023, until Q3, ENTSOG and ENTSO-E plan to develop and publicly consult their TYNDP 2024 scenarios, including the publication of the draft scenario report. According to the revision of Regulation (EU) 2022/869 on guidelines for trans-European energy infrastructure (TEN-E), ACER and the European Commission now have a more formal role in the process which has an impact on the scenario

development process. The timing of the final publication will depend on external stakeholders: ACER to provide its Opinion and European Commission to provide its approval, and input from other stakeholders.

In 2023, ENTSOG will continue working on the TYNDP 2022 Project Specific Cost Benefit Analysis (PS-CBA).



Picture courtesy of Gas Austria Connect

Following the adoption of Regulation (EU) 2022/869 (TEN-E), in line with its article 11, ENTSOG will finalise in 2023 the new single-sector draft Methodology for a harmonised energy sys-

tem-wide CBA (ENTSOG CBA Methodology) before its final adoption. The ENTSOG CBA Methodology will be applied to TYNDP 2024.

1.1.3 SECURITY OF SUPPLY

ENTSOG continues its assessment of the European security of supply, through preparation of deliverables Summer Supply Outlook 2023 and Summer 2022 Review and the Winter Supply Outlook 2023-2024 and Winter 2022-2023 Review.

ENTSOG will undertake work on facilitating the existing Regional Coordination System for Gas (ReCo System for Gas) as a CNOT for emergency conditions and the common incidents classification scale. ReCo will continue its 24/7 exchange platform and coordinating work to help address security of supply challenges in Europe. ENTSOG will continue to support the European Commission and the Gas Coordination Group (GCG) in implementing the current Security of Supply Regulation¹, in particular by assisting, if requested, in preparing and implementing solidarity principles, regional emergency plans, and preventative action plans. Further work is also expected in assisting the Energy Community Secretariat and Contracting Parties in security of supply activities, e.g., SEEGAS steer-

ing committee and others. ENTSOG will monitor the use of the CNOTs for emergency conditions, as adopted by ACER in 2019 – along with the evolution of operational processes and needs – and will revise them if needed.

Considering that most EU Member States import natural gas from non-EU countries and that a very large share of those imports originates from, or crosses third countries to the EU, ENTSOG will further strengthen the cooperation between EU TSOs and third-country TSOs that play an important role in EU gas supplies and contribute to the preparedness for emergencies.

Finally, ENTSOG will also undertake essential ad hoc analysis to support European Commission and other stakeholders in the context of the changes in the geopolitical situation.

¹ As amended by Regulation (EU) 2022/1032 of the European Parliament and the Council of 29th June 2022 amending Regulations (EU) 2017/1938 and (EC) No 715/2009 with regard to gas storage.

1.1.4 ENERGY TRANSITION

ENTSOG will in 2023 continue to participate in and contribute to the realisation of European Green Deal, including legislative initiatives within the 'Fit for 55' package, Hydrogen and Decarbonised Gas Market package and the REPowerEU action plan. ENTSOG will in particular focus on identified strategic topics such as Energy System Integration, specifically the development and planning of the EU hydrogen backbone via repurposing and retrofitting of existing pipelines, based on the revised TEN-E Regulation.

ENTSOG will also be active on the hydrogen and gas security of supply topics, specifically in the context of a coherent planning of re-dedicating gas grids to accept hydrogen blends and to a pure hydrogen backbone system - in time and scale necessary to fulfill the ambitious REPowerEU goals. On this, ENTSOG coordinates with the European Commission, ACER and relevant stakeholders from the gas and hydrogen value chain represented at the EU level.

With respect to the regulatory framework, ENTSOG will focus on the revision of Gas Directive and Gas Regulation, monitor the development of Methane Emissions Regulation, and the development of the Renewable Energy Directive (RED III). Core topics

include: the future role of the gas TSOs, guarantees of origin/certificates, gas quality and hydrogen transport and handling, cybersecurity and regional cooperation.

On these topics, ENTSOG will consider any applicable initiatives and proposals published by the European Commission, ACER or other relevant stakeholders, as well as liaise internally with different working groups and task forces. ENTSOG will continue working on the principles developed under its 2050 Roadmap for Gas Grids and its Action Plan, specifically and actively communicating through the channels established therein.

ENTSOG will continue to engage with stakeholders along the whole value-chain via:

- ▲ Advisory Panel for Future Gas Grids
- ▲ Prime Mover Group on Gas Quality and Hydrogen Handling²
- ▲ Prime Mover Group on Guarantees of Origin
- ▲ European Clean Hydrogen Alliance Roundtable on Clean Hydrogen Transmission and Distribution
- ▲ European Clean Hydrogen Partnership
- ▲ Energy Investor's Dialogue

1.1.5 MANAGEMENT SUPPORT

In 2023, the ENTSOG Management Support team will continue to work with the Business Areas and management in Brussels, and with ENTSOG members. Support will be through the Admin, Legal and Corporate Affairs, HR, Finance, and IT functions, to ensure there is a robust platform for ENTSOG activities and deliverables.

The Management Support team is responsible for the meetings of the General Assembly and the Management Board as well as coordinating ENTSOG publications, e.g., Annual Report and Annual Work Programme (AWP). In addition, the activities of the Liaison Group, the Legal Advisory Group and the Financial Committee are organised by the Management Support team along with the activities of the External Contact Platform (open to non-EU Gas transmission companies), which was created in collaboration with the Energy Community. Additionally, the Management Support team will facilitate the new framework for cooperation between ENTSOG and the UK TSOs in 2023. The Management Sup-

port team also, along with ENTSOG Business Area Directors, prepare ENTSOG's contribution to the European Commission's Gas and Electricity Policy Exchange Meetings.

The Annual Report and AWP are the result of combined efforts from the entire ENTSOG team – the Annual Report assesses ENTSOG's work and achievements retrospectively for each given year. The ENTSOG AWP contains the expected activities for ENTSOG in the upcoming year, considering ACER's opinions on ENTSOG's work and allowing the interested stakeholders to prepare their activities vis-à-vis ENTSOG.

2 Depending on topic-related developments, the engagement could take place either via the continuation of the dedicated Prime Movers' Group on gas quality and hydrogen handling or stakeholder workshops.



Picture courtesy of Gassco

2 NETWORK CODES AND GUIDELINES

EC Regulation 715/2009 requires European-wide Network Codes and Guidelines to be developed by ENTSOG to harmonise the applicable rules aimed at facilitating market integration.

The currently foreseen Network Codes and the Guidelines have been developed. ENTSOG is required to monitor the implementation of the Network Codes and the Guidelines and their effect on the harmonisation of applicable rules aimed at facilitating market integration, which will continue in 2023 and beyond. ENTSOG will also continue to actively participate in the further development of the Network Codes and Guidelines through the Functionality Process as well as any formal regulatory amendment process which might be initiated in the future, as required. Additionally, ENTSOG will consider any specific legislative developments arising from the European Commission's 'Fit for 55'

legislative package. In particular, potential changes or new Network Codes arising from the Hydrogen and Decarbonised Gas Markets Package will need to be considered.

In relation to transparency, specific obligations for gas TSOs have been introduced through Regulation (EC) No 715/2009, defining the basic transparency rules further specified in Chapter 3 of Annex I (and its amendments). Reporting obligations have been added following the REMIT regulation including its Implementing Acts. ENTSOG will also continue to deliver on these requirements and implement necessary updates.

2.1 CAPACITY ALLOCATION MECHANISMS NETWORK CODE

The CAM NC sets up capacity allocation mechanisms for existing and incremental capacity and how adjacent TSOs cooperate to facilitate capacity sales, having regard to general commercial as well as technical rules related to capacity allocation mechanisms.

The amended CAM NC entered into force as Regulation (EC) 2017/459 on 6 April 2017 and repealed the previous Regulation (EC) 984/2013. It is antic-

ipated that changed market conditions, ongoing Functionality processes, and recent court rulings could give reason to further amend the CAM NC. In 2023, ENTSOG will continue to support the implementation of the CAM NC by providing members and stakeholders advice and guidance throughout the implementation process, as well as engage in any activities related to possible amendments to the CAM NC if such a process were to be launched by the European Commission.

2.1.1 OBJECTIVES

- ▲ To support the implementation and application of CAM NC.
- ▲ To monitor and analyse the implementation of the CAM NC and its effect on the harmonisation of applicable rules aimed at facilitating market integration.
- ▲ To monitor the incremental capacity process initiated in 2021 according to Chapter V of the CAM NC and provide support to members throughout the different steps of this process, as well as offer guidance on future incremental processes³.
- ▲ To facilitate activities and provide expert knowledge and guidance to stakeholders related to capacity.
- ▲ To respond to CAM NC-related issues raised on the Functionality Platform, working in close dialogue with stakeholders.
- ▲ To support and assist in the implementation of the CAM NC in terms of regulatory interpretation by relevant EU bodies as well as via knowledge sharing and good practices dis-

3 Especially taking into account the regulatory uncertainty related to incremental capacity processes from the General Court's Judgment in joined Cases T-684/19 and T-704/19

semination, including assistance to the Energy Community in implementing the CAM NC.

- ▲ To develop documents/solutions stemming from legal obligations on ENTSG outlined in the CAM NC (including the auction calendar).

2.1.2 KEY ACTIVITIES AND DELIVERABLES

- ▲ Publish the 2021-2022 CAM NC Implementation and Effect Monitoring Report.
- ▲ CAM NC Auction Calendar.
- ▲ Issue solutions delivery from the joint ACER and ENTSG functionality process involving stakeholders.
- ▲ Update of Business Requirements Specification (BRS) CAM if requested by TSO/ Stakeholders.
- ▲ Monitor the progress of the third incremental capacity process and support members throughout the different steps of this process.
- ▲ Developing ENTSG positions on capacity related issues including responses to public consultations and ACER reports.

2.1.3 PROGRAMME OF ACTIVITIES

The following table shows the expected timeline and key activities on CAM NC related issues:

CAM NC	2023												
	J	F	M	A	M	J	J	A	S	O	N	D	
CAM NC auction calendar	■										■	■	■
CAM NC monitoring report 2021–2022 (implementation & effect)*	■	■	■	■	■								
Incremental Capacity Process – support TSOs with the incremental capacity process and commence drafting of the report covering the 2021–2023 cycle	■	■	■	■	■	■	■	■	■	■	■	■	■
Analysis of ACER reports and other capacity relevant reports	■	■	■	■	■	■	■	■	■	■	■	■	■
Monitor the activities and develop ENTSG positions on capacity relevant issues incl. responses to public consultations	■	■	■	■	■	■	■	■	■	■	■	■	■
Support the Energy community in implementing CAM NC	■	■	■	■	■	■	■	■	■	■	■	■	■
Functionality Process for CAM NC	■	■	■	■	■	■	■	■	■	■	■	■	■
CAM BRS update (if requested by TSO/Stakeholders)	■	■	■	■	■	■	■	■	■	■	■	■	■

■ Activity periods
 ■ Key deliverables available to external stakeholders
 ■ Undetermined workload

* The CAM NC does not stipulate a date for which ENTSG should produce and publish a report on the analysis of the implementation and effect of the CMP GLs in 2023. Therefore, the publication date in 2023 may change subject to the draft process and discussions within ENTSG's competent decision-making bodies.



Picture courtesy of Gascade

2.2 BALANCING NETWORK CODE

The BAL NC applies to balancing zones within the borders of the EU. It establishes rules for natural gas balancing, including network-related rules on nomination procedures, imbalance charges, settlement processes associated with daily imbalance charges and provisions on operational balancing.

The BAL NC was published in the Official Journal of the European Union on 26 March 2014. The code entered into force on 16 April 2014 with a first implementation deadline of 1 October 2015. However, according to Article 52(1), the application could be postponed until 1 October 2016, if approved by the

NRA and provided that no interim measures were applied. As a third option, the BAL NC allowed TSOs to apply interim measures according to Articles 45-50 in the absence of sufficient liquidity on the short-term wholesale market and upon approval by the NRA. Article 45(4) set April 2019 as the deadline for the termination of interim measures.

In 2023, ENTSOG will continue to support the implementation of the BAL NC by providing members and stakeholders advice and guidance throughout the implementation process and any other related topics.

2.2.1 OBJECTIVES

- ▲ To support the implementation and application of the BAL NC.
- ▲ To monitor and analyse the implementation of the BAL NC and its effect on the harmonisation of applicable rules aimed at facilitating market integration. To facilitate activities and provide expert knowledge and guidance to stakeholders related to balancing.
- ▲ To respond to BAL NC-related issues raised on the Functionality Platform, working in close dialogue with stakeholders.
- ▲ To support and assist in the implementation of the BAL NC in terms of Regulatory interpretation by relevant EU bodies as well as via knowledge sharing and good practices dissemination, including assistance to the Energy Community in implementing the BAL NC.
- ▲ To coordinate with ACER on data exchange and information sharing to monitor the effective implementation of the BAL NC.

2.2.2 KEY ACTIVITIES AND DELIVERABLES

- ▲ Commence the work on the BAL NC Implementation and Effect Monitoring Report to be published in 2024.
- ▲ Issue solutions delivery from the joint ACER and ENTSOG functionality process involving stakeholders.
- ▲ Update of Business Requirements Specification (BRS) for Balancing processes if requested by TSO/Stakeholders.
- ▲ Developing ENTSOG positions on balancing related issues including responses to public consultations and ACER reports.

