

Securing Europe's energy future

implementing the internal
market for gas

**ENTSOG – A FAIR
PARTNER TO ALL!**

Key Facts 2013

Length of the high-pressure pipeline network:

247,136 km

Total natural gas
demand in Europe:
461 bcm

Directly employed staff:

51,330 people

Share of natural gas
in EU energy mix:

23.1%

Total power installed in all
compressor stations:

14,284 MW

■ Data based on all ENTSOG members, associated partners and observers, see page 43

■ Source: primary energy consumption, "Statistical Report 2013", eurogas

Image courtesy of Gas Connect Austria

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Working Towards Our Common Goals

**Our Role | Our Way of Implementing Europe's Internal
Energy Market | Always In Time, Always Together!**

Our Role

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

Our specific objectives are to:

- ▲ Promote the completion of the internal market for gas and stimulate cross-border trade,
- ▲ Ensure the efficient management and coordinated operation of the European gas network and
- ▲ Facilitate the European network's sound technical evolution.

ENTSOG's tasks are defined within the European Gas Regulation (EC) 715/2009. They include the development of pan-European Network Codes for market and system operation, elaboration of a pan-European Ten-Year Network Development Plan (TYNDP), provision of regular gas supply and demand information for the European market and the delivery of common operational tools to ensure network security and reliability.

Natural gas (NG) releases 25 – 30% less CO₂ than oil and 40 – 50% less than coal per unit of energy produced.



NETWORK CODES

The network codes developed by ENTSOG will outline the rules for gas market integration and system operation and development, covering subjects such as capacity allocation, network connection and operational security. The process begins with a request from the European Commission (EC) to ACER (Agency for the Cooperation of Energy Regulators) to submit a framework guideline. ENTSOG then develops the related network code in line with the ACER Framework Guideline, conducting extensive public consultations throughout the development process. Upon the EC's approval, the network code becomes legally binding, being adopted in accordance with the Comitology procedure.

NETWORK DEVELOPMENT PLAN

The TYNDP provides a picture of the European gas infrastructure and its future developments, and it maps the integrated gas network, based on a range of development scenarios. The TYNDP also includes a European Capacity Adequacy Outlook and an assessment of the resilience of the network. Gas Regional Investment Plans (GRIPs) led by TSOs with ENTSOG assistance complement the TYNDP by focusing on issues that are of particular regional importance.

ADEQUACY FORECASTS

ENTSOG's Annual Summer and Winter Supply Outlooks review projections for the gas supply, demand and capacity of the near future. Supply Reviews analyse the actual situation over a particular period.

OPERATIONAL TOOLS

Regulation (EC) 715/2009 also envisages the use of common network operation tools to ensure the transparency and coordination of network operations under normal and emergency conditions.

Image courtesy of Snam Rete Gas

Our Way of Implementing Europe's Internal Energy Market

The success of the European internal energy market is highly contingent on close and effective cooperation between all stakeholders. In 2013 ENTSOG continued its homework on this matter. We developed and completed the network code for Gas Balancing in Transmission Systems, which was then approved by the Agency for the Cooperation between Energy Regulators (ACER) and submitted for legislation.

In keeping with Europe's comitology procedure, the Gas Committee reviewed our proposal and, in October 2013, passed the network code in large and enacted it into law pending approval by the European Council and Parliament.

In December 2013, ENTSOG submitted a revised version of the network code for Interoperability and Data Exchange Rules (INT NC) to ACER. The Agency in turn delivered it to the European Commission in early 2014 for the comitology process. Finally, ENTSOG was invited by the European Commission to propose harmonisation rules for the tariff structures of natural gas transmission (tariff network code – TAR NC) in Europe as well as to define the processes for marketing incremental and new capacities (amendment to CAM NC on the matter of incremental and new capacity). ENTSOG will also take on these tasks and continue to work towards achieving a harmonised internal energy market in Europe with the overarching goal of achieving price stability and security of gas supply for all European states and consumers. ENTSOG will monitor the development in order to assess the success of the network codes.

We have already achieved many of our goals. Yet there are still many challenges to overcome on our way to implementing Europe's internal energy market. Clearly, Member State governments, European Commission, European Parliament, TSOs, Associations, Regulation Authorities and gas consumers must work more closely together than ever before. But each stakeholder has their own areas of expertise. ENTSOG has and always will attempt to involve all key stakeholders in important decision-making processes at the earliest possible stage.



STEPHAN KAMPHUES
President, ENTSOG

ENTSOG has and always will attempt to involve all key stakeholders in important decision-making processes at the earliest possible stage.

By establishing a sense of mutual trust, we will be able to cooperate effectively in the pursuit of our common European goals.

Recent developments on the energy market necessitate increasing integration of electricity and gas. To realise a comprehensive, holistic energy market, ENTSO-E and ENTSG must intensify their cooperative efforts. Only in this way will we be able to attain the best overall economic results for the benefit of all Europeans.

ENTSO-E and ENTSG must intensify their cooperative efforts. Only in this way will we be able to attain the best overall economic results for the benefit of all Europeans.

As president of ENTSG, I am looking forward to further developing our positive and energetic collaboration with European partners so that we can achieve our common goal of an internal European energy market.

Stephan Kamphues
President, ENTSG



Image courtesy of GRTgaz

Always In Time, Always Together!

Well-coordinated cooperative efforts always bring better results than working in isolation. In 2013, ENTSOG achieved a great number of deliverables for the internal gas market with remarkable punctuality. The process of refining the network codes progressed quickly and the time was greatly reduced between the presentation of the first draft and delivery of the network code documents for ACER's final opinion prior to being forwarded to the Gas Committee of the European Commission.

The Capacity Allocation Mechanism network code (CAM NC) was initially delivered on 6 March 2012 and delivered to ACER for its final opinion by 17 September 2012. The Gas Committee finally met in January 2013. The Balancing network code (BAL NC) was delivered for ACER's initial opinion on 26 October 2012 and then refined in the period between September and February 2013. The comitology process started in April 2013 and was completed on 2 October 2013. The Interoperability network code was in fact delivered to ACER for their opinion on 11 September 2013 and resubmitted to ACER on 18 December 2013 after refining them in cooperation with ACER and ENTSOG members. The comitology process started in April 2014.

The high degree of cooperation between gas market stakeholders, ACER regulators, European Commission and member TSOs contributed to the success of this work and helped to streamline the process. From this we have learned that the better the gas market actors know each other, the better our common results will be. It is reassuring to see such strong willingness on the part of all stakeholders to implement the internal gas market in the very near future.

But TSOs accomplished much more in 2013 than writing documents and regulations. The first "CAM compliant" capacity platform to aggregate multiple transmission system operators (TSOs) in Europe commenced in April 2013 well before the relevant network code was implemented. This I think was a great opportunity for the gas market to assess NC requirements in a real-life environment and also test several CAM NC concepts.



In 2013, ENTSOG achieved a great number of deliverables for the internal gas market with remarkable punctuality.

VITTORIO MUSAZZI
General Manager, ENTSOG

But TSOs accomplished much more in 2013 than writing documents and regulations.

Other pilot projects foreseen in the CAM Roadmap for this network code were performed across Europe, in a cooperative effort between National Regulatory Authorities (NRAs) and TSOs, and under the supervision of ACER and ENTSOG.

In February 2013, ENTSOG also published the third edition of the Ten-Year Network Development Plan (TYNDP), which, thanks to the generous feedback received for the previous edition, was improved overall.

New maps on capacity and system development were published in May and July, respectively, of 2013.

Contributions from ENTSOG during the year were provided to the EU-Russia dialogue meetings and to the Gas Coordination Group, both led by EC, as well as to the preparatory phase of the revision of the Gas Target Model.

By the end of 2013, ENTSOG expanded to 43 members and three associated partners from 26 EU member states, and four TSOs as observers from four non-EU states. The Ukrainian TSO UKRTRANSGAZ joined ENTSOG during the last General Assembly in ENTSOG (December 2013). Therefore, ENTSOG represents TSOs of the EU while also maintaining partnerships with neighbouring countries in the spirit of the Regulation (EC) 715/2009. Significant activities were also performed by the Energy Community as a whole to engage and discuss issues with the Balkan states of Europe.

ENTSOG has always striven towards cooperative efforts involving all key players and ENTSOG has devoted much time and resources to this goal. Taking the excellent results into consideration, this has been a highly successful strategy in my opinion.

But there is still much more to be done. ENTSOG must now prepare the tariff network code (TAR NC) and the amendments of the CAM NC to accommodate rules regarding incremental and new capacity, and also adopt the Cost-Benefit Analysis methodology for the selection of Projects of Common Interest by August 2014.

New challenges await us at ENTSOG and we are confident that by continuing to cooperate with our various stakeholders, we will be able to jointly achieve these targets.

