entsog

european network
of transmission system operators
for gas

ANNUAL REPORT

2019

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PRESIDENT'S FOREWORD

As ENTSOG reached its 10-year anniversary at the end of 2019, it was a time to reflect on the organisation's contributions and achievements, building a competitive and secure European gas market. Even in these extraordinary times in the shadows of the COVID-19 virus, it is also a time to look to the future and the ever-changing role of ENTSOG and its Members, to meet the commitments of the EU Green Deal.

Over the past ten years, ENTSOG has successfully delivered **six Ten Year Network Development Plans (TYNDPs), four Networks Codes and two Guidelines, three signature tool platforms (Transparency, Functionality and Innovative Projects)** and contributed to the development of **an integrated European Gas Market**. I am proud of the dedicated work of the ENTSOG Team with our Members to reach these goals.

After much collaborative efforts, ENTSOG published its **2050 Roadmap for Gas Grids** at the end of 2019. This Roadmap sets out ENTSOG's **seven recommendations for a future with increasingly renewable, decarbonised and low-carbon gases**. In fact, the publication of the Roadmap coincided with the announcement of the European Commission's (EC's) Communication on the **European Green Deal** on 11 December – this sets the scene for an integrated, efficient and cost-effective European energy system. In the next decade, ENTSOG will continue to work on sector coupling, energy conversion technologies, and long-term energy scenarios, as part of the decarbonisation process.

One of ENTSOG's primary aims is to involve the relevant market participants/stakeholders into the Roadmap for Gas Grids discussion – to establish the technical and regulatory agreement on rules for interoperability, markets and planning in the world of both methane and hydrogen, entering into new multiple interactions. This requires well-prepared **stakeholder consultation processes** and well-structured and efficient engagement process. To continuously improve its way of working and developing its relations with key stakeholders, ENTSOG will continue with regular engagement with ACER, but also build productive and effective mutual dialogue with electricity, hydrogen and gas value chain stakeholders.

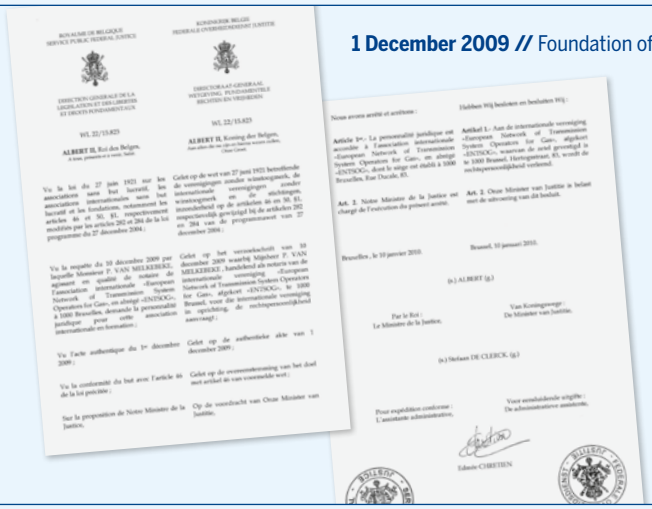
I invite you to take a look at the special section in this report, listing the **key highlights and deliverables of ENTSOG** together with its TSO Members, over the past ten years. We've achieved a lot, a message which

» I invite you to take a look at the special section in this report, listing the key highlights and deliverables of ENTSOG together with its TSO Members, over the past ten years.«

was reiterated by our stakeholders at **ENTSOG's third Annual Conference** in December 2019. ENTSOG will continue its work to make the European gas grid ready to meet decarbonisation goals, and in doing so, support all relevant technologies that contribute to the most efficient transition of the energy sector – both in terms of cost and time.

With the Paris Agreement and European Green Deal as a political compass and in the current context of post COVID19 recovery, all possible pathways to achieve the EU 2050 targets should be examined thoroughly and we will work closely with our Members, EU authorities and stakeholders to facilitate these structural changes in the gas infrastructure sector. And finally, all European TSOs, including those from countries so severely hit by the pandemic, can be assured of continuous operations and the Security of Supply at any time.

STEPHAN KAMPHUES
President, ENTSOG



1 December 2009 // Foundation of ENTSOG

GENERAL DIRECTOR'S FOREWORD

2019 was again another busy year for ENTSOG and its Members, to meet its regulatory obligations as well as engaging with relevant stakeholders looking at the future role of gas grids within the current and possible upcoming regulatory frameworks.

Monitoring reports on the **implementation and effect of the Capacity Allocation Mechanism Network Code and Congestion Management Procedure** by European TSOs were published in 2019.

This year also saw the publication of the finalised **Ten-Year Network Development Plan (TYNDP) 2018**. Work began on TYNDP 2020, as **ENTSOG and ENTSO-E jointly developed scenarios** for the European energy sector up to 2040. The combined expertise and modelling capabilities enabled the ENTSOs joint working group to build a set of ambitious and technically robust scenarios and commence the first important step to identify and assess the interlinkages and interactions between the gas and electricity systems. The development of the scenarios will allow the ENTSOs' TYNDPs to perform a sound assessment of European infrastructure requirements.

ENTSO-E and ENTSOG also published the focus study on interlinkage between gas and electricity systems – **the Interlinked Model**. The study concluded that interactions between gas and electricity systems are indeed well captured by the TYNDP scenarios assumptions.

It should be also recognised that for the first time, ENTSOG updated its project selection criteria to allow for the submission of **Energy Transition Projects (ETR)** to its TYNDP. Of the 185 projects included in TYNDP 2020, 41 were ETR projects.

Also, under ENTSOG regulatory tasks accomplishment, is ENTSOG's updated **Transmission Capacity Map** and **System Development Map** (jointly with GIE). ENTSOG has noted the widespread use and appreciation of these maps, as evidenced by the reaction on our **social media platforms**.

To facilitate ENTSOG's engagement on the European Commission's new EU strategy for smart sector integration and associated legislation, ENTSOG established a **new business area** in 2019 with responsibility for **Strategy, Policy and Communications**, to join the three existing business areas: Market, System Development and System Operation. The new business area has been tasked with further development of ENTSOG external relations, with raising awareness of policy processes and organising the internal knowledge sharing on upcoming regulatory developments by strengthening of internal and external communication.

With publication of the **European Commission's European Green Deal**, a significant task of the Strategy, Policy and Communication business area is the preparation of ENTSOG's engagement in stakeholders' processes in the context of the upcoming gas legislative package. The new team will work to address the identification of strategic aspects, policy monitoring, and communication service.

2019 also marked **10 years of cooperation with ACER and ENTSO-E** and an event hosted by the three organisations in Strasbourg in September 2019 highlighted our collaborative efforts to work with the Member States, NRAs and TSOs to facilitate the completion of the EU energy market and the meeting of energy targets.

1 December 2009 // Foundation of ENTSOG

ENTSOG hosted its celebratory **10-year anniversary event on 11 and 12 December, titled 'ENTSOG's Evolution: From Network Codes to Roadmap 2050'**. ENTSOG's **2050 Roadmap for Gas Grids** was launched at the conference, as gas TSOs' direct response to the EU Green Deal.

In the Roadmap, the European gas TSOs propose how to make gas grids ready for the transition of the energy sector by looking at pathways for decarbonising the gas grids by 2050, namely: **methane, blending methane and hydrogen, and hydrogen pathways**. ENTSOG established a consultation process on seven groups of Roadmap recommendations to be further elaborated through the dialogue with relevant stakeholders. ENTSOG recommendations range from:

- rules for preserving the Internal Energy Market objectives while kick starting the hydrogen and biomethane developments to the industrial levels;
- establishing the robust system for certification and guarantees of origin for renewable and decarbonised gases; and
- interoperability and coexistence future hydrogen, CO_2, and methane networks.

ENTSOG outreaches to new audiences and ensures good understanding of gas, hydrogen, electricity value chains as well as industry, NGOs, Member States and institutional stakeholders. We will continue to work as a proactive, trusted adviser on gas transmission related topics on European level, as has been done over the years. 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.

JAN INGWERSEN
General Director, ENTSOG

Picture courtesy of TAP

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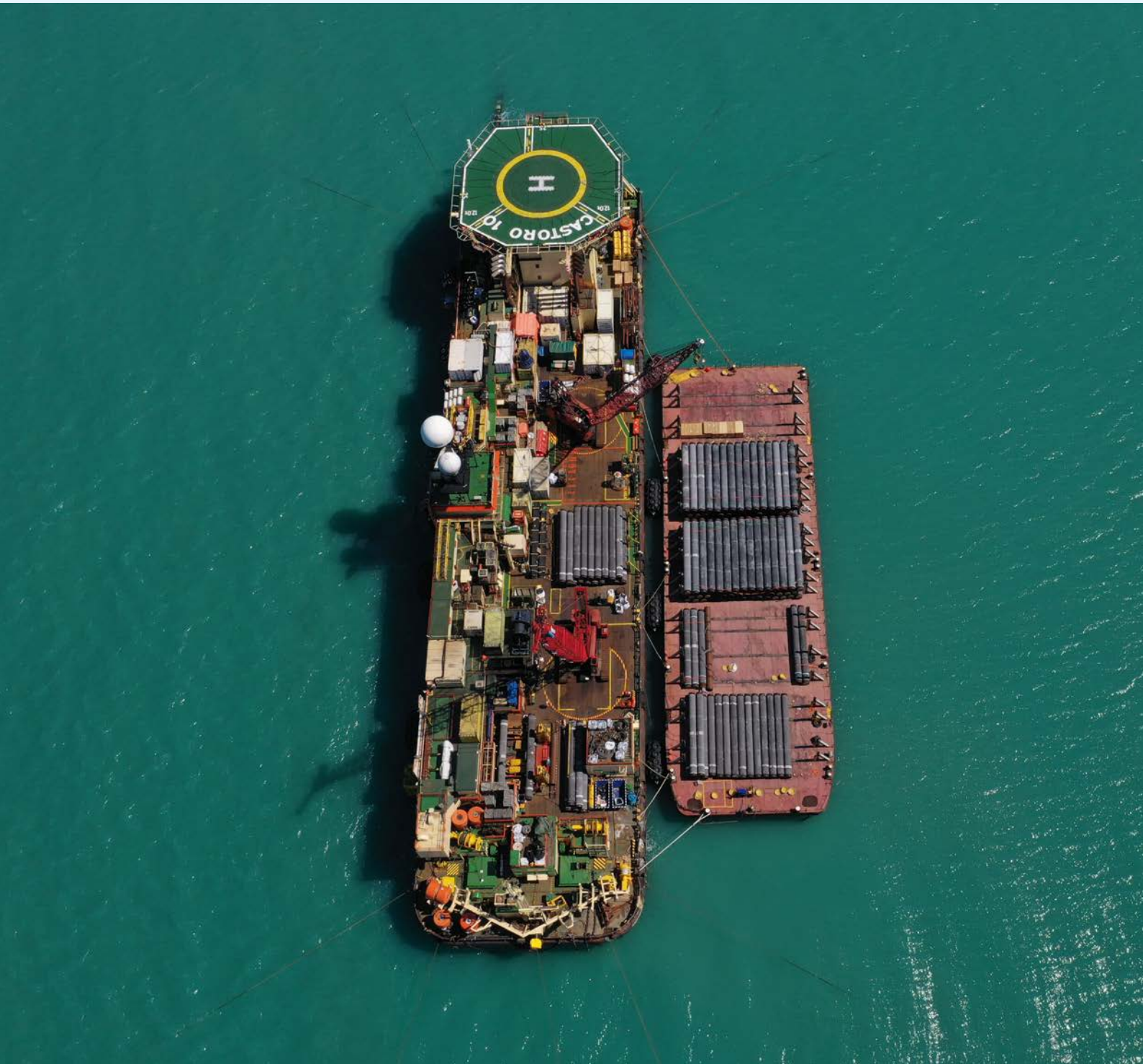
ORGANISATIONAL STRUCTURE AND MEMBERSHIP



The role of the European Network of Transmission System Operators for Gas (ENTSOG) is to facilitate and enhance cooperation between national gas transmission system operators (TSOs) across Europe, and to ensure the development of a pan-European transmission system in line with European Union energy and climate goals.

ENTSOG operations are governed by its General Assembly (GA), which leads the Association and has full powers to enable it to achieve its objectives. Its tasks include the admission of Members; the appointment of the Management Board, the General Director and business area Directors; the establishment of working and regional groups; and the adoption of ENTSOG deliverables.

Internally, ENTSOG is divided into four business areas: Market, System Development, System Operation and Strategy, Policy and Communication. These areas manage the many activities with which ENTSOG are tasked – the development and implementation of Network Codes and guidelines and assessment of current and future gas market design (Market); activities associated with scenario building and future gas infra-

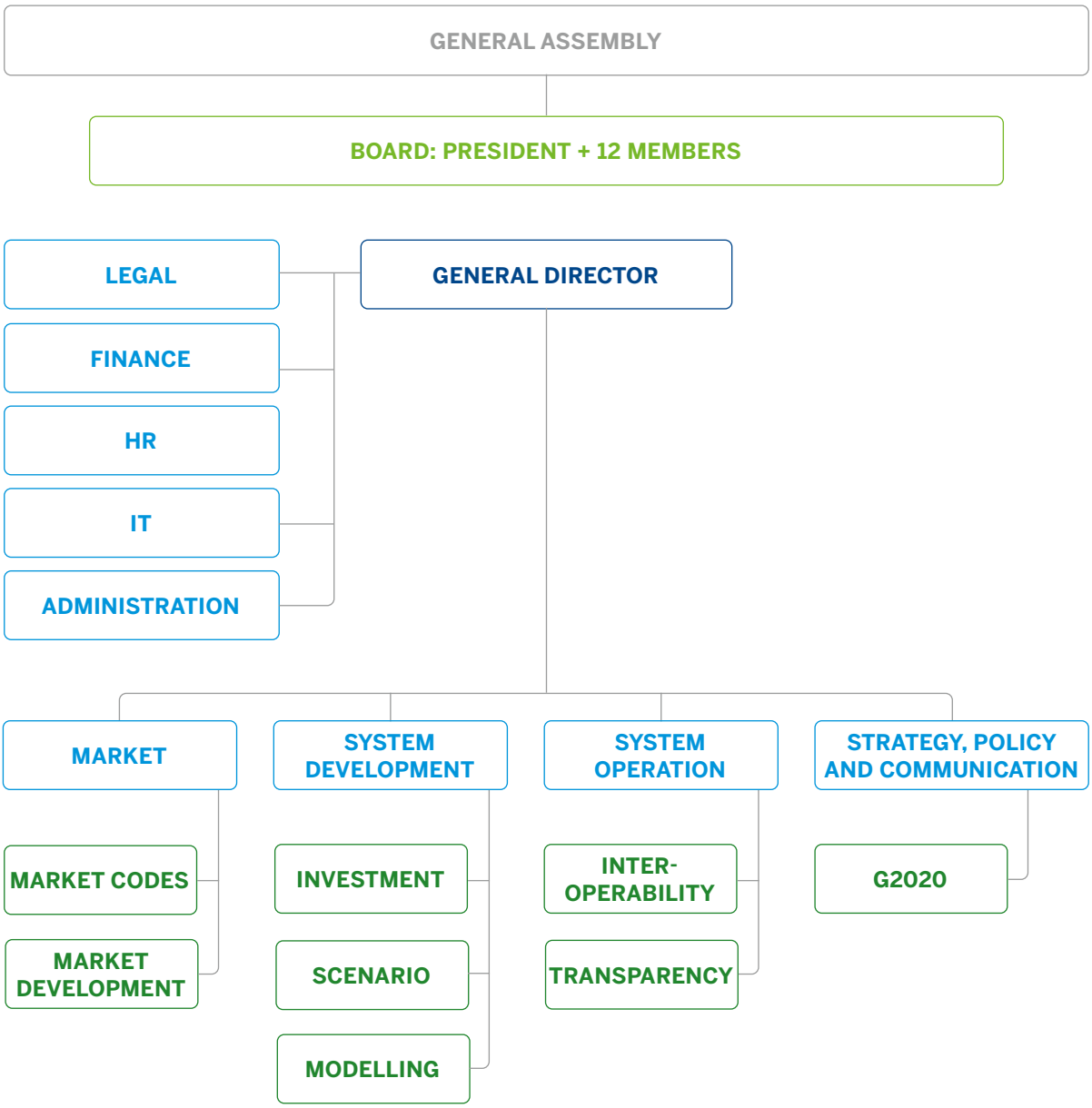


Figure 1: ENTSOG internal organisational structure (as of 31 December 2019)

structure planning (System Development); cooperation for security of supply and providing transparency, ensuring REMIT compliance and technical cooperation (System Operation and System Development). In 2019, the Strategy, Policy and Communication business area was established to coordinate strategic projects and policy processes within ENTSOG and communicate associated ENTSOG activity outside the organisation. The Management Support team provide legal, HR, Finance, and IT support to the ENTSOG team.

ENTSOG Working Groups (WG), Kernel Groups (KG) and Task Forces (TF) associated with delivering tasks are assigned to the four business areas. The main WGs are shown in Figure 1.

A WG is the primary vehicle for the management and delivery of ENTSOG's main content outputs (e.g. TYNDP, Summer/Winter Outlooks, Network Codes, position papers, responses, etc.) before their validation at Board and approval at GA level.

A KG is a more specialised group set up within a WG for the preparation of documents, proposals or for discussion of specific technical issues to prepare and facilitate the WG discussions.

A TF is established specifically for particular activities that do not fit within the scope of existing WGs or due to the cross-functional nature of the activity. It is established by the Board upon recommendation of the General Director, including the specification of its Terms of Reference.

WGs and TFs typically meet on a monthly basis and KGs meet on an ad-hoc basis, as required.

ENTSOG **MEMBERSHIP**

Since its foundation on 1 December 2009, ENTSOG Member TSOs have provided wide coverage of the European gas market, operating in Member States of the European Union. ENTSOG's Articles of Association were modified in December 2010 to admit TSOs from EU countries derogated from the Third Energy Package, as Associated Partners. This allows such TSOs to participate in ENTSOG activities.

In February 2011, TSOs from Third Countries (candidates for EU accession, members of the Energy Community, EEA or EFTA), interested in following development of ENTSOG activities, were also admitted to the Association as Observers. As of end of 31 December 2019, ENTSOG's membership was comprised of:

44 TSO Members, 3 Associated Partners from EU countries, and 8 Observers from non-EU countries **(Status as of 31 December 2019)**

MEMBERS (44)

Austria	– Gas Connect Austria GmbH – TAG GmbH
Belgium	– Fluxys Belgium S. A.
Bulgaria	– Bulgartransgaz EAD
Croatia	– Plinacro
Czechia	– NET4GAS, s.r.o.
Denmark	– Energinet
Finland	– Gasgrid Finland Oy
France	– GRTgaz – Teréga
Germany	– bayernets GmbH – Fluxys TENP GmbH – GASCADE Gastransport GmbH – Gastransport Nord GmbH – Gasunie Deutschland Transport Services GmbH – GRTgaz Deutschland GmbH – NEL Gastransport GmbH – Nowega GmbH – ONTRAS Gastransport GmbH – Open Grid Europe GmbH – terranets bw GmbH – Thyssengas GmbH

Greece	– DESFA S. A.
Hungary	– FGSZ Natural Gas Transmission
Ireland	– Gas Networks Ireland
Italy	– Infrastrutture Trasporto Gas S.p.A. – Snam Rete Gas S.p.A. – Società Gasdotti Italia S.p.A.
Lithuania	– AB Amber Grid
Luxembourg	– Creos Luxembourg S. A.
Netherlands	– BBL Company V.O.F. – Gasunie Transport Services B.V.
Poland	– Gas Transmission Operator GAZ-SYSTEM S. A.
Portugal	– REN – Gasodutos, S.A.
Romania	– Transgaz S.A.
Slovak Republic	– eustream, a.s.
Slovenia	– Plinovodi d.o.o.
Spain	– Enagás S.A. – Reganosa S.A.
Sweden	– Swedegas AB
United Kingdom	– GNI (UK) – Interconnector (UK) Limited – National Grid Gas plc – Premier Transmission Limited

ASSOCIATED PARTNERS (3)

Estonia	– Elering Gaas AS
Latvia	– Conexus Baltic Grid
Greece	– Trans Adriatic Pipeline AG (Greece, Albania, Italy)

OBSERVERS (8)

Albania	– Albgaz
Bosnia and Herzegovina	– BH-Gas Ltd. Sarajevo
North Macedonia	– GA-MA AD
Moldova	– Moldovatransgaz
Norway	– Gassco AS
Switzerland	– Swissgas AG – Erdgas Ostschweiz AG
Ukraine	– UKRTRANSGAZ

MEMBERS MAP

STATUS: DECEMBER 2019

44 Members

3 Associated Partners

8 Observers

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Since its foundation, ENTSOG member TSOs have provided wide coverage of the European gas market. In addition, according to ENTSOG's articles of association TSOs from EU countries currently derogated from the Third Energy Package, such as two of the Baltic States, are associated partners and are able to participate in its activities.

Since 2011, TSOs from Third Party countries (candidates for EU accession, members of the Energy Community or EFTA) interested in following development of the network codes were also admitted to the association as observers.

AUSTRIA, GERMANY AND SWITZERLAND

Picture courtesy of Transgas

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SUMMARY OF ENTSOG'S **ACTIVITIES AND DELIVERABLES** IN 2019

The Annual Report assesses ENTSOG's work and achievements retrospectively for each given year and provides an opportunity to assess the status of work when comparing the executed results against those planned in the Annual Work Programme.

ENTSOG's tasks are mainly defined in Regulation (EC) No 715 / 2009, which includes the development and monitoring of the implementation and effect of Network Codes for Market and System operation, developing Ten-Year Network Development Plans (TYNDPs), providing regular information on gas supply and demand for the European gas market and delivering transparency and common operational tools to ensure network security and reliability. While its focus remains on these activities, it also now includes the assessment of the future progress of the functionality of the European gas markets and looking at longer term horizons for European Scenarios, to meet EU energy and climate goals.

A summary of the key ENTSOG activities is provided in the next sections. The key deliverables are outlined in this section.

The status of the activities and deliverables which had been planned and included in the AWP2020 are provided in the chapter Work Programme status.

MARKET NETWORKS CODES AND GUIDELINES AND MARKET DEVELOPMENT

MARKET NETWORKS CODES AND GUIDELINES

ENTSOG has developed Network Codes containing rules on how to further integrate the EU gas market as well as for system operation and development. The Network Code development process begins when the EC submits a request for a Framework Guideline to the Agency for the Cooperation of Energy Regulators (ACER). Next, ENTSOG transforms the ACER Framework Guideline into a Network Code while conducting extensive public consultations.