2.2.3 PROGRAMME OF ACTIVITIES

The following table shows the expected timeline and key activities on BAL NC related issues:

Balancing NC	2023											
	J	F	M	A	M	J	J	A	S	O	N	D
Prepare for the 2023 BAL NC monitoring report (implementation & effect) to be published in 2024												
Support and assistance of TSOs in the implementation of the BAL NC												
Analyses of ACER reports (implementation/effect monitoring, market monitoring) and other BAL relevant reports												
Monitor activities and develop ENTSOG positions on balancing relevant issues incl. responses on public consultations and ACER reports												
Support of Energy Community in implementing BAL NC												
Functionality Process for BAL NC												

■ Activity periods ■ Key deliverables available to external stakeholders ■ Undetermined workload

2.3 TARIFF NETWORK CODE

The TAR NC on rules regarding harmonised transmission tariff structures for gas was published in the Official Journal of the European Union on 17 March 2017 and entered into force on the 6 April 2017. The application of the TAR NC was over three dates: 6 April 2017 (chapters I, V, VII, IX, X); 1 October 2017 (chapters VI, VIII); 31 May 2019 (chapters II, III, IV).

The TAR NC contributes to achieving tariffs, or methodologies used to calculate them, which are transparent, consider the need for system integ-

riety and its improvement, reflect the actual cost incurred, are non-discriminatory, facilitate efficient gas trade and competition, avoid cross-subsidies between network users, and provide incentives for investment.

In 2023, ENTSOG will continue to support the ongoing implementation and monitoring of the TAR NC by providing members and stakeholders with advice and guidance throughout the implementation process.

2.3.1 OBJECTIVES

- ▲ To support the implementation and application of the TAR NC.
- ▲ To monitor and analyse the implementation of the TAR NC and its effect on the harmonisation of applicable rules aimed at facilitating market integration.
- ▲ To facilitate activities and provide expert knowledge and guidance to stakeholders related to tariffs.
- ▲ To respond to TAR NC-related issues raised on the Functionality Platform, working in close dialogue with stakeholders.
- ▲ To support and assist in the implementation of the TAR NC in terms of regulatory interpretation by relevant EU bodies as well as via knowledge sharing and good practices dissemination, including assistance to the Energy Community in implementing the TAR NC.
- ▲ To develop documents/solutions stemming from legal obligations on ENTSOG outlined in the TAR NC (for example regarding transparency requirements).

2.3.2 KEY ACTIVITIES AND DELIVERABLES

- ▲ Commence work on the TAR NC Implementation and Effect Monitoring Report to be published in 2024.
- ▲ Issue solutions delivery from the joint ACER and ENTSOG functionality process involving stakeholders.
- ▲ Develop ENTSOG positions on tariff-related issues including responses to public consultations and ACER reports.

2.3.3 PROGRAMME OF ACTIVITIES

The following table shows the expected timeline and key activities on Tariff NC related issues:

Tariff NC	2023											
	J	F	M	A	M	J	J	A	S	O	N	D
Prepare for the 2023 TAR NC monitoring report (implementation & effect) to be published in 2024												
Support and assistance of TSOs in the implementation of the TAR NC												
Analyses of ACER reports (implementation/effect monitoring, allowed/target revenue, market monitoring) and other TAR relevant reports												
Monitor the activities and develop ENTSOG positions on tariff-relevant issues incl. responses on public consultations												
Support of Energy Community in implementing TAR NC												
Functionality Process for TAR NC												

■ Activity periods
 ■ Key deliverables available to external stakeholders
 ■ Undetermined workload

2.4 INTEROPERABILITY AND DATA EXCHANGE NETWORK CODE

Regulation (EU) 2015/703 established a network code on interoperability and data exchange rules (INT NC) in 2015.

An appropriate degree of harmonisation in technical, operational and communication areas is key to overcome potential barriers to the free flow of gas in the European Union. The INT NC enables the neces-

sary harmonisation in those areas, therefore leading to effective market integration. For that purpose and for facilitating cooperation between adjacent transmission system operators, ENTSOG provides assistance for the harmonised implementation of the INT NC and develops and maintains CNOTs for the technical implementation of Network Codes and Guidelines.

2.4.1 OBJECTIVES

- ▲ To support the implementation and application of the INT NC.
- ▲ To investigate the further steps of harmonisation regarding common data exchange solutions.
- ▲ To facilitate and support coordination of technical cooperation between Member States, Energy Community and third-country transmission system operators, as required by Art 8(3)c) Regulation (EC) No. 715/2009).



Picture courtesy of NET4GAS

2.4.2 KEY ACTIVITIES AND DELIVERABLES

2.4.2.1 Monitoring of the implementation and functioning of the Network Code on Interoperability and Data Exchange Rule:

- ▲ Publish a follow-up to the 2021 Implementation Monitoring Report of the Network Code on Interoperability and Data Exchange Rules in accordance with ACER, if required.
- ▲ Review of selected Interconnection Points by ACER, to document detailed evidence of Interconnection Agreements' (IAs') compliance with the INT NC as a complementary part of the Implementation Monitoring Report. The results of the IMR will be considered as input for a dialogue on a possible amendment of the INT NC.
- ▲ Analyse any proposals arising from the Functionality Process including validation, categorisation and prioritisation of the issues and develop proposals for improvement or amendment of the network codes or guidelines together with other ENTSOG business areas as well as with ACER and relevant stakeholders.
- ▲ Facilitate possible amendments of the INT NC in order to implement the agreed solutions for reported FUNC issues (e.g., reported FUNC issues "Communication Protocol and encryption" and "Capacity trading platforms").

2.4.2.2 Development, support and maintenance of common network operation tools (CNOTs) for data exchange:

- ▲ Monitor the implementation and functionality of published CNOTs for CAM/CMP and Nominations and matching procedures, including the related Business Requirement Specifications, Implementation Guidelines, and the technical communication profiles for the selected common solutions for Data Exchange.
- ▲ Organisation of a public stakeholder workshop related to the implementation of CNOTs, if needed.
- ▲ Cooperation with EASEE-gas, CEF (EC eDelivery), ACER and other relevant stakeholders in the field of data exchange.
- ▲ Analyse any potential requests concerning Data Exchange harmonisation.

2.4.2.3 Technical cooperation between Member States, Energy Community and third-country transmission system operators:

- ▲ If required, update recommendations relating to the coordination of technical cooperation between Member States, Energy Community and third-country transmission system operators.
- ▲ Support the TSOs of Member States, Energy Community and third countries in the implementation of the INT NC rules and expanding regional cooperation.
- ▲ Host workshop⁴ to discuss future steps for strengthening technical cooperation between Member States, Energy Community and third-country TSOs supplying or transiting gas to the EU (e.g., North African countries, Turkey). This cooperation is also discussed on the external communication platform which was established between ENTSOG and Energy Community Secretariat.

2.4.2.4 Operate the Local Issuing Office for Energy Identification Coding scheme:

- ▲ Management of EIC Codes requests and updates from/to the Central Issuing Office (CIO/ENTSO-E) and ENTSOG website.
- ▲ Cooperation with ENTSO-E to further streamline and standardise the implementation of the scheme in the gas sector.

2.4.2.5 Gas Quality and Hydrogen handling:

- ▲ Cooperate with CEN Technical Committees (TC) 234 and 408, particularly in:
 - The revision of the standard EN16726, including the associated Task Forces dealing with the review of each gas quality parameter (i.e., relative density, Wobbe Index, GCV, O₂ via CEN SFGas GQS TF3 Oxygen⁵), the potential inclusion of hydrogen in the standard and the normative work for the implementation of the proposed Wobbe Index classification system.
 - The work related to the gas transmission network readiness to integrate hydrogen and other renewable and low-carbon gases.
 - The development of the CEN standard on hydrogen specifications (Gas infrastructure – Quality of gas – Hydrogen used in converted/rededicated gas systems)⁶.
 - The systematic review of EN 16723 - Natural gas and biomethane for use in transport and biomethane for injection in the natural gas grid.
- ▲ Explore the possibilities of deploying a 'smart gas grid' to improve the interoperability of systems and technologies and provide a better gas quality and hydrogen management.
- ▲ Advise on Strategic Research and Innovation Agenda and Annual Work Plan of the Clean Hydrogen Partnership as part of its Stakeholder Group.
- ▲ Assess the potential achievable hydrogen purity levels on repurposed natural gas grids.
- ▲ Discuss the potential implementation of a minimum oxygen level at IPs for the unhindered cross-border flow of biomethane as proposed by the Hydrogen and Decarbonised Gas Regulation⁷.
- ▲ Cooperate with stakeholders to define gas quality hydrogen handling principles (via 'Prime Movers' set up and/or engagement in other associations WGs e.g., EASEE-gas, CEN, Marcogaz, GERG, GIE, CEDEC, GEODE, GD4S, Eurogas, etc).

4 Due to the COVID-19 pandemic, ENTSOG could not launch the planned 2022 workshop between EU TSOs and relevant adjacent non-EU TSOs (parties acting as TSOs) from third countries. The workshop is now planned for 2023.

5 CEN SFGas GQS TF3 Oxygen = CEN Sector Forum Gas, Gas Quality Study, Task Force 3 focused on Oxygen parameter.

6 The standard will define the quality of hydrogen, i.e., its parameters and limiting values, used within converted/rededicated European natural gas systems at the exit point to the end-user.

7 COM(2021) 804 final

2.4.3 PROGRAMME OF ACTIVITIES

The following table shows the expected timeline and key activities on INT NC related issues:

Interoperability and Data Exchange NC	2023											
	J	F	M	A	M	J	J	A	S	O	N	D
Follow-up to the INT NC monitoring report published in 2022 (if requested by ACER)												
Respond to queries and provide advice to TSOs and stakeholders on the INT NC and relevant CNOTs												
Support and assistance of TSOs and Energy Community in the implementation of the INT NC and relevant CNOTs												
Update of CNOTs												
Functionality Process for the INT NC												
Data Exchange workshop												
CAM/CMP BRS update (if requested by TSO/Stakeholders)												
Nomination & Matching BRS update (if requested by TSO/Stakeholders)												
Workshop between EU TSOs and adjacent non-EU TSOs												
Management of EIC codes												
ENTSOG – GIE cooperation on EC’s Methane Emissions initiative												
Cooperation with other stakeholders in terms of Cyber Security												
Continuation of the dialogue with stakeholders on European and national level in order to establish a common encryption method for AS4												
Analysis of interoperability topics in relation to the new gas package												
Cooperation with stakeholders on Gas Quality and hydrogen handling (e.g., via prime movers’ group, stakeholder workshops)												
Cooperation with CEN in standardisation activities for gas quality and hydrogen												
Organise a public Workshop on Gas Quality & hydrogen handling												
Advise on Strategic Research & Innovation Agenda and Annual Work Plan of the Clean Hydrogen Partnership												
Continue assessment of the maximum achievable hydrogen purity level on repurposed natural gas grids												
Explore the possibilities of deploying ‘smart gas grids’												
Discuss the potential implementation of hydrogen blending and a minimum oxygen level at IPs for the unhindered cross-border flow of hydrogen blends and biomethane												

■ Activity periods ■ Key deliverables available to external stakeholders ■ Undetermined workload

2.5 CONGESTION MANAGEMENT PROCEDURES GUIDELINES

The CMP GLs were developed by the European Commission in 2010 and 2011 and approved by the EU Gas Committee on 24 August 2012. The implementation date was 1 October 2013.

The CMP GLs help free up unused capacity with a view to optimal and maximum use of the technical capacity and the timely detection of future congestion and saturation points. They facilitate

cross-border exchanges in natural gas on a non-discriminatory basis.

In 2023, ENTSOG will continue to support the implementation of the CMP GLs by providing members and stakeholders advice and guidance throughout the implementation process, in particular focusing on potential changes to the CMP GLs arising from the Hydrogen and Decarbonised Gas Package.

2.5.1 OBJECTIVES

- ▲ To support the implementation and application of the Congestion Management Procedures Guidelines.
- ▲ To monitor and analyse the implementation of the CMP GLs and its effect on the harmonisation of applicable rules aimed at facilitating market integration.
- ▲ To facilitate activities and provide expert knowledge and guidance to stakeholders related to congestion management.
- ▲ To respond to CMP GLs-related issues raised on the Functionality Platform, working in close dialogue with stakeholders.
- ▲ To support and assist in the implementation of the CMP GLs in terms of regulatory interpretation by relevant EU bodies as well as via knowledge sharing and good practices dissemination, including assistance to the Energy Community in implementing the CMP GLs.

2.5.2 KEY ACTIVITIES AND DELIVERABLES

- ▲ Publish the 2021-2022 CMP GL Implementation and Effect Monitoring Report.
- ▲ Issue solutions delivery from the joint ACER and ENTSOG Functionality Process involving stakeholders.
- ▲ Update of Business Requirements Specification (BRS) CMP if requested by TSO/Stakeholders.
- ▲ Developing ENTSOG positions on congestion management related issues including responses to public consultations and ACER reports.

2.5.3 PROGRAMME OF ACTIVITIES

The following table shows the expected timeline and key activities on CMP related issues:

CMP Guidelines	2023											
	J	F	M	A	M	J	J	A	S	O	N	D
CMP GL monitoring report 2021–2022 (implementation & effect)*												
Support and assistance of TSOs in the implementation of the CMP GL												
Analyses of ACER reports (Congestion at interconnection points, implementation) and other contractual congestion relevant reports												
Monitor the activities and develop ENTSOG positions on contractual congestion relevant issues incl. responses on public consultations												
Functionality Process for CMP												

■ Activity periods
 ■ Key deliverables available to external stakeholders
 ■ Undetermined workload

* The CMP GLs do not stipulate a date for which ENTSOG should produce and publish a report on the analysis of the implementation and effect of the CMP GLs in 2023. Therefore, the publication date in 2023 may change subject to the draft process and discussions within ENTSOG's competent decision-making bodies.