Vittorio Musazzi
General Manager, ENTSOG

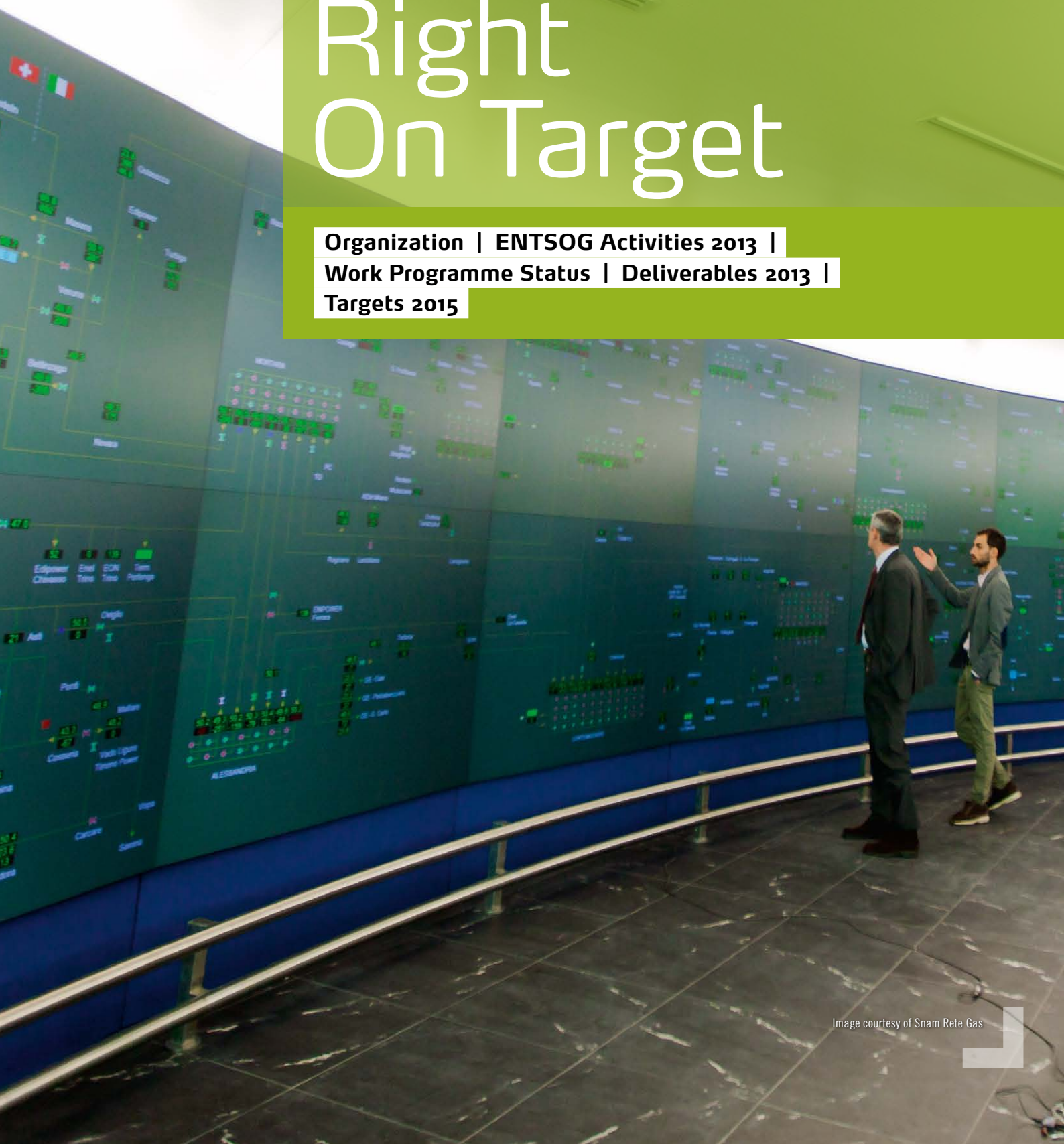


Image courtesy of Snam Rete Gas



Right On Target

**Organization | ENTSOG Activities 2013 |
Work Programme Status | Deliverables 2013 |
Targets 2015**



Organization

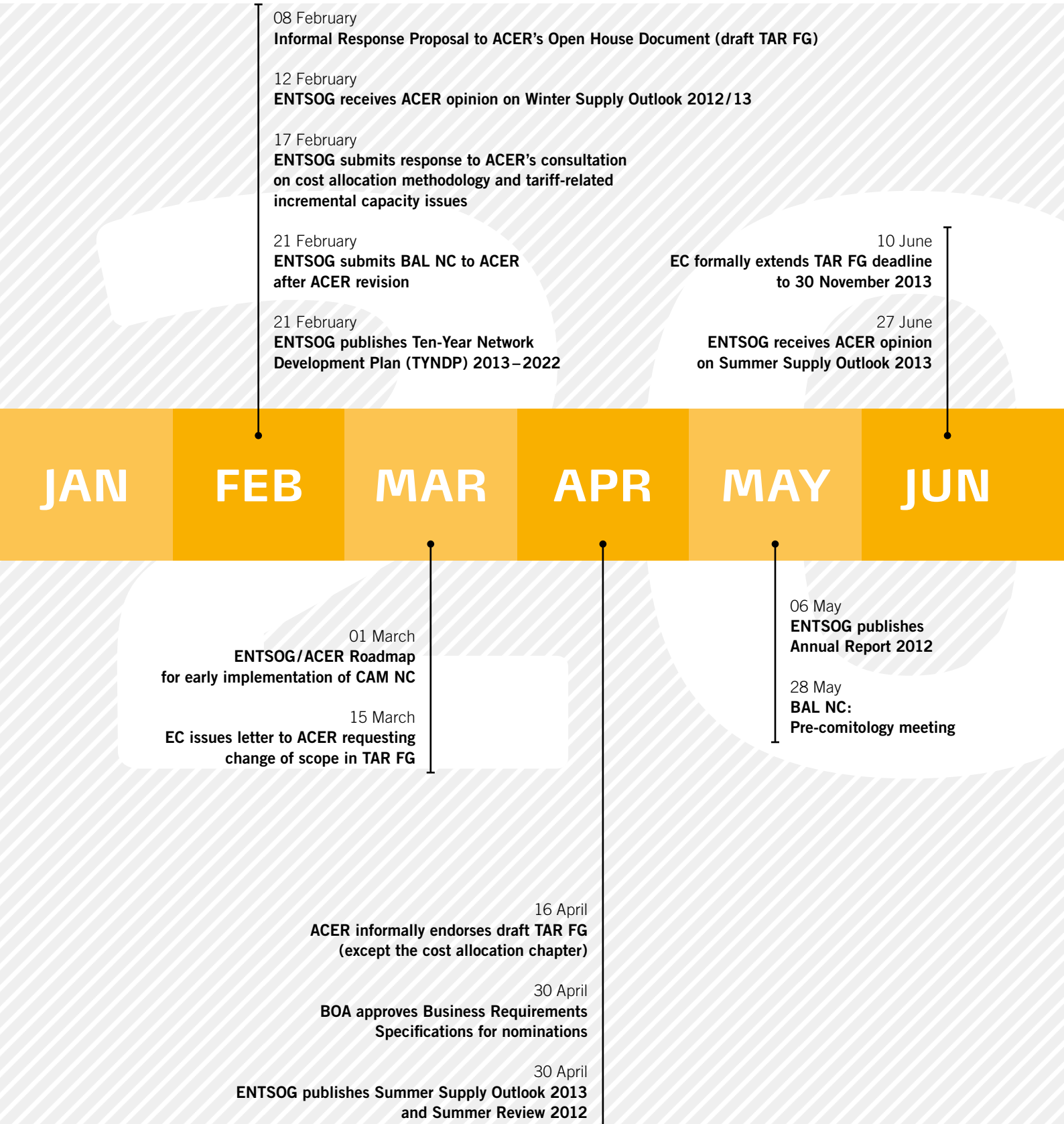
During 2013, our members, observers, associated partners and Management Board underwent the following changes:

- ▲ As of 1 August 2013, AB Amber Grid is Lithuania's transmission system operator (TSO) for natural gas and therefore in charge of natural gas transmission. This change was made in line with Lithuanian legislation mandating separate networks. AB Amber Grid now represents Lithuania at ENTSOG instead of Lietuvos Dujos. This change was introduced to the General Assembly on 24 October 2013.
- ▲ On 24 October 2013, the ENTSOG General Assembly admitted BGE UK Ltd as a Member at its General Assembly effective from 1 October 2013.
- ▲ The ENTSOG General Assembly admitted UKR-TRANSGAZ as an Observer at its General Assembly on 24 October 2013, effective 1 November 2013.
- ▲ On 18 December 2013, ENTSOG General Assembly admitted Plinacro d.o.o. as a Member at its General Assembly effective 1 January 2014. Plinacro previously held Observer status at ENTSOG.
- ▲ Mr Philippe Boucly resigned from his position at ENTSOG Board effective 26 April 2013. The ENTSOG Management Board approved Mr Thierry Trouvé as a temporary replacement at a board meeting held 30 April 2013.
- ▲ On 22 May 2013, ENTSOG's General Assembly unanimously approved the Management Board's recommendation of replacing Mr Boucly with Mr Trouvé. In compliance with the Article of Association, this change to the Management Board is to be realised by the end of current term.
- ▲ Mr Graeme Steele resigned from the ENTSOG's Management Board effective 1 September 2013. By 11 September 2013, the Management Board approved Ms Helen Campbell as a temporary replacement for Mr Steele.
- ▲ On 24 October 2013, ENTSOG's General Assembly unanimously approved the Management Board's recommendation of replacing Mr Steele with Ms Campbell. In compliance with the Article of Association, this change to the Management Board is to be realised by the end of current term.



The Management Board, from the left to the right:
Thierry Trouvé (GRTgaz S.A.), Ralph Bahke (ONTRAS Gastransport GmbH), Stephan Kamphues (Open Grid Europe and President ENTSOG), Harald Stindl (Gas Connect Austria), Torben Brabo (Energinet.dk), Walter Peeraer (Fluxys), Rafał Wittmann (GAZ-SYSTEM S.A.), Gaetano Mazzitelli (Snam Rete Gas S.p.A.), Annie Krist (Gasunie Transport Service B.V.), Dimitrios Kardomateas (DESFA S.A.), Francisco de la Flor García (Enagás S.A.), Vladimír Outrata (NET4GAS, s.r.o.), Helen Campbell (National Grid Gas plc)

ENTSOG Activities 2013





Work Programme Status

This table provides an overview of the activities in ENTSOG's three main business areas. The commented tasks originate from the Annual Work Programme 2013