Once approved through the European comitology procedure, a Network Code becomes legally binding for all Member States. The EC proposes not to include new items on the annual priority list for 2020 for the development of harmonised gas rules but to focus on the full and correct implementation of the existing market rules in all Member States. ENTSOG continues to monitor and analyse the implementation of the Network Codes and the EC Guidelines and their effect.

The following list outlines the timeline for publication and implementation of each of the Network Codes and Guidelines:

Publication	Implementation
Guidelines on Congestion Management Procedures (CMP GLs) and on Transparency	Published as Annex I to Regulation (EU) No 715/2009, entry into force on October 2013. Almost all ENTSOG members have already fully implemented the CMP GLs.
CAM NC – Network Code on Capacity Allocation Mechanisms in Gas Transmission Systems	ENTSOG's first NC – published on 14 October 2013 as Regulation (EU) No 984/2013, implemented by November 2015 CAM NC – Amendment for Incremental capacity Regulation (EU) 2017/459, the first amendment of the NC, entering into force on 6 April 2017
BAL NC – Network Code on Gas Balancing of Transmission Networks	Published 26 March 2014 as Regulation (EU) No 312/2014, implementation still ongoing.
INT NC – Network Code on Interoperability and Data Exchange Rules	Published on 30 April 2015 as Regulation (EU) No 703/2015, implemented by May 2016
TAR NC – Network Code on Harmonised Transmission Tariff Structures for Gas	Published on 16 March 2017 as Regulation (EU) No 460/2017, entry into force on 6 April 2017, implementation still ongoing

MARKET DEVELOPMENT

During 2019, the Market Development ENTSOG team and Market Development Working Group (MD WG) contributed to the development of ENTSOG's 2050 Roadmap for Gas Grids, which provides recommendations and actions for the decarbonisation of gas infrastructure. MD WG worked on proposals outlined in the 'Bridge beyond 2025' consultation paper prepared jointly by ACER and the Council of European Energy Regulators (CEER). MD WG analysed these proposals and, together with other ENTSOG WGs, prepared ENTSOG positions which were then communicated to CEER and ACER. The WG also reviewed external reports and provided ENTSOG positions.

SYSTEM DEVELOPMENT SCENARIOS AND INFRASTRUCTURE

ENTSOG adapted and published the final TYNDP 2018 following consideration of public consultation feedback and ACER's opinion. In parallel, throughout 2019, ENTSOG has engaged with its members and external stakeholders such as the EC, ACER, NGOs and energy associations to develop the draft TYNDP 2020 scenario report, which was published in November 2019. Following the public consultation, it is planned to publish the final scenario report in spring 2020.

A focus study on ENTSOG and ENTSO-E's Interlinked Model (based on regulation and interactions with EC and ACER and used by the ENTSOs to reflect sector coupling of the two energy systems) was published in November. Furthermore, ENTSOG supported the Regional Groups on the EC Projects of Common Interest selection process during 2019. The ENTSOG Capacity Map and the joint ENTSOG / GIE System Development Map were both published in 2019.

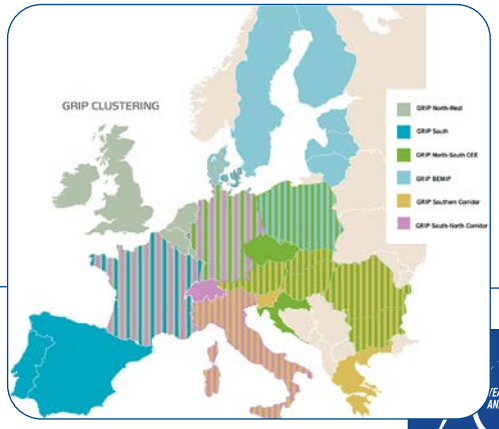
SECURITY OF SUPPLY AND REGIONAL COOPERATION

ENTSOG further developed the Regional Coordination System for Gas (ReCo System)[1)] and in September 2019 ENTSOG published a new version on its website. This included a communication interface to ACER in case of a regional or EU-wide emergency, a description of how it functions, and a process flowchart.

As per ACER's request[2)] on technical cooperation with Third Countries, ENTSOG organised a workshop in September with stakeholders from Turkey on how to implement the Network Code for Interoperability & Data Exchange. The Summer Supply Outlook 2019 and Summer 2018 Review, Winter Supply Outlook 2019-2020 and Winter 2018-2019 Review reports – which give an overview of the ability of the European network, storages and potential gas supply to meet market demand – were published in 2019, including an updated assessment of the Security of Supply main disruption scenarios for peak demand situations.

1) In line with ACER's Opinion No 09/2019 on the adoption of CNOT for emergency conditions

2) ACER Opinion No 10/2019 on ENTSOG's recommendations relating to the coordination of technical cooperation between community and third country TSOs



2011 // Terms of Reference for Gas Regional Investment Plans are established


Picture courtesy of ONTRAS

SYSTEM OPERATION, INTEROPERABILITY AND TRANSPARENCY REQUIREMENTS

The Interoperability team undertook work in 2019 on two issues reported on the Functionality Platform (FUNC) - one relating to missing harmonisation of interfaces for communication with booking platforms and the other on the potential extension of the Business Requirements Specifications (BRS) by adding information about balancing processes.

The solution of the FUNC issue "Communication Protocol and Encryption" was published in 2019, with the proposal to amend Article 1(2), 20 (1), 20 (2) and 23 (1) to extend the scope to virtual trading points and, subject to NRA decision, to points other than interconnection points (e.g. storage and LNG).

In 2019, ENTSOG produced a gas quality position paper setting out ENTSOG's current understanding of the opportunities and challenges with an increased penetration of hydrogen and other renewables in gas grids – principles used in the ENTSOG 2050 Roadmap for Gas Grids. Additionally, ENTSOG continues cooperating with CEN, Marcogaz, GIE, and other industry associations in the field of gas quality.

The ENTSOG Transparency Team and the Transparency Working Group undertook work in 2019 on improving the ENTSOG Transparency Platform (TP), maintaining and improving the continuous provisions of transparency information required by the TAR, INT and CAM Network Codes and Transparency Guidelines and the data provision required by REMIT. To support the users of the TP, four open web-based training sessions for new TP users were published online. Furthermore, ENTSOG and the gas TSOs have been active in several ACER fora discussing the continued implementation and improvements to REMIT.

ENTSOG MANAGEMENT SUPPORT

In 2019, ENTSOG's Management Support team continued working with ENTSOG teams and management and working with ENTSOG members. Support was via the Legal, HR, Finance, IT and Administration functions to ensure a robust platform for the activities and deliverables of ENTSOG.

In 2019, the ENTSOG Legal Team ensured the proper working of the day to day activities from the legal perspective, such as the support on the implementation of the existing Network Codes, and in some cases effect monitoring.

ENTSOG Human Resources continued with a well-prepared recruitment process, so that the relevant resources and competences were in place to perform the requested activities.

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. In 2019, they provided IT support to ENTSOG stakeholders in the use of ENTSOG's data and systems.

ENTSOG **DELIVERABLES 2019**

APRIL

08 // CBA Project Fiches for TYNDP 2018

19 // Summer Supply Outlook 2019 and Summer Supply Review 2018

30 // Practical Implementation Document for developing the TYNDP 2020

JUNE

12 // Annual Report 2018

12 // Monitoring Reports for CAM Network Code and CMP Guidelines

JAN | FEB | MAR | APR | MAY | JUN

MAY

23 // Supporting documents for the project collection process for the TYNDP 2020

10 YEARS ANNIVERSARY

1 May 2012 // Publication of European Transmission Capacity Map

OCTOBER

15 // Winter Supply Outlook 2019/20 and Winter Supply Review 2018/19

25 // Demand Assessment Reports of European gas Transmission System Operators

29 // Transmission Capacity Map (2019)

DECEMBER

12 // ENTSOG Roadmap 2050 for Gas Grids

18 // CAM Network Code related 'Capacity Auction Calendar' for 2020/21

19 // Annual Work Programme 2020

30 // ENTSOG and Gas Infrastructure Europe (GIE) System Development Map 2018/2019

NOVEMBER

04 // ENTSO-E and ENTSOG publish the focus study on interlinkage between gas and electricity systems

05 // List of projects to be included in TYNDP 2020

13 // European wide gas and electricity Scenario Report for TYNDP2020

25 // CAM & CMP Information Brochure

WORK PROGRAMME STATUS

These tables provide an overview of the activities in ENTSOG's four main business areas – Market, System Development, System Operation and Strategy, Policy and Communication (SPC). The listed tasks originate (and are supplemented in some cases) from the Annual Work Programme 2020. As Strategy, Policy and Communication is a new business area launched in 2019, activities for Q4 2019 have been specified below.

MARKET

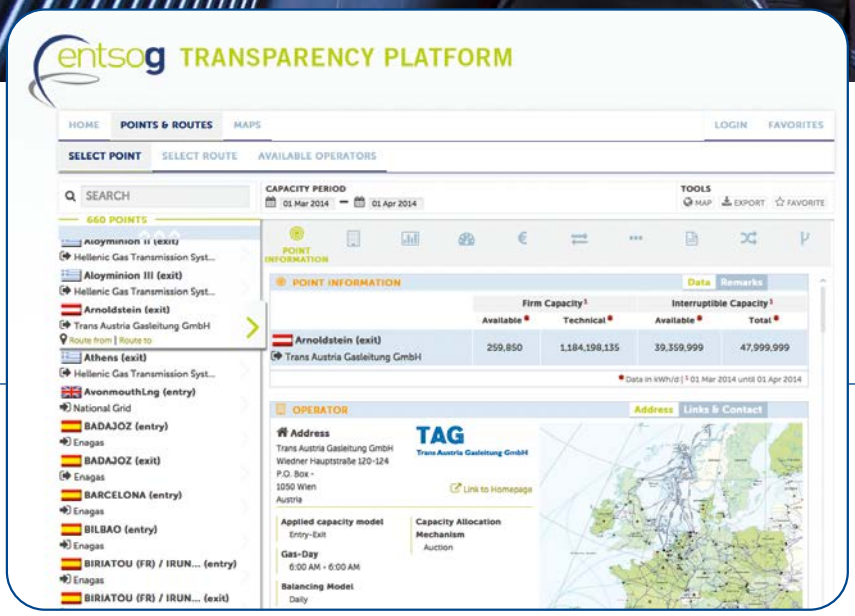
Activity	Goal	Deliverables & Completion Date	Consultation with	Status/ Comments
MARKET NETWORKS CODES AND GUIDELINES				
Respond to ACERs 8th Market Monitoring Report covering 2018	Ensure the stakeholders (including the EC) are aware of ENTSOG's positions and views regarding the proposals developed within the Quo Vadis study and respond to any consultations	Q1/Q2 2018	TSOs, EC, stakeholders	Completed
BALANCING				
Support ENTSOG members with the implementation of the BAL NC	Successful implementation of the BAL NC provisions by ENTSOG members	Ongoing throughout 2019	TSOs	On-going
Development of BAL NC implementation and effect monitoring report	Monitor the implementation and effects of the BAL NC	Publication on ENTSOG website Q2 2020	TSOs and ACER	To be completed in 2020
ENTSOG monitoring on cases of suspected misconduct in BAL zones reported by TSOs	Raise awareness internally and externally on suspected misconduct in EU balancing zones and policies to address it	Ongoing throughout 2019	TSOs and ACER	On-going
TARIFFS				
Support ENTSOG members with the implementation of the TAR NC	Successful implementation of the TAR NC provisions by ENTSOG members	Ongoing throughout 2019	TSOs	On-going
Assess the need for a 3rd edition of the IDoc	Update the second edition of IDoc to assist with the implementation of TAR NC	During 2019, discussions commenced regarding the need for update of the IDoc, a few changes and corrections made in Annexes. Further work is planned for 2020.	TSOs, stakeholders, ACER	On-going
Develop the 2nd TAR NC implementation and effect monitoring report	Monitor the implementation and effects of the TAR NC	Process was started mid-2019. Publication in April 2020	TSOs, ACER	To be completed in 2020
Develop ENTSOG positions on tariff related issues and respond to consultations and queries from stakeholders	Develop sound ENTSOG positions on tariff related issues that can be presented to stakeholders and the wider market, as well as internal material aimed at analysing the evolution of tariffs and revenues.	On-going throughout 2019	TSOs, stakeholders, ACER	On-going

Activity	Goal	Deliverables & Completion Date	Consultation with	Status/ Comments
CAPACITY				
Support ENTSOG members with the implementation of the CAM NC	Successful implementation of the CAM NC provisions by ENTSOG members	Ongoing throughout 2019	TSOs	On-going
Development of CAM NC auction calendar 2020/2021	Publish the auction calendar for 2020/2021	Publication on 18 December 2019	TSOs	Completed
Develop the CMP GL and CAM NC implementation and effect monitoring report covering 2018	Monitor the implementation and effects of the CAM NC and CMP GL	Publication on ENTSOG website 12th June 2019	TSOs	Completed
Development and publication of the first Incremental Capacity Process report	Monitor the implementation of the incremental capacity process and the final outcome in Europe	Publication on ENTSOG website 20 January 2020	TSOs, ACER	Completed
Supporting the Energy Community secretariat with activities relating to implementation of CAM NC and CMP in CP countries	Implementation of CAM NC and CMP in CP countries	On-going	Energy community secretariat, Energy community members, TSOs and NRAs	On-going
Respond to ACERs 6th contractual congestion report covering 2018	Analyse the report and provide feedback	Response sent to ACER 19 September 2019	TSOs	Completed
FUNCTIONALITY				
Support the Functionality Process and any related issues to the Network Codes and Guidelines that arise	Provide assistance to the successful establishment and operation of the Functionality Process	On-going	Stakeholders, TSOs, ACER	On-going
Improve the Functionality Process and Functionality Platform	Improve the Functionality process by updating the guidelines for cooperation with ACER and Terms of Use of the Functionality Platform. Improve the Platform itself with a new design and more user-friendly features.	Guidelines and Terms of Use updated during 2019. New Platform to be launched in May 2020	TSOs, ACER	On-going
MARKET DEVELOPMENT				
Evaluate any proposed changes to the current regulatory framework in the EU gas sector and provide feedback.	Ensure that the stakeholders (including the EC) are aware of ENTSOG's positions and views regarding the legislative and policy proposals developed for the EU gas sector	On-going throughout 2019	TSOs, EC, stakeholders	On-going
Develop positions and recommendations that will facilitate the use of power-to-gas technologies and the use of renewable gases in transport, heating and industry	Ensure that stakeholders understand how the gas grids can contribute to decarbonisation and the energy transition in different sectors of the EU economy	On-going throughout 2019	TSOs, EC, stakeholders	On-going
Provide support to ENTSOG Members regarding the development of any new TSO products and services which can contribute towards meeting decarbonisation and EU climate neutrality targets	Develop positions on the measures that are needed at the national levels to facilitate deployment of the new 'climate oriented' TSO products and services	Ad-hoc work stream (upon requests of TSOs)	TSOs, stakeholders	On-going

SYSTEM DEVELOPMENT

Activity	Goal	Deliverables & Completion Date	Consultation with	Status/Comments
TYNDP 2018	Assess the infrastructure against the European Energy Policies to identify infrastructure gaps and mitigation of these gaps by projects on the basis of the CBA Methodology in force	Final TYNDP 2018	TSOs Stakeholders, ACER, Public consultation TYNDP Presentation Day on 21 March 2019	Draft published before end 2018 Final version completed consider the outcome of the public consultation and the opinion received from ACER
TYNDP 2020	Assess the infrastructure against the European Energy Policies to identify infrastructure gaps and mitigation of these gaps by projects on the basis of the CBA Methodology in force	TYNDP 2020 Practical Implementation Document (completed) Project data collection and support of project promoter in their submission (completed, first half 2019) Inclusion of Energy Transition Related projects (completed) Draft TYNDP 2020 publication expected by summer 2020	TSOs, EC and ACER consulted on TYNDP 2020 Practical Implementation Document Webinar with project promoters ACER and NRAs consulted on submitted data	Project data published in November 2019 TYNDP 2020 process ongoing
Support to Regional Groups	Provide technical expertise during the fourth PCI selection process Support promoters on CBA at project level by modelling and producing Project Fiches	4th PCI selection process Operationalisation of the PCI call using ENTSOG Project portal (completed) Prepare Project Fiches for the 4th PCI selection process (completed)		
ENTSO-E/ ENTSOG consistent and interlinked model	ENTSOs have a draft model in line with Art 11(8) of Regulation (EU) 347/2013 and adapt it further to ACER and EC opinions in view of submission for approval to EC in December 2016. Following EC and ACER recommendations, the ENTSOs intend to adapt their consistent and interlinked model taking into account the focus study on electricity and gas project interlinkages started in 2018.	Investigation on the interlinkage between gas and electricity scenarios and infrastructure projects assessment (i.e. Focus Study) and its publication (competed)	TSOs, ACER, Commission Stakeholders, Copenhagen Infrastructure Forum	ENTSOG and ENTSO-E to implement a project screening methodology, taking into account the outcomes of the Focus Study as well as todevelop a dual assessment methodology (ongoing)
TYNDP 2020 scenario development process	Joint scenario development process between both ENTSOs	Draft TYNDP 2020 joint scenario report (ENTSOG/ ENTSO-E) Published in November 2020	TSOs; TYNDP 2020 scenarios consulted with EC, ACER, external stakeholders (9 workshops) and submitted to public consultation	Draft report to be published in 2019, final report to be published in Spring 2020
2nd CBA Methodology	For TYNDP 2020, application of ENTSOG 2nd CBA methodology, whose final version was published on 23 October 2018 and approved by EC on 17 January 2019.	Application of ENTSOG 2nd CBA Methodology to TYNDP 2020	N/A	Ongoing

Picture courtesy of Snam Rete Gas



1 October 2013 //
Launch of new Transparency Platform

Activity	Goal	Deliverables & Completion Date	Consultation with	Status/Comments
Summer Outlook 2019	Provide view on injection period ahead	Publication	TSOs, ACER	Completed
Summer Review 2018	Analyse previous summer	Publication	TSOs	Completed
Winter Outlook 2019/20	Provide view on supply-and-demand balance for winter ahead	Publication	TSOs, ACER	Completed
Winter Review 2018/19	Analyse previous winter	Publication	TSOs	Completed
Capacity Map (periodical)	Provide overview of the European infrastructure including information on infrastructure capacities	Publication	TSOs	October 2019
System Development Map (periodical)	Provide project map and graphic representation of supply-and-demand for past year	Publication	TSOs	December 2019

SYSTEM OPERATION

Activity	Goal	Deliverables & Completion Date	Consultation with	Status/Comments
TRANSPARENCY				
Data consistency support to TSOs	Ensure a high data completeness and consistency on the TP	ENTSOG staff monitors the data publications daily and reports to the TSOs on a monthly basis.	Gas TSOs	Over the course of the year, data completeness has continuously improved and is stable around 95–97 %, this is an increase of approximately 5 % compared to the previous year.
Continuous platform improvements	Ensure user friendliness and usability of the published data	In 2019, many new features were implemented and presented at the public workshop	Gas TSOs and TP Users	On-going
Organise online courses to inform TP users about the TP's wide range of features	Support the users of the TP	Online sessions were held on 15 May, 12 June, 22 October and 17 December		The sessions were recorded and published on ENTSOG's Vimeo channel
Facilitate required data collection processes	Ensure timely and effective data deliveries	The data needed for ACER's monitoring obligations was delivered on 15 February 2019.	Gas TSOs, ACER Gas Market Department,	Completed
Follow up on REMIT requirements	Ensure proper application of the REMIT requirements	Ongoing effort	Gas TSOs, ACER REMIT department, ACER REMIT User groups	ENTSOG and gas TSOs have participated in numerous discussions in the REMIT area in 2019. The updated ACER requirements for REMIT implementation have been considered and implemented, if relevant.
Discuss updated UMM concept	Ensure good practice and integrity for publication of inside information as UMMs	ENTSOG discussed the existing UMM-setup amongst the members and updated internal governance rules.	Gas TSOs, ACER REMIT department	The TP will be listed as a Registered Information Service alongside with IIPs on ACER's REMIT portal
Analyse legal transparency requirements coming from EU legislation, including the gas Network Codes	Ensure proper application of the transparency requirements	Ongoing effort	Gas TSOs, EC, TP users and other stakeholders	On-going

Activity	Goal	Deliverables & Completion Date	Consultation with	Status/Comments
Cooperate with ENTSOG business areas to fulfil transparency requirements coming from relevant NCs	Ensure proper application of the publication requirements	Ongoing effort	Gas TSOs, other ENTSOG Working Groups, TP users and other stakeholders	On-going
Facilitate and support other areas inside ENTSOG with projects concerning TP	Ensure good usage of the available data and functionalities on the TP	N/A	Gas TSOs, other ENTSOG Working Groups,	On-going
Stakeholder satisfaction survey on the TP	Ensure a transparent and user-friendly channel for providing feedback on using the TP	The survey responses were evaluated by ENTSOG TRA WG and presented at the 13th public Transparency workshop	Gas TSOs, TP users, ACER, EC, and other stakeholders	Completed Besides the stakeholder satisfaction survey, 129 questions from TP users were handled by ENTSOG and TSO staff in 2019
Public workshop on Transparency	Ensure transparent dialog with stakeholders	Workshop was held on 21 November 2019	Gas TSOs, TP users, ACER, EC, and other stakeholders	Completed
Develop ENTSOG and gas TSOs' positions on transparency and REMIT related issues and respond to reports from stakeholders	Develop positions on transparency and REMIT related issues that can be presented to stakeholders	On-going	Gas TSOs, ACER, other stakeholders	On-going
INTEROPERABILITY AND DATA EXCHANGE				
Follow up on INT NC implementation monitoring	Monitor the implementation and functioning of the Network Code on Interoperability and Data Exchange Rules	Implementation monitoring report 2019 – will be published in the second half of 2020.	TSOs, ACER	Next monitoring exercise planned for the end 2020
Continue discussion on gas quality	Develop understanding of how H^2 might be introduced in the gas grids	Dedicated workstream to assess hydrogen in gas grids. The key findings of the internal assessment were used in the "ENTSOG 2050 Roadmap for Gas Grids" publication.	TSOs	Set out ENTSOG's current understanding of the opportunities and challenges on increased penetration of hydrogen in gas grids

Activity	Goal	Deliverables & Completion Date	Consultation with	Status/Comments
Continue discussion on gas quality standardisation with CEN	Cooperate with gas sector regarding gas quality standard and regulation	Contribute towards the revision of EN 16726 to include WI	TSOs and gas quality stakeholders in CEN	ENTSOG continues cooperating with CEN
Continue discussion on gas quality with industry associations	Cooperate with gas sector regarding gas quality standard and regulation	On-going	TSOs and gas quality stakeholders	Marcogaz, EASEE-gas and other industry associations in this field
Follow up on the SoS and Technical cooperation	Follow up on the existing ReCo System for Gas as a CNOT for emergency conditions	The last version of the ReCo System for Gas was updated in September 2019.	ACER	Revised after ACER's opinion. The appropriate reply to ACER (regarding their opinion) was sent
Follow up on technical cooperation with third-country TSOs	Continue cooperating with Energy Community and third-country TSOs	External contact platform meetings twice per year.	EnC Secretariat and stakeholders	On-going
Follow up on technical cooperation with third-country TSOs	Update and follow recommendations regarding technical cooperation with third-country TSOs	ENTSOG considered ACER's opinion. The last version of the Recommendations was updated in September 2019.	EnC Secretariat, ACER	Revised after ACER's opinion. The appropriate reply to ACER (regarding their opinion) was sent
Follow up on data exchange	Manage and review CNOTs	Review of the changes coming from the FUNC issue to include VTPs into the INT NC.	ACER, TSOs, SSOs, Market Area Managers, and network users	ENTSOG will continue working on updating the CNOT for nomination and matching and CAM/CMP according to the outcome of the FUNC process
Follow up on data exchange	Organise data exchange workshop	Data exchange workshop November 2019	EASEE-gas	A new edition of the data exchange workshop will be held in the second half of 2020
Follow up on EIC scheme	Deliver Local Issuing Office service	On-going	N/A	On-going

Picture courtesy of Plinovodi

STRATEGY, POLICY AND COMMUNICATION

Activity	Goal	Deliverables & Completion Date	Consultation with	Status/Comments
ENTSOG 2050 Roadmap for Gas Grids	Develop ENTSOG 2050 Roadmap for Gas Grids	From May until publication on 11.12.2019	TSOs	Completed
	Align ENTSOG Members' positions on possible pathways to decarbonise the gas grids	Ongoing throughout 2019	TSOs	On-going
	Provide strategic input to gas and electricity cooperation under Hybrid Energy System	Ongoing throughout 2019	TSOs	On-going
	Launch of the stakeholders' engagement process to discuss the Roadmap recommendations	Ongoing throughout 2019	TSOs	On-going
Policy proposals and updates	• Monitor key energy & climate policy/ regulatory developments put forward by EU institutions • Map the priorities of the European Commission and European Parliament • Discuss and engage with Members on EU's analytical work (EC consultations and studies) • Provide update on the EU institutional developments post EU elections in 2019 • Mapping the priorities of the Commission and Parliament established in 2019.	Ongoing throughout 2019	TSOs	On-going
Communication proposals	• Provide recommendations on ENTSOG's priorities in dialogue with the European Commission, Parliament and ACER • Propose external and internal communication • Engage in dialogue with industry, gas and other key EU stakeholders	Ongoing throughout 2019	TSOs	On-going
Information sharing	• Provide information material to TSOs in their discussions on gas regulatory framework held at national level. • Document mirroring possibilities from electricity to gas legislation stemming from Clean Energy Package • Report to Members on all ENTSOG bilateral, multilateral and public engagement	Throughout the whole 2019	TSOs	On-going

Picture courtesy of Fluxys Belgium

3

MARKET NETWORK CODES AND GUIDELINES AND MARKET DEVELOPMENT

ENTSOG's Market Team is responsible for providing expertise, monitoring and development of the market-related Network Codes that promote the internal European gas market. The Market Area has also been involved with the Energy Community, providing support in their Network Code development and implementation activities.