2.6 TRANSPARENCY GUIDELINES

The energy market liberalisation process, aimed at securing a well-functioning, open and efficient internal market in gas, has significantly changed the gas transmission business and increased the need for transparency. In this respect, specific obligations for gas TSOs have been introduced through Regulation (EC) No 715/2009, which defines the basic transparency rules, further specified in Chapter 3 of Annex I (and its amendments).

The Network Codes have been developed to provide rules and procedures to reach an appropriate level of harmonisation towards efficient gas trading and transport across gas transmission systems in the EU, increasing data publication requirements.

ENTSOG activities on the Transparency topic relate to management of the transparency obligations including TSOs' publications on their websites and the Transparency Platform and Regulation on Energy Market Integrity and Transparency (REMIT). Regulation (EU) No 1227/2011 (REMIT) and its Commission Implementing Regulation (EU) No 1348/2014 introduced additional publication and reporting obligations to the market participants, aimed at supporting market monitoring, fostering open and fair competition in wholesale energy markets. The REMIT obligations are also handled by the Transparency Area in ENTSOG.

2.6.1 OBJECTIVES

The objective of the Transparency activities in ENTSOG is to enhance the transparency of gas TSOs' activities in the European Union. This is realised by the data published on the Transparency Platform (TP) and the TSOs' websites. The requirements for the transparency publications are specified in Regulation (EC) No 715/2009, REMIT and the Network Codes. The main objectives are to:

- ▲ Further enhance ENTSOG Transparency Platform with functionalities improving the usability and user-friendliness of the published data while taking cost-efficiency into account.
- ▲ Monitor, analyse and apply the legal transparency and reporting requirements coming from EU legislation such as

- Regulation (EC) No 715/2009
- Regulation (EU) No 1227/2011
- Regulation (EU) No 1348/2014
- Regulation (EU) 2015/703
- Regulation (EU) 2017/459
- Regulation (EU) 2017/460
- Regulation (EU) 2019/942

- ▲ Cooperate with other ENTSOG business areas to fulfil transparency requirements coming from relevant network codes and liaise with relevant ENTSOG WG to identify synergies in fulfilling these obligations.

2.6.2 KEY ACTIVITIES AND DELIVERABLES

In line with the previous Annual Work Programme 2022, ENTSOG continues to update and improve the ENTSOG Transparency Platform to the benefit of all users and stakeholders. The TP provides technical and commercial data on the TSOs' transmission-relevant points, showing them on an interactive map, in charts, in tables, in downloads, and as 'Application Programming Interfaces' (APIs). Part of this information is also available via 'Really Simple Syndication' (RSS) web-feeds. The information is available free of charge, provided by the TSOs.

ENTSOG continues to work closely with the TSOs to apply the regulation provisions, including the transparency requirements coming from the Network Codes and Guidelines, and REMIT

The following is a list of key activities and deliverables:

- ▲ Strive to continuously improve the TP user experience based on feedback from public workshops, the Functionality Platform, satisfaction surveys, and the TP "Submit a question" form.
- ▲ Organise a workshop to receive feedback from stakeholders.
- ▲ Evaluate the communication between ENTSOG and the TP users in terms of newsletters, surveys, and announcements on the Platform.
- ▲ Support TSOs in improving data completeness and consistency in line with legal obligations.
- ▲ As Registered Reporting Mechanism, continue to provide aggregated fundamental data to the ARIS as defined in Article 9(1) of Regulation (EU) 1348/2014.



Picture courtesy of REN

- ▲ Follow-up on reporting and REMIT fees' provisions as well as on data collection processes for TSOs and ENTSOG under REMIT obligations. In 2023, this could include activities to implement changed security requirements and updated electronic formats for REMIT reporting, subject to announcement of timeline and readiness from ACER.
- ▲ Maintain, together with the gas TSOs, a close working relationship with ACER's Market Integrity and Transparency department and support bilateral effort in improving REMIT application.

This includes participation in ACER public consultations and surveys on REMIT as well as various stakeholder user groups managed by the Agency, e.g., REMIT Expert Group, RRM User Group, and roundtables for REMIT reporting and inside information disclosure.

- ▲ Provide input on ENTSOG's position about the publication provisions of the Hydrogen and Decarbonised Gas Markets Package, and in 2023 particularly on preparation to implement it.

2.6.3 SUPPORTING ACTIVITIES

- ▲ Facilitate required data collection processes when required by the legislation, e.g., the information for ACER's 2023 Congestion Monitoring Report.
- ▲ Support TSOs from the Energy Community Contracting Parties on their ENTSOG TP transparency publications.
- ▲ Support the Agency's REMIT teams and ACER stakeholder user groups, e.g., REMIT Expert Group, RRM User Group, roundtables for REMIT reporting and for inside information disclosure etc., with input on the processes and practices on the EU gas market relevant for the REMIT implementation and developments.

- ▲ Continuous dialogue with other ENTSOG working and kernel groups to provide support for any ad hoc data requests for possible ACER monitoring or for research studies within ENTSOG.
- ▲ Support the other ENTSOG working and kernel groups on projects related to the usage of information provided by the TSOs in ENTSOG's Professional Data Warehouse (PDWS) including the Regional Coordination System for Gas (ReCo System for Gas).

2.6.4 PROGRAMME OF ACTIVITIES

The following table shows the expected timeline and key activities on Transparency Guidelines related issues:

Transparency Guidelines	2023											
	J	F	M	A	M	J	J	A	S	O	N	D
Continuous platform improvements												
Activities on application of the transparency requirements coming from EU legislation												
Functionality Process for Transparency Guidelines												
Facilitate required data collection processes												
Support the TSOs from Energy Community CPs on REMIT and transparency topics												
Support ACER's REMIT department												
Support to TSOs on data completeness												
Follow-up on REMIT requirements												
Cooperate with ENTSOG business areas on transparency requirements and support with projects concerning TP												
Stakeholder satisfaction survey												
Public workshop on Transparency												

■ Activity periods
 ■ Key deliverables available to external stakeholders
 ■ Undetermined workload

2.7 FUNCTIONALITY PROCESS

The established Functionality Process, co-managed by ENTSOG and ACER and supported by the European Commission, is aimed at reaching commonly recommended solution(s) on implementation and operational issues within the existing Gas Network Codes and Guidelines which already entered into force.

The central tool of the process is the Gas Network Codes Functionality Platform (www.gasnfunc.eu) which was launched in February 2016.

After an issue has been reported, ACER and ENTSOG will jointly validate, categorise, and prioritise the raised issues and produce solutions taking into account stakeholders' views⁸. The process includes data collection, launch of public consultations and analysis of results.

⁸ 21 issues have been reported on the FUNC Platform, 18 out of these issues have been solved, closed, or withdrawn by the issue poster, 3 issues are currently open for joint assessment (Q3 2021).

2.7.1 OBJECTIVES

ACER and ENTSOG provide stakeholders a platform to raise and discuss implementation and operational Network Codes and Guidelines issues and

provide an opportunity to be involved in developing solutions, which, at the end of the process, will aim at commonly recommended non-binding guidance.

2.7.2 KEY ACTIVITIES AND DELIVERABLES

In 2023, it is anticipated that ENTSOG will provide further joint ACER and ENTSOG solutions to issues posted by the stakeholders on the Functionality Platform.

In addition to the content work of producing issue solutions, ACER and ENTSOG also actively work on improving the Functionality Process itself by making it more efficient, transparent, and easier to use for the involved stakeholders. This work will also continue in 2023.

2.7.3 PROGRAMME OF ACTIVITIES

The following table shows expected timeline and key activities on the Functionality Process:

Functionality Process	2023											
	J	F	M	A	M	J	J	A	S	O	N	D
Develop and publish issue solutions												
Process improvement												

■ Activity periods

2.8 SUPPORTING ACTIVITIES

2.8.1 GAS AND ELECTRICITY POLICY EXCHANGE MEETINGS (GEPEM)

The Gas and Electricity Policy Exchange Meetings (GEPEM), previously known as the Network Code Implementation and Monitoring Group (NC IMG), is a forum for high level strategic coordination between the European Commission, the Agency for the Cooperation of Energy Regulators (ACER), the European Network of Transmission System Operators for Electricity (ENTSO-E), and the European Network of Transmission System Operators for Gas (ENTSOG).

Previously, the NC IMG oversaw the implementation and implementation monitoring of electricity network codes and gas network codes in the EU. In

2022, the European Commission have proposed to update the forum’s scope to reinforce the participation of the renewable energy market and drive the investments necessary to provide security of supply, and in response to the “Fit for 55” initiatives and Hydrogen and Decarbonised Gas package.

Going forward, ENTSOG aims to continue its participation to this forum, contributing to transparent dialogue and effective information exchange between EC, ACER and the ENTSOs on the integration of the European electricity and gas markets and the important topics related to new legislative files and proposals.



Picture courtesy of Open Grid Europe

3 SCENARIOS AND INFRASTRUCTURE

The deliverables and activities outlined in this Section reflect ENTSOG obligations under Regulations (EC) 715/2009 (3rd Energy Package), (EU) 2017/1938 (Security of Supply), (EU) 2022/869 (Energy Infrastructure Guidelines) and EU 2015/703 (Interoperability & Data Exchange Network Code) and relate to scenario development, investment and infrastructure assessment for the EU energy system.

One of ENTSOG's main deliverables are short and medium to long-term assessments such as the Union-wide Ten-Year Network Development Plan (TYNDP). In addition, the ENTSOG maps show commitment to transparency and to providing stakeholders with easily accessible and high added value information.

All these deliverables aim at developing a vision of the integrated European energy market and in particular its infrastructure component. This vision is of particular importance in view of completing the pillars of the European Energy Policy in the perspective of achieving the European energy and climate targets and European commitments to the EU Green Deal and the Paris Agreement.

The TYNDP development is a three-year process (even though published every second year), with scenario development taking two years, and the infrastructure and project assessment taking an additional year. The TYNDP Scenarios are jointly developed by ENTSOG and ENTSO-E following an extensive engagement and cooperation with external stakeholders. This process is the entry point to two parallel subsequent processes, to which ENTSOG provides its support: the development of the Gas Regional Investment Plans (GRIPs) and the Projects of Common Interest (PCI) selection process. The overall TYNDP and subsequent processes take a total of four years and are repeated every second year.

Regulation (EU) 2022/869 (TEN-E) identifies eleven priority corridors and three priority thematic areas to develop and interconnect. The revised TEN-E Regulation updates the infrastructure categories eligible for support with an emphasis on decarbonisation, and adds a new focus on offshore electricity grids, hydrogen infrastructure and smart grids. Following the adoption of Regulation (EU) 2022/869, in line with its article 11, ENTSOG will finalise in 2023 the new draft ENTSOG CBA Methodology for hydrogen before its final adoption and application to TYNDP 2024.

In parallel, in light of Russia's invasion of Ukraine, the European Commission published the REPowerEU plan to rapidly reduce dependence on Russian fossil fuels and fast forward the green transition. This will be taken into account when developing the forthcoming TYNDP 2024 and the above-mentioned methodology.

3.1 OBJECTIVES

- ▲ To assess the contribution of infrastructure solutions under different scenarios to the European Energy Policy, in particular sustainability, security of supply, competition and market integration, as well as to assess the European supply adequacy outlook through modelling of the integrated network and development of supply and demand scenarios.
- ▲ To support the investment process starting from gap identification through to the coming on-stream of the respective infrastructure solutions.
- ▲ To support the Regional Groups, established by the European Commission, in the PCI selection process by providing the technical background and methodologies related to the cost-benefit analysis of projects.
- ▲ To provide support to institutions and stakeholders in the understanding of gas infrastructure.
- ▲ To develop ENTSOG skills, methodologies and tools to sustain the achievement of the above objectives.

3.2 KEY DELIVERABLES AND ACTIVITIES

- ▲ Draft and finalise TYNDP 2024 Scenarios
- ▲ TYNDP 2022 project-specific cost-benefit analysis
- ▲ Support to the PCI Project Collection and the 6th PCI Selection Process.
- ▲ Transmission Capacity Map 2023
- ▲ System Development map 2022, to be published in 2023.
- ▲ Develop draft ENTSOG CBA Methodology.
- ▲ Adapt ENTSO-E/ENTSOG Consistent and Interlinked Model for TYNDP 2022 and future editions.

3.2.1 SCENARIOS FOR TYNDP 2024

The TYNDP 2024 Scenario development process takes two years in total, starting in 2022. As part of the Interlinked Model, it will build on continuous cooperation between ENTSOG and ENTSO-E and external stakeholders, allowing for the evolution of policy and technology to be considered, and the experience gained from TYNDP 2022 and the joint focus study on the interlinkages between gas and electricity sectors. In this regard, the ENTSOs will further develop their methodology regarding the construction of full-energy scenarios, including aspects of sector coupling such as hybrid demand solutions and Power-to-Gas (P2G).

By the end of 2023, ENTSOG and ENTSO-E plan to have drafted, consulted and published the draft TYNDP 2024 Scenario report. These tasks include the quantification of demand and supply patterns for their scenarios:

- ▲ A joint data collection for bottom-up gas and electricity data for use in the National Trends scenario,
- ▲ Electricity market simulations, including major improvements regarding sector coupling (such as market integrated P2G) primarily in the COP21 scenarios.
- ▲ Quantification of gas supply patterns, in particular extra-EU supply potentials for both methane and hydrogen, biomethane production and Power-to-Molecules.