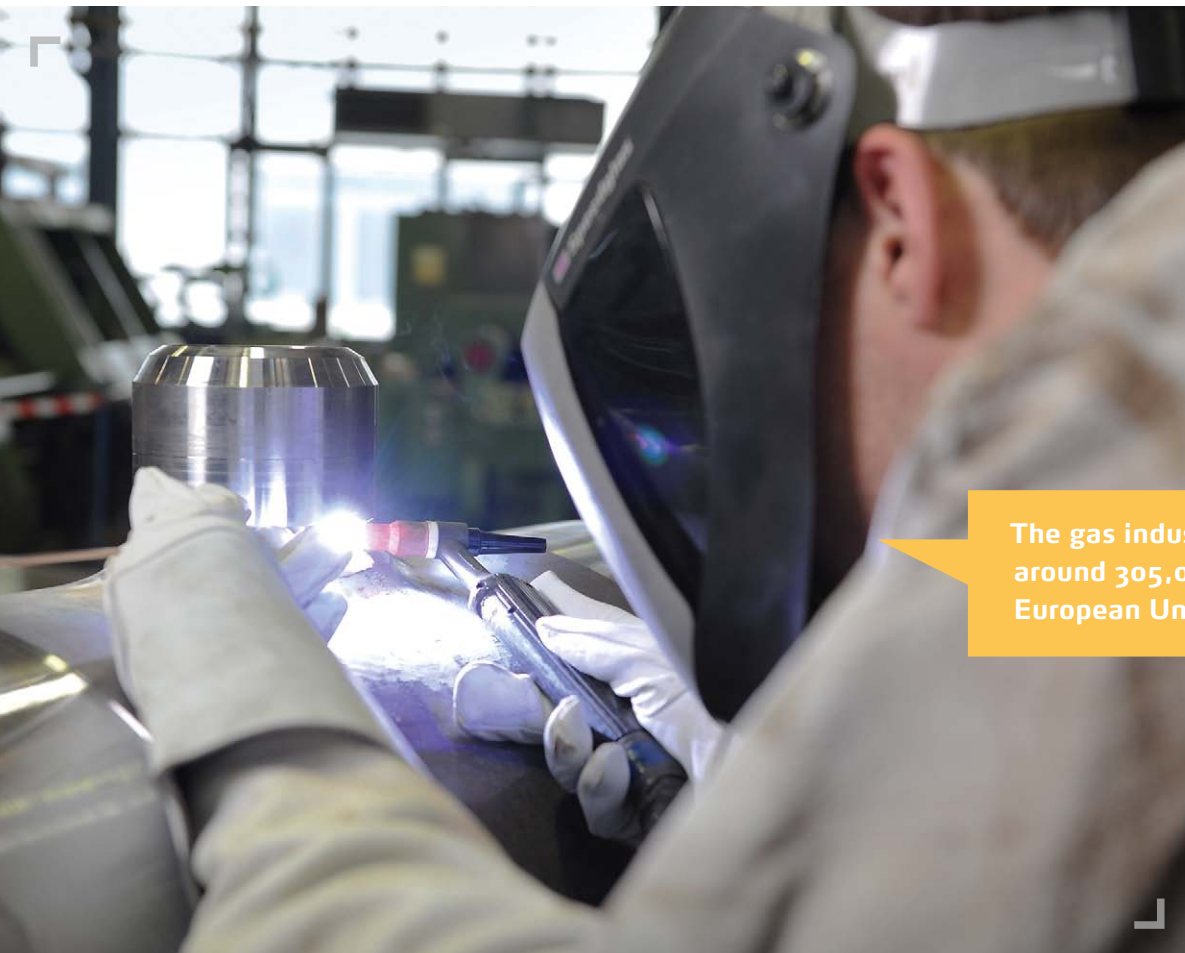
| ACTIVITY | GOAL | DELIVERABLE & COMPLETION DATE | CONSULTATION WITH | STATUS / COMMENTS |
|---|--|--|--|--|
| MARKET | | | | |
| NETWORK CODE DECISIONS (BAL NC) | Finalise network code on balancing | BAL NC resubmitted to ACER by 21 February 2013 | ACER, EC, Members States. Committee meetings 11 July, 1–2 October | BAL NC is expected to be adopted by European Commission in April 2014 |
| BRS FOR NOMINATIONS | Deliver Business Requirements Specifications for Nominations based on Balancing Network Code | Approved by the ENTSOG Board on 30 April 2013 | BRS workshops at 20 February, 14 March, 4 April | Presented at the ENTSOG CNOT workshop 25 February 2014 |
| RELEASE OF FLEXIBLE GAS | Prepare and start consultations on procedures for release of flexible gas, as stipulated in network code. | Planned to be submitted by end of 2013 | Consultation with TSOs | Task was cancelled due to removal of task from BAL NC |
| MONITORING AND REVIEWS RELATED TO THE BAL NC | Review of expected challenges for member states when implementing the BAL NC | Implementation report delivered to ACER at 30 November 2013 | Consultation with TSOs and ACER | Report discussed with ACER in February 2014 and possibly to be repeated in Q3–Q4 2014 |
| PROJECT PLAN FOR TARIFF NETWORK CODE | Develop network code proposal | Originally TAR FG should have been issued by ACER at the end of Dec 2012 but was not available until end of Nov 2013. Therefore start of the network code work was delayed until January 2014. | ENTSOG participated in ACER public workshop January 2013, responded to additional information for Open House session and to ACER consultation from Jul–Sep 2013. Some ENTSOG members attended expert group meetings. Participated in ACER Q & A session in August 2013 and in public workshop in September 2013. | Participated in all ACER events related to tariffs. Maintained bilateral and trilateral discussions with ACER and EC to help progress the development of the tariff framework guidelines. Tariff Proposal is scheduled for publication 31 December 2014. |
| NETWORK CODE FINALISATION (CAM NC) | Incorporation of requested changes to CAM NC proposal, provide support to EC during preparation and comitology steps | CAM NC Comitology started January 2013 | ACER, EC, Members States | CAM NC was published by the European Commission 15 October 2013 |
| IMPLEMENTATION ACTIVITIES CAM NC | CAM Road Map including EC-requested list of IPs where CAM NC can be applied, booking platform report, auction calendar: 2014 pilot project, CNOTs: scoping paper for CMPs and rest of CAM NC | Deliverables and completion foreseen in 2014 | ACER, TSOs, Market Stakeholders | Road Map update foreseen mid-2014, booking platform Report scheduled for publication 2014, auction calendar scheduled for publication March 2014, CNOTs to be presented at ENTSOG workshop February 2014 |
| CMP IMPLEMENTATION | Data collection and survey of ENTSOG members pertaining to CMP implementation status | Table of monitoring results ready in February 2014 | ACER, TSOs | Published in ENTSOG Annual Report 2013 |
| INCREMENTAL CAPACITY | Engage with EC and ACER to assess scope of Guidance document, study issues internally and prepare for code-drafting phase | Launch documentation developed and approved by WG 7 January 2014 | TSOs, ACER, EC, Market Stakeholders | Incremental Proposal is scheduled for publication 31 December 2014 |

| ACTIVITY | GOAL | DELIVERABLE & COMPLETION DATE | CONSULTATION WITH | STATUS / COMMENTS |
|--|---------------------------------|--|---|---|
| SYSTEM DEVELOPMENT | | | | |
| PROJECT PLAN FOR INVESTMENT WORKGROUP DELIVERABLES | TYNDP 2013–2022 | 21 Feb 2013 11 July 2013 (submission to ACER) | Stakeholders in 2012 | Used as infrastructure project notification to Commission under REG (EC) 647/2010 |
| | CBA methodology | 15 November 2013 | Stakeholders (2 Public consultations, 2 SJWSs and one joint workshop with ENTSOE and dedicated to Member States and NRAs) | |
| | Summer Supply Outlook 2013 | 30 April 2013 | Gas Coordination Group | |
| | Summer Review 2012 | 30 April 2013 | Gas Coordination Group | |
| | Winter Supply Outlook 2013/14 | 28 November 2013 | Gas Coordination Group | |
| | Winter Review 2012/13 | 28 November 2013 | Gas Coordination Group | |
| PROJECT PLAN FOR INVESTMENT WORKGROUP IT AND R&D PLAN | Data warehouse project | Contract signature in September 2013 | Tender | Product fully operational in October 2014 (including the new Transparency Platform) |
| | Gas demand for power generation | Approach to define gas demand for power generation based on gas vs coal vs CO ₂ price | ENTSO-E | In 2014, focus will be on the need of flexibility induced by RES development |
| | Network modelling | Development of prototype cases for the monetization of project benefits under REG (EC) 347/2013 | | Fully fledged development in 2014 including CBA Case-study |

| | | | | |
|--|--|--|--|--|
| SYSTEM OPERATION | | | | |
| PROJECT PLAN FOR TRANSPARENCY WORKGROUP | Establish Transparency Platform (TP) for participation of all TSOs | Transparency Platform upgraded 1 October 2013 | TP users | New TP to be delivered in 2014 |
| | Transparency Workshop: preparation and organisation | 11 December 2013 | | Presentation of material and publishing of minutes |
| | Improve quality of TP and increase number TSOs participating | Ongoing effort | TP users | |
| PROJECT PLAN FOR INTEROPERABILITY WORKGROUP | Develop a network code proposal | Draft proposal delivered 10 Sep, revised proposal (after ACER's reasoned opinion) delivered 18 December 2013 | Public consultation 28 Feb–26 Apr, Consultation Workshop 20 March, 3rd Countries Workshop 16 April, Data Exchange Workshop 23 April, Madrid Forum 17 April, Concluding Workshop 28 May, Stakeholder Support Process 9–23 July 2013 | ENTSOE supports EC for pre-comitology meetings. First comitology meeting in April 2014 |

Deliverables 2013

| | |
|---------------------|---|
| 21 February | ENTSOG adopts Ten-Year Network Development Plan 2013–2022 |
| 30 April | Release of Summer Supply Outlook 2013 and accompanying Summer Review 2012 |
| 06 May | ENTSOG publishes Annual Report 2012 |
| 23 July | ENTSOG publishes new editions of Capacity Map and System Development Map |
| 10 September | ENTSOG submits Network Code on Interoperability and Data Exchange Rules draft proposal to ACER |
| 26 September | ENTSOG publishes Annual Work Programme 2014 |
| 01 October | ENTSOG launches the upgraded Transparency Platform |
| 05 November | North-West European Gas Transmission System Operators publish their Gas Regional Investment Plan |
| 15 November | ENTSOG publishes Cost-Benefit Analysis Methodologies in support of Project of Common Interest process |
| 28 November | Release of Winter Supply Outlook 2013/14 and Winter Review 2012/13 |
| 18 December | ENTSOG submits Network Code on Interoperability and Data Exchange Rules revised proposal to ACER |



The gas industry provides around 305,000 jobs in the European Union.

Image courtesy of Open Grid Europe

Targets 2015

On 4 February 2011, European Council set the deadline for completing the internal energy market to the end of 2014. The involved parties are working hard to achieve this ambitious goal.