In addition to work on the Network Codes, the Market Area is also responsible for the jointly managed ACER and ENTSOG Functionality Process, which addresses not only potential adjustments to the implementation of Network Codes, but also to include possible issues which might require future Network Code adaptations.

The Market team also contribute with proposals and analysis of the impact of possible changes to the current regulatory framework for the EU gas market and Smart Sector Integration related activities. Work in 2019 was undertaken to envision what innovative TSOs solutions could support the achievement of the EU goals of climate neutrality and energy transition, competitiveness, security of supply and sustainability and to assess their possible impacts on the functioning of the internal gas market.

WORK STRUCTURE

The work within the Market Area is organised into two main areas – the Market Codes Working Group (MC WG) and the Market Development Working Group (MD WG).

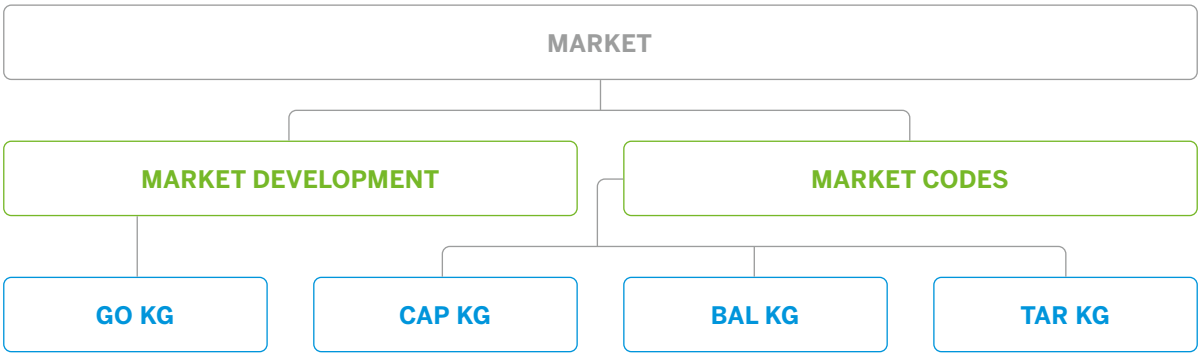


Figure 3.1: Market Codes and Market Development Working Group and associated KGs

MARKET CODES

The MC WG is responsible for ENTSOG's activities related to balancing, capacity and tariffs. This includes all topics relating to the CAM NC and the Guidelines on CMP, BAL NC and TAR NC, as well as any further regulation possibly upcoming in relation with these areas.

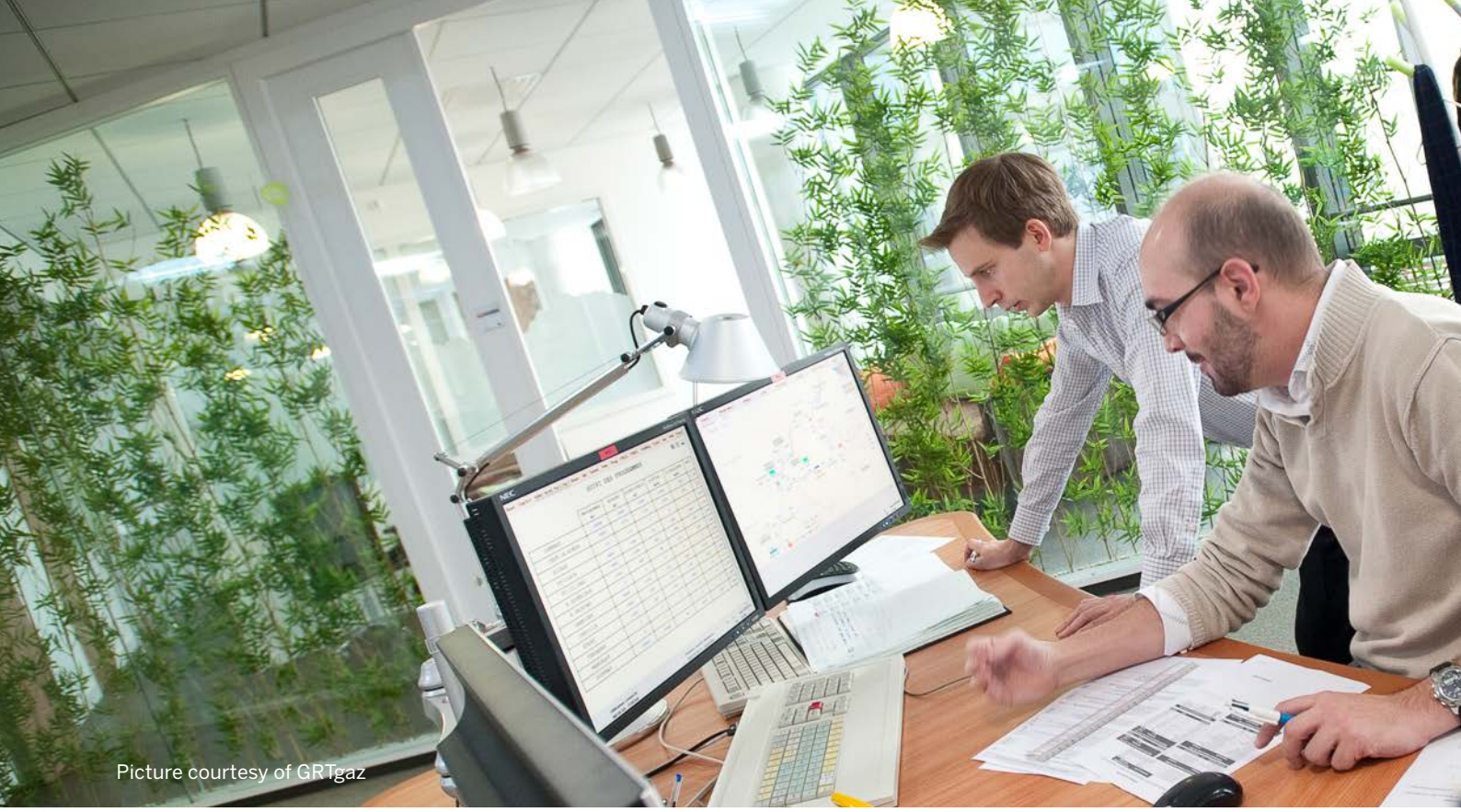
The work within the MC WG is managed via their corresponding KGs, with more specialised tasks. The activities of BAL, CAP and TAR KGs are coordinated through the MC WG.

The MC WG meet on a monthly basis (and ad-hoc, as required) and comprise participants representing Member TSOs across Europe.

The work areas addressed in the Kernel Groups are as follows:

CAPACITY

The Capacity KG (CAP KG) is responsible for ENTSOG's activities related to the allocation of existing and incremental capacity (CAM NC – REG (EU) No 2017/459) and congestion management (Guidelines on CMP – Commission Decision of 24 August 2012 on amending Annex I to Regulation (EC) No 715/2009). The CAP KG has also been responsible for ENTSOG's activities related to implementation and operational issues raised on the Functionality Platform that are connected to CAM NC or CMP GLs.



Picture courtesy of GRTgaz

Furthermore, the CAP KG is responsible for the monitoring of CAM NC and the CMP GLs and developing monitoring reports on the implementation and effect of the CAM NC and CMP GLs. The CAP KG also analyses and provides feedback to ACER's monitoring reports on the same topics, where necessary.

Where requested, the CAP KG provides appropriate input to the update of Common Network Operation Tools (CNOT) – comprising Business Requirements Specifications for the CAM NC and the CMP GLs document and Message Implementation Guideline (MIG).

BALANCING

The Balancing KG (BAL KG) is responsible for ENTSOG's tasks related to balancing activities in transmission systems, with a focus on the implementation, application and functioning of the Network Code on Gas Balancing of Transmission Networks (BAL NC – REG (EU) No 312/2014). The BAL KG is responsible for developing the report on the implementation and the effect monitoring of BAL NC, for example. Where requested, the BAL KG provides appropriate input to the update of CNOT and any other balancing related topics.

TARIFFS

The Tariff (TAR KG) is responsible for providing expertise, monitoring and development of the Tariff Network Code (TAR NC).

In 2019, the TAR KG developed the 2nd TAR NC implementation and effect monitoring report, which was published in April 2020.

MARKET DEVELOPMENT

The MD WG is responsible for developing ENTSOG's proposals for the future gas market design, so that these proposals can be fed into work undertaken by the EC and used to discuss future developments with stakeholders. Going forward, the MD WG will also contribute with inputs and proposals to the gas-related topics of the new regulatory packages, developed to achieve the ECs Green Deal's objectives.

The GO Kernel Group deals most specifically with Guarantees of Origin and works with other associations within a so-called "Prime Movers" Group.

The MD WG meet on a monthly basis (and ad-hoc, as required) and comprise participants representing Member TSOs across Europe.

ACTIVITIES

MARKET CODES

In 2019, the MC WG was active in discussions with ACER and the EC on work about the recent fraud cases which occurred in Europe. This work was further discussed at the BAL KG meetings. Results of discussions with ACER and the EC at the NC Implementation and Monitoring Group (IMG) meetings were also debated by the MC WG. The MC Brussels team was involved as experts for the online course 'EU Gas Network Codes' organised by ENTSOG and the Florence School of Regulation on several subjects: Capacity, Balancing, and Tariffs. The MC WG also contributed in the preparation of ENTSOG's response to ACER's consultation on 'The Bridge beyond 2020'.

CAPACITY KERNEL GROUP

Capacity Allocation Mechanisms

ENTSOG prepared the annual auction calendar in 2019 for the gas year 2020/2021 and published it at the end of December 2019.

In June 2019, the Implementation and Effect Monitoring Reports for CAM NC and CMP Guidelines were published, covering the year 2018.

Additionally, ENTSOG supported activities of the Energy Community Secretariat related to implementation of CAM NC and CMP Guidelines in the Energy Community Contracting Party countries.

The first demand assessment for incremental capacity, which constituted the start of the incremental capacity process, was conducted in 2017. During 2019, the first incremental capacity report was produced, covering the process started in 2017. The report was published in Q1 2020.

Moreover, the market demand assessment report (DAR) for the incremental capacity process initiated in 2019 was published on the websites of the TSOs and on ENTSOG's website in October 2019.

BALANCING KERNEL GROUP

The Balancing Network Code (Commission Regulation (EU) No 312/2014) was published in the Official Journal of the EU in March 2014 with a first implementation deadline as 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.

During 2019, the BAL KG focused on the implementation requirements set out in the BAL NC.

Following its monitoring obligation set out in Article 8 (8) of the Regulation (EC) No 715/2009 and to assess the implementation plans of the individual TSOs, ENTSOG started the data collection to produce its BAL NC Implementation and Effect Monitoring Report, which covers the implementation status of the BAL NC by 1 October 2019 and the Effect Monitoring Report.

The ENTSOG Report on BAL Monitoring will be published in June 2020.

TARIFF KERNEL GROUP

In 2019, the TAR KG continued supporting ENTSOG members with the implementation of the TAR NC.

The TAR KG started working on the 2nd TAR NC Implementation and Effect Monitoring Report by establishing the scope of the implementation monitoring part and by developing the relevant indicators for the effect monitoring part. The required data was analysed, and work on the report ended in the first quarter of 2020. The report was submitted to ACER in April 2020.

The MC WG, which oversees the TAR KG, assessed if a 3rd revision of the TAR NC Implementation Document (TAR IDoc) was required. The TAR IDoc is a non-binding document, prepared for information and illustrative purposes, and offers a set of examples and possible solutions for the implementation of the TAR NC throughout the EU. The MC WG decided it was not necessary to proceed with this update in 2019, and therefore did not mandate the TAR KG to work on this task. However, a few updates were made to Annex I of the IDoc in 2019, following a question received by ENTSOG from a market participant. New challenges and concerns may arise from the ongoing implementation of the TAR NC, which could justify additional updates. Further work on the IDoc is envisaged for 2020.

The TAR Brussels team also discussed tariff issues with stakeholders such as ACER, the Florence School of Regulation (FSR) and the EC. It attended events organised by external stakeholders.

In March 2018, the TAR KG finalised and published the TAR NC Implementation and Baseline Effect Monitoring report 2017, which provides the status of the implementation of the TAR NC by the TSOs and constitutes a baseline study of the effects of the TAR NC on the European gas market. The TAR KG had started working on the report in 2017, establishing the scope of the implementation monitoring part of the report and developing the relevant indicators for the effect monitoring part of the report. The required data was analysed and work on the report ended in the first quarter of 2018. As per Article 36(1)(a) of the TAR NC, the report was submitted by 31 March 2018 to ACER.

The TAR KG cooperated with other KGs and WGs, for example with the CAP KG on tariff issues related to incremental capacity, and with the TRA WG, through the TAR DP TF, on the implementation of the transparency (data publication) requirements of the TAR NC. In 2018, the Task Force continued to provide assistance to ENTSOG members to implement the publication requirements of the TAR NC

The TAR KG supported the ongoing Functionality Process. In addition, the TAR KG has been working on the implementation of the TAR NC with the Energy Community and their Contracting Parties, including contributions to the Gas Working Group meetings, Transparency Workshop and providing advice on training for their NRAs. Throughout 2018, the TAR KG also responded to consultations and queries from stakeholders and developed ENTSOG positions on tariff-related issues to ensure ENTSOG's work and views are appropriately presented externally. Ad-hoc meetings were also organised to help specific Member States to implement the TAR NC.

The TAR Brussels team was also involved in discussions with ACER regarding the revenue report prepared by consultancy ECA for ACER, in accordance with TAR NC provisions. The TAR Brussels team attended workshops organised by ACER and represented TSOs and ENTSOG positions.

The TAR Brussels team was also a participant at the Informal Member State meeting hosted by the EC in June 2018, at which stakes and issues in the gas sector were debated. It also attended other workshops organised by other external stakeholders.

JOINT NETWORK CODE FUNCTIONALITY PROCESS

The established Joint Functionality Process, co-managed by ENTSOG and ACER and supported by the EC, is aimed at reaching commonly recommended solution(s) on implementation and operational issues within the existing Network Codes and Guidelines. It provides stakeholders a possibility to raise and discuss issues as well as an opportunity to be involved in developing solutions, which aim at commonly recommended non-binding guidance.

The Gas Network Codes Functionality Platform (www.gasncfunc.eu) enables stakeholders to raise implementation and operation issues via the web interface and gives an overview of all reported issues and their status. Since its introduction in 2016, the perceived limited scope – only Network Code implementation, functional or operational issues could have been raised on the platform – was outlined as a potential barrier to submission of Network Code related issues. Therefore, in the Summer of 2017, in conjunction with ACER, the scope of the Functionality Process was broadened so as to allow any issue related to the Network Codes to be included. In addition, the number of potential Network Codes and Guidelines was also expanded to include the Transparency Guidelines and the TAR NC.

No	Posting party	Description	Next steps
1	Equinor + 3 others	Communication protocol encryption	Solved
2	GMT	Fallback solution for failed DA auctions	Solved
3	EnC/UTG	INT NC on IPs to 3rd countries	Closed
4	EFET	Inconsistencies in publication of reserve price information	Solved
5	Equinor ASA + ENGIE	Missing harmonisation of interfaces on capacity booking platforms	In progress
6	Equinor ASA	BRS for balancing	In progress
7		Data Reliability	Issue closed post resolution
8	AGGM	Auction restrictions in the NCG market area	In progress
9	EFET	Greater harmonization of fallback procedures	In progress

Picture courtesy of TAP

In July 2018, the first issue solution was published on the Functionality Platform, related to Ex-post interruptible capacity discounts. During 2019, seven issues have been solved or closed and five new issues have been posted. The table below outlines the status of all the issues which have been discussed, solved or posted on the platform during 2019. Some issues were posted by more than one stakeholder – in those cases the issues were processed jointly but remained as separate issues on the Platform itself.

From the first stakeholder issue on the platform at the end of 2017 until the publication of the first issue solution in July 2018, improvement suggestions to the platform and process were analysed by ACER and ENTSOG and transformed into project steps, with the aim of making the Functionality Process more efficient, transparent and smoother to use for the involved stakeholders. This project continued during 2019 and updates were made to the guidelines for the ACER/ENTSOG cooperation process, as well as updates of the Terms of Use for the platform and other related documents. In Q4 2019, the technical specifications for improvements to the Platform were finalised and consultants were appointed to carry out the necessary IT modifications. The project is anticipated to be finalised in Q2 2020.

MARKET DEVELOPMENT

In 2019, the MD WG continued to evaluate relevant policy and legislative initiatives in the EU gas sector and examined innovative TSO solutions which could facilitate energy transition whilst maintaining security of supply and promoting competition. MD WG also contributed to the development of ENTSOG's 2050 Roadmap for Gas Grids with the relevant proposals on:

1) integration of renewable and decarbonised gases into EU internal gas market;

2) development of a hybrid energy system, including power-to-gas business model;

3) trade in the 'climate value' of renewable and decarbonised gases across Member States and

4) prospects for deploying Carbon Capture, Utilization and Storage (CCUS) technologies.

The MD WG's primary focus and workload throughout 2019 was developing positions and views in relation to anticipated legislative changes of the EU gas market, and the gas grids contribution towards decarbonising the energy sector. In particular, MD WG worked on proposals outlined in the 'Bridge beyond 2025' consultation paper, prepared jointly by the ACER and CEER. In these proposals, two strategic areas were addressed, i. e. targeted regulation and market functioning, enabling new products and enhancing infrastructure governance. MD WG analysed these proposals and together with other WGs prepared ENTSOG positions which were then communicated to CEER and ACER. The MD WG also reviewed external reports during public consultations and provided ENTSOG positions.

Regarding the climate value, the GO Prime Movers group has made recommendations during the two Madrid Fora in 2019 in order to develop an EU wide GO market.

NETWORK CODES IMPLEMENTATION AND EFFECT MONITORING

For the Market Area, ENTSOG is required to publish monitoring reports, on implementation as well as on effects of the CAM NC, TAR NC, BAL NC and CMP GLs[1]. The monitoring requirements differ for the different Network Codes when it comes to how often the reports have to be published and when. In 2019, ENTSOG produced: the TAR NC monitoring report as specifically required by the Network Code text; the BAL NC monitoring report; and the report on the implementation of the provisions of Chapter V of the CAM NC on the incremental capacity process. Further details are provided below.

TAR NETWORK CODE IMPLEMENTATION MONITORING

The TAR NC Implementation Monitoring covers the status of implementation at the reference date of 1st October 2019.[2] The results reflect the status of implementation of 48 European TSOs, including the 44 ENTSOG Members. The analysis for the report was focussed both on the implementation status of provisions which were applicable in the previous monitoring report and on provisions that entered into force at the latest application date (AD) of 31 May 2019.

Although the last AD came into effect during 2019, it will be a few years before all European TSOs have started to apply the tariffs derived from the 'new Reference Price Methodology (RPM)'[3]. This is a natural effect of the provisions in the TAR NC, allowing for the prevailing tariffs as at 31 May 2019, to be applied up until the end of the prevailing tariff period.

This entails that in the upcoming years, TSOs will gradually move from the prevailing RPM to the new RPM, depending on when their tariff periods change. Since there are a number of different tariff periods being applied across the Member States, the full effect of the TAR NC will not be determined until all TSOs have started to apply the new RPM. Based on the tariff periods reported by the TSOs, this will not happen until the year 2022, at the earliest.

By analysing the data TSOs provided for the implementation monitoring report, it can be concluded that whilst ten out of the participating TSOs had started to apply the new RPM at the reference date, the 33 prevailing RPM TSOs have reported a high level of early compliance for a majority of the TAR NC provisions that are only applicable for the new RPM.