Moreover, the ENTSOs plan to have defined and tested their quantification methodologies and collected technical boundary conditions and trajectories for their scenarios.

3.2.2 PROJECT COLLECTION FOR TYNDP 2024

In the second half of 2023, ENTSOG will update its Practical Implementation Document defining the administrative and technical requirements the project promoters will need to comply with so their projects can be included in TYNDP 2024.

The Practical Implementation Document adaptation, once published, will be followed by the TYNDP 2024 project collection, whose timeline will be defined in 2023.



Picture courtesy of Gassco

3.2.3 HYDROGEN PROJECT ASSESSMENT FOR TYNDP 2022

Project categories were defined in the European Commission proposal of December 2020 for the revision of the TEN-E Regulation. On that basis ENTSOG in 2021 adapted its Practical Implementation Document as well as its Project Portal to facilitate the data collection of new project categories, with particular focus on the hydrogen-related infrastructures, and their contribution to sustainability. TYNDP 2022 project data collection was undertaken from November 2021 to January 2022. An additional data collection was opened in June

2022 to facilitate the submission of up-to-date project information following the publication of the European Commission's REpowerEU plan.

In the first half of 2023, and in coordination with the PCI Cooperation Platform, ENTSOG will perform project-specific cost-benefit analysis for projects applying to the 6th PCI selection process. Results of the assessment will be made available to the 6th PCI selection process and published as part of TYNDP 2022.

3.2.4 ENERGY SYSTEM-WIDE CBA

Regulation (EU) 2022/869 (TEN-E) requires ENTSOG to publish its single sector draft CBA Methodology for a harmonised energy system-wide CBA at Union level for PCIs (projects of common interest) and PMIs (projects of mutual interest) concerning hydrogen projects falling under the categories set out in point (3) of Annex II.

The draft CBA Methodology will be published by ENTSOG by 24 April 2023.

The methodology will be based on the improvements already identified by ENTSOG for TYNDP 2022 as well as the principles laid down in Annex V of Regulation EU 2022/869.

After having received the relevant opinions, the methodology will be adapted and applied for the preparation of ENTSOG's TYNDP 2024.

3.2.5 ENTSO-E/ENTSOG CONSISTENT AND INTERLINKED MODEL

Building on the outcomes of the study performed in 2020, ENTSOG and ENTSO-E have started adapting their Interlinked Model. A progress report on screening and dual assessment was published in May 2021⁹.

Regulation 2022/869 requires ENTSO-E and ENTSOG to jointly submit by 24 June 2025 to the European Commission and ACER, a consistent and progressively integrated model. This model would include electricity, gas and hydrogen transmission

⁹ See Interlinked Model progress report [here](#).

infrastructure as well as storage, LNG and electrolyzers, covering the energy infrastructure priority corridors and the areas defined in line with the principles outlined in Annex V of the Regulation.

3.2.6 TYNDP 2022

The TYNDP 2022 report identifies the infrastructure gaps, namely the priority areas lacking market integration, security of supply, competition or sustainability. The report also assesses where and to which extent the level of development of gas infrastructure could improve the infrastructure-related market integration, security of supply, competition and sustainability.

TYNDP 2022 represents the basis for the selection of the 6th PCI list (), both to support the identification by Regional Groups of the investment needs, and to serve as basis for the project-specific cost-benefit analysis of PCI candidates.

In 2023, ENTSOG will continue with testing the adapted version of the Interlinked Model principles on its TYNDP 2022.

Inspired by the recently adopted Regulation 2022/869 (TEN-E), TYNDP 2022 will include the latest development of IT/R&D activities and it will be based on the new tool used for modelling, Plexos.

In 2023, ENTSOG will publish the results of project-specific cost-benefit analysis for projects applying to the 6th PCI selection process.

Following the Draft TYNDP publication, and the subsequent public consultation, ENTSOG will submit the TYNDP 2022 to ACER. The final publication in 2023 will also depend on the engagement with external stakeholders (ENTSO-E, ACER and European Commission and others) as well as on the development of the current geopolitical situation due to Russia's invasion of Ukraine.

3.2.7 MAPS 2023

Since its creation, ENTSOG has developed different maps, on a voluntary basis. These maps are welcomed by institutions and stakeholders as a highly useful overview and resource.

Every year ENTSOG publishes the System Development Map and starting from 2018 publish either

the Capacity Map, or the TYNDP Map with all the projects included in TYNDP, on a bi-annual basis.

In 2023, ENTSOG will issue the System Development Map and the Transmission Capacity Map, which can be obtained in hardcopy or downloaded from ENTSOG website.

3.3 SUPPORTING ACTIVITIES

3.3.1 SUPPORT TO REGIONAL GROUPS ON THE PCI SELECTION PROCESS

To the extent envisioned by the European Commission, ENTSOG will take part to the Cooperation Platform (informal working group) between the European Commission, ACER and ENTSGOs, and will participate in and support the work of the Regional Groups established by the EC in the tasks of operating the 6th PCI selection process and monitoring PCIs.

ENTSOG will also support promoters of projects applying for the PCI label, as for the previous PCI selection processes, including through the handling of Project-Specific cost-benefit analysis (PS-CBA) as part of TYNDP, in line with its CBA Methodology, subsequent TYNDP improvements, and ACER recommendations. The publication of PS-CBA results will provide a transparent tool to all concerned stakeholders taking part to the 6th PCI process.

3.3.2 GAS REGIONAL INVESTMENT PLANS (GRIPS)

TSOs regional cooperation to produce Gas Regional Investment Plans (GRIPS) will continue, and

ENTSOG will support TSOs in the development of the next edition of their GRIPS.

3.4 PROGRAMME OF ACTIVITIES

The following table shows the expected timeline and key activities on Scenarios and Infrastructure related issues:

Scenarios and Infrastructure	2023											
	J	F	M	A	M	J	J	A	S	O	N	D
TYNDP 2022*												
Draft System Assessment	■	■	■									
Draft Infrastructure Report	■	■	■									
Draft PS-CBAs	■	■	■	■	■	■						
Draft TYNDP report public consultation	■	■										
Final TYNDP report			■	■	■	■	■					
CBA Methodology	■	■	■	■								
Adaptation of Interlinked Model	■	■	■	■	■	■	■	■	■	■	■	■
TYNDP and System Development Maps	■	■	■	■	■	■	■	■	■	■	■	■
Support Activities	■	■	■	■	■	■	■	■	■	■	■	■
Support to Regional Groups on the PCI selection process	■	■	■	■	■	■						
Support to TSOs with GRIPS	■	■	■	■	■	■	■	■	■	■	■	■
TYNDP 2024												
Draft Scenario development and publication	■	■	■	■	■							
Consultation of Draft Scenario Report and public workshop			■	■								
Update and work on final Scenario Report					■	■	■	■	■	■	■	■
PID update and Project collection							■	■	■	■	■	■

■ Activity periods ■ Key deliverables available to external stakeholders ■ Undetermined workload

*Concerning the current geopolitical situation, TYNDP 2022 process might be subject to further adaptation



Picture courtesy of Gasunie

4 SECURITY OF SUPPLY

After the gas crises of 2006 and 2009, the EU reinforced its security of gas supply, notably by adopting the first security of gas supply Regulation (EU) 994/2010 in 2010. On 28 October 2017 a revised Regulation (EU) 2017/1938 concerning measures to safeguard the security of gas supply and repealing Regulation (EU) 994/2010 entered into force. Regulation (EU) 2022/1032 then amended Regulations (EU) 2017/1938 and (EC) No 715/2009 with regard to gas storage.

The impact of the Russian invasion of Ukraine has shown that the existing security of supply rules are, however, not adequately adapted to sudden major geopolitical developments, where supply shortages and price peaks may not only result from the failure of infrastructure or extreme weather conditions, but also for instance from intentional major events and longer lasting or sudden supply disruptions. It is therefore necessary to address the significant increased risks resulting from the current geopolitical situation, including the diversification the EU's energy supplies. ENTSOG will continue to

contribute to developing and adopting new rules and legislations in terms of security of gas supply, and will continue to take part in the works of the Gas Coordination Group (GCG) and ensure functionality of the Regional Coordination System for Gas (ReCo System for Gas).

Regarding Regulation (EU) 2022/1032 for gas storage, ENTSOG can facilitate and assist to develop channels for communication with all relevant actors and collect any information relevant to the security of gas supply at national, regional, and EU level.

4.1 OBJECTIVES

- ▲ Facilitate regional cooperation for security of supply (SoS) and operational issues.
- ▲ Within the framework of the revised SoS regulation, facilitate the functioning of the Regional Coordination System for Gas (ReCo System for Gas) as CNOT for emergency conditions and the incidents classification scale (Art 8(3)c) Regulation (EC) 715/2009). ReCo will continue its 24/7 exchange platform and coordinate work to help address security of supply challenges in Europe.
- ▲ Support the GCG and relevant stakeholders in the implementation of the revised SoS regulation and the assessment of European SoS.
- ▲ Provide support to institutions and stakeholders in the provision of gas demand and supply outlooks, reviews, and monitoring activities.

4.2 KEY DELIVERABLES AND ACTIVITIES

- ▲ Summer Supply Outlook 2023
- ▲ Summer Supply Review 2022
- ▲ Winter Supply Outlook 2023–2024
- ▲ Winter Supply Review 2022–2023
- ▲ Support functioning of the ReCo System for Gas
- ▲ Support to the Gas Coordination Group
- ▲ Support the EC in relation to SoS topics
- ▲ Cooperation with non-EU TSOs and coordination of SoS activities.
- ▲ Run communication and tabletop exercises for better risk preparedness.
- ▲ Develop and adopt updates to the existing ReCo System for Gas and Incidents classification scale, in particular for cyber security risks.



4.2.1 OUTLOOKS AND REVIEWS

4.2.1.1 Summer Supply Outlook 2023 and Summer 2022 Review

ENTSOG has published its Summer Supply Outlook 2022, so that stakeholders are informed very early in the injection season. To develop this report, ENTSOG builds on the experience gathered since 2010 taking due account of ACER opinions and stakeholder feedback. The report benefits from the latest development of IT/R&D activities in the fields of modelling, supply and demand approaches.

Summer Supply Outlook will assess the ability of the European gas infrastructures to provide flexibility while enabling shippers to fill storage in preparation of the winter, also in the context of the current geopolitical situation. This report assesses the level of service provided by infrastructures considering the latest trends in supply and demand – it does not intend to forecast market behaviour. As

for the Supply Outlooks since 2013, EC and Member States, through the GCG, can request ENTSOG assessments for specific situations.

Along with its Summer Supply Outlook 2023, ENTSOG will also deliver on a voluntary basis the Summer 2022 Review: a description of the behaviour of the gas market during the summer months of 2022 on the basis of the observed daily gas flows and prices. It will provide the opportunity to investigate the short-term demand and supply trends and especially the dynamic of the gas demand for power generation. The review will cover any relevant events taking place during the period.

This analysis will then be factored in ENTSOG's research and development activities for further improvement of approaches for future deliverables.

4.2.1.2 Winter Supply Outlook 2023-2024 and Winter 2022–2023 Review

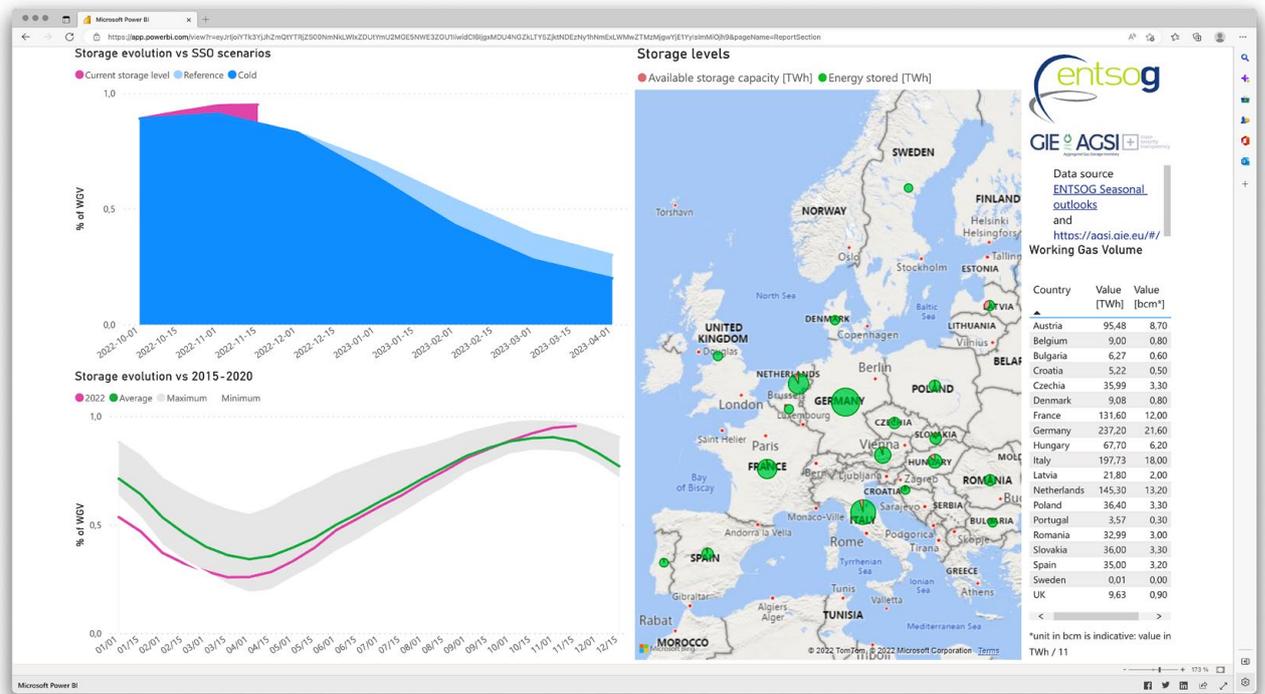
ENTSOG plans to publish its Winter Supply Outlook 2023–2024 in October 2023, so that stakeholders can be informed very early in the storage withdrawal season. To develop this report, ENTSOG will build on the experience gathered since 2010 taking due account of ACER opinions and stakeholder feedback. The report will benefit from the latest development of IT/R&D activities in the fields of modelling, supply and demand approaches.