Since the conversion efficiency into electricity or heat is higher with natural gas than with other fossil fuels, less energy is lost in the process.



Image courtesy of GRTgaz

As foreseen by Regulation (EC) 715/2009, ENTSOG has been asked to deliver network codes under a very strict timeline – one year – while also consulting with all relevant stakeholders in this same period. Network codes for capacity allocation mechanisms, balancing, interoperability and harmonisation of tariff structures will serve as the cornerstones of Europe's future internal energy market. Together with network codes, continuous development of the Ten-Year Network Development Plan (TYNDP) has provided some of the most interesting and excellent overviews of the European gas market over a ten-year period. The next edition of this document will be strengthened (planned for February 2015) by the first implementation of Cost-Benefit Analysis (CBA) methodology applied to projects of common interest for the EU.

Our efforts from 2011–2014 have been devoted to completing network codes and developing new ones as they become necessary, as well as finalising the next edition of TYNDP. From 2015 onwards, a new set of network codes will be taken into consideration so that the internal gas market can be improved in additional aspects.

ENTSOG has engaged a team in Brussels that is, with the support of our members in various working groups, working to complete these many tasks. Regular workshops and meetings with stakeholders are conducted where various issues can be presented and discussed. By proceeding in this manner, we will be able to develop and complete our network codes and TYNDP in our steadfast pursuit of an effective internal energy market for Europe.



A Concerted Effort

**Market | System Development | System Operation |
Implementation of Network Codes**



ENTSOG's Market team is responsible for delivering a coherent set of Network Codes that, together with other ENTSOG activities, will enable and promote the internal gas market in Europe. During 2013, the team worked on three specific codes: capacity allocation mechanisms (CAM), gas balancing in transmission networks (BAL) as well as the guidelines on Congestion Management Procedures (CMP). Furthermore, preparations have started on the network code for transmission tariffs as well as incremental and new capacity that are to be finalised by the end of 2014. Together with the network code for interoperability and data exchange, these codes and guidelines establish a core framework for the future internal gas market.

AREA STRUCTURE

The work within the Market Area has been organised in three Working Groups, supplemented by a number of Kernel Groups with more specialized tasks:

- ▲ Until now, the **Capacity Working Group (CAP WG)** has been responsible for developing and drafting network codes for capacity allocation mechanisms (CAM NC) and submitting these to ACER. CAP WG has also contributed to the CMP Guideline on behalf of ENTSOG. In the future, CAP WG will also extend its activities to implementation of network codes, monitoring obligations and defining Business Requirements Specifications for both CAM NC and CMP Guidelines. CAP WG consists of the following three Kernel Groups for detailed tasks:

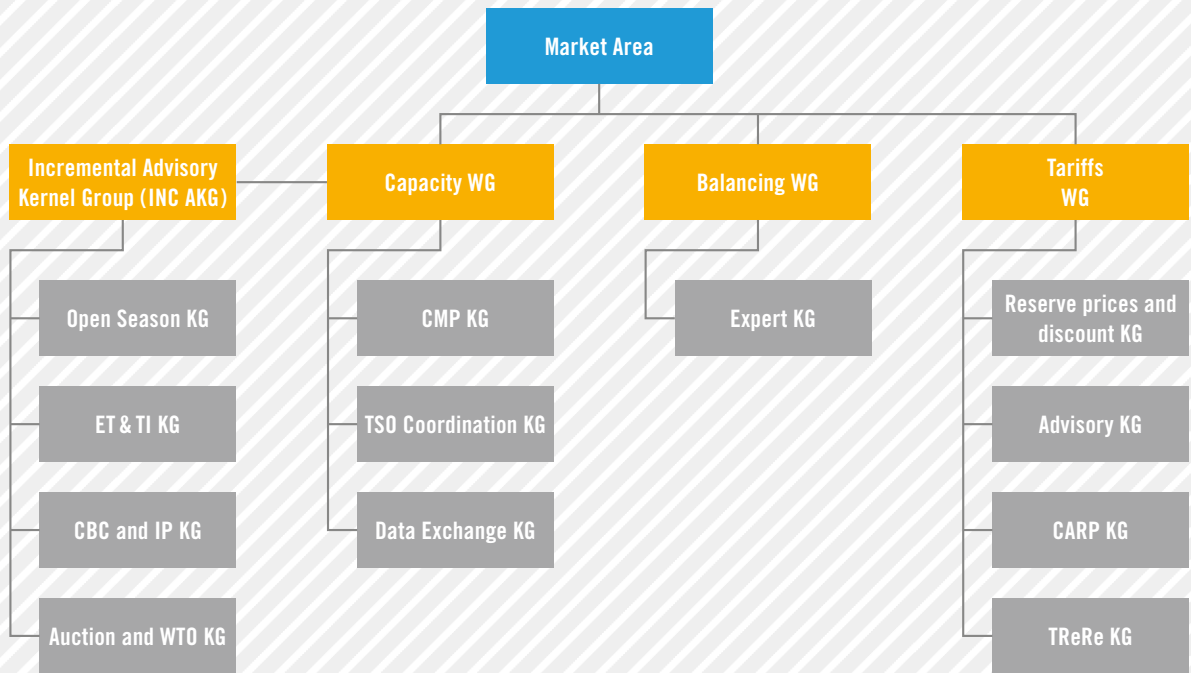
 - Adjacent TSO cooperation (**ATSO KG**)
 - CMP (**CMP KG**)
 - Data Exchange (**DE KG**)

Within CAP WG, the **Incremental Advisory Kernel Group (INC AKG)** is developing and drafting the proposal for incremental and new capacity. The incremental proposal is closely coordinated with the tariff network code (TAR NC) concerning the economic test and tariffs for incremental and new capacity. INC AKG consists of four Kernel Groups:

 - Auctions and when to offer (**AUC KG**)
 - Cross-border coordination and information provisions (**CBC&IP KG**)
 - Economic test and tariff issues (**ET&TI KG**)
 - Open Seasons (**OS KG**)
- ▲ The **Tariff Working Group (TAR WG)** is responsible for developing and drafting a TAR NC for submission to ACER. Detailed work on specific issues is carried out in the following kernel groups:

 - Cost Allocation and Reference Price (**CARP KG**)
 - Reserve Prices and Discounts (**ResDis KG**)
 - Transparency and Revenue Recovery (**TReRe KG**)
 - Advisory KG
- ▲ The **Balancing Working Group (BAL WG)** has been responsible for developing and drafting the Balancing Network Code (BAL NC). In the future, BAL WG will focus on implementation of network codes, monitoring obligations and Business Requirements Specifications for nominations. BAL WG contains one kernel group – **Expert KG** – that handles the detailed work for balancing-related tasks.

MARKET AREA STRUCTURE



CAPACITY WORKING GROUP

Capacity Allocation Mechanisms

The Network Code on Capacity Allocation Mechanisms (CAM NC), developed by ENTSOG in 2011 and 2012, was integrated into the Gas Committee process early in 2013. ENTSOG provided advice and input to relevant parties during this process and supported the formal sessions of the Gas Committee in an expert capacity. Following scrutiny by the Council of Ministers and European Parliament, the Network Code came into effect in November 2013 with an implementation date of November 2015.

Parallel to its adoption, ENTSOG facilitated the (early-) implementation of the Network Code via the ACER/ENTSOG CAM Roadmap publication and related workshops.

Congestion Management Procedures

The Guidelines on Congestion Management Procedures (CMP) were formally approved in August 2012, with an implementation date of 1 October 2013. ENTSOG has been working to support its members in the implementation of these binding rules.

Incremental and New Capacity

In the area of incremental capacities, ENTSOG has assisted CEER and ACER with policy development. ENTSOG has been intensely active in developing and finalising the network code throughout 2013. Trilateral discussions have been held with the European Commission (EC) and ACER to improve ENTSOG's understanding of their views on the requirements specified in the TAR FG and guidance on incremental and new capacity.

In November 2013, the Agency issued "ACER guidance to ENTSOG on the development of amendment proposals to the Network Code on Capacity Allocation Mechanisms on the matter of incremental and new capacity", which was followed by a formal letter from the EC on 19 December 2013 inviting ENTSOG to develop the incremental proposal by the end of 2014.

The ENTSOG incremental proposal will consist of two parts:

- 1) an amendment to the CAM NC to facilitate the allocation of incremental and new capacity;
- 2) a section of the Tariff NC dealing with incremental and new capacity. ENTSOG provided consulting for the project plan during December 2013 and will engage with stakeholders, ACER and the European Commission during 2014 to ensure that ACER receives the proposal by the end of the year.

Tariff Working Group

ACER has been working on the Tariff Framework Guidelines (TAR FG) for most of 2012 and 2013. In April, ACER endorsed part of the Framework Guidelines. On 30 November, ACER submitted the full TAR FG to the EC. On 19 December, ENTSOG received an invitation letter from the European Commission to draft a Network Code on Harmonised Transmission Tariff Structures for Gas (TAR NC) by the end of 2014.

Tariff-related work at ENTSOG has been intense during the past year in preparing for the network code development process. Throughout the year, trilateral discussions have been held with the Commission and ACER with the goal of improving ENTSOG's understanding of both the Commission's and ACER's views on the tariff requirements specified in TAR FG.

ENTSOG submitted a working level paper to ACER discussing response proposals to the updates made to the draft TAR FG in February 2013 and a response to ACER's consultation on the cost allocation methodologies and tariff-related incremental capacity issues in September 2013. The Launch Documentation for the Network Code development process was elaborated during the second half of 2013 and subsequently published on 22 January 2014. It aims to provide a starting point for stakeholders' discussion on the Network Code development process. The consultation on the draft Project Plan took place as soon as the invitation letter was received on 19 December 2013.

The highly complex area of transmission tariffs for TAR NC is one of the most challenging tasks ENTSOG has ever undertaken. In particular, 31 December 2014 is a very tight deadline for submitting TAR NC to ACER.