Although the monitoring report covers the implementation status as of 1st October 2019, and therefore the RPM that was being applied at that time, the majority of the TSOs/NRAs had already conducted the Article 26 consultations over the new RPM at that date. 20 TSOs had their new RPM consulted upon by the deadline of 31 May 2019, and for 16 of those, their NRA(s) had taken the motivated decision in accordance with Article 27. In the majority of the Member States (21 out of 26), the NRA is responsible for conducting the final consultation in accordance with Article 26.

1) The implementation and effect monitoring of the Interoperability Network Code is covered on page 55.

2) Reference date set to be in line with 31st December 2019 deadline set in Article 36(2)(b) and to facilitate the data comparison.

3) When referring to the 'new RPM' in the report, this is the RPM that has been consulted on as per Article 26 TAR NC and should have been approved by the respective NRA by 31 May 2019. Some TSOs were already operating under this new RPM at the reference date 1st October 2019, because their tariff periods changed before this date. These TSOs are referred to as 'new RPM TSOs' in the report. Other TSOs had not yet changed tariff periods at the reference date and were therefore monitored as operating under the 'prevailing RPM', as stipulated in Article 27(5) TAR NC. These TSOs are referred to as 'prevailing RPM TSOs' in the report.


Picture courtesy of National Grid

TAR NETWORK CODE EFFECT MONITORING

The five indicators used for the effect monitoring report prepared in 2019 have been sometimes adapted compared to the previous report and could be further amended in future monitoring reports. Suggestions from ACER in 2019 have also been taken into consideration.

EFFECT MONITORING INDICATORS AND THEIR RESULTS

TAR.1: Ratio of under-/over-recoveries to allowed/target revenues

This indicator was adapted from the previous monitoring report to focus on the level of under-/over-recovery compared to the allowed/target revenue, regardless of the existence of a regulatory account. The level of under-/over-recoveries may influence the stability of TSO tariffs.

Results for TAR.1 show that on average the revenue recovery reaches a level which is close to the allowed/target revenue. For all years and all TSOs, there is an average yearly over-recovery of +2.7 % using the simple average approach, or +1.4 % using a revenue-weighted average.

The under-/over-recovery represents the annual difference between the actual and the targeted revenue, which under all circumstances will be evened out in the following years. Any over-recovery of the allowed/target revenues collected by a TSO is returned to customers via a corresponding reduction in allowed revenues in the subsequent year (or such other period agreed with the relevant NRA). Conversely, any under-recovery of revenues is made up through a corresponding increase in allowed revenues in the following year(s).

TAR.2: Tariff changes at all TSO points for yearly products

TAR.2 was changed compared to the previous monitoring report to focus on an aggregated approach of tariff changes for all TSOs in Europe, and to highlight the evolution of tariffs after changes in the RPM.

The average tariff change over the period 2013–18 is +0.1 % and the median tariff change is +0.3 % over the same period. This means that average and median tariffs were almost flat during that period.

Based on inflation data from Eurostat for calendar years, and assuming the data provided by TSOs is for comparable time periods, TAR.2 shows that for a substantial number of TSOs, recent tariff changes are under the level of inflation.

TAR.3: Seasonal factors

This indicator was introduced in the present effect monitoring report to better cover the specificity of those TSOs which use seasonal factors. It replaces the previous indicator on capacity bookings.

Taking into account the aim of seasonal factors is to foster efficient system use and to improve the cost-reflectivity of reserve prices, this can be achieved by allowing higher reserve prices in months with high utilisation rates, and lower reserve prices in low-utilisation months. Overall, nine TSOs indicated that they have used seasonal factors for quarterly, monthly, daily and within-day standard capacity products at IPs at 1 October 2019. Seasonal factors, which are significant tools to accommodate seasonality, are currently used by a minority of EU TSOs.

TAR.4: Publication of information in English

TAR.4 was only slightly changed, in comparison to the previous report, to the extent TSOs should mention any evolution in the publication in English compared to the previous report.

Results for TAR.4 show that, in around 50 % of the cases, it is the TSO that is responsible for publishing the relevant information to the extent possible in English, whereas it is the NRA or a Ministry that is responsible in the remainder of cases. Only one TSO did not publish in English, the information that needs to be published before the tariff period in accordance to Article 30 of the TAR NC.

TAR.5: Multipliers applied by TSOs

TAR.5 on multipliers was only slightly modified in order to enable each TSO to register whether the same multiplier was used for all their IPs. As at 1 October 2019, TAR.5 shows that multipliers for quarterly, monthly, daily and within-day are generally within the ranges provided in the TAR NC.

A few TSOs indicated that their multipliers are currently out of the ranges for some products. Compliance with the TAR NC means that, with the new RPM rules, these TSOs will have to adjust their multipliers to the TAR NC ranges. For daily and within-day multipliers, TSOs will also have the possibility to provide a due justification in case multipliers are positive but outside the range.

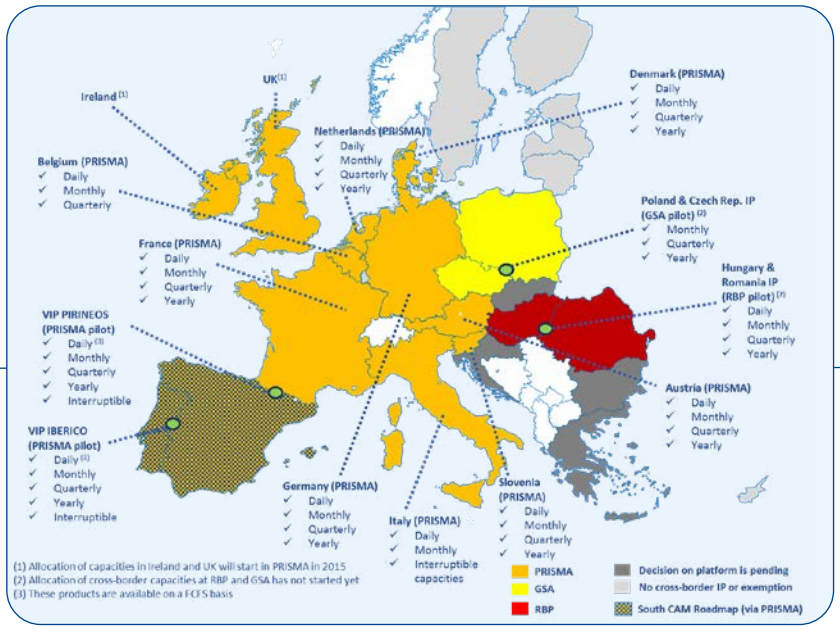
BAL NETWORK CODE IMPLEMENTATION MONITORING

ENTSOG launched its annual implementation monitoring exercise for Balancing NC in September 2019. This Implementation Monitoring Report covers both gas year 2017/2018 and gas year 2018/2019. It reflects the status of the BAL NC implementation at 1 October 2019. The results are summarised below.

At 1 October 2019, almost all the countries fully applied the BAL NC provisions. Only five countries still have interim measures in place[1)], approved by the NRAs. In the period since the publication of the previous Implementation Monitoring Report 2017, six countries have terminated the use of interim measures. The interim measures that remain in place are planned to be removed within the next five years, as soon as well functioning Trading Platforms are established, and market liquidity is developed.

During the monitored gas years two balancing zones mergers have been accomplished, specifically in France and also between Denmark and Sweden. Future balancing zones mergers are expected after 2019 in the Baltics, Germany and Bulgaria.

1) Interim measures are still in place in Bulgaria (alternative to a balancing platform, interim imbalance charge and tolerances), Greece (Balancing Platform), Ireland (tolerances were almost completely removed except for few Daily Metered sites), Slovakia (Balancing Platform, alternative to a balancing platform, interim imbalance charge) and UK-NI (Interim imbalance charge, tolerances). The main reason indicated by these countries to maintain the interim measures in place is the absence of sufficient short-term market liquidity.



10 YEARS ANNIVERSARY

3 November 2014 // ENTSOG publishes Report on Capacity Booking Platforms

BAL NETWORK CODE EFFECT MONITORING

ENTSOG launched the annual effect monitoring process in December 2019. Regarding effect monitoring, ENTSOG's particular focus has been to identify to which extent the rules set out in this Network Code affect the harmonisation of balancing regimes among EU Member States.

To measure the effects of the BAL NC on the European market, ENTSOG used six indicators:

1. Indicator BAL.1: TSO balancing through short-term standardised products (STSPs) vs. total TSO balancing actions
2. Indicator BAL.2.1: TSO balancing volume as % of market volume
3. Indicator BAL.2.2: TSO balancing volume as % of domestic consumption
4. Indicator BAL.3: Net TSO balancing volume vs. domestic consumption
5. Indicator BAL.4: Net imbalance volume of network users vs. domestic consumption
6. Indicator BAL.5: Average network users' cost of being balanced by the TSO

For a better presentation of the results, the analysed countries and their respective balancing zones are clustered into three groups related to their chosen implementation deadline as follows:

- Cluster 2015: Countries in which the BAL NC was implemented by the first application date (1 October 2015) – AT, BE/LU, DE, DK, FR, HU, NL, SI and UK-GB (10 countries)
- Cluster 2016: Countries in which the BAL NC was implemented by the second application date (1 October 2016) – CZ, ES, HR, IT and PT (5 countries)
- Cluster 2019[1)]: Countries that either terminated the use of interim measures by April 2019 or that are still under interim measures at the reference date for the monitoring data collection (1 October 2019). - BG, EE, EL, IE, LT, LV, PL, SE, SK, RO and UK-NI (11 countries)

EFFECT MONITORING INDICATORS AND THEIR RESULTS

BAL.1: TSO balancing through short-term standardised products vs. total TSO balancing actions

Balancing by the TSO is conducted via balancing actions following the merit order (according to Article 9 of the BAL NC). The indicator BAL.1 is calculated by dividing the total quantity of gas traded by the TSO for each Short-Term Standardised Product (STSP) traded for balancing purposes by the total volume of all TSO's balancing actions. This assessment provides a clear indication of the degree to which balancing by the TSO has been performed using each STSP – and in particular using title products – compared to the overall TSO balancing actions (other STSPs, balancing services, interim measures). The percentage volume of other balancing tools (i.e. balancing services) over the total TSO action volume is also calculated for completeness.

Analysing the yearly evolution of indicator BAL.1, it can be observed that the countries grouped in Cluster 2015 (thus that implemented the BAL NC by the first application date) relied mostly or almost exclusively on title products bought or sold on trading platform(s) in both Gas Year (GY) 2017/18 and GY 2018/19. The 5 countries belonging to the Cluster 2016 also increased the utilisation rate of title products from GY 2017/18 to GY 2018/19, especially of the Within Day products. The countries grouped in Cluster 2019 relied either on title products traded on trading platforms or balancing platforms and/or balancing services in the two observed Gas Years.

BAL.2.1: TSO balancing volumes as % of market volume

Establishing a residual balancing role for the TSO while leaving the primary balancing responsibility to the network users is one of the key principles of the BAL NC. Therefore, ENTSOG proposes two indicators to assess how much gas is traded by the TSO for balancing purposes (BAL.2.1 and BAL.2.2).

The first indicator BAL 2.1 is calculated by dividing the total quantity of gas traded by the TSO by the total gas

1) In Germany, in addition to a trading platform, a balancing platform has been established until 1 January 2018. In order to avoid duplication, Germany is clustered only once in Cluster 2015. Cluster 2019 also includes Estonia that held a derogation at 1 October 2019.

market entry volume. The entry volume considers the quantity allocated at all entry points into a balancing zone including, e. g., virtual IPs, LNG, productions and storage facilities.

The fluctuation of indicator BAL.2.1 is overall close to 0 % in most of the balancing zones of the countries grouped in Cluster 2015. Results of indicator BAL 2.1 for the countries belonging to the Cluster 2016 show that the percentage of TSOs' balancing actions over the total entry market volume is quite modest (less than 3 %). Values for indicator BAL.2.1 in the countries belonging to Cluster 2019 have a more fluctuating range, but in most of the countries the percentage of TSO action volume is between 0 %–2 %.

BAL.2.2: TSO balancing volumes as % domestic consumption

To better compare the balancing zones by removing the effect of the cross-border flows and storage facilities, the indicator BAL.2.2 is calculated by replacing the total entry volume with the domestic consumption (end-customers). The domestic consumption means the quantity of gas allocated at all exit points to end-customers on the transmission network and towards DSO/city gate, excluding exits to storage and IP exits.

Looking at the countries that implemented the BAL NC by 2015, it can be observed that, even if in most of the balancing zones the values for BAL 2.2 stay in a limited range (0 %–2 %) of 0 %–2 % in both GY 2017/18 and GY 2018/19, there is a visible spread between the two indicators in some cases. Among the countries included in Cluster 2016, a similar trend of the indicators BAL.2.1 and BAL.2.2 is presented for the countries where cross-system flows have a high impact on the total market volume. Countries clustered in the last group (Cluster 2019) have a more fluctuating trend, although in most of the cases there is no difference between the percentage value of BAL.2.1 and BAL.2.2 due to the relatively small market size.

BAL.3 vs BAL.4: Net TSO balancing volumes vs. domestic volumes

Indicator BAL 3 provides an additional analysis of the residual balancing role for the TSO, dividing the net TSO balancing volume by the domestic consumption. This indicator is compared combined with the indicator BAL.4 which assesses the percentage of net network users' imbalance volume over the domestic consumption volume. Both indicators should be minimised and should have a limited range.

Balancing zones in Cluster 2015 show relatively low values for both indicators, which means that both TSOs' actions and Network users' imbalance volume is in a limited range (< 1 %), while the range of fluctuation of the two indicators in countries belonging to Cluster 2016 is 1 %–(-1 %). In some of the countries that are currently under interim measures, for GY 2018/19, values for BAL 3 and BAL 4 indicators are significantly higher compared to the previous gas year (GY2017/18). Among the countries in Cluster 2019 that terminated the interim measures, the values for BAL.3 and BAL.4 are generally aligned within a range of 1.50 %–(-1 %).

BAL.5: Average network users' cost of being balanced by the TSO

In the Second BAL NC Effect Monitoring Report 2017 ENTSOG introduced indicator BAL.5 to assess the average marginal cost borne by the network users for being imbalanced. In this Third Effect Monitoring Report the same indicator is proposed with some minor adjustments in the calculation methodology.

In the case of negative imbalances (Short Network Users) applying at the end of the gas day, the indicator BAL.5 is now derived by comparing the average Daily Buy price applied by the TSO with the average daily Weighted Average Price (WAP). In the case of positive imbalances (Long Network Users) applying at the end of the gas day, the indicator BAL.5 is now derived by comparing the average Daily Sell price applied by the TSO with the average daily Weighted Average Price (WAP).The aim is to indicate the additional cost (relative to the average daily WAP) for network users of being balanced by the TSO.

The calculation of indicator BAL.5 has been performed only for the countries where the data were available. Countries that applied interim imbalance charge in GY 2017/18 (BG–N, BG–T, GR, IE, LV, PL–L, PL–TGPS, RO, SK) and GY 2018/19[1)] (BG–N, BG–T, GR, PL–L, PL-TGPS, SK) are excluded from the calculation.

In GY 2017/18 in most of the balancing zones where the indicator BAL.5 is calculated, the ratio between Average Daily Buy/Sell Price and average daily WAP varies between 5 % (Average Daily Buy price) and -5 % (Average Daily Sell price), with exception for Germany, Portugal and Slovenia. This is due to the reasons described in detail in the analysis of the indicator BAL.5. Results for GY 2018/19 show that in most of the balancing zones presented, the ratio between Average Daily Buy/Sell Price and average daily WAP varies between 6 % (Average Daily Buy price) and -6 % (Average Daily Sell price). However, there are a few cases where the deviation of both Average Daily Buy/Sell Prices from the average daily WAP is relatively higher than the other balancing zones, namely Romania, Portugal and Slovenia.

1) Ireland has applied interim imbalance charge as interim measure according to art. 49 until 1 April 2019.

Picture courtesy of Gasunie

CAM NETWORK CODE IMPLEMENTATION MONITORING – CHAPTER V ON THE INCREMENTAL CAPACITY PROCESS

At the time when the CAM NC implementation monitoring report was published, the incremental capacity process was still on-going – the implementation of the provisions on Chapter V of the CAM NC has been assessed in a later stage during the second half of 2019. Therefore, a report on the incremental capacity process was prepared by ENTSOG during 2019 and published on January 2020. The aim of this report was to assess the possible market demand for additional or new capacity in the European Union and provide an overview of the results of the first incremental capacity process which was initiated in April 2017. In order to perform this analysis, data provided by 38 out of 44 ENTSOG members was used.

The first step of the incremental capacity process comprises the preparation of Demand Assessment Reports (DARs) which are performed at least in each odd-numbered year and which allow TSOs to determine whether it is necessary to initiate an incremental capacity project or not. All the TSOs have performed and published common DARs[1)] for their entry-exit borders in 2017. After the DARs were published, 16 TSOs proceeded with the next step of the process – the design phase – and conducted technical studies for 17 entry-exit borders. Public consultations were subsequently launched for 16 of these entry-exit borders.

According to Art. 28(1) of the CAM NC, after the consultation, and once the design phase has finalised, the involved TSOs shall publish and submit their incremental capacity project proposals to the corresponding NRAs in order to receive coordinated approvals. From the previous 16 TSOs, 12 reported that the project proposal for 12 entry-exit borders was submitted to the relevant NRAs and published, while two TSOs were in progress and the remaining two TSOs did not proceed further with the incremental capacity process.

As specified in Art. 29 of the CAM NC, incremental capacity shall be offered together with the respective available capacity by the involved TSOs in the annual yearly capacity auction as standard bundled products. Consequently, four TSOs reported that incremental capacity was offered during the yearly auction 2018 while five others offered incremental capacity in the yearly auction on 1st of July 2019. However, during the auctions, none of the TSOs received binding commitments from network users. Consequently, none of the TSOs carried out an economic test which is the last step of the incremental capacity process.

Although this outcome shows that for the first cycle of the incremental capacity process there is no request for incremental capacity, since the existing available capacity seems adequate to cover current demand, it is beneficial to analyse the market situation and be prepared for a future demand testing.

Furthermore, the cooperation and coordination of TSOs throughout the process and their compliance with CAM NC, shows a positive outcome of the process.

1) Except for the entry-exit border Bulgaria – Romania where no common DAR was agreed by the involved TSOs.

Picture courtesy of Gas Connect Austria

4

SYSTEM DEVELOPMENT **SCENARIOS** AND **INFRASTRUCTURE**

The System Development business area covers ENTSOG activities related to scenario development, investment planning and infrastructure assessment for the EU energy system. The main deliverables are short and medium to long-term assessments such as the Ten-Year Network Development Plan (TYNDP) and Supply Outlooks. 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 especially important 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 Paris Agreement.

WORK STRUCTURE

The activities within the System Development Area are managed via the Scenario Working Group (SCN WG) and the Investment Working Group (INV WG) and supplemented by the Network Model Kernel Groups (NeMo KG).

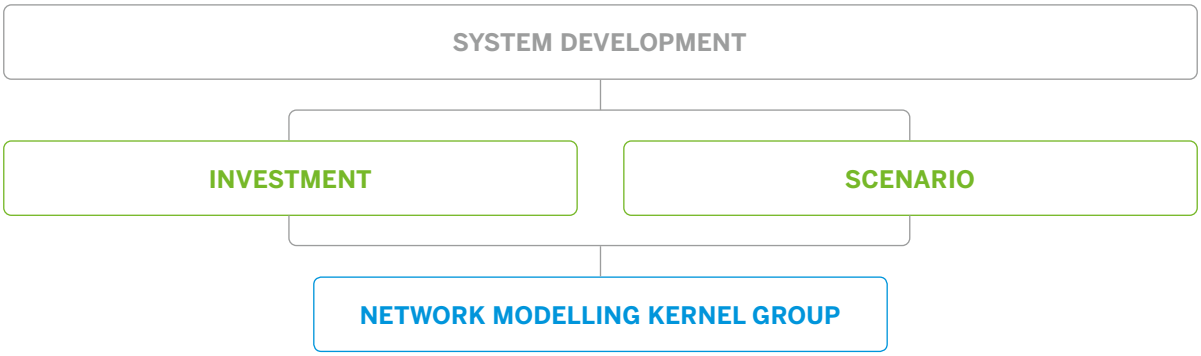


Figure 4.1: Investment and Scenarios Working Groups and associated KG

As shown in the figure above, the Working Groups (WGs) are supported in their mission by the Network Modelling Kernel Group (NeMo KG), which was established to develop and enhance ENTSOG's modelling tool and perform the simulations for ENTSOG deliverables in accordance with defined Scenarios for TYNDP.

INVESTMENT

The Investment Working Group (INV WG) is responsible for developing regulatory deliverables: The Union-wide Ten-Year Network Development Plan (TYNDP), the Winter and Summer Outlooks and the implementation of ENTSOG Cost-Benefit Analysis (CBA) Methodology. It is also responsible for non-regulatory deliverables: Winter and Summer reviews, the Transmission Capacity Map and the System Development Map developed in collaboration with Gas Infrastructure Europe (GIE).

The INV WG meet on a monthly basis (and adhoc, as required) and comprise participants representing Member TSOs across Europe.

SCENARIOS

The Scenarios Working Group (SCN WG) is responsible for developing the supply and demand scenarios for ENTSOG deliverables based on analysis of current situation and potential future trends. SCN WG has been supported by the ENTSOG and ENTSO-E joint Scenario Building Working Group, gathering experts from both electricity and gas TSOs, and tasked with developing joint scenarios for the electricity and gas TYNDPs as the corner stone of their Interlinked Model between gas and electricity.

The SCN WG meet on a monthly basis (and adhoc, as required) and comprise participants representing Member TSOs across Europe.

Picture courtesy of Open Grid Europe

ACTIVITIES

INVESTMENT

The INV WG were involved in several activities in 2019. These are listed in the following sections.

UNION-WIDE TEN-YEAR NETWORK DEVELOPMENT PLAN 2018

In December 2018, ENTSOG published the Draft TYNDP 2018. Following the contribution received from stakeholders and taking on board the recommendations of ACER's Opinion No. 14-2019. ENTSOG finalised the TYDNP 2018 during 2019 and published the Final TYNDP 2018 Report on 10 January 2020.

TYNDP looks at the next twenty years and assesses the European supply adequacy, and the resilience of the system. It identifies if and where investment gaps remain, and how submitted projects mitigate these gaps.

TYNDP 2018 confirms that the current gas infrastructure is close to achieving the infrastructure-related aims of the internal gas market. The gas network is highly interconnected across most of Europe. In the specific areas where persistent long-term investment needs are identified, the necessary projects are included in the TYNDP and their commissioning timeline and potential benefits are also presented in the report.