Winter Supply Outlook will assess both the possible evolution of gas storages inventory along different winter cases as well as the resilience of the European gas infrastructures under peak conditions, also in the context of the current geopolitical situation. This report assesses the level of service provided by infrastructures considering the latest trends in supply and demand – it does not intend to forecast market behaviour. As for all Supply Outlooks since

2013, EC and Member States, through the GCG, may request ENTSOG assessments for specific situations.

Along with the Winter Supply Outlook 2023–2024, ENTSOG will also deliver on a voluntary basis the Winter 2022–2023 Review, a description of the behaviour of the gas market during the winter months of 2022–2023 on the basis of the observed daily gas flows and prices. It will provide the opportunity to investigate the short-term demand and supply trends and especially the dynamic of the gas demand for power generation. The Review will cover any relevant event taking place during the period.

This analysis will then be factored in ENTSOG research and development activities for further improvement of approaches for future deliverables.



Seasonal Supply Outlook Monitoring Dashboard

4.2.1.3 Regional Coordination (ReCo) System for Gas

ENTSOG will ensure facilitation of the existing ReCo System for Gas as a CNOT for emergency conditions, including the incidents classification scale, and other supporting documentation for the ReCo Teams. Following the ReCo System for Gas common procedures, TSOs and ENTSOG will identify which TSOs will take the role of the 24/7 facilitators for the existing ReCo Teams Europe, East, North-West and South in 2023–2024 and will undertake relevant communication and tabletop exercises.

The COVID-19 pandemic in 2020–2022 brought new challenges to TSOs, including considerations to ensure personnel health protection, securing office spaces and dispatching centres against health risk, and exploring more advanced solutions for operating gas transmission systems (e.g., remote control, coordination between dispatching teams and back-up personnel, solutions for buildings, etc).

In this regard, ENTSOG will take into account any new developments to facilitate knowledge and experience sharing amongst TSOs in the context of operational procedures in various circumstances, to ensure readiness to deal with any identified emergency conditions.

The Russian invasion of Ukraine in 2022 triggered a very close cooperation between TSOs, with communication on a daily basis and the identification of the need to monitor the gas flows all over Europe.

In this respect, ENTSOG developed in 2022 online dashboards which included data for capacity usage and gas supply corridors distribution. ENTSOG made these publicly available on their website and will continue to provide the dashboard data update in 2023 and beyond.

ENTSOG will continue to share aggregated information about gas flows in the EU, flow patterns, and SoS updates with TSOs and relevant stakeholders such as European Commission and ACER.

ENTSOG, in coordination with the European ReCo Teams, will facilitate strengthening the cooperation in the energy sector in the case of sudden ‘stress’ events in addition to normal conditions and planned events, in particular with electricity TSOs (ENTSO-E), and other relevant associations.

To enhance coordination between TSOs in normal and emergency conditions (following ACER’s opinion No. 09/2019 on the adoption of ENTSOG’s common network operation tools¹⁰), ENTSOG and TSOs will continue their work on developing visualisation solutions for exchange of operational data between TSOs. Better information for all TSOs can contribute to a more efficient and secure management of the gas transmission systems by allowing faster and more efficient preventive and remedial actions by TSOs to emergency situations.

10 See opinion no 09/2019 of the Agency for the Cooperation of Energy Regulators (ACER) [here](#).

4.3 SUPPORTING ACTIVITIES

4.3.1 SUPPORT TO GAS COORDINATION GROUP (GCG)

- ▲ Support of the EC and the GCG in the implementation of the current SoS regulation Follow up on any tasks given to it by GCG.
- ▲ On request of the EC, SoS updates will be provided in GCG meetings.
- ▲ Through the GCG and when preparing Supply Outlooks, ENTSOG will continue to encourage Member States (MS) to feedback on particular cases of interest.
- ▲ Support the TSOs and MS in the risk assessment for the defined groups based on the results of the Union-wide simulation.
- ▲ Support the TSOs and competent authorities in the establishment of the preventive action and emergency plans, and possible new documentation about threats to business continuity including pandemic and other unplanned situations.
- ▲ Support the TSOs and competent authorities to agree on the technical arrangements for the application of the solidarity principles.
- ▲ Support the EC and the TSOs in conducting ad hoc analysis investigating the different geopolitical challenges in the context of the security of gas supply.

4.3.2 TECHNICAL COOPERATION BETWEEN MEMBER STATES, ENERGY COMMUNITY AND THIRD COUNTRY TSOS

- ▲ Support Energy Community Contracting Parties and third countries TSOs concerning security of supply.
- ▲ Enhance technical cooperation with all the third country TSOs supplying or transiting gas to the EU. In particular, the exchange of technical and operational information in case of stress events is foreseen.
- ▲ Continue to organise meetings in the framework of the External Contact Platform (ECP) in cooperation with the Energy Community Secretariat in Vienna. This platform was developed by ENTSOG and the Energy Community Secretariat, to strengthen ENTSOG's cooperation with non-EU gas transmission companies, including those from the Energy Community countries
- ▲ Support the TSOs of Member States, Energy Community and third countries in the implementation of the EU NC rules by expanding regional cooperation, via workshops or meetings organised by ENTSOG.
- ▲ Organise a workshop between EU TSOs and relevant adjacent non-EU TSOs (e.g., from North African countries, Turkey and parties acting as TSOs) supplying or transiting gas to EU in order to discuss future steps for strengthening technical cooperation.

4.4 PROGRAMME OF ACTIVITIES

The following table shows the expected timeline and key activities on Security of Supply related issues:

Security of Supply	2023											
	J	F	M	A	M	J	J	A	S	O	N	D
Summer Supply Outlook 2023 & Review												
Summer Supply Outlook 2023	■	■	■	■								
Summer Review 2022	■	■	■	■								
Winter Supply Outlook 2023/24 & Review												
Winter Supply Outlook 2023/24						■	■	■	■	■	■	
Winter Review 2022/23						■	■	■	■	■	■	
Support to GCG												
Support to the EC and GCG concerning the SoS Regulation, L-gas Risk Group, regional EP, PAP, and solidarity mechanisms	■	■	■	■	■	■	■	■	■	■	■	■
Facilitation of ReCo System for Gas												
Review and update of the ReCo System for Gas	■	■	■	■	■	■	■	■	■	■	■	■
Cooperation with ENTSO-E and other associations in Security of Supply (energy)	■	■	■	■	■	■	■	■	■	■	■	■
Development of visualisation solutions and tools for exchange of operational data between TSOs	■	■	■	■	■	■	■	■	■	■	■	■

■ Activity periods ■ Key deliverables available to external stakeholders



Picture courtesy of Gascade

5 ENERGY TRANSITION

The European Commission (EC) developed in 2021/2022 new energy and climate related legislation in the context of the European Green Deal, the 'Fit for 55' legislative package, and the Hydrogen and Decarbonised Gas Market package, which also includes an update to the current gas market design and has been complemented by the REPowerEU Plan.

These files are of particular relevance and will provide guidance to the elements which are most important for TSOs to address in order for gas grids to play a constructive and forward-looking role in the energy transition. From the beginning of ENTSOG's engagement in the energy transition related activities, the two core topics are:

- ▲ Energy system integration – via cooperation with gas, hydrogen and electricity value chains
- ▲ Decarbonisation of gas sector – via coordination with gas, hydrogen and biogas stakeholders.

ENTSOG continuously underlines the synergies of electricity and gas systems integration and the importance of planning for hydrogen production centres and transmission capacities.

To achieve these ambitions in time and the scale needed for effective implementation of the Repower EU Plan, ENTSOG will integrate the information based on the TYNDP project collection, as well as IPCEI and European Clean Hydrogen Alliance project collections, to facilitate appropriate network planning and assessment for the grid users.

In addition to TYNDP processes to consider renewable and low carbon gases, enhanced coordination of tasks will be conducted together with all relevant stakeholders from the hydrogen and gas value

chain. Engagement with storage and LNG system and ports operators, DSOs and industrial /mobility /heating off-takers of hydrogen are of particular relevance.

The EC has requested all stakeholders to actively participate in the discussions when considering the development of its legislative proposals. Therefore, ENTSOG will have a strong focus on topics related to the European Green Deal, specifically identified to feed into the discussions. This will encompass topics such as Energy System Integration, development of the Hydrogen and Decarbonised Gas Market package, development of the Renewable Energy Directive (RED III), future role of gas TSOs, guarantees of origin/certificates, gas quality and hydrogen transport and handling, methane emissions, cybersecurity and regional cooperation.

On these topics, ENTSOG will consider any applicable initiatives and proposals published by the EC, ACER or other relevant stakeholders as well as liaise internally with different working groups and task forces.

In 2023, ENTSOG will continue to contribute to several legislative processes, specifically on Hydrogen and Decarbonised Gas Market package, RED III and other relevant upcoming legislative files, including on methane emissions and cybersecurity.

5.1 OBJECTIVES

- ▲ Monitor key energy/climate policy and regulatory developments put forward by EU institutions.
- ▲ Develop ENTSOG's contributions to EC's legislative and policy proposals for the EU gas sector, including hydrogen, in relation to strategic projects identified by ENTSOG.
- ▲ Communicate ENTSOG's positions regarding the legislative and policy proposals developed for the EU gas sector, including hydrogen, and its integration with other energy sectors.
- ▲ Engage in dialogue with EC, ACER, industry associations, energy sector associations and other key EU stakeholders.
- ▲ Propose the practical solutions for the implementation of the integrated planning for gas and hydrogen, security of supply and market development.



Picture courtesy of Gasum

- ▲ Facilitate effectively and transparently the European Clean Hydrogen Alliance Roundtable on Hydrogen Transmission and Distribution based on the rules agreed with the European Commission (DG GROW and DG ENER).
- ▲ Coordinate and exchange with stakeholders along the whole value chain on how gas grids can transition via the newly created ENTSOG Advisory Panel for Future Gas Grids (CEOs of Brussels – based associations of producers and consumers from gas, hydrogen and electricity value chains).
- ▲ Ensure that stakeholders understand how gas grids can contribute to decarbonisation and the energy transition in different sectors of the EU economy.
- ▲ Assist in developing positions on measures that are needed at a national level to facilitate deployment of new TSO products and services to facilitate decarbonisation and the energy transition.

5.2 KEY ACTIVITIES AND DELIVERABLES

- ▲ ENTSOG's proposals for the future regulatory framework in context of European Green Deal and 'Fit for 55' legislative package, for the Hydrogen and Decarbonised Gas Market Package, monitor development on Methane Emission Reduction Regulation, development of RED III, on methane emissions and cybersecurity.
- ▲ ENTSOG's responses to relevant public consultations and stakeholders' engagement processes – contributing with facts, figures, proposal for technical standards and solutions for market, grids and operations integrating gas, hydrogen and electricity value chains.
- ▲ Communication of ENTSOG proposals on integration of gas and hydrogen planning, security of supplies and market development.
- ▲ ENTSOG's positions for the Copenhagen, Florence and the Madrid Fora.
- ▲ ENTSOG's positions on all relevant reports and studies concerning strategic topics in relation to market design, grid planning and grid operations.
- ▲ Engagement with stakeholders via the Advisory Panel for Future of Gas Grids.
- ▲ Support for European Clean Hydrogen Alliance work, specifically on Clean Hydrogen Transmission and Distribution Roundtable.
- ▲ Participation in Prime Movers on Guarantees of Origin.
- ▲ Participation in Prime Movers on Gas Quality and Hydrogen Handling.¹¹
- ▲ Participation in Clean Hydrogen Partnership
- ▲ Participation in Investors Dialogue on Energy

¹¹ Depending on topic-related developments, the engagement could take place either via the continuation of the dedicated Prime Movers' Group on gas quality and hydrogen handling or stakeholder workshops.