Image courtesy of GAZ-SYSTEM



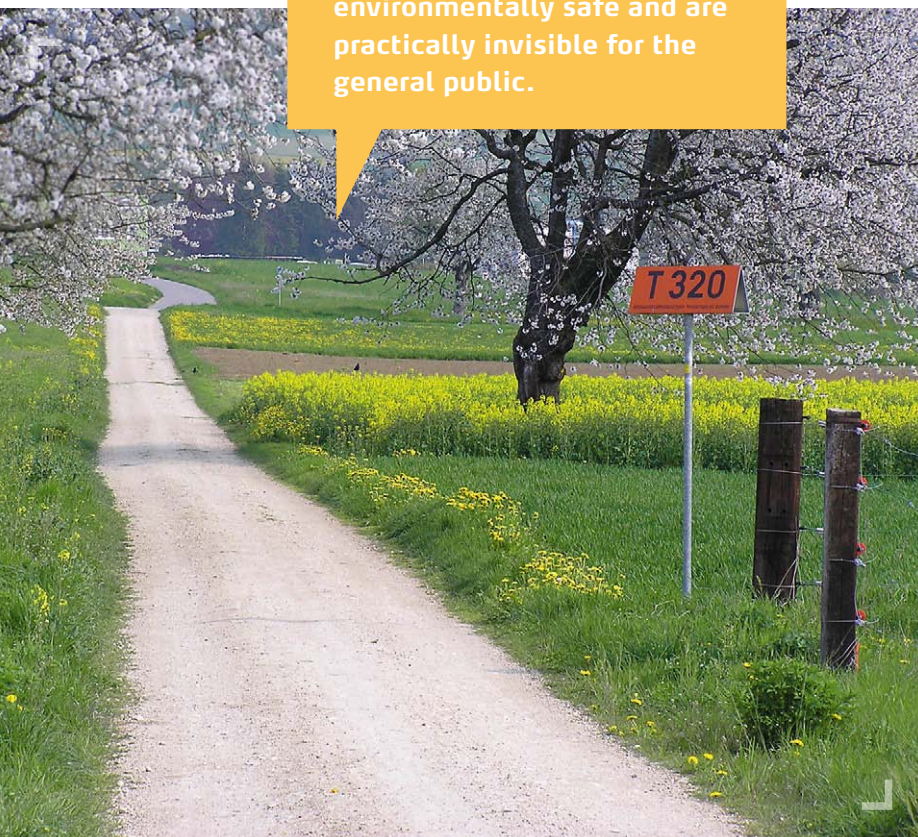
Natural gas is easier and more affordable to store than electricity.

Balancing Working Group

During December 2012 and January 2013, ENTSOG worked closely with key ACER staff to discuss refinements to the draft version of the network code for gas balancing in transmission networks (draft BAL NC) that had been submitted to ACER on 26 November 2012. During the first quarter of 2013, cooperation between ACER and ENTSOG led to the submission of ACER's opinion on BAL NC. Next, ENTSOG performed a fast-track refinement of BAL NC and this was followed by ACER's unqualified recommendation of BAL NC to the EC.

The proposal evolved as part of the Commission's preparation for the Gas Committee and during the Member State deliberations in the Gas Committee. ENTSOG remained active as an expert adviser throughout the process and whilst some enhancements from a Member State and Commission perspective were made, all substantive elements of the industry agreement about the BAL NC were retained when the Gas Committee endorsed BAL NC at its meeting on 2 October 2013.

Underground gas pipelines and gas storage facilities are environmentally safe and are practically invisible for the general public.



BAL NC will introduce market-based balancing throughout Europe. Specifically, the market-based cash-out regime will incentivise network users to balance their portfolios on a daily basis, thus delivering an efficient marketplace where TSOs assume a smaller, residual role with the development of trading platforms that will provide network users with better portfolio management and trading tools.

It is anticipated that, following scrutiny by the European Parliament and Council, BAL NC will come into effect by April 2014. TSOs will then have until October 2015 to implement BAL NC. TSOs can apply for a one-year deadline extension until October 2016, subject to approval from the national regulator.

Countries with insufficient liquidity on the short-term wholesale market can apply for "interim measures". These will allow TSOs to have a balancing platform for a period up to five years and thereby stimulate the short-term market.

Other activities

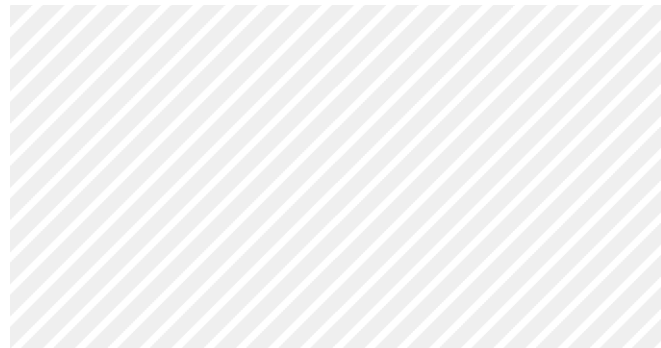
ENTSOG's roles and responsibilities extend beyond the development of codes and into the implementation phase. ENTSOG has been active in developing Common Network Operations Tools (CNOTs) to support the implementation of these codes. CNOTs consist of Business Rules Specifications (BRS) and Message Implementation Guidelines (MIG). ENTSOG's Market team has worked closely together with the ENTSOG Interoperability Team on the BRS part of two pilot projects: the CAM Auction and Nominations implementations with a stakeholder workshop on 25 February 2014.

ENTSOG's Market team is also contributing more to industry developments such as the Gas Target Model process and the EU-Russia dialogue and will be involved in the ACER strategic initiative "Energy Regulation: A Bridge to 2025".

Image courtesy of Fluxys TENP

System Development

The System Development business area covers all ENTSOG activities related to gas supply, demand and infrastructures. The main deliverables are short and medium-term assessments such as the Ten-Year Network Development Plan (TYNDP) and Supply Outlooks. 2013 was also marked by the drafting of the Cost-Benefit Analysis methodology under the new TEN-E Regulation.



SUMMER/WINTER SUPPLY OUTLOOKS AND REVIEWS

The aim of seasonal Supply Outlooks is to give an overview of how the European gas system can potentially cope with the main challenges of the season ahead. This is done by taking into account the latest supply and demand trends captured by seasonal Reviews.

The **Summer Supply Outlook** focuses on the flexibility offered by gas infrastructures to network users during the injection season. This is captured by modelling each of the 183 days of the season:

- ▲ Under various supply situations
- ▲ Targeting different stock levels at the end of the summer
- ▲ Taking into account transmission capacity unavailability due to maintenance

In these perspectives, Summer Supply Outlook 2013 has proven to be sufficiently robust in all parts of Europe.

The **Winter Supply Outlook** focuses both on the decrease of underground gas storage (UGS) stock levels during the winter and specific scenarios with high daily demand. Since 2013, the supply/demand balance has been modelled for the entire winter season as well as for days with potentially high demand. This makes it possible to identify potential imbalances at both the aggregated and balancing zone levels. Sensitivity analyses are performed on the level of demand and supply. Specific stresses on supply are also considered under guidance of the Gas Coordination Group.

The continuous decrease of UGS levels at the end of last summers are of concern for TSOs. If Winter Supply Outlook 2013–14 had shown that European gas infrastructures could cope with the supply/demand balance under a wide range of winter demands, including periods of high daily demand, the final situation would depend on market behaviour. The disruption of Russian gas transit through the Ukraine meant that some countries would be no longer able to meet their whole demand. This concerned most of South-Eastern Europe.

The publication of **Seasonal Reviews** is an ENTSOG initiative based on internal supply/demand analyses carried out within the framework of TYNDP and Supply Outlooks. ENTSOG chose to publish these analyses and thus to share the results with stakeholders so that feedback could be gathered. This initiative helps to establish a robust basis when defining the input data and methodology of subsequent reports. After having focused on the supply/demand balance, the reviews now go further in understanding the role of gas demand for power generation and give a view of flow patterns between the European balancing zones.

The Winter 2012–13 Review had provided the opportunity to highlight the growing influence of power generation as it was the driver on the day of the highest aggregated European gas demand.



The capital costs of gas-fired power plants are the lowest per MW installed.

Image courtesy of GASCADE Gastransport

TYNDP 2013–2022

Developed in 2012, this new edition of TYNDP was released in February 2013. An extensive consultation process was carried out during the first half of 2012 and ENTSOG developed a modelling approach that represents a big leap forwards for TYNDP and subsequent Supply Outlooks. Since being published, TYNDP has been very warmly received but the extent of the challenge will continue to increase.

TYNDP 2013–2022 was published in February 2013 and opened a three-month public consultation period. In March 2013, a public workshop was held in Riga to present TYNDP results and to allow stakeholders to provide preliminary feedback. This location was selected as it is one of the few remaining ‘gas islands’.

TYNDP was also presented at various other platforms such as the Gas Coordination Group, Energy Community and European Commission. The large majority of stakeholders commented on the improvements in this edition of TYNDP and confirmed that they were consistent with the concept they had cooperated in developing back in 2012.

In the meantime, ENTSOG assessed the various stakeholder responses and worked to correct the report before submitting the final formal version of TYNDP to ACER in July 2013.

ENTSOG also formally submitted TYNDP and additional information on infrastructural development to the European Commission under the framework of the Regulation on Investment Notification.*

After receiving ACER’s opinion in September and stakeholder feedback, ENTSOG identified three main areas of improvement for TYNDP:

- ▲ More consistency between ENTSO-E/ENTSOG
- ▲ Overview of project evolution infrastructure
- ▲ Market layer development

These priority areas were presented together with the stakeholder engagement process in a workshop held in November 2013. They will be integrated into both CBA methodology and TYNDP 2015 since the two are now interlinked. This workshop was a bridge between the two editions. It helped to ensure that TYNDP will continue to meet the expectations of stakeholders and institutions, which is a cornerstone of ENTSOG process.

* Regulation (EC) 617/2010 has been annulled by the European Court of Justice but this regulation was still valid at the time when the new version was adopted.

COST-BENEFIT ANALYSIS METHODOLOGY

Regulation (EC) 347/2013 came into effect in May 2013. This legislation will expand the role of TYNDP so that it effectively serves as a gateway to the selection process for for Projects of Common Interest (PCI). It also requires that ENTSOG develops a Cost-Benefit Analysis (CBA) methodology to be used at different stages of the PCI process.