ENTSOG is committed to the continual improvement of the TYNDP and has taken the feedback received from both ACER and the stakeholders and incorporated the elements that could be addressed in the final TYNDP publication. A feedback section is included, and the report includes annexes with information on the methodology, the projects, the TYNDP map, and the Gas Quality Outlook. Feedback will be taken into consideration for the future editions of the TYNDP.

SEASONAL SUPPLY OUTLOOKS AND REVIEWS

The objective of the Supply Outlooks is to assess the flexibility offered by gas infrastructures for each of the oncoming Summer and Winter seasons, by considering the latest supply and demand trends, which are shown in the correspondent Review reports.

Summer Supply Outlook reports focuses on the ability of the gas infrastructure to allow market participants to reach high storage levels at the end of the summer gas season, based on the actual storage levels at the beginning of the injection time horizon. The analysis is completed using sensitivities targeting different stock levels under different supply situations.

The Summer Supply Outlook 2019 report identified the European Gas network as sufficiently robust to enable enough stock level in preparation for the winter and flexibility for the supply strategy of the network users.

Winter Supply Outlook reports explores the evolution of the underground storage inventories across the winter gas season while ensuring the supply-and-demand balance during specific high-demand situations. The robustness of the report is complemented by a sensitivity analysis on the different climatic profiles of the winter. The resilience to potential transit disruptions through Ukraine was assessed.

The results of the Winter Outlook 2019/2020 analysis indicate that the European gas system offers enough flexibility across the winter season in Europe, even in the case of high demand during an extremely cold winter. One of the report's key findings is that shippers could ensure flexibility by further injecting into storages to support an adequate storage level as of October of each year.

ENTSOG and ENTSO-E cooperated on their Winter Outlook reports, which allowed the ENTSO-E Winter Outlook to reflect the ability of the power system to cope with gas security-of-supply situations that may affect gas-fired generation.

Seasonal Reviews are an ENTSOG initiative based on the internal analysis of the supply-and-demand trends used to feed the TYNDP and Supply Outlooks. ENTSOG publishes these analyses to share the results with stakeholders.

These reviews establish the basis to define the input data and methodology of subsequent reports. In addition to the focus on the supply-and-demand balance, the reviews go further by analysing the trend of the gas demand for power generation as well as of providing an insight on gas prices and traded quantities at the main European hubs.

TRANSMISSION CAPACITY MAP 2019 AND SYSTEM DEVELOPMENT MAP 2019

The INV WG and the NeMo KG were involved in the work to publish two maps in 2019 – the System Development Map 2019 and the Transmission Capacity Map 2019.

The Transmission Capacity Map 2019, published in October 2019, provides an overview of the existing infrastructure (as of first January 2019) and the infrastructure projects submitted by promoters to TYNDP 2020.

ENTSOG publishes the System Development Map (in collaboration with GIE) on an annual basis, which focuses on supply and demand trends. The 2018/19 edition was published in December 2019.

The team also worked on assessing how Network Modelling simulation results could be shown on an interactive online map and the mapping data could be used by implementing a Geographical Information System (GIS). It is also anticipated that data used in future editions of the Summer/Winter Outlook/Reviews could be presented using the GIS software.

ENTSO-E/ENTSOG CONSISTENT AND INTERLINKED MODEL

In line with Regulation (EU) 347/2013, the ENTSOs have submitted the draft version of their consistent and interlinked electricity and gas network and market model (the Interlinked Model) to the Commission and ACER on 21 December 2016, and ACER has issued its opinion on 20 March 2017. Currently, the Interlinked Model is with the Commission for their formal opinion.

Starting with TYNDP 2018, the ENTSOs have implemented the joint scenario building process, which covers the most substantial part of the draft Interlinked Model and will continue to do so in the subsequent TYNDP editions.

ENTSOG and ENTSO-E acknowledge that ACER's opinion points out additional potential interlinkages. To meet ACER expectations, in September 2019 the "Investigation on the interlinkage between gas and electricity scenarios and infrastructure projects assessment" Report (i. e. Focus Study), commissioned by ENTSO-E and ENTSOG was published. The main objective of this focus studyis to provide ENTSO-E and ENTSOG with the elements allowing them to determine on which kind of projects amore thorough investigation of the impacts of inter-linkages should be performed.

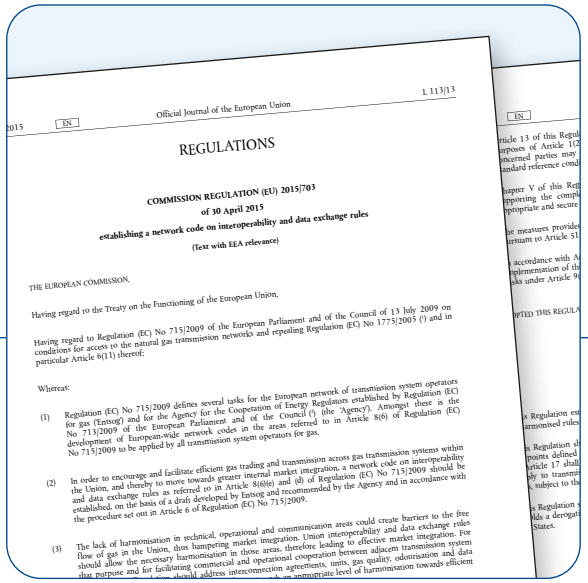
ENTSOG and ENTSO-E will work in 2020 and 2021 to develop and implement a project screening methodology, taking into account the outcomes of the Focus Study as well as to develop a dual assessment methodology.

THE ADAPTED COST-BENEFIT ANALYSIS (CBA) METHODOLOGY 2.0

The first CBA methodology was approved by Commission in 2015. It was applied to develop TYNDP 2015 and TYNDP 2017, and therefore supported the 2nd and 3rd PCI selection process.

Consequently, ENTSOG developed the adapted 2nd CBA methodology, in line with Article 11(6) of Regulation (EU) 347/2013. ENTSOG published the Adapted 2nd CBA 2.0 on 23 October 2018, which was approved by Commission on 17 January 2019. The Adapted CBA methodology 2.0 was implemented for the first time in TYNDP 2018.

ENTSOG is constantly working to improve its application for the next TYNDP editions (including TYNDP 2020).



Official Journal of the European Union L 113/13

EN

REGULATIONS

COMMISSION REGULATION (EU) 2015/703
of 30 April 2015
establishing a network code on interoperability and data exchange rules
(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005 (1) and in particular Article 6(11) thereof;

Whereas:

(1) Regulation (EC) No 715/2009 defines several tasks for the European network of transmission system operators for gas (Entsog) and for the Agency for the Cooperation of Energy Regulators established by Regulation (EC) No 713/2009 of the European Parliament and of the Council (2) (the 'Agency'). Amongst these is the development of European-wide network codes in the areas referred to in Article 8(6) of Regulation (EC) No 715/2009 to be applied by all transmission system operators for gas.

(2) In order to encourage and facilitate efficient gas trading and transmission across gas transmission systems within the Union, and thereby to move towards greater internal market integration, a network code on interoperability and data exchange rules as referred to in Article 8(6)(e) and (d) of Regulation (EC) No 715/2009 should be established, on the basis of a draft developed by Entsog and recommended by the Agency and in accordance with the procedure set out in Article 6 of Regulation (EC) No 715/2009.

(3) The lack of harmonisation in technical, operational and communication areas could create barriers to the free flow of gas in the Union, thus hampering market integration. Union interoperability and data exchange rules should allow the necessary harmonisation in those areas, therefore leading to effective market integration. For that purpose and for facilitating commercial and operational cooperation between adjacent transmission system [illegible] should address interconnection agreements, units, gas quality, odourisation and data [illegible] an appropriate level of harmonisation towards efficient

SUPPORT TO REGIONAL GROUPS FOR THE 4TH PCI SELECTION PROCESS

ENTSOG has brought its constant support to the Regional Groups in the fourth process of selecting projects of common interest (PCI).

ENTSOG actively engaged, throughout 2019, in the PCI Cooperation Platform activities and in providing its technical support to the Regional Groups. This was achieved, in particular, through its technical contribution to the activities of the Cooperation Platform, composed of the Commission, ACER and the ENTSOs and aimed at streamlining the work of Regional Groups - the intensity of those activities had not been anticipated in ENTSOG's Annual Work Programme. The TYNDP plays a key role in the PCI selection process initiated by the European Commission.

ENTSOG has provided further support to the PCI selection process – by closely cooperating with the European Commission in configuring and offering its technical platform – the ENTSOG Project Portal – to perform the call for PCI projects. Additionally, upon formal invitation by the European Commission, and under the mandate of project promoters, ENTSOG handled and delivered to PCI candidate projects' promoters the Project Fiches that present project-specific cost-benefit analysis (PS-CBAs) of PCI candidates. ENTSOG also provided technical support to all promoters in the submission of their projects to the European Commission and the Regional Groups.

SUPPORT TO GAS COORDINATION GROUP

The Gas Coordination Group (GCG) is a platform established by Regulation (EU) 944/2010 that introduces measures of safeguarding the security of gas supply.

The role of the Gas Coordination Group (GCG) is to exchange information and best practices, and to facilitate Security of Supply (SoS) standards and to support supply-and-demand balance, especially in case of critical situations. Members include the European Commission, representatives of EU Member States, ENTSOG, and other international organisations as well as the industry.

10 YEARS ANNIVERSARY

30 April 2015 // ENTSOG published Network code on Interoperability and Data Exchange Rules

Picture courtesy of DESFA

SCENARIOS

ENTSO-E/ENTSOG JOINT TYNDP SCENARIO REPORT

Since development of the TYNDP2018, and to deliver the consistent and interlinked model, ENTSOG and ENTSO-E have joined their scenario building workstreams, building on their combined expertise and modelling capabilities as well as on the input received from dozens of stakeholders from the industry, NGOs, National Regulatory Authorities and Member States. This co-development approach results in a set of ambitious, technically robust and equally realistic scenarios. The joint scenarios outline the quantification of three markedly different storylines, possible paths towards a low-carbon energy system in line with EU targets.

ENTSOG and ENTSO-E published their draft TYNDP 2020 Scenario Report in November 2019, followed by public consultation from 21 November 2019 to 17 January 2020, which included a public Stakeholder Workshop on 5 December. The ENTSOs are updating their scenarios upon the considered review of the consultation feedback. The final TYNDP 2020 Scenario Report is planned to be published in Spring 2020

To further improve their joint scenarios for their TYNDPs 2020, ENTSOG and ENTSO-E have developed two top-down full energy scenarios (Distributed Energy and Global Ambition) in addition to a bottom-up scenario (National Trends) based on the National Energy and Climate Plans (NECPs). National Trends captures each Member State's strategy to comply with the EU 2030 climate targets, whereas the full energy scenarios (Distributed Energy and Global Ambition) will ensure an in depth assessment of sectoral interlinkages, fuel switches and the monitoring of all GHG emissions in line with the 1,5°C target of the Paris Agreement. For this, ENTSOs have collaborated with external stakeholders such as Climate Action Network (CAN) Europe and Renewables Grid Initiative (RGI) to quantify a carbon budget for the EU28 following the statements of latest Special Report[1)] of the Intergovernmental Panel on Climate Change. This recommends a thorough assessment of the whole energy supply chain, sectoral interlinkages and the development of renewable and decarbonised gases.

1) IPCC Special Report 15 https://www.ipcc.ch/sr15/

Picture courtesy of TAP

5

SYSTEM OPERATION:

SECURITY OF SUPPLY, REMIT, TRANSPARENCY AND INTEROPERABILITY

The primary work of the System Operations business area includes developing and monitoring technical Network Codes, evaluating activities related to gas quality standardisation, developing and maintaining existent Common Network Operation Tools (CNOT), the ReCo System for Gas, and the maintenance and continuous development of ENTSOG's Transparency Platform (TP) including activities referring to REMIT. At present, System Operations comprises two main working groups: Interoperability (INT WG) and Transparency (TRA WG).

WORK STRUCTURE

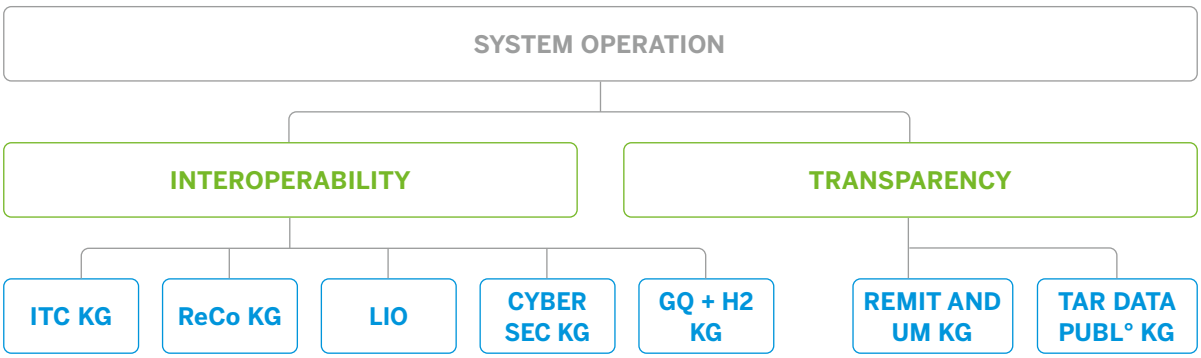


Figure 5.1: Interoperability and Transparency Working Group and associated KGs

TRANSPARENCY

The Transparency Working Group (TRA WG), which ensures compliance with the transparency requirements, is supported by the REMIT & UMM Kernel Group (KG), following the activities in ACER's RRM User Group, ACER's REMIT Expert Group, ACER Roundtable for inside information disclosure, ACER AEMP Roundtable and general REMIT developments. The TRA WG is also supported by the Tariff Data Publication Kernel Group, which in 2019 was available for discussions related to tariff publications. In 2019, the work of TRA WG has been supported by an informal taskforce, called (ENTSOG) Member Informal Taskforce (MIT-lab), to ensure continuous discussions on improvements to the Transparency Platform.

The TRA WG and KGs meet on a monthly basis (and adhoc, as required) and comprise participants representing Member TSOs across Europe.

INTEROPERABILITY

The Interoperability Working Group (INT WG monitors the implementation of the INT NC and oversees the work of the groups mentioned below.

ENTSOG members' work on interoperability topics is structured around the following groups within the System Operations area:

- The Regional Coordination System KG includes the three ReCo Teams: North-West, East and South and focusing on operational cooperation for security of supply.
- The Information Technologies and Communications KG develops and maintains the ENTSOG Common Network Operation Tools for normal conditions, including Business Requirement Specifications, Implementation Guidelines and communication profiles.

- The Cybersecurity task force is jointly managed by GIE and ENTSOG.
- The Gas Quality and Hydrogen KG coordinates the cooperation with CEN, Marcogaz, EASEE-gas, and GIE as well as preparing the TYNDP Gas Quality Outlook reports. In addition, the ENTSOG team and members contributed to the "ENTSOG 2050 Roadmap for gas grids" publication.
- ENTSOG and Local Issuing Offices from the gas sector established on a voluntary basis a dedicated expert group to coordinate their activities and exchange experiences in managing energy identification codes (EIC) and communication to the Central Issuing Office (managed by ENTSOE).

These groups meet on a monthly basis (and adhoc, as required) and comprise participants representing Member TSOs across Europe.


Picture courtesy of Snam Rete Gas

ACTIVITIES

ENTSOG TRANSPARENCY PLATFORM

ENTSOG's Transparency Platform (TP) provides technical and commercial data on the gas transmission systems, which includes relevant points, such as interconnection points and storage connections, LNG facilities, distribution networks, final consumers and production facilities depending on the NRA decision. The current version of ENTSOG TP was launched on 1 October 2014. It was developed with the aim of improving transparency, user friendliness and data publication capabilities. It is a powerful tool providing the means for ENTSOG's Members, Associated Partners and Observers to fulfil their data publication obligations[1]. ENTSOG received strong support from many stakeholders with regards to TP functionality and the information provided therein.

The Transparency Platform is available at this link:
https://transparency.entsog.eu/

RELEASED FUNCTIONALITIES AND IMPROVEMENTS

Improvements during 2019 included:

- New feature for a quick Direct Download button to save user clicks
- New feature to configure API calls via the TP GUI
- New map for balancing zones in Europe
- Several improvements to the GUI of the UMM section[2]
- Improved Export Wizard section for Recently Viewed Items
- Improved status indicator for information about data publications status: UMM track included

1) see Chapter 3, Annex I, Regulation (EU) No 715/2009

2) ACER guidance on implementation of web feeds https://documents.acer-remit.eu/wp-content/uploads/UMM_Guidance_v2.pdf

- Improved visualisation of pipe-in-pipe situations
- Improved validation rules for the CMP publications
- Improved validation rules for tariff publications
- Update of the TP User Manual
- Implementation of a solution where TSOs can automatically generate their Urgent Market Messages in the back-end system of ENTSOG's data warehouse
- Update to the communication protocols to allow AS4 communication between the ENTSOG TP and TSOs' information systems. The project was delivered in Q4 2019, while the first TSO started using the protocol for their TP publications in Q1 2020.

At the 13th Public workshop on Transparency, ENTSOG demonstrated the improvements through a series of videos available in **Vimeo**.

Updated UMM section and RSS

Since 1 October 2014, a solution for publishing Urgent Market Messages (UMMs) on the ENTSOG TP has existed. In December 2016, ACER issued recommendations for a standardised format for inside information publications. ENTSOG has updated the TP Graphical User Interface (GUI) and the Rich Site Summary (RSS) feeds to be in line with this standard format. Furthermore, ENTSOG has implemented several additional features for increased user friendliness and meet the ACER recommendation and technical requirements to the Inside Information Platforms (IIPs):

- Filters for latest version and operators
- Pop-up to show entire history with all versions
- Direct link to individual messages

Publications of inside information via UMMs is open to ENTSOG Members, Associated Partners, Observers and Booking Platforms. For these users, there is a SharePoint form that can be used to create new (versions) of the UMMs as well as an XML solution to transmit the information to the ENTSOG TP automatically. In 2019, 539 UMMs were published.

TP User support

During 2019, ENTSOG organised four online sessions for TP users, giving them an introduction to all aspects of the TP functionalities and available data. Participants could engage with questions during the sessions, and the sessions were recorded for publication on **ENTSOG's Vimeo page**.

Besides the videos from the online training sessions, additional videos were developed to support the users working with the TP and the data there: **five tutorials videos for using Excel's PowerQuery with the TP APIs.**

TP USAGE, STAKEHOLDER INVOLVEMENT AND DATA PUBLICATION

ENTSOG and TSOs work closely together to achieve the highest quality and comprehensiveness of the data published on the platform. To satisfy and serve the market expectations of data quality and transparency, an internal monitoring process is established to facilitate the joint efforts of ENTSOG and its Members. This process is continuously evaluated and updated, to keep up with the constant changes in functionalities and reporting requirements.

Besides TSO publications, ENTSOG is also supplying the European Commission and ACER with customised reports for specific tasks. In 2019, this entailed extensive work on reports to ACER in relation to their monitoring obligations for application of CMP measures, i. e. the Congestion Report, and the Market Monitoring Report.

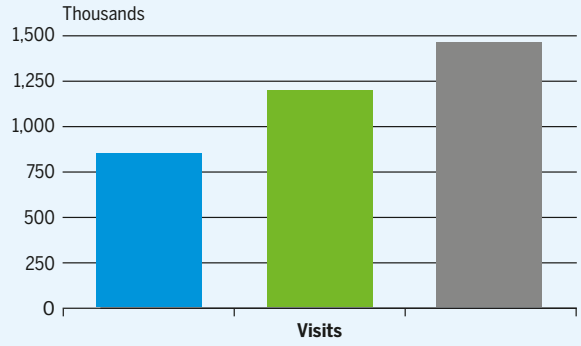
In 2019, ENTSOG used the standing TP Satisfaction Survey, aimed at getting a better understanding of the general TP user satisfaction and providing an additional forum for receiving TP user input. Since only two users participated in this survey, the results cannot be considered as representative. However, ENTSOG did receive some valuable suggestions which were discussed in the TRA WG, prioritised for processing and presented at the 13th annual Transparency Workshop.

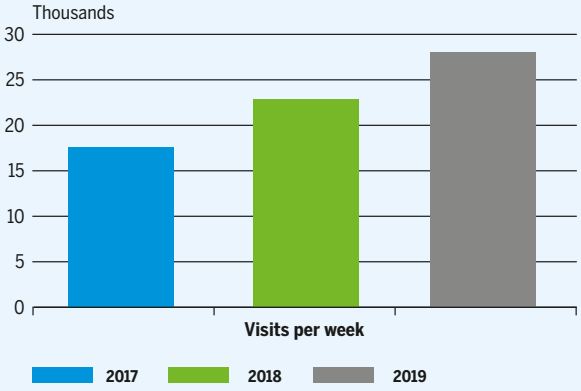
TP Usage statistics

Usage statistics 2019 are included below:

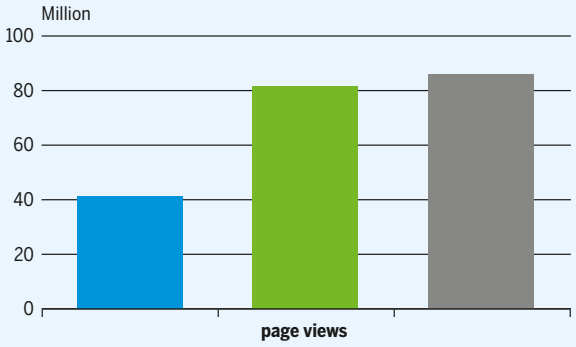
The number of visits has increased with 17 % to a total of 1.431.732 in 2019 compared to 2018 and an increase of 15 % towards 26.940 for the average amount of visits per week. The highest number of visits was reached on 30 October 2019with 4780 visits on that day, of which 4660 were unique visits.

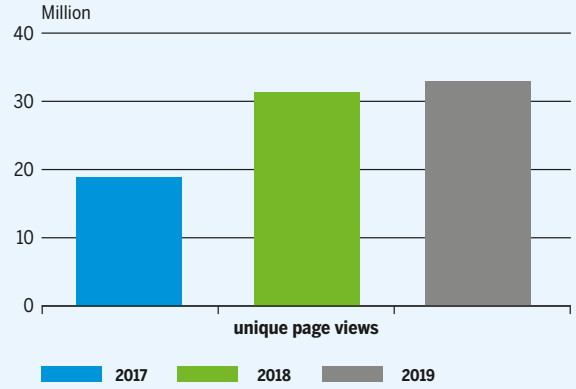
Compared to 2018, the number of page views has seen a slight increase of 4 % to a total of 84.030.994 in 2019 and the same increase towards 32.017.540 for the total number of unique page views in 2019.