Picture courtesy of Teréga

5.3 PROGRAMME OF ACTIVITIES

The following table shows the expected timeline and key activities:

Activities	2023											
	J	F	M	A	M	J	J	A	S	O	N	D
Develop ENTSOG's positions for the 2023 Copenhagen, Florence Madrid Fora												
Communicate ENTSOG's views on strategic projects to stakeholders (including EC)												
Facilitate and support work of the Hydrogen Transmission & Distribution Roundtable of the European Clean Hydrogen Alliance												
Exchange and coordinate with stakeholders on key technical, regulatory and market relevant topics via Advisory Panel for Future Gas Grids												
Prime Mover on Gas Quality and Hydrogen Handling												
Prime Movers on Guarantees of Origin												
Clean Hydrogen Partnership												
Investors Dialogue on Energy												
Provide support to ENTSOG's Members regarding the development of any new TSO products and services which can contribute towards meeting decarbonisation and EU climate neutrality targets												

■ Activity periods



Picture courtesy of GAZ-SYSTEM

6 RESEARCH & DEVELOPMENT

6.1 OBJECTIVES

Regulation No 715/2009 requires that the ENTSOG Annual Work Programme contains a list and description of its research and development activities. ENTSOG is committed to working towards and promotion of innovation and improvement of processes of its Members' activities and strives

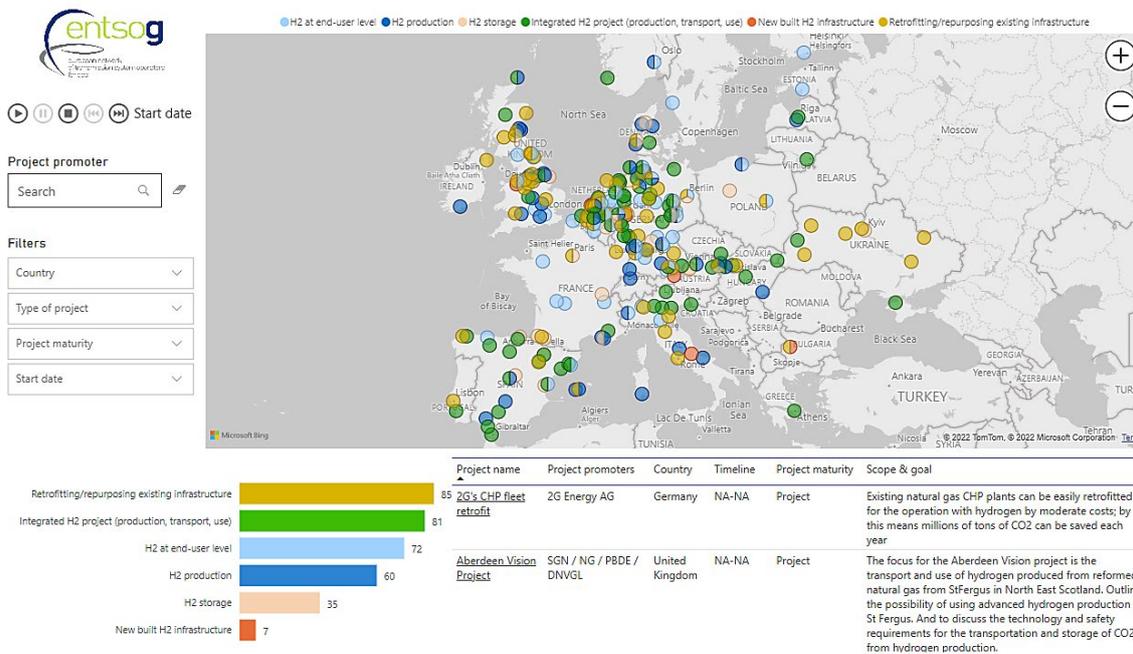
to meet challenges on an ongoing basis. This is evidenced in this section, in which the tools, methodologies, stakeholder engagement processes and IT solutions are outlined to address potential difficulties and to improve our way of working.

6.2 KEY DELIVERABLES AND ACTIVITIES

6.2.1 HYDROGEN PROJECT VISUALISATION PLATFORM

Ongoing discussions are taking place at EU level regarding opportunities to increase hydrogen production and end-use, including the REPowerEU Plan outlining the Hydrogen Accelerator plan to double the targets for renewable hydrogen and introduction of Hydrogen import corridors. On that basis, it is crucial to map the numerous hydrogen projects to identify supply and demand centres, to

develop an EU-wide Hydrogen Backbone. ENTSOG, together with its Members, developed a [Hydrogen Project Visualisation Platform](#) – comprehensive, interactive map for hydrogen projects along the whole value chain based on open source data. ENTSOG will continue in 2023 to update the map periodically.



6.2.2 PROMOTING TSO INNOVATIVE ACTIVITIES

In 2023, ENTSOG will continue its work to actively engage with its Members to further develop the database of TSO Research, Development and Innovation (RDI) activities using the Innovative Projects Platform (IPP), available on ENTSOG's public website. This platform includes best practices applied by EU TSOs for technology development, regulation and business models and partnerships. The purpose of this exercise is to showcase TSOs decarbonisation projects as examples of how to achieve current EU energy and climate goals of reducing GHG emissions by innovating in the gas sector, including in hydrogen. ENTSOG will work on

documenting the emerging hydrogen value chain developments via updating the projects database and illustrating the technical solutions for blending and pure hydrogen possible pathways with repurposed/retrofitted gas grids.

In 2023, the website will include also further details on which projects will receive the IPCEI status and which projects will be selected for the European Clean Hydrogen Alliance pipeline of investment projects.

ENTSOG will continue to promote the IPP via its social media and other media channels.

6.2.3 JOINT MAPPING OF HYDROGEN INFRASTRUCTURE

The 36th European Regulatory Forum for Gas (Madrid Forum) conclusions identified a joint action to be undertaken by gas infrastructure industry (ENTSOG, EHB, GIE, CEDEC, Eurogas, GEODE, GD4S) to visualise all hydrogen infrastructure projects collected under different existing processes in the form of a map. Together with the relevant stakeholders, ENTSOG will work with the other involved organisations to develop this joint visualisation of hydrogen infrastructure.

In 2023 ENTSOG will continue its work to actively engage with its Members to further develop the database of TSO Research, Development and Inno-

vation (RDI) activities using the Innovative Projects Platform (IPP), available on ENTSOG's public website. This platform includes best practices applied by EU TSOs for technology development, regulation and business models and partnerships. The purpose of this exercise is to showcase TSOs decarbonisation projects as examples of how to achieve current EU energy and climate goals of reducing GHG emissions by innovating the gas sector. ENTSOG will work on documenting the emerging hydrogen value chain developments via updating the projects database and illustrating the technical solutions for blending and pure hydrogen possible pathways with repurposed/retrofitted gas grids.

6.2.4 HYDROGEN AND GAS QUALITY

ENTSOG will progress in assessing the tolerance for different levels of hydrogen concentration in the gas grid system, analyse the feasibility and verification of all pathways, which are hydrogen backbone, methane backbone, and hydrogen/methane blended networks. Furthermore, to support the cost-effective integration of renewable and low carbon gases such as biogas, biomethane, and hydrogen, in the network in accordance with consumers' needs and gas quality requirements, ENTSOG is committed to further work in analysing the possibilities of deploying smart grid solutions and digital tools for gas quality and hydrogen handling. This could include digital systems for online gas quality

tracking and forecasting, sensor technologies for interactive and intelligent metering, among others.

Furthermore, taking into account the European Commission's proposal for EU Gas Regulation and Directive, ENTSOG will continue working closely with its members and key stakeholders in assessing the potential achievable hydrogen purity levels on repurposed natural gas grids, the potential implementation of hydrogen blends and a minimum oxygen level at IPs for the unhindered cross-border flow hydrogen blends and of biomethane, and the Wobbe Index classification system for exit points (based on CEN SFGas GQS proposal).

6.2.5 METHANE EMISSIONS AND HYDROGEN EMISSIONS

ENTSOG will follow the development on the methane emissions reduction process in Europe and will collaborate with other organisations like GIE, MARCOGAZ, GERG, and Eurogas, and if required provide support to TSOs in the methane emissions

reduction activities. This support includes, in particular, activities recommended by EC/UNEP for methane emissions reporting and targets setting, as well as dissemination of best practices for the detection, quantification and mitigation of methane

emissions. During the development and possible implementation of the EU Regulation on Methane emissions¹² reduction in the energy sector, ENTSOG will follow the process and will be involved in prepa-

ration of feedback and other activities to the extent needed. Furthermore, ENTSOG will follow new developments regarding possible hydrogen emissions from dedicated hydrogen infrastructure.

6.2.6 CYBERSECURITY

In 2023, ENTSOG IT will continue its activities to protect its information assets from potential cybersecurity attacks. This ongoing programme includes the development and implementation of policies, controls and governance that balances the need to protect ENTSOG and its members against cybersecurity attacks with operational efficiency of the organisation.

Additionally, ENTSOG will continue together with GIE as a partner of the joint Cyber Security Task Force its coordination and dialogue with relevant parties in the field of cybersecurity, especially regarding the work on a potential network code for the cybersecurity sector and as well closely observe the further steps regarding the implementation of the NIS Directive 2.0.

ENTSOG will continue to participate in the ENISA cyber security briefings which aims to provide ENTSOG with weekly cyber security threat analysis. The aim is to provide pro-active, early warnings to TSOs (when required) in the event of any upsurge or imminent cybersecurity threat to prepare and plan. ENTSOG is also creating a TSO early warning infrastructure so that in the event of a significant security breach or imminent attack, the relevant cybersecurity experts from the TSOs can be updated as soon as possible. This early warning infrastructure will be linked with the current ReCo system. Cybersecurity incidents affecting dispatching and operational procedures are included in the ReCo System for Gas and the incidents classification scale.

6.3 PROGRAMME OF ACTIVITIES

The following table shows the expected timeline and key activities on Research and Development related issues:

Research and Development	2023											
	J	F	M	A	M	J	J	A	S	O	N	D
Promoting TSO Innovative Activities												
Visualisation of projects and creation of project database												
Joint mapping of hydrogen infrastructure												
Methane Emissions and Hydrogen Emissions assessment												
Hydrogen and Gas Quality assessment												
Cybersecurity assessment												

■ Activity periods

12 REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942 and ANNEXES to the Proposal for a Regulation of the European Parliament and of the Council on methane emissions reduction in the energy sector and amending Regulation (EU) 2019/942



Picture courtesy of SNAM

7 ENTSOG SUPPORTING ACTIVITIES

7.1 OBJECTIVES

With the support of its Members and the guidance of its steering bodies, the Management Support team coordinates and supports the work of ENTSOG. It prepares, arranges, and coordinates the various General Assembly and Management Board Meetings and maintains an overview on all organisational activities. It is structured in various management support functions that work with the Brussels team but also directly with the Members. With a growing number of cross-organisational projects and interlinked activities, the Management Support team supports ENTSOG planning, management, and execution.

The Management Support team also prepares the strategic processes aimed at defining the ENTSOG profile and taking care of the consistent application of those strategic orientation lines in organisation practice. The team aims to establish and maintain

the most efficient structure to support all organisational Business Areas (i.e., Market, System Development, System Operation and Strategy, Policy and Communications) and the related working groups (WGs) and Task Forces (TFs). That includes the planning and development of financial and human resources but also the communication flow within the association and to its stakeholders.

ENTSOG will continue to internally evaluate the risks that present challenges to meet its objectives, activities, and deliverables, addressing regulatory, legal, finance and human resource aspects. Risk assessment and plans for proper mitigation measures will be supervised by ENTSOG's steering bodies.

A high-level overview of the main risks and associated mitigation measures are outlined in the table included in Section 7.2.4

7.2 KEY DELIVERABLES AND ACTIVITIES

7.2.1 LEGAL AND CORPORATE AFFAIRS

The ENTSOG Legal Team ensures compliance of ENTSOG with the applicable law and the regulatory framework while carrying out its missions. It undertakes the day-to-day activities of the Association from the legal perspective as well as supporting activities undertaken by the different Business Areas and their respective WGs.

In 2023, this support will continue with respect to the implementation of the existing network codes and in some cases effect monitoring. The Legal Team will in particular support WGs and TFs established or to be established with the aim to follow the discussions and legislative proposals in response to the Hydrogen and Decarbonised Gas Market package of legislation. The Legal Team will also support the System Development team by providing legal assistance on the development of the TYNDPs.

The Management support team will continue to facilitate meetings of the External Contact Platform (ECP), a platform developed by ENTSOG and the Energy Community Secretariat, to strengthen

ENTSOG's cooperation with non-EU gas transmission companies, including those from the Energy Community countries.

The Management support team will also facilitate in 2023 the meetings and the activities of the EU-UK Gas TSOs Task Force, which was created in 2021 as the interface between ENTSOG and the UK TSOs. This is upon request of the European Commission and the UK Government in accordance with the Trade and Cooperation agreement concluded by the EU and the UK following the Brexit. The main goal of this Task Force is to ensure further cooperation between the EU and the UK TSOs.

To address the legal issues arising out of meetings of the ENTSOG Working Groups, the Legal Team coordinates the activities of the Legal Advisory Group (LAG), which convenes for monthly meetings. The LAG is the ENTSOG legal working group composed of ENTSOG members' representatives from legal staff of the TSOs.

On a day-to-day basis, the Legal Team and Manage-

ment support provides legal assistance and advice to the management, the Board and the General Assembly in terms of governance. The Legal Team will also ensure the compliance of the Association with possible new national law applicable to companies and associations. In particular, in 2023, it is

expected to amend the ETNSOG's Articles of Association to (i) comply with the recently approved Belgian Code of Companies and Association and (ii) possibly adjust to the requirements of Hydrogen and Decarbonised Gas Market package, as needed.

7.2.2 FINANCE AND HR

7.2.2.1 Finance

ENTSOG is an international non-profit association (AISBL) established according to Belgian law. The highest decisive body of ENTSOG is the General Assembly which meets four times a year. ENTSOG is financed by its Members. The member TSOs contribute to the budget according to the number of kilometres of gas grid, population of the country and in some cases to special EU Grid connection significance.

With regards to financial reporting, ENTSOG created and implemented clear and efficient accounting procedures and controls.

In 2010, a Financial Committee has been established and the main tasks of the Committee are as follows:

- ▲ checking the compliance with local laws and obligation
- ▲ advising on the association's Budget
- ▲ validating the closure of the accounting year and balance sheet
- ▲ reporting on a quarterly basis to the Board and General Assembly on account situation

Financial Committee meetings are held five times per year.