This regulation presents a challenging task to ENTSOG with the requirement of developing – in just six months time – a detailed CBA methodology to be used by the association and project promoters alike. The role of these CBAs is to measure the impact of infrastructure projects on the basis of security of supply, competition, sustainability and market integration. At the same time, the methodology should identify the impacted countries and compare the project impact with its cost.

This 6-month deadline is equivalent to one-third of the framework guidelines and network code process for a similar deliverable. ENTSOG has therefore anticipated this task as much as possible by analysing existing practices and consulting with stakeholders before the legislation comes into effect.

Since May 2013, ENTSOG has organised two public consultations, two Stakeholder Joint Working Sessions, many bilateral meetings with institutions such as the European Investment Bank (EIB), and a joint workshop with ENTSO-E targeting the Member States and National Regulatory Authorities (NRAs).

Along this process, stakeholders have backed the following main elements proposed by ENTSOG:

- ▲ Dual structure methodology:
 - Energy System-Wide (ESW) CBA to be carried out by ENTSOG as part of TYNDP and serving as the basis for individual project assessments
 - Project-Specific CBAs to be carried out by each project promoter in order to capture the marginal impact of his project and to compare it to the associated cost
- ▲ Combined approach capturing project impact through:
 - Quantitative analysis based on indicators reflecting criteria set by regulators
 - Monetization of main project benefits
 - Qualitative analysis commenting and developing the previous steps

As the Regulation stipulates, the methodology developed by ENTSOG aims to inform the selection of PCIs by Regional Groups and to support the later stages of the process such as cross-border cost allocation. It is not intended as a means of ranking projects and particular attention is given to identifying how sensitive the results are to inputs.

Moreover, the availability and the meaningfulness of the data are among the main challenges for 2014. ENTSOG has drawn attention to this point so that stakeholders and institutions can help with these matters. The unavailability of certain data could force ENTSOG to downscale the methodology in order to ensure its applicability.

ENTSOG published the methodologies for ESW CBA and project-specific CBA on 15 November, one day ahead of the regulatory deadline. Prior to adaptation by ENTSOG, these methodologies must be assessed by ACER, the European Commission and Member States by May 2014.

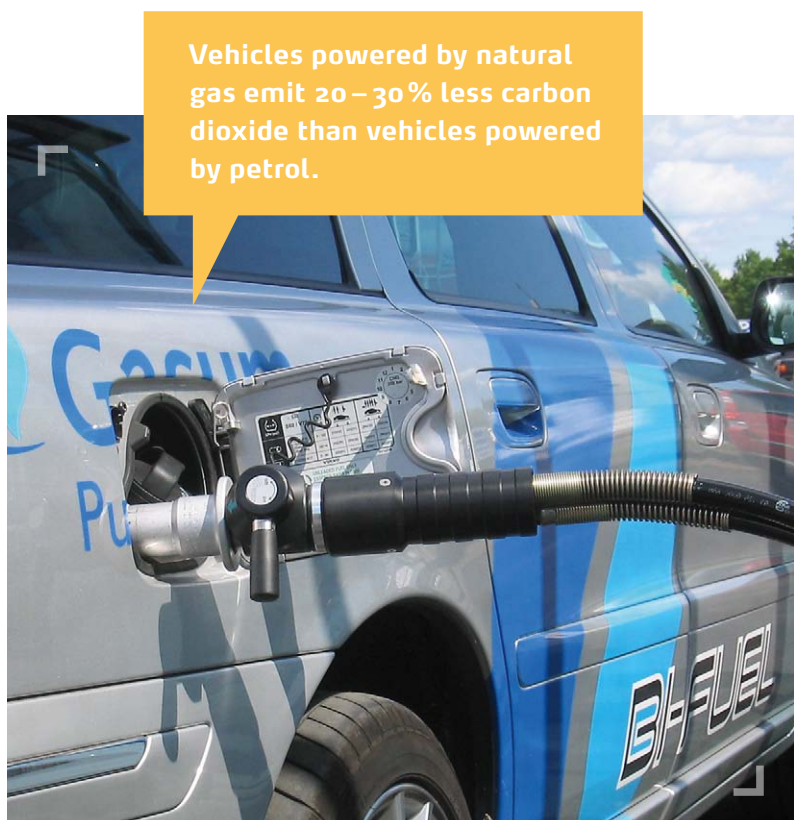


Image courtesy of Gasum

ENTSOG MAPS

The ENTSOG Transmission Capacity Map has been continuously improved since its first publication by GTE back in 2001. Building on these achievements and the development of TYNDP, Supply Outlooks and Seasonal Reviews, ENTSOG has decided to continue the System Development Map introduced in 2011.

The Transmission Capacity Map is jointly produced by the System Operation and System Development teams at ENTSOG. The 2013 edition has been improved based on stakeholder feedback and provides a view of infrastructure development in line with TYNDP 2013–2022.

The map provides an overview of Europe's main high-pressure transmission lines with information on the technical capacities at cross-border interconnection points. This map, which has become a market standard, is updated on a regular basis and printed once a year. The most recent edition was printed in July 2013.

The System Development Map introduced the previous year is also one of ENTSOG's key deliverables. It provides an overview of the existing gas infrastructures and an outlook for its development. The information shown in the map includes a detailed summary of the supply and demand situation in Europe for 2012 with additional details on the Summer and Winter seasons.

SUPPORT TO GAS REGIONAL INVESTMENT PLANS

Regional cooperation between TSOs is essential in the gas industry since most of the consumed gas travels across Europe from non-EU supply sources. Although ENTSOG provides support, Gas Regional Investment Plans (GRIPs) are created under the direct responsibility of TSOs. They investigate further infrastructure development and serve as a link between TYNDP and national plans.

Beyond historical collaborations, the requirement to promote regional cooperation is enshrined in EU Directive 2009/73/EC and further detailed by EU Gas regulation (EC) 715/2009. The latter requires European TSOs to publish Gas Regional Investment Plans (GRIPs) on a biennial basis. GRIPs are thus under the direct responsibility of TSOs but ENTSOG provides support to TSOs in developing them.

With the publication of TYNDP 2013–2022, TSOs have commenced work on the second edition of six regional plans using the same grouping illustrated by the map on page 27.

Each GRIP reflects specific regional needs regarding infrastructure investment and complements TYNDP by creating a regional link to national plans. The GRIP second editions benefit from the experience gained in their first editions as well as from TYNDP 2013–2022, stakeholder feedback and, in particular, ACER opinion issued in March 2013. A special public workshop was held 26 November 2013 to collect additional feedback from stakeholders.

In order to ensure up-to-date information on investments, a new collection of infrastructure project data was launched by ENTSOG on the basis of previous TYNDP processes. Information on demand and national production were also centrally updated.

ENTSOG's centralised data collection process and ENTSOG Network Modelling tool are essential to maintaining consistency between reports and with TYNDP.

The GRIP North-West was published in December 2013. The five other GRIPs will be published during the first half of 2014.



At today's consumption rates, currently known gas reserves from conventional reservoirs are sufficient to meet the next 120 years of demand.

Image courtesy of Snam Rete Gas

GRIP MAP



GRIP NORTH-WEST



GRIP BEMIP



GRIP SOUTH



GRIP SOUTH-NORTH
CORRIDOR



GRIP CENTRAL
EASTERN EUROPE



GRIP SOUTHERN
CORRIDOR

SUPPORT FOR GAS COORDINATION GROUP

The Gas Coordination Group (GCG) is a platform established by Regulation (EU) 994/2010 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 implementation of Security of Supply (SoS) standards. Members include the European Commission, representatives of EU Member States, ENTSOG and other international and European associations.

ENTSOG is often asked for its expert opinion on different SoS-related subjects and also assists GCG by modelling the resilience of the European gas system under specific scenarios. ENTSOG

also assists GCG by modelling the resilience of the European gas system under specific scenarios.

Every year, ENTSOG presents its seasonal Supply Outlooks, Seasonal Reviews and TYNDP to GCG. Member States and the European Commission use these data as inputs for their own analyses. For this reason, ENTSOG has offered to define which situations are to be included in future Supply Outlooks for GCG.

In 2013, the GCG continues to draw its attention to the links between gas and electricity. The decline of underground gas storage (UGS) levels at the end of the injection season over the past few years has also been of concern for many Member States.



Image courtesy of Fluxys

Natural gas provides up to 22% of the world's power.

RESEARCH AND DEVELOPMENT PLAN

As new regulatory requirements are introduced and stakeholder expectations increase, ENTSOG methodologies, tools and data scenarios will have to be improved. These improvements are defined in the ENTSOG Research and Development Plan (ENTSOG R&D Plan).

The Supply and Demand (S&D) and Network Modelling (NeMo) Kernel Groups are directly in charge of developing innovative approaches and tools under the monitoring of the Investment Working Group.

Supply & Demand Aspects

Here, research is performed to expand knowledge of the gas supply and demand aspects at the European level. This knowledge is used to improve the assumptions and approaches used in the Supply Outlooks and TYNDP.

The main focus of the study was to develop an approach for the gas demand in the power generation sector with the aim of ensuring consistency between scenarios to be used by ENTSOs in their respective TYNDPs. This analysis develops a methodology for quantifying the potential range of gas consumption for power generation in specific electricity scenarios. This methodology makes use of models developed to estimate the thermal gap in the electricity mix and its split between competing fuels under divergent market conditions.

The application of this methodology to ENTSO-E electricity scenarios will improve the consistency between gas consumption scenarios for power generation at both ENTSOs. It will also make it possible for ENTSOG to assess flexibility requirements with respect to intermittent RES.

The first version of this methodology was tested for each Member State's electricity system and it will be fine-tuned from the feedback received. In this way, it will be possible to adapt methodology for each electricity system.

ENTSOG R&D Plan also includes other topics such as supply flexibility and the link between demand and weather conditions. Preliminary assessments of these issues are underway and will continue throughout 2014.