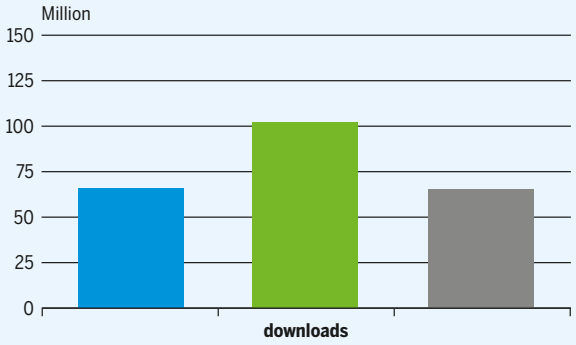


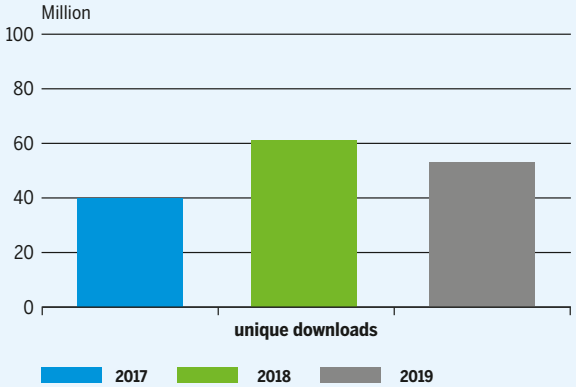


The number of downloads has decreased with 30 % compared to 2018, to a total of 70.430.769 in 2019 and a reduction of 14 % towards 52.254.123 for the total number of unique downloads in 2019. In 2019, 11.223 IP-addresses were retrieving data from the TP.









REMIT ACTIVITIES

Regulation (EU) No 1227/2011 Regulation on Energy Market Integrity and Transparency (REMIT) establishes rules prohibiting abusive practices affecting wholesale energy markets and providing more transparency regarding price-relevant (inside) information. It provides for the monitoring of wholesale energy markets by the ACER in close collaboration with NRAs. The goal of REMIT, through strong cross-border market monitoring, is to detect and avoid market manipulations and to facilitate the completion of a fully functioning, interconnected and integrated internal energy market.

Commission Implementing Regulation (EU) No 1348/2014 stipulates the information that shall be reported and defines the rules to be followed by the market participants with regards to their REMIT reporting to ACER.

ENTSOG'S ACTIVITIES AS RRM

Since 2015, ENTSOG has been a Registered Reporting Mechanism (RRM). On behalf of gas TSOs, ENTSOG reports aggregated fundamental data to ACER with regards to the capacity and use of facilities for the transmission of natural gas, including planned and unplanned unavailability of these facilities[1)].

The ENTSOG reporting system was developed according to the provisions of Commission Implementing Regulation (EU) No 1348/2014 and other supportive documentation issued by ACER with regards to REMIT. Since 7 October 2015, ENTSOG has been reporting the following set of aggregated fundamental data to ACER, for each TSO that is publishing data on the ENTSOG Transparency Platform:

- Aggregated day-ahead nominations
- Aggregated final re-nominations
- Actual physical flow
- Technical capacity
- Available firm capacity
- Contracted firm capacity
- Total interruptible capacity
- Available interruptible capacity
- Contracted interruptible capacity
- Planned interruption of interruptible capacity
- Actual interruption of interruptible capacity
- Planned interruption to firm capacity
- Unplanned interruption to firm capacity

ENTSOG submits the required information to ACER as it was received on the Transparency Platform, to ACER's REMIT Information System (ARIS).

As to the data reporting performed by ENTSOG on behalf of gas TSOs, ENTSOG provides the following information to its members:

- Segregated access (per TSO) to report files submitted to ACER Reporting Information System for Applying REMIT (ARIS)
- Segregated access (per TSO) to return receipts received by ENTSOG Reporting system from ARIS
- Daily report (per TSO) on the status of files reported to ACER

As part of the REMIT Reporting process, ENTSOG is responsible for the following:

- Submitting ENTSOG TP data to ARIS
- Rectifying and (re)submitting data in case of technical reporting issues between ENTSOG and ARIS.

In the light of the above-mentioned tasks of ENTSOG the TSOs are responsible for carrying out the following:

- Performing complete, high-quality and timely data publications on ENTSOG Transparency Platform
- Monitoring information provided by ENTSOG on data reported on TSOs' behalf to ARIS
- If ACER rejects TSO REMIT data due to content/functional reasons, the respective TSO shall resend the relevant information to the ENTSOG Transparency Platform. It will then be transmitted to ACER through the ENTSOG Reporting System

In 2019, ENTSOG opened one contingency plan with ARIS CSD, due to backloading of data from a new TSO.

1) as defined in Article 9 (1) of Commission Implementing Regulation (EU) No 1348/2014

TSOS' IMPLEMENTATION OF REMIT REPORTING

Commission Implementing Regulation (EU) No 1348/2014 stipulates that gas TSOs shall report the following disaggregated information per market participant to ACER:

- Transaction data: natural gas transportation contracts within the Union between two or more locations or bidding zones, concluded as a result of a primary explicit capacity allocation by or on behalf of the TSO, specifying physical or financial capacity rights or obligations
- Fundamental data: day-ahead nominations, final re-nominations of booked capacities, specifying the identity of the market participants involved, and the allocated quantities.

The TSOs reporting obligations under REMIT commenced on 7 April 2016.

To facilitate the TSOs' continued activities under REMIT, ENTSOG undertakes the following:

- Regular REMIT discussions at Transparency Working Group meetings
- Ad-hoc discussion sessions between ENTSOG's Transparency Team, TSOs and members of ACER's REMIT Team. The aim is to provide clarity on various technical and policy questions and resolve issues related to data reporting. During 2019, ENTSOG Transparency Team and Transparency Working Group participated in the following events:
  - ACER REMIT Expert Group meetings
  - ACER RRM User Group meetings
  - ACER ENTSOG TSOs' ad-hoc stakeholder webinars
  - ACER discussions on the results of the public consultation on the electronic formats for REMIT reporting
  - ACER Roundtables on inside information disclosure and REMIT reporting for AEMPs, IIPs and OMPs
  - 3rd ACER EMIT Forum

ACTIVITIES FOR TARIFF NETWORK CODE PUBLICATIONS

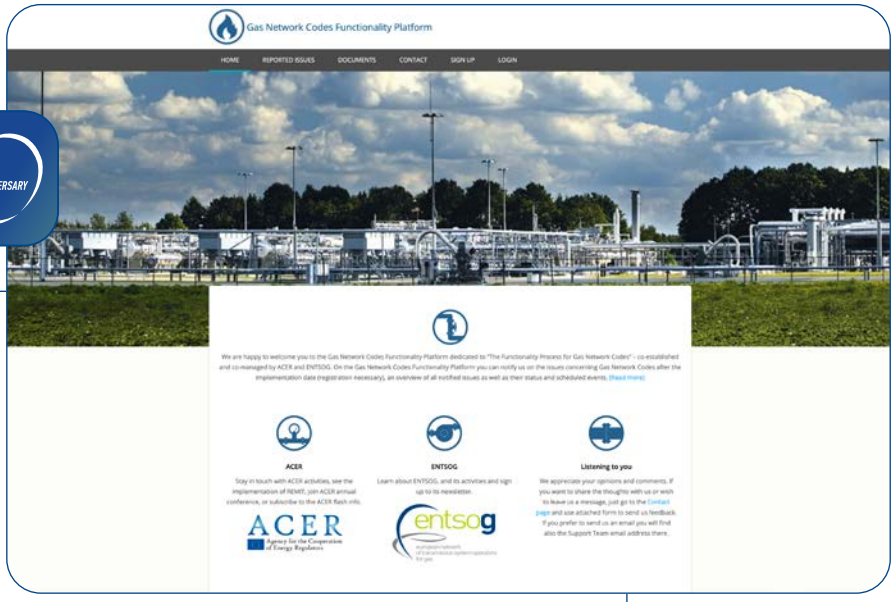
In 2019, the Kernel Group for Tariff Data Publications was available to support TRA WG on questions related to the application of the requirements for tariff data publication.

ANNUAL PUBLIC WORKSHOP ON TRANSPARENCY

ENTSOG organised the 13th Annual Public Transparency Workshop on 21 November 2019 in Brussels. The workshop was organised in three sessions dedicated to the following topics:

- ENTSOG Transparency Platform, including released developments, the usage of the platform and stakeholder feedback including a presentation from Zuse Institute Berlin
- A session dedicated on the interruptions data and inside information publication
- A discussion facilitated by the European Commission about transparency requirements in the Internal Energy Market

All presentations and summary notes are available on **ENTSOG's website**.



10 YEARS ANNIVERSARY

11 February 2016 // Launch of Functionality Platform

SECURITY OF SUPPLY

SECURITY OF SUPPLY (SOS) AND REGIONAL COOPERATION

Regional Coordination System for Gas (ReCo System)

The European gas market is continuously developing, and operation of the networks is becoming more complex. Therefore, it is beneficial for each TSO to operate efficiently and to ensure security of supply.

In 2017, Regulation (EU) 2017/1938 concerning measures to safeguard the security of gas supply came into force. It states that the regional cooperation should gradually be complemented with a stronger European perspective, allowing recourse to all available supplies and tools in the entire internal gas market.

Regional cooperation and coordination between TSOs play an important and significant role in security of gas supply, handling emergencies, and helping to minimise negative effects.

To address the above-mentioned objectives, the European Union's TSOs, under the umbrella of ENTSOG, have established specific groups – ReCo Teams. Each ReCo Team is a community of TSOs for one of the supply corridors, which are explained in Reg. (EU) 2017/1938: "Union gas supply routes that help Member States to better mitigate the effects of potential disruption of supply or infrastructure". These include TSOs from the relevant gas supply risk groups defined in Annex 1 of Regulation 2017/1938 as well as other EU TSOs if reasonable. Non-EU TSOs can also be invited by ENTSOG (after approval by ENTSOG's Board) to become a member of a ReCo Team.

ReCo Teams can provide operational expertise on an ad-hoc basis to the concerned TSOs in case of a crisis or need to provide relevant information via ENTSOG to other stakeholders such as the Gas Coordination Group (GCG), the European Commission, and the Member States.

The Regional Coordination System for Gas has been functioning and progressing since 2014 with more and more TSOs coming on board. At the end of 2019, all 44 ENTSOG members, 2 associated partners, and 4 TSOs from non-EU countries (50 in total) were participating in at least one of the three ReCo Teams (East, North-West, South). Communication exercises were successfully carried out for all three ReCo Teams.

Since the historical gas transit contract between Gazprom and Naftogaz of Ukraine was due to expire on 31 December 2019 and a new contract was uncertain, ENTSOG and its member-TSOs started proactively preparing for possible gas flow disruptions from Russia via Ukraine as from 1 January 2020. Several conference calls were organised with the participation and support of the EC, Member States, the Energy Community Secretariat, and other relevant stakeholders. Results of the calls showed TSOs' readiness to face possible disruptions of gas flows from Russia via Ukraine.

In addition, ENTSOG participated in a Table-Top exercise organised by the EC and NATO and in an emergency exercise organised by the Energy Community Secretariat with the support of the EC.

Support to the EC in terms of SoS

The ENTSOG team continued cooperating closely with the EC and participated in the scheduled GCG meetings in 2019. This aimed at providing operational and system-development expertise in implementing the SoS Regulation, especially in the face of a possible disruption of gas flows from Russia via Ukraine in 2020.

ENTSOG also took part in all L-Gas Risk Group meetings throughout 2019 to provide expertise for drafting the Common Risk Assessment under the chairmanship of the Dutch Ministry for Economic Affairs and Climate and the Dutch TSO Gasunie Transport Services – with the assistance of the Benelux Secretariat and the involved Competent Authorities and all relevant stakeholders from the neighbouring countries (Germany, France, and Belgium).

In November 2014, the European Commission established the Ukrainian Monitoring Mission in cooperation with ENTSOG and the Ukrainian TSO Ukrtransgaz. Within this framework, ENTSOG carried out monitoring of the daily nominations with the associated physical flows, the pressure at cross-border points between Ukraine and Russia, and the gas consumption and storage use within the Ukrainian gas market.

Furthermore, in the context of ReCo, ENTSOG established closer cooperation with ENTSO-E for SoS purposes. If the energy infrastructure landscape becomes more interlinked, operating interfaces between the electricity and gas sectors will become vital. This is why developing processes on how to cooperate in case of a crisis is crucial.

Recommendations relating to technical cooperation with third countries.

In 2018, ENTSOG adopted "Recommendations relating to the coordination of technical cooperation between Community and third-country transmission system operators" ("Third-country TSOs")[1].

The document describes the key areas of technical cooperation: Security of Supply and the ReCo System, Expert Knowledge on Interoperability, and the External Contact Platform. Furthermore, the criteria to categorise third-country TSOs have been developed and the corresponding groups identified: Energy Community and EFTA countries, countries with specific agreements to accommodate or implement EU legislation, and others. For each category, different recommendations for the key areas of cooperation are given.

ENTSOG and TSOs followed the provisions of the document. Together with the Energy Community Secretariat, two meetings with third-country TSOs were held within the framework of the External Contact Platform to exchange expert knowledge and deepen further cooperation.

ENTSOG also invited TSOs from non-EU countries to participate in several workshops and conferences on the relevant processes and developments in the EU gas transmission sector.

ENTSOG also met with Botas (Turkish TSO) and supported them in implementing the EU gas Regulations in Turkey, in particular the INT NC at the borders between Turkey and EU Members States.

INTEROPERABILITY AND DATA EXCHANGE

INTEROPERABILITY AND DATA EXCHANGE NETWORK CODE

ENTSOG undertook an assessment of the INT NC requirements implementation by TSOs in 2019. 41 TSOs provided ENTSOG with an updated set of information (as a questionnaire) on Interconnection Points (IPs) and their Interconnection Agreements (IAs) compliance with the INT NC, which has allowed ENTSOG to fulfil its monitoring and reporting obligations for 2019. This third monitoring report outlines the implementation of the requirements – as set out in Articles of the INT NC – by TSOs on both sides of interconnection points (IPs) within the European Union.

Analysis of TSOs' replies and IAs' review indicate that, during the last two years, the adjacent TSOs have done significant work on improving IAs and documenting their mutual agreements on the main terms and conditions envisaged in the INT NC. Default terms and conditions set out in the INT NC are widely used. No cross-border trade barriers related to gas quality or odourisation were identified. Implementation progress can be seen in the areas of gas quality data publication and implementation of common data exchange solutions. The report is based on the analysis of detailed evidence of IAs' compliance with the INT NC.

UPDATES OF CNOTS

In 2019, ENTSOG continued to improve the common network operation tools (CNOTs), with special attention to the communication profiles. Under the data exchange section of its website, ENTSOG published or updated the following documents:

- The ENTSOG AS4 usage profile: Based on stakeholder feedback, ENTSOG proposed some changes for the AS4 usage profile. Together with Edig@s version 6, ENTSOG presented the changes at a joint public workshop with EASEE-gas on 28 November. The AS4 usage profile provides not only interoperability guidance for the required AS4 functionality (i. e., whose requirements are mandatory or optional) but also security guidance based on state-of-the-art best practices following ENISA recommendations and best practices implemented by eDelivery.
- ENTSOG worked on two CNOT documents in 2019: BRS for CAM and CMP and BRS for nomination and matching procedures adding additional parameters to indicate the changes coming from the new Edig@s version 6. The amended version of both documents is planned to be published in the second half of 2020.

1) in accordance with Article 8.3(c) Regulation (EC) No 715/2009

FOLLOW-UP OF EASEE-GAS DEVELOPMENTS

ENTSOG cooperates closely with EASEE-gas in the field of data exchange as an observer in the relevant groups (Message Workflow and Design Working Group and Technology Standards Working Group), and this continued in 2019.

On the basis of the collaborative work undertaken in 2019, as described in the previous section, ENTSOG and EASEE-gas will organise another joint workshop on data exchange in 2020.

FUNCTIONALITY ISSUES AROUND DATA EXCHANGE

ACER and ENTSOG organised a meeting with the relevant stakeholders in September 2019 on the reported FUNC issue "Missing harmonisation of interfaces on capacity booking platforms". It was agreed to launch a public consultation asking the market for their preferences regarding the electronic format and protocol to be used for communication between Network Users and Capacity Booking Platforms. The Public Consultation was launched in December 2019 and the publication of the results is expected in Q2 2020.

OPERATION OF THE LOCAL ISSUING OFFICE (LIO)

Energy Identification Codes (EIC), standardised and maintained by ENTSO-E, provides a unique identification of the market participants and other entities active within the Internal European Energy Market. They are widely used in the Electronic Document Interchange and to identify parties and objects for REMIT. ENTSOG continued to operate the Local Issuing Office (LIO) throughout 2019 and now manages more than 1200 EIC codes for market participants across Europe. In 2019, ENTSOG continued cooperating with ENTSO-E via the joint Central Issuing Office (CIO)/LIO meetings and contributed to upgrading the EIC Reference Manual and addressing existing issues.

ENTSOG and Local Issuing Offices from the gas sector established, on a voluntary basis, a dedicated expert group to coordinate their activities and exchange experiences in managing EIC and communication to the CIO, managed by ENTSO-E.

INTEROPERABILITY NETWORK CODES IMPLEMENTATION AND EFFECT MONITORING

From 2016, as per Article 8(8) of Regulation (EC) No 715/2009, and Article 25 of the INT NC, ENTSOG is executing the task of monitoring and analysing how TSOs are progressing in implementing the Network Code for Interoperability & Data Exchange (INT NC). ENTSOG reviewed TSOs' data twice in the implementation monitoring reports of 2016 and 2017 (published in 2016 and 2018).

By the end of 2019, ENTSOG asked TSOs to provide an updated set of information (as a questionnaire) on IPs and their IAs compliance with the INT NC. 41 TSOs provided all necessary input, which allowed ENTSOG to fulfil its monitoring and reporting obligations for 2019. The main criteria of IPs' eligibility for the Implementation Monitoring Report (IMR) are that TSOs operate IPs within the EU. Based on the input received from TSOs, the IMR shows that 67 out of 69 IPs are covered with IAs between adjacent TSOs. Two IPs are missing IAs: IP Petrzalka (AT-SK) is not in operation; IP Negru Voda II, III (RO) / Kardam (BG) is in operation, although "missing technical and legal conditions necessary for an IA." The implementation process for the later IP is in progress (according to comments from the adjacent TSOs).

IPs' Status within European Union by the end of 2019

IP status	Number of IPs	Comments
IPs between EU TSOs within the European Union	69	IPs are subject to the IMR 2019
IPs in operation with IA	67	• One IP with derogation of INT NC requirements expired by the end 2019 • Two IPs became parts of common balancing zones • One IP in derogation became a part of a common balancing zone
IP in operation without IA	1	Missing technical and legal conditions necessary for an IA
IP not in operation	1	A new IP. Never in operation

INT NC, Chapter II. Interconnection Agreements

Analysis of TSO replies and IA review indicate that, during the last two years, the adjacent TSOs have done significant work on improving IAs and documenting their mutual agreements on the main terms and conditions envisaged in the INT NC. 63 % of the existing IAs have been amended with added provisions to the IAs that cover at least the terms and conditions defined in articles 6–12 of the INT NC. In 97 % of the cases, TSOs fulfilled their obligations (according to Article 4 INT NC) to inform Network Users about IA provisions that may directly affect the said Users. The remaining 3 % are in progress.

For the majority of IAs, the "Rules for flow control" (Article 6) and "Measurement principles" (Article 7) have been taken into consideration as stated in the INT NC.

The various requirements stemming from Article 6 (flow control, safety legislation, emergency plans, preventive action plans etc.) are 82–99 % covered in the IAs. The remaining percentages represent mainly "Not applicable" answers with TSOs' clarifying comments that the rules are "not included in IAs but existing in other technical and legal documentation."

Replies regarding Article 7 INT NC "Measurement principles for gas quantity and quality" show 90–99 % TSOs' compliance with all paragraphs of the article. The remaining percentages indicate that the work is mainly "In progress".

Paragraphs of Article 8 INT NC "Rules for the matching process" received 95–99 % compliance replies. 56 % of TSOs specified a flow control equipment operator responsible for the matching process, 40 % reported that "roles are designated between the partners", 4 % described the work "In progress".

In most of the IAs, the "lesser rule" has been implemented as the matching rule (96 %), and the operational balancing account (OBA) as the allocation rule (97 %).

Compliance with Article 10 INT NC "Agreements on communication procedures in case of exceptional events" has been reported in 97 % of cases. Compliance with Article 11 INT NC "Settlement of disputes" has been reported by 96 % of TSOs. Compliance with Article 12 INT NC "Amendment process" has been reported by 95 % of TSOs.

INT NC, Chapter III. Units

Compliance with Article 13 INT NC "Common set of units" used for data exchange and publication has been reported by 92 % of TSOs.

INT NC, Chapter IV. Gas Quality and Odourisation

According to the results, TSOs are 100 % compliant with the requirements of Articles 15 and 19 of the INT NC that cover gas quality and odourisation issues and prescribe instruments for managing cross-border trade restrictions due to differences of gas quality or odourisation practices. No cross-border trade restrictions due to differences in gas quality or odourisation practices have been reported.

89 % of the TSOs comply with the obligations of Article 16, INT NC regarding publication of the gas quality parameters Wobbe Index (WI) and Gross Calorific Value (GCV) on an hourly basis for each entry IP.

For Article 17 INT NC "Information provision on short-term gas quality variation", as applies to the relevant entitled parties, TSOs reported 85 % compliance and 15 % "No" answers with clarifying comments that these TSOs do not have any party that falls under the eligibility criteria according to paragraph 17.2. Therefore, they are not obliged to define and maintain a list of parties according to paragraph 17.3. (a). 48 % of TSOs reported providing WI to the relevant parties, 65 % of TSOs share GCV, and 43 % of TSOs provide information about the full composition of gas. The main way to communicate data is to publish it on TSO's website (53 %); second most frequently applied communication method is the Industrial or B2B protocol (28 %).

INT NC, Chapter V. Data Exchange

All TSOs have met the data exchange security requirements as stated in Article 22 of the INT NC. In reference to Article 23 INT NC "Implementation of the common data exchange solutions ", 70 % of TSOs reported that, besides the Document Based Data Exchange solution (AS4, EDIG@s xml), they are still using other data exchange solutions than those defined in Article 21 for data exchange requirements envisaged in point 2.2 of Annex I to Regulation (EC) No 715/2009, CAM/CMP NC, BAL NC, REMIT and INT NC. Following requirements of Article 24 INT NC "Development process for common network operation tools", 93 % of TSOs implemented the Common Data Exchange Solution as defined in ENTSOG's Common Data Exchange Solution Table. The remaining TSOs reported the implementation work is in progress with temporary use of the optional solutions approved by NRAs.