7.2.2.2 Human Resources

ENTSOG is committed to meet the targets of the Third Energy Package. But this requires a well-prepared recruitment pipeline so that ENTSOG will have the relevant resources and competences to perform the requested activities.

By the end of 2022, the ENTSOG Team in Brussels consists of forty-two persons and a replacement plan is in place to prepare for replacement of seconded persons whose contracts expire.

ENTSOG is comprised of seconded staff from its members – typically seconded for 3–5 years – and therefore the organisation is under dynamic change and always ready to offer new opportunities. The ENTSOG staff consists currently of 19 different nationalities and representing 10 companies, which provides a unique and challenging international working environment.

Key responsibilities of the Adviser role include leadership and support for internal work groups, external workshops and meetings, as well as participation in processes led by the European Commission, ACER and other European authorities.

ENTSOG has a strong focus on the resource allocation as well as the relevant hand-over processes to ensure the performance of the organisation vis-à-vis the required deliverables. Systematic planning of resources replacement and knowledge transfer allows for the mitigation of risks which may affect the business continuity of the association.

ENTSOG Staff	31.12.2021	31.12.2022
General Director	1	1
Directors	4	4
Manager / Advisers	34	34
Senior Assistants	2	2
Assistants	1	1
Total	42	42

7.2.3 INFORMATION TECHNOLOGY (IT)

The ENTSOG IT team provides IT support and services to the ENTSOG team (i.e., management and the Business Areas), its members and other ENTSOG stakeholders (e.g., ACER, EC). The figure below outlines the key delivery and support activities which are the responsibility of the IT team.

Working with several IT providers, vendors and IT contractors, the IT team plans, manages, builds, and operates IT systems to support ENTSOG advisors and their activities; they also provide IT support to ENTSOG stakeholders in the use of ENTSOG's data and systems.

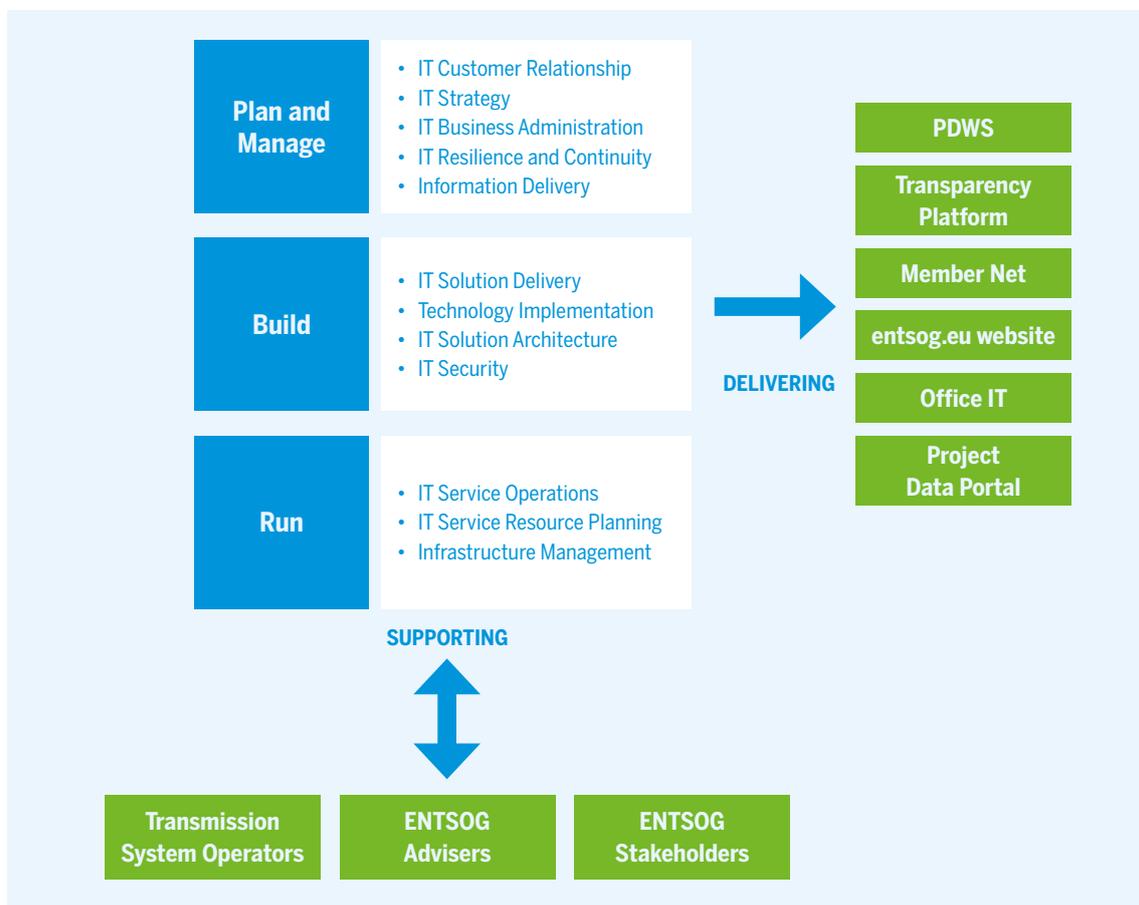
The ENTSOG IT systems include:

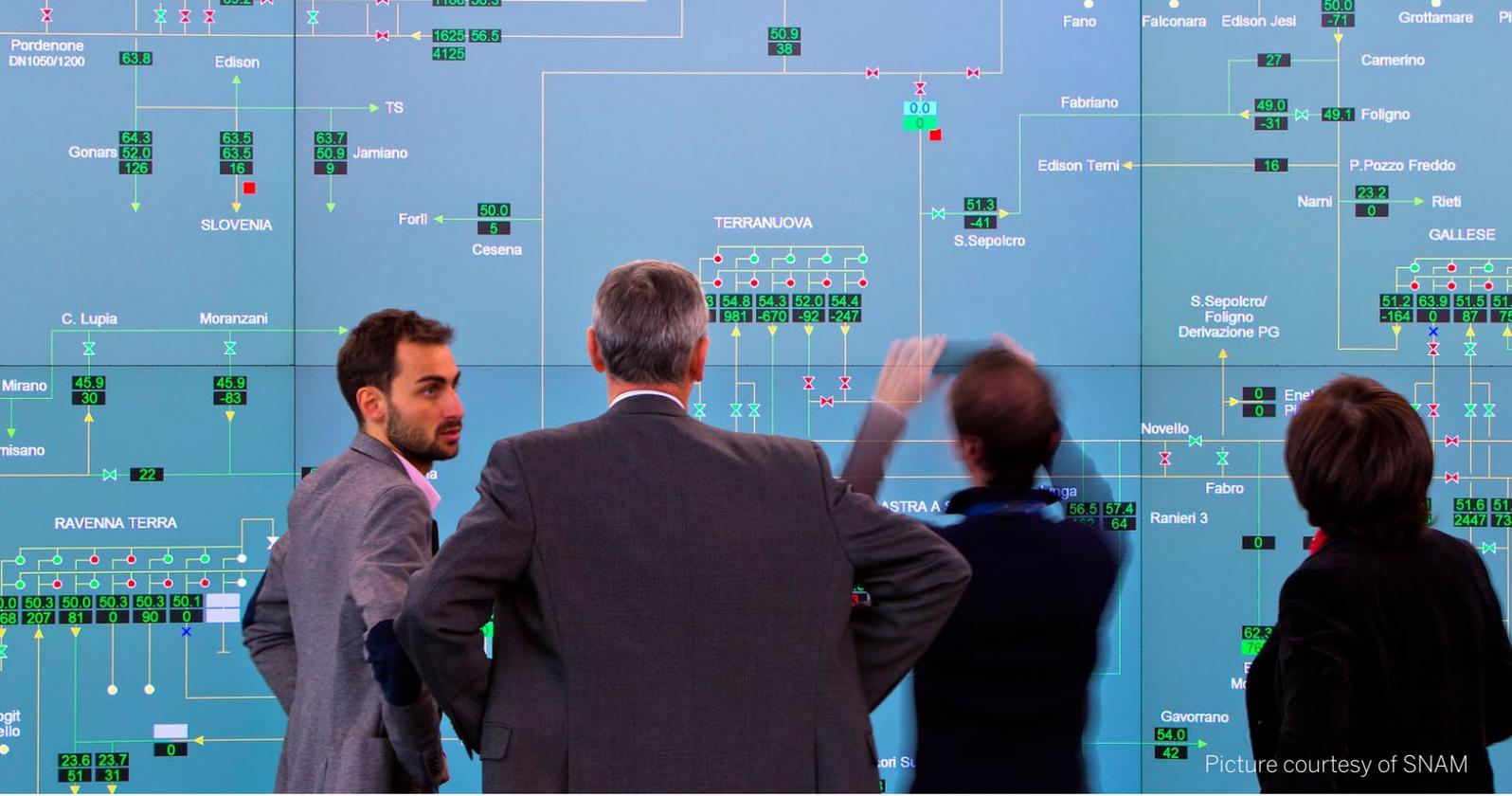
- ▲ Professional Data Warehouse (PDWS) (including a Data Portal for reporting)
- ▲ Portal for Projects Data Collection
- ▲ [Transparency Platform \(TP\)](#)
- ▲ Modelling Database for SysDev
- ▲ Content Management Solution (Membernet)
- ▲ [ENTSOG Website](#)
- ▲ ESRI ArcGIS solution
- ▲ ReCo 2.0

- ▲ Office IT – Network, Laptops, Mobile phones, Conferencing Audio-Video, etc.

Following a review of its IT systems in 2019, ENTSOG will plan the replacement/upgrade of ENTSOG's IT assets in the coming years to deliver secure, integrated, and cost-effective IT solutions for ENTSOG. The targeted services for these upgrades in 2021 and 2022 are the TP, PDWS and ArcGIS systems:

- ▲ The TP upgrade analysis commenced in 2019 and had the main delivery was in early 2022 when all the PDWS & TP infrastructure was migrated to Azure cloud. The fine-tuning will continue in 2022 and early 2023.
- ▲ One of the purposes of PDWS is the reporting feature. This was improved in 2020 by migrating some or building new reports in [Power BI](#) (a business analytics service that delivers insights by transforming data into visuals which can be shared and collaborate on), and the task will continue in 2023.
- ▲ [ESRI ArcGIS](#) software implementation, which had commenced in 2019 as part of IT R&D strategy and BI vision will continue in 2023.





Picture courtesy of SNAM

- ▲ Besides the PDWS/TP infrastructure migration to cloud another project delivered in 2022 was the SharePoint upgrade of the Data Portal. In 2023 it is planned to fine tune the release and bring new functionalities.
- ▲ In 2022 the development of the Modelling Database commenced by using Azure Data Factory. This will continue in 2023.
- ▲ For the office IT, the main project in 2022 was the Active Directory (AD) migration to Azure cloud which will continue in 2023 with fine-tuning of policies in InTune
- ▲ The development of ReCo 2.0 commenced in late 2021 and continued throughout 2022 and 2023 for its different phases.

7.2.4 RISK AND MITIGATION

ENTSOG strives to meet challenges and potential risks on an ongoing basis. The core ENTSOG organisational structure, with the flow of information between the ENTSOG Members, Board and General Assembly ensures that the correct mechanisms are in place to anticipate in advance any potential risks. ENTSOG Working Group, Task Force and Standing group meetings occur at minimum on a monthly basis, and also ad hoc as needed. Additionally, ENTSOG is in direct and frequent communication with ACER and European Commission, as ENTSOG tasks are embedded in Regulation (EC) 715/2009. ENTSOG and ACER's Network Code Functionality Platform allows for the identification by market participants of the effectiveness of the implementation of the Network Codes, thereby allowing full transparency, monitoring, and a formal process for identification and reaction to any relevant issues.

As outlined in Section 6 Research and Development of this report, and included in each edition of the AWP, the tools, methodologies, stakeholder engagement processes and IT solutions to address potential difficulties and risks to performance and to improve our way of working.

Additionally, ENTSOG will continue to internally evaluate the risks that present challenges to meet its objectives, activities and deliverables, addressing regulatory, legal, finance and human resource aspects. Risk assessment and plans for proper mitigation measures will continue to be supervised by ENTSOG's steering bodies. ENTSOG aims to minimise unnecessary costs to the Association that would be incurred through additional risk assessment undertaken by external consultants.

The table below outlines the key mitigation measures implemented by ENTSOG to address the potential risks identified.