Network Modelling Aspects

The experiences gathered from TYNDP 2013–2022 have convinced ENTSOG to first focus on the performance and efficiency of the Network Modelling tool. Consequently, each deliverable can now be based on a higher number of simulations, thus increasing the scope and robustness of the assessment. As an example, the overview of UGS level variations in the Winter Supply Outlook is based on 182 daily simulations instead of the aggregated balance.

The second part of the year was dedicated to developing theoretical approaches and preliminary prototypes to support monetization of project impact. These improvements were driven by CBA methodology developed by ENTSOG as part of the new TEN-E Regulation.

Data Warehouse Aspects

After a successful tender carried out during the first part of 2013, ENTSOG contracted the development of a data warehouse and the associated new Transparency Platform. Development will last for one year and the overall design has been achieved by the end of 2013.

This tool will help ENTSOG to meet growing stakeholder expectations with respect to transparency. At the same time, it is key to securing and streamlining the data process at the core of each assessment.

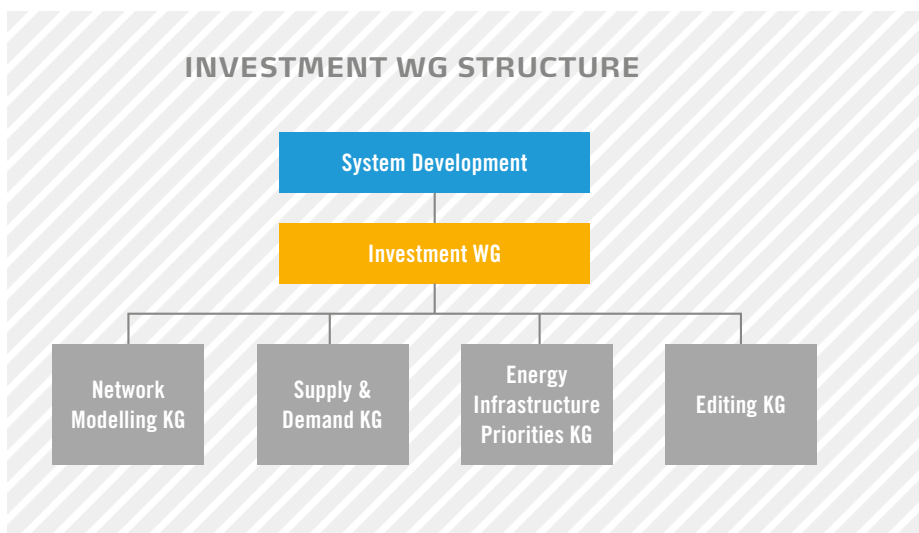
GROUP STRUCTURE

All activities of the System Development Business Area are managed by the Investment Working Group.

The Investment Working Group is supported in its mission by four Kernel Groups (KGs), each of which focusses on specific areas:

- ▲ Network Modelling Kernel Group (NeMo KG): development and enhancement of ENTSOG's Network Modelling tool and performance of simulations
- ▲ Supply & Demand Kernel Group (S&D KG): development of supply and demand approach for ENTSOG deliverables based on analysis of current situation and alternative scenarios. Particular focus is given to gas demand for power generation.
- ▲ Energy Infrastructure Priorities Kernel Group (EIP KG): analysis and development of recommendations for the Connecting Europe Package and drafting of CBA methodology
- ▲ Editing: proofing TYNDP and checking terminological and stylistic consistency between reports

As part of ENTSOG's R&D Plan, S&D KG held an internal expert workshop in autumn 2013 to integrate experience gained by TSOs on gas demand for power generation. ENTSO-E attended the event to improve the consistency between scenario and approach development.





Replacing an old coal-fired power plant with a CCGT plant can reduce CO₂ emissions by up to 70%.

Image courtesy of Gas Connect Austria

COOPERATION WITH ENTSO-E

Due to the linkages between the gas and electricity markets, ENTSO-E and ENTSOG are increasingly collaborating with each other. In 2013, the focus was on gas demand for power generation and Cost-Benefit Analysis (CBA) methodology.

In response to stakeholder feedback on TYNDP 2011–2020 and the analysis of the cold spell in February 2012, ENTSOG has strengthened its cooperation with ENTSO-E and expanded its study of gas demand for power generation. This is being done by comparing the various ENTSOs scenarios in TYNDP 2013–2022 and identifying the gas demand for power generation in Seasonal Reviews.

In 2013, continuous working collaborations were established between ENTSOG and ENTSO-E. Regular meetings are held to discuss power generation, modelling and development of CBA methodology. Knowledge sharing is now regulated through a contractual framework.

The new TEN-E Regulation was developed with the objective of developing highly consistent scenarios for CBAs at both ENTSOG and ENTSO-E. In pursuit of this target, cooperation was expanded in 2013 and a joint workshop for Member States and NRAs on the CBA methodology was held in October 2013.

It must be emphasised that efficient collaboration between ENTSOG and ENTSO-E will require increased involvement from stakeholders and institutions in the gas and electricity markets alike.

System Operation

System Operation is primarily responsible for the development of technical network codes, as well as providing other working groups with technical input in the development of codes and tools that facilitate the exchange of gas across networks.

AREA STRUCTURE

There are two working groups (WGs), the Interoperability Working Group (INT WG), responsible for technical aspects of cooperation between TSOs with respect to business rules, gas quality, odourisation and data exchange and the Transparency Working Group (TRA WG), responsible for the publication and reporting of technical information from ENTSOG pertaining to transparency guidelines and REMIT.

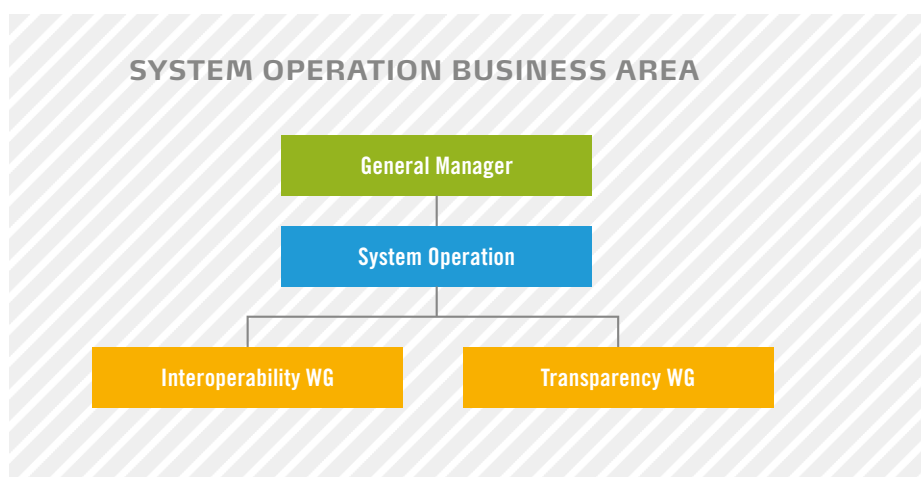


Image courtesy of Snam Rete Gas

Interoperability

GROUP STRUCTURE

INT WG is supported by the following kernel groups (KGs):

- ▲ Advisory KG, responsible for coordinating processes relevant to the development and delivery of the network code on Interoperability and Data Exchange Rules
- ▲ Business Rules KG, responsible for development of harmonised rules related to technical cooperation between TSOs, including interconnection agreements
- ▲ Gas Quality KG, responsible for issues related to quality specifications and odourisation practises
- ▲ IT & Communications Roadmap KG, responsible for issues related to streamlining communication solutions for data exchange
- ▲ Technical Solutions Adoption & Implementation Group, responsible for developing common tools for data exchange necessary for the implementation of developed network codes
- ▲ EU-Russia Dialogue WS3 support KG, responsible for developing proposals for an early warning and reaction system in case of gas supply crisis

INTEROPERABILITY NETWORK CODE DEVELOPMENT PROJECT

Operational, technical, communication and business interoperability is a prerequisite for the proper functioning and integration of the gas market. In gas transmission services, interoperability can be seen as a set of technical and operational rules that enhance cooperation among system operators and network users, thus facilitating the exchange of gas across networks. Network codes define new business processes. Interoperability and data exchange rules form the seamless interfaces between TSOs to make this a success.

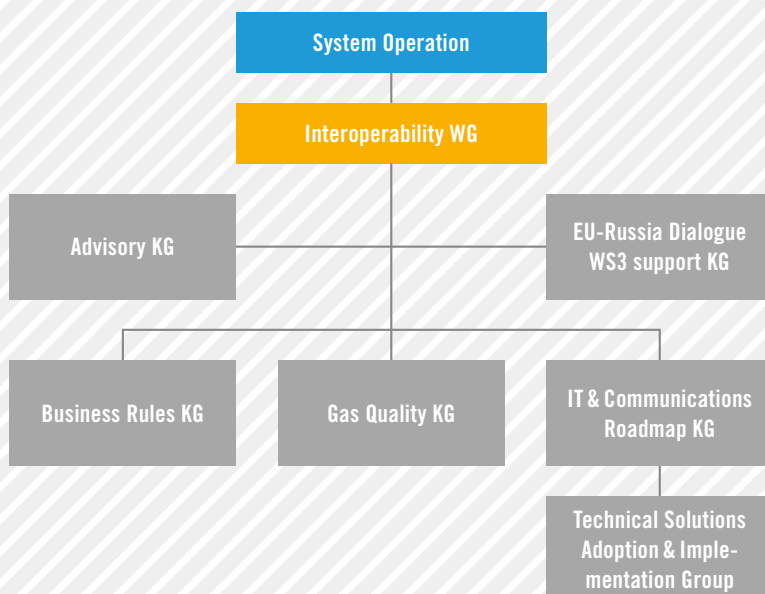
After being invited by the European Commission, ENTSOG commenced work on developing a network code for Interoperability and Data Exchange in September 2012.

In 2013, ENTSOG continued development work through an open and transparent cooperation process with stakeholders, European Commission and ACER.