GAS QUALITY AND HYDROGEN

COOPERATION WITH CEN AND MARCOGAZ AND EASEE-GAS

During 2019, ENTSOG continued cooperating actively with CEN, Marcogaz and EASEE-gas on the topics of gas quality and renewable, low-carbon and decarbonised gases. As part of the pre-normative research carried out within the CEN Sector Forum Gas – Gas Quality Study WG, ENTSOG contributed to the proposal of a Wobbe Index (WI) range acceptable for most gas chain stakeholder to be included in the future for the revision of EN16726 standard. This work will result in a final report for CEN TC234/WG11 in the first half of 2020 and will be presented during next Madrid Forum in October 2020. CEN TC234 is responsible for revising the standard. Throughout 2020, ENTSOG will continue cooperating with CEN on revising and completing the EN16726 (H-gas quality standard) including renewable, low-carbon and decarbonised gases.

ENTSOG is also monitoring standardisation activities regarding the injection of hydrogen into the gas grid through the CEN Sector Forum Energy Management Working Group Hydrogen.

ENTSOG is a member of the Marcogaz Working Group Gas Quality and Renewable Gases. ENTSOG is also a member of the EASEE-Gas Gas Quality Harmonisation Working Group.

HYDROGEN IN THE TRANSMISSION SYSTEM

In 2019, ENTSOG increasingly focused on assessing the possibilities to inject hydrogen into the transmission system. ENTSOG finalised an internal assessment on unlocking barriers to hydrogen injection and future network configurations in 2050, which was later used in "ENTSOG 2050 Roadmap for Gas Grids". New assessments in this area were initiated, and they have been carried forward into 2020.

GAS QUALITY OUTLOOK FOR TYNDP 2020

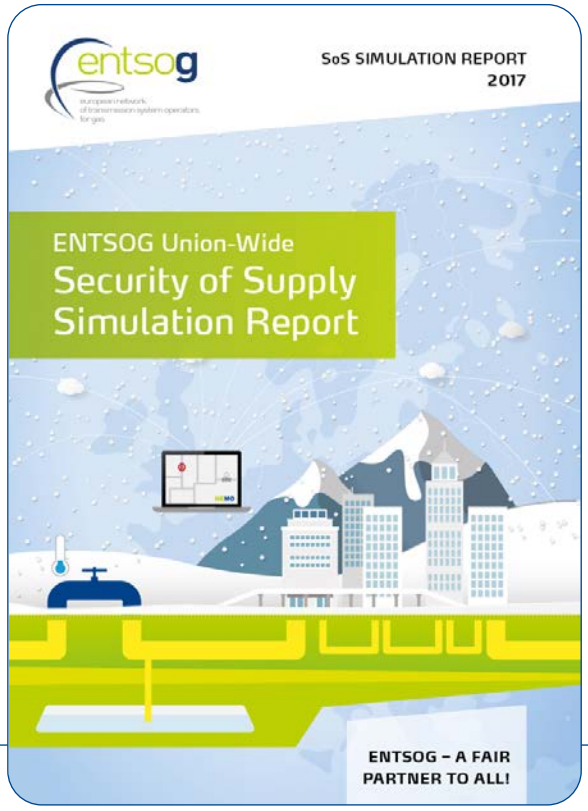
As part of the TYNDP 2020 publication, ENTSOG in 2019 started working on the Gas Quality Outlook 2020 report. This report will again showcase the regional outlook including significant amount of biomethane and hydrogen.

CYBERSECURITY

In 2019, ENTSOG collaborated with GIE on the Cybersecurity Taskforce to build a common understanding on the key areas identified by the EC regarding a potential Network Code on cybersecurity for the energy sector:

- European Cybersecurity Maturity Framework
- Supply Chain Management
- European Early Warning System for Cyber Threats
- Cross-Border and Cross-Organisational Risk Management

Work will continue in this area beyond 2019 and throughout 2020.



21 November 2017 // Union-wide SOS simulation report

Picture courtesy of Terranets

6

STRATEGY, POLICY AND COMMUNICATION

To cover ENTSOG's engagement in the Roadmap communication, stakeholder dialogue and value chain cooperation in more structured way, a new business area with responsibility for Strategy, Policy and Communication (SPC) was established.

With publication of the European Green Deal, the major task of the newly established SPC area is and will continue to be the preparation of ENTSOG's engagement in Stakeholders processes and gas value chain cooperation in the context of Smart Sector Integration file. The SPC business area addresses:

- the identification of strategic aspects,
- policy monitoring,
- communication service.

The SPC Business area supports managerial activities by provision of information sharing of resources, networks and relevant knowledge to organise internal ENTSOG strategic debate. SPC oversees promotion of ENTSOG activities to its members and the external environment, by involving relevant stakeholders, by contributing to consultations, participating in conferences and fora as discussion partner or speaker, but also by maintaining a close dialogue with media representatives. ENTSOG SPC develops and manages relevant partnerships with research centres, for example: Florence School of Regulation, Delta Energy Institute, Copenhagen School of Infrastructure and think tanks.

The new area monitors numerous European Commission's studies, consultations and stakeholder workstreams including dialogue ahead of Madrid, Florence and Copenhagen Fora. The area coordinates all the external communications of ENTSOG, including management of social media channels and preparation for public appearances related to future of the European infrastructure.

SPC also coordinates annually the ENTSOG Annual Report and the ENTSOG Annual Work Programme, with input from the Business Areas. ENTSOG's 10-Year Anniversary Conference 'ENTSOG's Evolution: From Network Codes to Roadmap 2050' was coordinated by SPC in 2019 and ENTSOG's social media activity is managed by the business area.

WORK STRUCTURE

The ENTSOG G2020 TF is responsible for coordinating ENTSOG's activities related to work on the parts of the European Green Deal - legislative actions, policy communications, action plans announced by the EC or other, as requested by the ENTSOG Board.

The TF will be active at least to the end of the work on the Green Deal regulatory and legal developments.

The TF meets on a monthly basis, with an option for ad-hoc meetings, if required. The TF is managed by the ENTSOG SPC, with close cooperation of other ENTSOG business areas. Ad-hoc activities may be addressed to the G2020 TF as determined by the Board and/or GA.

Figure 6.1: G2020 Task Force

ACTIVITIES

In 2019, the G2020 TF prepared ENTSOG's 2050 Roadmap for Gas Grids as ENTSOG's narrative and proposal for the future regulatory developments on gas infrastructure. The two cornerstone messages of the ENTSOG Roadmap are:

1. the gas grids can effectively decarbonise and

2. in the future, the EU will benefit from a Hybrid Energy System, building on synergies between gas and electricity infrastructures.

The TF will continue to cover ENTSOG's engagement in the Roadmap communication, stakeholder dialogue and value chain cooperation.

In In 2019, the G2020 TF prepared ENTSOG's 2050 Roadmap for Gas Grids, providing seven policy recommendation and proposing three possible decarbonisation pathways on making gas grids ready for transition by 2050. The Roadmap lists the following key principles:

1. importance of switch from coal/oil to natural gas;

2. development and integration of renewable, decarbonised and low-carbon gases;

3. development of a Hybrid Energy System interlinking the gas and electricity systems; and

4. maintaining an integrated EU Gas Market.

The TF will continue to progress ENTSOG's 2050 Roadmap narrative in 2020 via stakeholder engagement process with EU institutions, industry, gas value chain and other key EU stakeholders in order to provide input to the European Green Deal.

In 2019, the TF was responsible for providing EU policy proposals and updates on the preparations for the European Green Deal developments and on upcoming reopening of gas related legislation expected in 2020-2021. The TF also monitored the changing political environment related to the establishment of the new Commission and Parliament and ahead of Madrid, Florence and Copenhagen Fora. The TF provided regular updates to the ENTSOG GA, ENTSOG Board and cooperated with other relevant WGs, specifically Market Development WG.

In addition, the TF monitored the evolving narratives of electricity, hydrogen, industry and NGOs on the future energy system, including the voice of particular EU Member States and scenarios/technology/innovation experts.

The TF also addressed ENTSOG's engagement in the Clean Energy Package monitoring, including analysing potential mirroring from electricity to gas legislation.

The key activities of the G2020 TF for 2019 are listed below:

1. ENTSOG 2050 ROADMAP FOR GAS GRIDS

- Development and publication of ENTSOG 2050 Roadmap for Gas Grids on 11 December 2019 – the date of the launch of the European Green Deal.
- Aligned ENTSOG Members positions on the pathways to decarbonisation of gas grids
- Strategic input to gas and electricity cooperation under EU Hybrid Energy System
- Informed about the positions of important stakeholders (including electricity, gas and hydrogen value chain representatives)
- Launched stakeholders' engagement process to discuss the Roadmap recommendations
- Plan, deliver and reported to the Members on all related communication (bilateral, multilateral, public)

2. POLICY UPDATES

- Monitored key energy & climate policy/ regulatory developments put forward by EU institutions
- Monitored and engaged where relevant to EU analytical works (EC studies and stakeholder engagement processes)
- Provided update on the EU institutional developments post EU elections in 2019
- Mapped the priorities of the Commission and Parliament established in 2019.

3. COMMUNICATION PROPOSALS

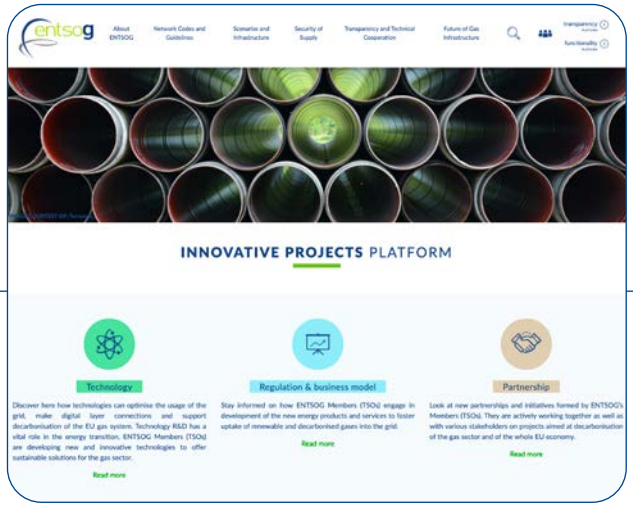
- Provided recommendations on ENTSOG's priorities in dialogue with the European Commission, Parliament and ACER
- Proposed external and internal communication
- Engaged in dialogue with industry, gas and other key EU stakeholders

4. INFORMATION SHARING

- Provided information material for TSOs in their discussions on gas regulatory framework held at national level.
- Documented mirroring possibilities from electricity to gas legislation stemming from Clean Energy Package
- Reported to Members on all ENTSOG bilateral, multilateral and public engagement

.

12 December 2018 //
Launch of ENTSOG Innovative Projects Platform



Picture courtesy of S.G.I.

7

ENTSOG MANAGEMENT SUPPORT

The management team has five support groups which provide compliance, financial and other services across the association. These are Legal, Financial, HR, IT and Administration.

ACTIVITIES

In 2019, the Management Support Team continued to provide support to the Business Areas and management in Brussels, and work with ENTSOG members. Support is through the Legal, HR, Finance, and IT functions to ensure there is a robust platform for the activities and deliverables of ENTSOG's Business Areas. They also responsible for organisation of the meetings of the GA and the Board, as well as those for the Liaison Group, the Legal Advisory Group and the Financial Committee.

LEGAL

The Legal Team, either internally or together with the Legal Advisory Group (LAG), which meets on a monthly basis, contributes to the work and deliverables of all the Business areas. These include the improvement of the Functionality platform and process, and the interpretation of Network Codes and other legal texts applicable to ENTSOG and the TSOs. Other work undertaken is the analysis of potential mirroring from electricity (the Clean Energy Package) to gas legislation and development of regulatory input for the upcoming gas legislative package. The LAG has contributed to the 2050 Roadmap for Gas Grids as well as ENTSOG's work on Certificates and Guarantees of Origin for renewable and decarbonised gases.

In 2019, the Legal Team were involved in the organisation of workshops and follow up discussion with Market Team and ACER on BAL NC Fraud cases, the participation in external consultation and studies launched by the EC and ACER, REMIT activities of ENTSOG, and Gas quality discussions. The LAG also issued formal recommendations to the Board and GA with respect to the applications for membership, Associated Partner membership and for Observer membership.

In 2019, the Legal Team, with the other areas, organised the two additional meetings of the External Contact Platform (ECP) in April and October. The ECP was created by ENTSOG and the Energy Community Secretariat to strengthen the cooperation between ENTSOG and TSOs other non-EU gas transmission gas companies. The scope focus on coordination and technical cooperation between ENTSOG and other non-EU gas transmission system operators, as framed by Regulation 715/2009. Finally, the Legal Team also ensured the internal day to day way of working of ENTSOG by contributing to the organisation of the GA and Board meetings, implementing new GDPR rules and guidelines, and assisting the HR and communication services as well as the management.

HR AND FINANCE

ENTSOG Human Resources continued with a well-prepared recruitment process, so that the relevant resources and competences were in place to perform the requested activities. ENTSOG has a strong focus on the resource allocation as well as the relevant handover processes to ensure the performance of the organization vis-à-vis the required deliverables. With regards to financial reporting, ENTSOG created and implemented clear and efficient accounting procedures and controls in 2019. ENTSOG's Financial Statement for 2019 is included in this report.

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 list of the main IT projects for 2019 include the following:

- Preparation work on TP Migration to the Cloud (Microsoft Azure) – to be executed in 2020
- Preparation work on TP Upgrade to newer version of technologies – to be executed in 2020
- Developing Geographical Information Systems (GIS) software for the System Development projects (built on ESRI ArcGIS)
- PDWS (data warehouse) and TP Performance enhancements
- Delivery of the UMM system on TP
- Developing the Projects Data Collection Portal for TYNDP 2020
- Developing the first version of ReCo

In addition, ENTSOG is moving their reporting capabilities to a modern Microsoft platform called Power BI. In 2019, some of ENTSOG's internal reports were migrated - this will continue in 2020 with other reports, also used by TSOs.

Beside the above listed projects, the IT team also have worked on recurrent projects in 2019 – the TYNDP 2020, Project Submission Portal, Capacity Transmission Map, and Summer/Winter Outlook/ Review data collections.

13 November 2019 // ENTSOs publish European wide gas and electricity Scenario Report for TYNDP2020

Picture courtesy of Ontras

8

RESEARCH AND DEVELOPMENT AT ENTSOG

ENTSOG'S UPDATED WEBSITE: IPP AND 2050 ROADMAP FOR GAS GRIDS

ENTSOG's Innovative Projects Platform (IPP), established in 2018, now showcases more than 70 innovative gas decarbonisation projects focusing on new technologies, regulations and business models and partnerships. To encompass all new R&D developments in the decarbonisation of new gases, the platform's scope grew in 2019 to include new projects focusing on digitalisation, heating and cooling and certification of green gases. ENTSOG is updating and adding new projects on an on-going basis to ensure up-to date information. A new section was also added on the ENTSOG website: a dedicated page for the ENTSOG 2050 Roadmap for Gas Grids documentation.

NEW POLICY OUTREACH ACTIVITIES

To progress ENTOSG's R&D agenda and to share know-how and best practices, ENTSOG established in 2019 new contacts with stakeholders active on research and development, such as European Commission's Strategic Energy Technology Plan and A.SPIRE, an European Association working on Public Private Partnerships with energy-intensive industries. ENTSOG also deepened its cooperation with technical associations Marcogaz and GERG to progress on grid's interoperability elements related to integration of new gases. ENTSOG collaborated under New Gases Network (NGN) on clarification of taxonomy for renewable and decarbonised gases, with conclusions presented during the 33rd Madrid Forum in 2019.

UPDATE'S TO ENTSOG/ACER JOINT FUNCTIONALITY PLATFORM

During 2018, ACER and ENTSOG analysed improvement suggestions to the Functionality platform and to the process and transformed both into project steps with the aim of making the Functionality Process more transparent, more efficient and user-friendly. This project continued during 2019 and by Q4 2019 the procurement process and technical specifications for the improvements of the Platform itself were finalised and consultants were contracted. The project in its entirety is anticipated to be finalised in Q2 2020.

TYNDP SCENARIO METHODOLOGY UPDATE

To further improve their joint scenarios, ENTSOG and ENTSO-E decided to develop two top-down full energy scenarios in addition to a bottom-up scenario. Full energy scenarios will ensure a thorough assessment of sectoral interlinkages, fuel switches and the monitoring of all GHG emissions. Furthermore, the ENTSOs will assess the decarbonisation pathway in line with the climate targets of the Paris agreement by considering a carbon budget as stated in the latest Special Report of the Intergovernmental Panel on Climate Change. This requires also a greater assessment of renewable and decarbonised gases, such as Power-to-Gas, biomethane and Blue Hydrogen.

ENTSOG'S AND ENTSO-E'S JOINT WEBSITE ON THE TYNDP 2020 SCENARIOS

To ensure a maximum level of transparency and reach out to external stakeholders in the most efficient way, ENTSOG's and ENTSO-E's Scenario Building Working Group in 2019 launched their dedicated joint website on the TYNDP 2020 Scenarios. The website also provides a visualisation platform, which allows stakeholders to select from the extensive data set provided by the joint Scenarios and display them in different ways.

TP DATA AGGREGATES AND PRELOADED REPORTS

In 2019, the MIT-lab discussed the possibility of providing monthly data aggregations to TP users. Such publications could contain the average and total firm technical capacities or allocations per balancing zone or operator. The idea had already been presented to the TP users in 2018, with positive feedback. A Proof of Concept and a Mock-Up are to be developed before it is deemed feasible for the project to progresses.

APPROACHES ON ADDRESSING HYDROGEN IN THE GAS GRIDS

In 2019, ENTSOG produced an internal assessment setting out ENTSOG's current understanding of the technical opportunities and challenges with an increased penetration of hydrogen in gas grids. The key findings of the assessment were used in the ENTSOG 2050 Roadmap for Gas Grids report.

IT R&D

GEOGRAPHICAL INFORMATION SYSTEMS (GIS) FOR NETWORK MODELLING AND SIMULATIONS

ENTSOG's System Development team required a tool that allows the Network Modelling simulation results to be shown on an interactive online map. Work was undertaken by the IT team to assess the possible solutions to meet these requirements.

The ESRI ArcGIS software was identified and chosen in 2019 as the preferred tool for this business requirement. Based on business acceptance and feedback of this GIS tool already undertaken, it is anticipated that data used in future editions of the Summer/Winter Outlook/Reviews could be presented using the GIS software. In addition, assessment is being undertaken of how the data used to create the ENTSOG Transmission Capacity and TYNDP maps and the ENTSOG / GIE System Development map data could be updated to fit the GIS format is also being undertaken.

TP FREQUENTLY ASKED QUESTIONS

ENTSOG received 129 questions via the TP "Submit a question" feature. In 2019, ENTSOG experimented with using Microsoft Flows to pick up those questions to create a library for the users, but it was deemed not technically feasible. ENTSOG will continue to search for other solutions and will consider creating a FAQ in 2020, if there are enough volume of repeating questions on TP functionalities and publication requirements helpful for many stakeholders, while at the same time ensuring that the TP is not jeopardised in relation to cyber security risks.

Picture courtesy of National Grid

9

ENTSOG BOARD AND TEAMS

ENTSOG **BOARD**

In December 2019, The General Assembly accepted the transfer of the Finnish membership from Gasum to the newly created TSO Gasgrid Finland Oy as a result of ownership unbundling process in Finland – Gasgrid Finland Oy had taken over the Gas transmission activities.

On 12 December, the ENTSOG General Assembly also approved the replacement of Ms. McClay by Mr. Chris Logue (National Grid) in the ENTSOG's Board.

Stephan Kamphues, President
(OGE/Vier Gas Transport GmbH)

Miroslav Bodnár
(eustream a.s.)

Pascal De Buck
(Fluxys Belgium S.A.)

Francisco de la Flor Garcia
(Enagás S.A)

Bart Jan Hoevers
(Gasunie Transport Services B.V.)

Gaetano Mazzitelli
(Snam Rete Gas S.p.A.)

Chris Logue
(National Grid Gas plc.)

Andreas Rau
(Net4gas, s.r.o.)

Vedran Špehar
(Plinacro)

Tomasz Stępień
(GAZ-SYSTEM S.A.)