Category	Risk	Mitigation
Regulatory/legal	Possible inadequacy between the regulatory framework in place and the ENTSOG's objectives, tasks and deliverable	<ul style="list-style-type: none"> • ENTSOG, as AISBL, works under Belgian law. The legal team of ENTSOG is composed of a Belgian lawyer, and a strong network has been built with Belgian Notary and other Belgian Officials/authorities. • Adherence to ENTSOG's Article of Association and related Rules of Procedures, following opinions issued by ACER and the Commission. • Oversight by ACER of ENTSOG's regulatory tasks, as outlined by Regulation (EC) 715/2009 • Constant legal monitoring to review, application and implementation of any additional/new pieces of legislation to which ENTSOG may be subject
Finance/budgeting	Underestimated budget in place to achieve ENTSOG's objectives, tasks, deliverables	<ul style="list-style-type: none"> • Finances evaluated frequently by ENTSOG Finance committee, comprising ENTSOG members. The Finance committee meets five times per year. • The status of finance evaluation reported, on quarterly basis, to Members to ensure a constant monitoring • External publication of a detailed Financial Statement in ENTSOG Annual Report, which includes comparison of the assets, liabilities and equities, and income sources with the previous year. Any potential negative risk is being evaluated and addressed based on the trends presented. • Yearly submission of Financial Statements to National Belgium Bank in accordance with Belgian accounting rules.
Resource allocation	Inadequate resource allocation to achieve ENTSOG's objectives, tasks, deliverables	<ul style="list-style-type: none"> • Secondment principal applied – personnel coming from TSOs • Systematic planning in advance of personnel replacement • Internal processes to ensure knowledge transfer within the Business Areas • Outlook and analysis of recruitment needs prepared and addressed to members on bi-annual basis
IT/cyber security	Inadequate IT resources/ systems in place to achieve ENTSOG's objectives, tasks, deliverables	<ul style="list-style-type: none"> • Frequent planning for replacement/upgrade of ENTSOG IT resources and infrastructure to deliver secure, integrated, and cost-effective IT solutions • Anti-malware and cyberattack protection training campaigns rolled out to ENTSOG Brussels team on a regular basis • Update of hardware and software to ensure IT security • Audit of infrastructure and policies put in place • Constant monitoring of traffic activities for email and SharePoint • 2-factor authentication will be rolled out late 2022 and finished in early 2023 • Knowledge transfer between personnel for back up in case of absences



Picture courtesy of Terranets

8 ANNEX: OVERVIEW OF ENTSOG'S REGULATORY FRAMEWORK FOR ITS TASKS

The tasks entrusted to ENTSOG derive mainly from the following pieces legislation¹³:

Regulation (EC) No. 715/2009 of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005 (so-called Gas Regulation)

- ▲ Definition of the tasks of ENTSOG (Art. 8)
 - elaboration of network codes (NCs);
 - adoption of:
 - I. common network operation tools (CNOTs);
 - II. a non-binding Community-wide ten-year network development plan;
 - III. recommendations relating to the coordination of technical cooperation between Community and third country TSOs;
 - IV. an annual work programme;
 - V. an annual report;
 - VI. annual summer and winter supply outlooks.
- ▲ obligation of monitoring and analysing the implementation of NCs and the Guidelines adopted by the Commission and their effect on the harmonisation of applicable rules aimed at facilitating market integration.
- ▲ views to the Commission on the adoption of the Guidelines, upon request of the latter institution;
- ▲ ENTSOG shall make available all information required by ACER to fulfil its tasks.
- ▲ All TSOs shall cooperate at Community level through ENTSOG in order to promote the completion and functioning of the internal market in natural gas and cross-border trade and to ensure the optimal management, coordinated operation and sound technical evolution of the natural gas transmission network (Art. 4);
- ▲ TSOs shall establish regional cooperation within the ENTSOG to contribute to the accomplishment of some of its tasks (Art. 12);

Regulation (EU) No. 1227/2011 of 25 October 2011 on wholesale energy market integrity and transparency (so-called REMIT)

- ▲ market participants, or a person or authority on their behalf (as ENTSOG), shall provide ACER with a record of wholesale energy market transactions, including orders to trade (Art. 8);
 - ▲ cooperation at Union level foreseen (Art. 16);
- ## Commission Implementing Regulation (EU) No. 1348/2014 of 17 December 2014 on data reporting implementing Article 8(2) and Article 8(6) of Regulation (EU) No. 1227/2011 (so-called REMIT Implementing Act)
- ▲ For reducing the burden of reporting on market participants and to make best use of existing data sources, reporting should involve where possible ENTSOG (Recital 8);
 - ▲ the obligation for reporting should be phased in, starting with transmitting fundamental data available on the transparency platforms of ENTSOG (Recital 11);
 - ▲ ENTSOG shall, on behalf of market participants, report information to ACER in relation to the capacity and use of facilities for transmission of natural gas including planned and unplanned unavailability of these facilities, through the Union-wide central platform (commonly known as ENTSOG TP) (Art. 9);
 - ▲ ENTSOG is obliged to make the said information available to ACER as soon as it becomes available on its TP (Art. 9).

¹³ This non-exhaustive list is only listing the pieces of legislation in force at the time of drafting this report. ENTSOG expects, however, to be subject to additional/new pieces of legislation in 2023, upon final adoption by the EU Legislator of, notably: the so-called Hydrogen and Decarbonised Gas Package – amending/replacing the gas Directive and Regulation.

Commission Regulation (EU) No. 703/2015 of 30 April 2015 establishing a network code on interoperability and data exchange rules (the INT NC)

- ▲ ENTSOG should monitor and analyse the implementation of this Reg. and report its findings to ACER for allowing the institution to fulfil its tasks (Recital 10);
- ▲ TSOs shall communicate to ENTSOG the mandatory terms of interconnection agreements or any amendments thereof concluded after the entry into force of this Reg. within 10 days after their conclusion or amendment (Art. 4);
- ▲ by 30 June 2015, ENTSOG shall develop and publish a draft interconnection agreement template covering the default terms and conditions set out in the Reg. (Art. 5);
- ▲ taking into account the opinion provided by ACER, ENTSOG shall publish on its website the final template by 31 December 2015 (Art. 5);
- ▲ ENTSOG shall publish on its TP a link to the websites of the TSOs with reference to the Wobbe-index and gross calorific value for gas directly entering their transmission networks for each interconnection point (Art. 16);
- ▲ ENTSOG shall publish every two years a long-term gas quality monitoring outlook for transmission systems (aligned with the TYNDP) in order to identify the potential trends of gas quality parameters and respective potential variability within the next 10 years (Art. 18);
- ▲ For each data exchange requirement, ENTSOG shall develop a CNOT and publish it on its website (Art. 24);
- ▲ ENTSOG shall establish a transparent process for the development of all CNOTs (Art. 24);
- ▲ Where a potential need to change the common data exchange solution is identified, ENTSOG on its own initiative or on the request of ACER, should evaluate relevant technical solutions and produce a cost-benefit analysis of the potential change(s)(Art. 21);
- ▲ by 30 September 2016 at the latest, ENTSOG had to monitor and analyse how TSOs have implemented Chapters II to V of this Reg. TSOs were obliged to send the relevant information before 31 July 2016 (Art. 25).

Regulation (EU) 2022/869 of the European Parliament and of the Council of 30 May 2022 on Guidelines for Trans-European Energy Infrastructure, amending Regulations (EC) no 715/2009, (EU) 2019/942 And (EU) 2019/943 And Directives 2009/73/EC And (EU) 2019/944, And Repealing Regulation (EU) No 347/2013 (so-called TEN-E Regulation)

- ▲ Involvement of ENTSOG for the establishment of a harmonised energy system-wide cost-benefit analysis
- ▲ Involvement of ENTSOG for the publication of framework guidelines for the joint scenarios (for the TYNDPs) to be developed together with ENTSO-E
- ▲ Publication, together with ENTSO-E of infrastructure gaps reports

Regulation (EU) 2017/1938 of 25 October 2017 of the European Parliament and of the Council concerning measures to safeguard the security of gas supply and repealing Regulation (EU) No 994/2010 (the “SOS Regulation”¹⁴)

- ▲ Obligation for ENTSOG to perform an EU-wide gas supply and infrastructure disruption simulation in order to provide a high-level overview of the major supply risks for the EU
- ▲ Participation in in the Gas Coordination Group
- ▲ Obligations for the TSOs, in the event of a regional or Union emergency, to cooperate and exchange information using the ReCo System for Gas established by ENTSOG.

¹⁴ As amended by Regulation (EU) 2022/1032 of the European Parliament and the Council of 29th June 2022 amending Regulations (EU) 2017/1938 and (EC) No 715/2009 with regard to gas storage.

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 (the CAM NC)

- ▲ ENTSOG is required to publish the auction calendar (by January of every calendar year for auctions taking place during the period of March until February of the following calendar year) (Art. 3);
- ▲ ENTSOG has facilitated the establishment of joint booking platforms (Art. 37).
- ▲ ENTSOG is involved in a process by which terms and conditions of TSOs across the Union for bundled capacity products should be assessed and aligned to the extent possible, with a view to creating a common template of terms and conditions (Recital 10);
- ▲ within nine months from the entry into force of this Regulation ENTSOG shall, after consulting stakeholders, review and create a catalogue of the applicable main terms and conditions of the transport contract(s) of the TSOs in relation to bundled capacity products (Art. 20);
- ▲ in particular, ENTSOG shall analyse existing transport contracts, identifying and categorising differences concerning the main terms and conditions and the reasons for such differences and publish its findings in a report (Art. 20);
- ▲ on the basis of the said report, ENTSOG shall develop and publish a template for the main terms and conditions, covering contractual provisions which are not affected by fundamental differences in principles of national law or jurisprudence, for the offer of bundled capacity products (Art. 20);
- ▲ no later than three months after receiving the ACER's opinion, ENTSOG shall publish on its website the final template for the main terms and conditions (Art. 20);
- ▲ ENTSOG shall finalise at the latest by 1 October 2017, after consulting stakeholders and ACER, a conversion model for existing transport contracts in case of network users holding mismatched unbundled capacity at one side of an interconnection point. This because a free-of-charge capacity conversion service shall be offered by TSOs as from 1 January 2018 (Art. 21);

▲ ENTSOG shall coordinate and assist the completion of the demand assessment reports including by providing a standard template and publishing the reports on ENTSOG's website (Art. 26);

▲ in order to assist ACER in its implementation monitoring, ENTSOG shall monitor and analyse how TSOs have implemented the new version of CAM in accordance with Article 8(8) and (9) of Regulation (EC) No. 715/2009. In particular, ENTSOG shall ensure the completeness and correctness of all relevant information from TSOs. ENTSOG shall submit to ACER that information by 31 March 2019 (Art. 38).

▲ ENTSOG shall monitor and analyse effects of network codes and the Guidelines on the harmonisation of applicable rules aimed at facilitating market integration. (EC 715/2019 Art. 8,8)

Commission Regulation (EU) 2017/460 of 17 March 2017 establishing a network code on harmonised transmission tariff structures for gas (the TAR NC)

▲ in order to assist ACER in its implementation monitoring, ENTSOG shall monitor and analyse in accordance with Article 8(8) and (9) of Regulation (EC) NO 715/2009 how transmission system operators have implemented the TAR NC. In particular, ENTSOG shall ensure the completeness and correctness of all relevant information provided by transmission system operators. ENTSOG shall submit to ACER that information in accordance with deadlines set out in the TAR NC (Art. 36);

▲ provide feedback on the template that ACER shall develop for the consultation document (Art. 26).



Picture courtesy of Reganosa

9 ABBREVIATIONS

	Definition		Definition
ACER	Agency for the Cooperation of Energy Regulators	GQ	Gas Quality
API	Application Programming Interface	GQO	Gas Quality Outlook
AWP	Annual Work Programme	GQS	Gas Quality Study
BAL NC	Network Code on Gas Balancing	GRIP	Gas Regional Investment Plan
BRS	Business Requirements Specifications	IA	Interconnection Agreement
CAM NC	Network Code on Capacity Allocation Mechanisms	IMR	Implementation Monitoring Report
CBA	Cost-Benefit Analysis	INT NC	Network Code on Interoperability and Data Exchange Rules
CEN	European Committee for Standardisation	IP	Interconnection Point
CMP GL	Congestion Management Procedures Guidelines	IPP	Innovative Projects Platform
CNOT	Common Network Operations Tools	KG	Kernel Group
DSO	Distribution System Operator	LAG	Legal Advisory Group
EASEE-gas	European Association for the Streamlining of Energy Exchange – gas	MS	Member States
EC	European Commission	NC IMG	Network Code Implementation and Monitoring Group
ECP	External Contact Platform	PCI	Projects of Common Interest
EIC	Energy Identification Code	PDWS	Professional Data Warehouse System
ENTSO-E	European Network of Transmission System Operators for Electricity	RDI	Research, Development, and Innovation
ENTSOG	European Network of Transmission System Operators for Gas	ReCo	Regional Cooperation
ESI	Energy System Integration	REMIT	Regulation on Energy Market Integrity and Transparency
ETR	Energy Transition Related	SFGas	Sector Forum Gas
EU	European Union	SoS	Security of Supply
GCG	Gas Coordination Group	TP	Transparency Platform
GERG	European Gas Research Group	TF	Task Force
GIE	Gas Infrastructure Europe	TAR NC	Network Code on Harmonised Transmission Tariff Structures for Gas
GIS	Geographic Information System	TSO	Transmission System Operator
		TYNDP	Ten-Year Network Development Plan
		WG	Working Group

ADDITIONAL NOTE

This report was prepared by ENTSOG on the basis of information collected and compiled by ENTSOG from its members. All content is provided “as is” without any warranty of any kind as to the completeness, accuracy, fitness for any particular purpose or any use of results based on this information and ENTSOG hereby expressly disclaims all warranties and representations, whether express or implied, including without limitation, warranties or representations of merchantability or fitness for a particular purpose.

ENTSOG is not liable for any consequence resulting from the reliance and/or the use of any information

hereby provided. The reader in its capacity as professional individual or entity shall be responsible for seeking to verify the accurate and relevant information needed for its own assessment and decision and shall be responsible for use of the document or any part of it for any purpose other than that for which it is intended.

ENTSOG engages the services of various consultants for the purpose of communication, technical and mapping support during the development of its publications and execution of its activities, depending on the need and resources required.

Publisher: ENTSOG AISBL
Avenue de Cortenbergh 100
1000 Brussels, Belgium

Cover picture: Courtesy of Reganosa

Design: Drei Dreizehn GmbH, Berlin | www.313.de



ENTSOG AISBL
Avenue de Cortenbergh 100 | 1000 Brussels, Belgium
Tel. +32 2 894 51 00

info@entsog.eu | www.entsog.eu