Harald Stindl
(Gas Connect Austria)

Thierry Trouvé
(GRTgaz)

Christoph von dem Bussche
(GASCADE Gastransport GmbH)

ENTSOG **TEAMS**

MARKET TEAM

From left to right: Claude Mangin, Madeleine Hammerman, Alexandra Kiss, Irina Oshchepkova, Kateryna Dolzhenko, Constanza Troiano, Matt Golding, Alessia D'Addabbo, David Gil, Laurent Percebois, Sean Kinsella

SYSTEM DEVELOPMENT TEAM

From left to right: Maria Castro, Louis Watine, Rares Mitrache, Stefano Astorri, Anne Boorsma, Jacques Reberol, Martin Graversgaard, Paula Di Mattea, Maria Fernandez, Kacper Zeromski, Anna Keri

SYSTEM OPERATION TEAM

From left to right: Kathrine Nygaard Stannov, Marin Zwetkow, Lilia Jakobsson, Hendrik Pollex, Anna Keri, Anton Kolisnyk, Martin Graversgaard, Rosa Puentes

STRATEGY, POLICY AND COMMUNICATION TEAM

From left to right: Carmel Carey, Alexandra Kiss, Sara Piskor, Patricia Orglervoa, Carolina Novac

MANAGEMENT SUPPORT TEAM

From left to right: Nicolas Van der Maren, Alexandra Kiss, Areti Kostaraki, Mauro Barbosa, Jan Ingwersen, Agata Musial, Bogdan Gugescu, Maria Dhénin

10 YEARS OF ENTSOG

2009

1 December //
Foundation of ENTSOG

2010

8 January //
1st ENTSOG Board Meeting

24 February //
1st ENTSOG General Assembly

22 March //
Proposal for Transparency Guidelines

16 June //
1st ENTSOG Summer Supply Outlook 2010

30 November //
1st ENTSOG Winter Supply Outlook 2010–2011

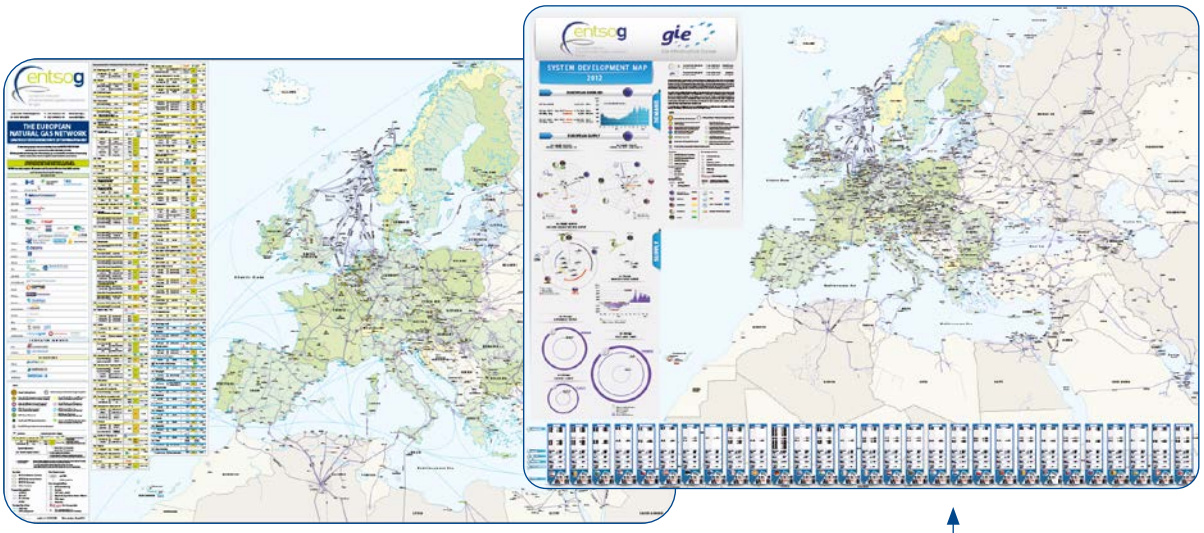
December // Associated Partners invited to participate in ENTSOG

2011

27 January //
EC invitation to draft the CAM Network Code

17 February //
1st ENTSOG TYNDP 2011–2020

28 February //
Delivery of ENTSOG Statutes to ACER and EC for their opinion



31 January //
Automatic download tool for gas Transparency Platform data is made publicly available (www.gas-roads.eu).

6 March //
Approval of Article of Association & Approval of Rules of Procedure

8 October //
Publication of European System Development Map

26 October //
Balancing Network Code Delivery

2012

10 YEARS ANNIVERSARY

1 May //
Publication of European Transmission Capacity Map

November //
Invitation to draft BAL Network Code

ENTSOG Board 2011

February //
Observers were admitted to the association

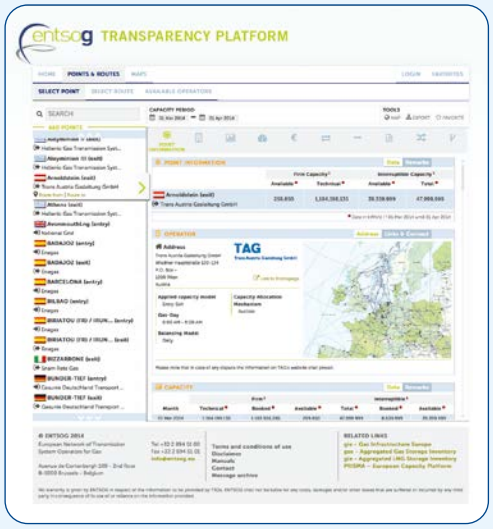
2013

1 October //
Launch of new Transparency Platform

14 October //
ENTSOG published its first NC - Network Code on Capacity Allocation Mechanisms in Gas Transmission Systems

15 November //
ENTSOG publishes Cost-Benefit Analysis methodology under Regulation (EC) 347/2013

10 September //
ENTSOG submits INT NC draft proposal to ACER



26 March //
ENTSOG's NC on Gas Balancing of Transmission Networks (BAL NC) published in European Journal

3 November //
ENTSOG publishes Report on Capacity Booking Platforms

2014

17 December //
ENTSOG celebrated its fifth anniversary

26 December //
ENTSOG submits Drafted Incremental Proposal and drafted Network Code (NC) on Harmonised Transmission Tariff Structure for Gas to ACER

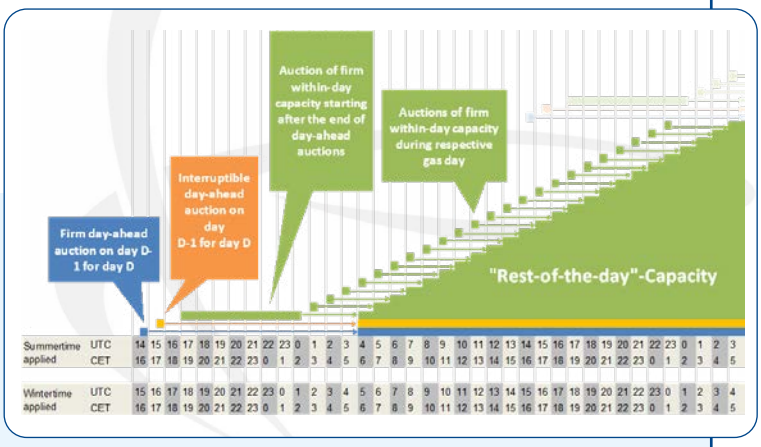
22 January //
CAM NC related Auction calendar

13 October //
CAM NC amendment endorsed by Gas Committee

2016

11 February //
Launch of Functionality Platform

17 November //
CNOTs for Data Exchange



30 November //
AS4 Usage Profile

21 December //
Submission of ENTSO-E/ ENTSOG interlinked model to ACER and EC

2015

29 December //
Modified Interconnection Agreement Template for default terms and conditions published

31 July //
ENTSOG resubmits the NC on Harmonised Transmission Tariff Structures for Gas to ACER

30 April //
ENTSOG published Network code on Interoperability and Data Exchange Rules

31 March //
First amendment to the capacity allocation mechanisms network code (CAM NC)

13 February //
European Commission adopts cost-benefit analysis (CBA) methodologies for transmission lines

10 YEARS ANNIVERSARY

ENTSOG Board 2015

2017

28 October //
Revised Regulation No. (EU) 2017/1938 concerning measures to safeguard the security of gas supply entered into force – plans for ReCo

21 November //
Union-wide SOS simulation report

XX December //
ENTSOG First Annual Conference

31 July //
Incremental Demand Assessment Reports of TSOs

24 July //
Draft 2nd CBA methodology

22 March //
TAR NC 1st Implementation Document

30 March //
ENTSOs finalise European wide gas and electricity Scenario Report for TYNDP 2018

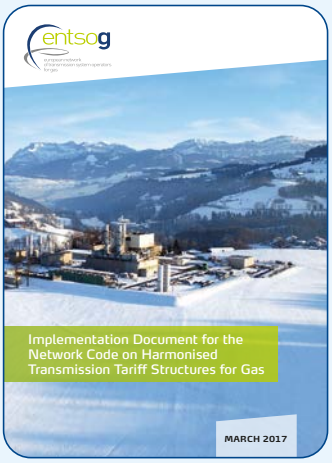
5 September //
Position Paper – A flexible approach for handling varying gas qualities

15 October //
ENTSOs Position Paper – Sector Coupling: Power to Gas

2018

10 YEARS ANNIVERSARY

16 March //
ENTSOG published TAR NC – Network Code on Harmonised Transmission Tariff Structures for Gas

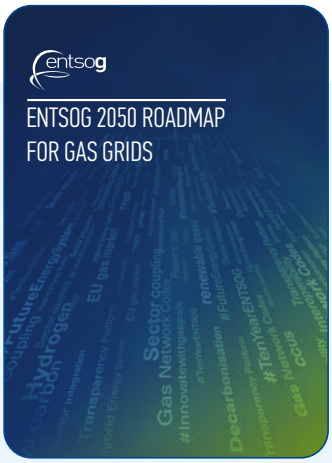


12 December //
Launch of ENTSOG Innovative Projects Platform

19 December //
Final Template of Main Terms and Conditions for bundled capacity contracts

10

YEARS OF **ENTSOG**



12 December //
ENTSOG launches the 'ENTSOG Roadmap 2050 for gas grids' at the ENTSOG Conference 2019

13 November //
ENTSOs publish European wide gas and electricity Scenario Report for TYNDP2020

2019

17 September //
The ENTSOs and ACER mark 10 years of European Energy Market Integration

04 November //
ENTSO-E and ENTSOG publish the focus study on interlinkage between gas and electricity systems

ENTSOG **FINANCIAL STATEMENT 2019**

The Financial Statement 2019 was approved by the ENTSOG General Assembly on 2 April 2020.

ASSETS

Values EUR	Note	2019	2018
FORMATION EXPENSES	20		
FIXED ASSETS	21/28	**38.258,62**	**134.857,58**
I. Intangible assets	21	**0,00**	**0,00**
II. Tangible assets	22/27	**37.758,62**	**134.857,58**
A. Land and buildings	22		
B. Plant, machinery and equipment	23		
C. Furniture and vehicles	24	**37.758,62**	**49.161,25**
D. Leasing and similar rights	25		
E. Other tangible assets	26	**0,00**	**85.696,33**
F. Assets under construction and advance payments	27		
III. Financial fixed assets	28	**500,00**	**0,00**
A. Affiliated companies	280/1		
1. Participating interests	280		
2. Amounts receivable	281		
B. Other companies linked by participating interests	282/3		
1. Participating interests	282		
2. Amounts receivable	283		
C. Other financial fixed assets	284/8	**500,00**	**0,00**
1. Shares and interests	284		
2. Amounts receivable and cash guarantees	285/8	**500,00**	**0,00**
CURRENT ASSETS	29/58	**2.108.870,23**	**1.957.571,16**
IV. Amounts receivable after more than one year	29		
A. Trade debtors	290		
B. Other amounts receivable	291		
V. Stocks and orders in progress	3	**0,00**	**0,00**
A. Stocks	30/36		
1. Raw materials and consumables	30/31		
2. Work in progress	32		
3. Finished goods	33		
4. Goods purchased for resale	34		
5. Immovable property acquired or constructed for resale	35		
6. Advance payments	36		
B. Orders in progress	37		
VI. Amounts receivable within one year	40/41	**161.959,97**	**122.935,69**
A. Trade debtors	40	**65.112,33**	**59.860,80**
B. Other amounts receivable	41	**96.847,64**	**63.074,89**
VII. Short-term investments	50/53		
A. Own shares	50		
B. Other investments and deposits	51/53		
VIII. Cash at bank and in hand	54/58	**1.885.261,26**	**1.775.956,17**
IX. Deferred charges and accrued income	490/1	**61.649,00**	**58.679,30**
TOTAL ASSETS	20/58	**2.147.128,85**	**2.092.428,74**

Values EUR	Note	2019	2018

LIABILITIES AND EQUITY

CAPITAL AND RESERVES		10/15	**1.209.608,50**	**1.138.010,08**
I.	**Capital**	10	**619.892,00**	**619.892,00**
	A. Issued Capital	100	**619.892,00**	**619.892,00**
	B. Uncalled capital	101		
II.	**Share premium account**	11		
III.	**Revaluation surplus**	12		
IV.	**Reserves**	13	**300.000,00**	**300.000,00**
	A. Legal reserve	130		
	B. Reserves not available for distribution	131		
	1. In respect of own shares held	1310		
	2. Other	1311		
	C. Non-taxable reserves	132		
	D. Reserves available for distribution	133	**300.000,00**	**300.000,00**
V.	**Accumulated profits (losses)**	14	**289.716,50**	**218.118,08**
VI.	**Investment grants**	15		
VII.	**Advance to associates on distribution of net assets**	19		
PROVISIONS AND DEFERRED TAXATION		16		
VIII.	**A. Provisions for liabilities and charges**	160/5		
	1. Pensions and similar charges	160		
	2. Tax charges	161		
	3. Major repairs and maintenance	162		
	4. Environmental obligations	163		
	5. Other liabilities and charges	164/5		
	B. Deferred taxation	168		
CREDITORS		17/49	**937.520,35**	**954.418,66**
IX.	**Amounts payable after more than one year**	17		
	A. Financial debts	170/4		
	1. Subordinated loans	170		
	2. Unsubordinated debentures	171		
	3. Leasings and similar obligations	172		
	4. Credit institution	173		
	5. Other loans payable	174		
	B. Trade debts	175		
	1. Suppliers	1750		
	2. Bills of exchange payable	1751		
	C. Advances received on orders in progress	176		
	D. Other amounts payable	178/9		

Values EUR		Note	2019	2018
X.	**Amounts payable within one year**	42/48	**724.520,35**	**534.773,66**
A.	Current portion of amounts payable after more than one year	42		
B.	Financial debts	43		
	1. Credit institution	430/8		
	2. Other loans	439		
C.	Trade debts	44	**604.565,88**	**470.727,94**
	1. Suppliers	440/4	**604.565,88**	**470.727,94**
	2. Bills of exchange payable	441		
D.	Advances received on orders in progress	46		
E.	Taxes, salaries and social security	45	**119.954,47**	**64.045,72**
	1. Income taxes	450/3		
	2. Salaries and social security charges	454/9	**119.954,47**	**64.045,72**
F.	Other amounts payable	47/48		
XI.	**Accrued charges and deferred income**	492/3	**213.000,00**	**419.645,00**
TOTAL LIABILITIES		10/49	**2.147.128,85**	**2.092.428,74**

Values EUR		Note	2019	2018

INCOME STATEMENT

I.	**Sales and services**	70/76A	**8.361.319,06**	**7.877.835,38**
A.	Turnover	70	**8.252.000,01**	**7.769.749,95**
B.	Variation in stocks of orders and goods in progress and finished goods (increase +, decrease –)	71		
C.	Own construction capitalised	72		
D.	Other operating income	74	**109.319,05**	**108.082,43**
E.	Non-recurring operating income	76A	**0,00**	**3,00**
II.	**Costs on sales and services**	60/66A	**8.283.291,02**	**8.023.973,74**
A.	Raw materials, consumables and goods for resale	60		
	1. Purchases	600/8		
	2. Stock variation (increase –, decrease +)	609		
B.	Miscellaneous goods and services	61	**7.050.258,39**	**7.205.895,13**
C.	Salaries and wages, social security costs and pensions	62	**1.090.596,89**	**671.002,88**
D.	Depreciations and amounts written down on formation expenses, intangible and tangible fixed assets	630	**141.572,13**	**145.842,28**
E.	Amounts written down on stocks, orders in progress and trade debtorss (increase +, decrease –)	631/4		
F.	Provisions liabilities and charges (increase +, decrease –)	635/7		

Values EUR		Note	2019	2018
G.	Other operating charges	640/8	863,61	1.233,45
H.	Operating charges capitalised as reorganization costs	649		
I.	Non-recurring operating charges	66A		
III.	**Operating profit (losses)**	9901	**78.028,04**	**–146.138,36**
IV.	**Financial income**	75/76B	**19,86**	**22,32**
A.	Recurring financial income	75	**19,86**	**22,32**
	1. Income from financial fixed assets	750		
	2. Income from current assets	751	**15,58**	**20,82**
	3. Other financial income	752/9	**4,28**	**1,50**
B.	Non-recurring financial income	76B		
V.	**Financial charges**	65/66B	**6.449,48**	**4.999,29**
A.	Financial charges	65	**6.449,48**	**4.999,29**
	1. Debt charges	650	**0,02**	**0,00**
	2. Amounts written down on current assets other than mentioned under II.E. (increase +, decrease –)	651		
	3. Other financial charges	652/9	**6.449,46**	**4.999,29**
B.	Non-recurring financial charges	66B		
VI.	**Profit (losses) before tax current year**	9903	**71.598,42**	**–151.115,33**
VII.	**Transfers from deferred taxation**	780		
VIII.	**Transfer to deferred taxation**	680		
IX.	**Income taxes**	67/77		
A.	Income taxes	670/3		
B.	Income tax adjustments and write-back of tax provisions	77		
X.	**Profit (losses) current year**	9904	**71.598,42**	**–151.115,33**
XI.	**Transfers from non-taxable reserves**	789		
XII.	**Transfers to non-taxable reserves**	689		
XIII.	**Distributable profit (losses) current year**	9905	**71.598,42**	**–151.115,33**
A.	Distributable profit (losses)	9906	**289.716,50**	**218.118,08**
	1. Distributable profit (losses) current year	(9905)	**71.598,42**	**–151.115,33**
	2. Accumulated profits (losses) former year	14P	**218.118,08**	**369.233,41**
B.	Transfers from capital and reserves	791/2		
	1. to capital and share premium account	791		
	2. from reserves	792		
C.	Transfers to capital and reserves	691/2		
	1. to capital and share premium account	691		
	2. to legal reserve	6920		
	3. to other reserves	6921		
D.	Profit (losses) to be carried forward	(14)	**289.716,50**	**218.118,08**
E.	Shareholders' contribution against the loss	794		
F.	Profit to be distributed	694/7	**0,00**	**0,00**
	1. Dividends	694		
	2. Directors' emoluments	695		
	3. Employees	696		
	4. Other beneficiaries	697		
OFF BALANCE SHEET		OUT		

PRESS RELEASES AND STAKEHOLDER WORKSHOPS 2019

PRESS RELEASES

18 February	ENTSOG opens public consultation on draft TYNDP 2018
08 April	ENTSOG publishes CBA Project Fiches for TYNDP 2018
19 April	ENTSOG publishes Summer Supply Outlook 2019 and Summer Supply Review 2018
30 April	ENTSOG publishes Practical Implementation Document for developing the Ten-Year Network Development Plan (TYNDP) 2020
13 May	ENTSOG commences project data collection for TYNDP 2020 on 30 May 2019
23 May	ENTSOG publishes supporting documents for the project collection process for the TYNDP 2020
12 June	ENTSOG publishes its Annual Report 2018 and Monitoring Reports for CAM Network Code and CMP Guidelines
27 June	ENTSOG informs about the beginning of the incremental capacity process 2019
06 August	ENTSOG opens public stakeholder consultation on its AWP 2020
17 Sepember	The ENTSOs and ACER mark 10 years of European Energy Market Integration
15 October	ENTSOG publishes the Winter Supply Outlook 2019/20 and Winter Supply Review 2018/19
25 October	ENTSOG publishes the Demand Assessment Reports of European gas Transmission System Operators
29 October	ENTSOG publishes new edition of Transmission Capacity Map (2019)
04 November	ENTSO-E and ENTSOG publish the focus study on interlinkage between gas and electricity systems
05 November	ENTSOG publishes list of projects to be included in TYNDP 2020
13 November	ENTSOs publish European wide gas and electricity Scenario Report for TYNDP2020
25 November	ENTSOs commence public consultation on their Scenario Report for TYNDP2020
12 December	ENTSOG launches the 'ENTSOG Roadmap 2050 for gas grids' at the ENTSOG Conference 2019
18 December	ENTSOG publishes the CAM Network Code 'Capacity Auction Calendar' for 2020/21
19 December	ENTSOG publishes its Annual Work Programme 2020
30 December	ENTSOG and Gas Infrastructure Europe (GIE) publish the System Development Map 2018/2019

STAKEHOLDER CONSULTATIONS AND WORKSHOPS 2019

MARKET DEVELOPMENT

07 May	Invitation for the ENTSOG and GIE Joint Workshop on Guarantees of Origin of 'renewable and low-carbon gases'

MARKET CODES

February – April	FSR/ENTSOG online Gas Network Codes course

TRANSPARENCY

May – December	Online webinars for TP users
21 November	13th Transparency workshop

INTEROPERABILITY

28 November	Joint ENTSOG/EASEE-gas workshop on Data Communication Harmonisation for Gas Transmission

SCENARIO

18 April	Invitation to the ENTSOs TYNDP 2020 Scenario Building Stakeholder Webinar
05 December	Gas and electricity ENTSOs workshop on joint TYNDP 2020 Scenarios, Brussels

INVESTMENT

15 February	ENTSOG Webinar on TYNDP 2020 Practical Implementation Document
21 March	ENTSOG's Presentation Day for Draft TYNDP 2018
15 May	ENTSO-E and ENTSOG joint workshop on interlinkage between gas and electricity scenarios and infrastructure projects assessment
03 June	Webinar to assist promoters with the project submission for TYNDP 2020
27 November	ENTSOs Winter Outlook Assessment 2019 / 2020 Webinar

GENERAL

11 December	ENTSOG 10 Year Anniversary Conference "ENTSOG'S EVOLUTION: FROM NETWORK CODES TO ROADMAP 2050"

LIST OF **ABBREVIATIONS**

ACER	Agency for the Cooperation of Energy Regulators
AR	Annual Report
ARIS	ACER's REMIT Information System
AWP	Annual Work Programme
BAL KG	Balancing Kernel Group
BAL NC	Balancing Network Code
BP	Booking Platform
CAM NC	Capacity Allocation Mechanism Network Code
CAP KG	Capacity Kernel Group
CBA	Cost-Benefit Analysis
CCS	Carbon Capture Storage
CCU	Carbon Capture and Utilisation
CEER	The Council of European Energy Regulators
CEN	European Committee for Standardisation
CIS	Commonwealth of Independent States
CMP GL	Congestion Management Procedures Guidelines
CNOT	Common Network Operational Tool
DAR	Demand Assessment Report
EASEE-gas	European Association for the Streamlining of Energy Exchange - gas
EC	European Commission
ECP	External Contact Platform
EEA	European Economic Area
EFTA	European Free Trade Association
EIC	Energy Identification Code
EnC	Energy Community
ENTSO-E	European Network of Transmission System Operators for Electricity
ENTSOG	European Network of Transmission System Operators for Gas
ETS	European Trading Scheme
EU	European Union
FDA UIOLI	Firm-Day Ahead Use It Or Lose It
FUNC	Gas Network Codes Functionality Platform
GCG	Gas Coordination Group
GIE	Gas Infrastructure Europe
GHG	Greenhouse Gases
GIS	Geographical Information System
GMD TF	Gas Market Design Task Force
GTC KG	General Terms and Conditions Kernel Group

IEA	International Energy Agency
INT WG	Interoperability Working Group
INV WG	Investment Working Group
IP	Interconnection Point
IPP	Innovative Projects Platform
KG	Kernel Group
LT UIOLI	Long-Term Use It Or Lose It
LNG	Liquefied Natural Gas
MDWG	Market Development Working Group
MIT-lab	Member Informal Taskforce
MS	Member State
NC	Network Code
NeMo KG	Network Model Kernel Group
NRA	National Regulatory Authority
OS & BB	Oversubscription and Buy Back
PCI	Project of Common Interest
P2G	Power-to-Gas
RBP	Regional Booking Platform
R&D	Research and Development
ReCo	Regional Coordination System for Gas
REMIT	Regulation (EU) No 1227/2011 on wholesale energy market integrity and transparency
RES	Renewable Energy Sources
RRM	Registered Reporting Mechanism
SCN WG	Scenario Working Group
SoS	Security of Supply
TAR DPTF	Tarriff Data Publication Task Force
TAR KG	Tariff Kernel Group
TAR NC	Tariff Network Code
Tariff Idoc	Tariff Network Code Implementation Document
TP	Transparency Platform
TRA WG	Transparency Working Group
TSO	Transmission System Operator
TYNDP	Ten-Year Network Development Plan
UMM	Urgent Market Message
VTPs	Virtual Trading Points
WG	Working Group

COUNTRY CODES (ISO)

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

ADDITIONAL **NOTE**

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