The following milestones were achieved in 2013:

- ▲ Publication of initial draft network code and supporting document plus launch of a two-month public consultation (28 February – 26 April) with the following stakeholder events:
 - Consultation workshop to present initial draft of network code (20 March)
 - Third Countries Workshop in cooperation with Energy Community in Vienna (16 April)
 - Data Exchange Workshop to present the selection approach for common data exchange solutions based on cost-benefit -assessment (23 April)
 - Madrid Forum (17 April)
- ▲ Refinement of initial draft of network code integrating stakeholders' feedback from public consultation and preliminary views from ACER with the following events:
 - Conclusions Workshop to present the outcome of public consultation and refinement proposals for network code (28 May)

INTEROPERABILITY WG STRUCTURE



- ▲ Stakeholder Support Process (9 – 23 July) to seek stakeholders support for the content of the refined network code. Strong support was received from stakeholders on the development process and the content of the refined network code.
- ▲ Finalisation of proposed network code and analysis of decisions taking into account the outcome of the Conclusions Workshop and the Stakeholder Support Process
- ▲ Submission of proposed network code to ACER: 10 September

After receiving the network code from ENTSOG, ACER compared it with the framework guidelines and acknowledged a generally high level of conformity (ACER's Reasoned Opinion, 21 November 2013). ACER also listed some deviations that were justified by ENTSOG and supported by stakeholders. Some structural and textual refinements, adaptations, and clarifications were proposed for purposes of legal consistency and to align the network code more fully with the provisions and objectives of the framework guidelines, Regulation (EC) 715/2009 and its annexes, as well as other network codes.

As a consequence, ENTSOG decided the following:

- ▲ Amendment of proposed network code taking ACER's reasoned opinion into account
- ▲ Re-submission of amended network code to ACER: 18 December

After re-submitting the amended network code to ACER, ENTSOG will continue to provide ACER and the EC with support and consultation in preparing for the comitology approval process. Whenever requested, ENTSOG will support the formal Gas Committee sessions in an expert capacity.

The delivered network code:

- ▲ Makes interconnection agreement mandatory for each interconnection point with specific terms that assure technical cooperation between adjacent TSOs necessary for the gas market integration
- ▲ Establishes a common set of units for communication and data exchange purposes

- ▲ Defines procedures for managing potential cross-border trade restrictions due to gas quality differences, for offering information to consumers on short-term variations in quality parameters and for monitoring long-term quality changes
- ▲ Defines procedures for managing potential cross-border trade restrictions due to differences in odourisation practices
- ▲ Defines harmonized communication solutions for necessary data exchange and a process for the development of the content for each type of exchange



Image courtesy of FGSZ

Natural gas helps to decrease harmful emissions such as particulate matter.

GAS QUALITY

Differences in gas quality specifications between operating systems can impede the free flow of gas in the internal market. Therefore, the concept of harmonised specifications has been widely explored by different groups over the past years. ENTSOG, utilizing the experience of its members, tries to participate and actively contribute to the relevant activities.

ENTSOG have followed up the gas quality standardisation work performed by CEN (CEN Mandate M/400 for natural gas quality standard and CEN Mandate M/475 for biomethane standard) and participated in the coordination group of the pilot project EU gas quality harmonisation implementation led by EASEE-gas and Marcogaz.

COMMON NETWORK OPERATION TOOLS

According to Regulation (EC) 715/2009, ENTSOG must adopt common network operation tools to ensure coordinate network operation in normal and emergency conditions, including a common incidents classification scale, and research plans. These tools are intended to increase cooperation between adjacent TSOs. ENTSOG has already begun to develop common network operation tools related to data exchange.

Data Exchange Requirements Regulation (EC) 715/2009:

In line with the Network Code Interoperability and Data Exchange Rules, data exchange requirements related to Regulation (EC) 715/2009 must be developed. These may include business requirement specifications, data content format and implementation guidelines.

In 2013, the Business Requirement Specification for the auctioning process, described in the CAM network code, and the Business Requirement Specification for the nomination and matching process, described in the Balancing and Interoperability and Data Exchange network codes, have been developed, as first pilot projects towards the preparation of the necessary messages for data exchange purposes. This is the first step in harmonising the content of the necessary message exchanges related to the network codes. Stakeholders will be included in the process at the start of 2014.

ENTSOG has cooperated with the Edigas group (EASEE-gas) to develop the necessary message formats for data exchange in the auctioning, nomination and matching processes.

Implementation of the selected common data exchange protocol:

ENTSOG has begun to prepare to implement the common data exchange protocol for document-based data exchange (AS4). This process foresees the involvement of stakeholders.

TECHNICAL COOPERATION WITH THIRD COUNTRY TSOs

According to Regulation (EC) 715/2009, ENTSOG must adopt recommendations relating to the coordination of technical cooperation between Community and Third-Country transmission system operators.

Third-country TSOs were invited to participate in the development of the network code for Interoperability and Data Exchange Rules (INT NC). A specific workshop to present the preliminary draft of the network code was organised in cooperation with the Energy Community in Vienna on 16 April.

ENTSOG also participated in the Energy Community Gas Working Group meeting on 25 September 2013 to discuss issues related to the network code and presented at the Energy Community for Gas Forum.

EARLY WARNING SYSTEM

As part of the EU-Russia Energy Dialogue, ENTSOG was asked to develop an Early Warning System (EWS) proposal for gas supplies to the EU from Russia. For this purpose, a new Kernel Group was established to develop detailed ideas and processes on how to deal with emergency situations. These ideas were presented at a meeting organized by ENTSOG in the framework of the EU-Russia Energy Dialogue on 15 November 2013. Furthermore, Russian side presented their ideas for a European Dispatch Service (EDS). This cooperative effort is scheduled to continue.

LOCAL ISSUING OFFICE

The Energy Identification Coding (EIC) scheme, standardized and maintained by ENTSO-E, provides a means of uniquely identifying the market participants and other entities active on the European Internal Energy Market. It is widely used for electronic document interchange.

The administrative organization consists of a two-level hierarchy: the Central Issuing Office (CIO) under the direct responsibility of ENTSO-E and the Local Issuing Offices (LIO), acting as agents of the CIO.

As of 1 March 2013, EASEE-gas has relinquished its responsibilities as an EIC Local Issuing Office (LIO) in favour of ENTSOG. This includes transferral of all existing codes issued by EASEE-gas.

ENTSOG LIO only issues international codes related to the gas industry and is responsible for allocating and maintaining the codes it issues or have been issued under party code 21. A dedicated page was developed for this purpose on the ENTSOG website. Here, users can submit requests, download or view existing codes and access the manual of procedures.

Transparency

The liberalization process aimed at establishing an internal gas market has significantly changed the gas transmission business and increased the need for transparency. In this regard, European legislation has defined specific obligations for TSOs. Regulation (EC) 715/2009 defines the basic transparency rules, which are further specified in chapter 3 of Annex I and its amendments. As network codes are developed for market integration, stakeholders are demanding that more information related to the access and operation of gas networks be made publicly available.

GROUP STRUCTURE

TRA WG is supported by the following Kernel Group:

- Platform Development KG, responsible for analyzing transparency requirements for TSOs and proposing improvements for the transparency platform.

TRANSPARENCY PLATFORM

The Transparency Working Group (TRA WG) at ENTSOG holds monthly meetings for members. One of the main projects was to upgrade the existing Transparency Platform in order to comply with the Transparency Guidelines and its amendment (Congestion Management Procedures, CMP – August 2012). Despite the tight timeline, ENTSOG's Transparency Platform went "live" on 1 October 2013, effectively becoming the Union-wide central platform where all TSOs publish their mandatory transparency and CMP-related data. Apart from the technical communication aspects (message structure must accommodate new data), definitions were clarified and jointly accepted, new tables for visualising information and downloading were developed and support was provided for TSOs that had not previously participated in the voluntary platform.

Since the platform was based on a previous solution while market requirements have continued to expand, it became clear that new tools had to be developed. In their Opinion 20/2013, ACER deemed that a harmonized format will be necessary for publishing technical information on the natural gas network by TSOs and ENTSOG. They also suggested that the ENTSOG platform should

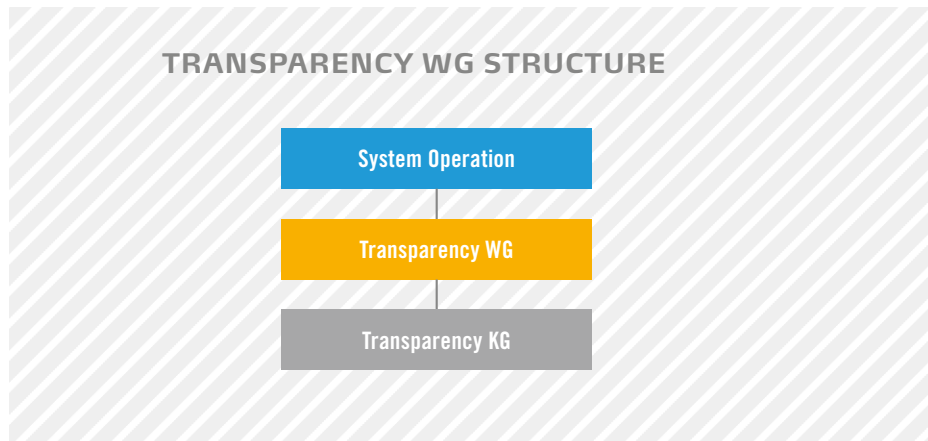


Image courtesy of GASCADE Gastransport

offer hourly data, apply timestamps to all published data, and integrate charts and graphs in the display of information. With this as an impetus, TRA WG has commenced work on the "New Transparency Platform" that will offer new functionality for users and enhanced uploading possibilities for members. Going one step further, the TRA WG also decided to introduce a new balancing zone map that displays information from each European balancing zone while indicating the relevant connection points. The New Transparency Platform will go live before the end of 2014.

TRANSPARENCY STANDARDIZED SECTION ON TSOS' WEBSITES

The Transparency Guidelines describe the basic responsibility of TSOs to publish information on their website in a 'user-friendly manner' and to make it available for market participants with no restrictions. In previous years, TSOs had received significant negative feedback particularly with respect to user-friendliness from stakeholders and ACER. After a brief implementation period, TSOs worked hard to revamp their websites in a more user-friendly manner aimed at multinational users.

As a solution, TRA WG developed a structure that partially standardizes how information is to be presented. This structure consists of three columns providing:

- ▲ Legal requirement of Regulation (EC) 715/2009 (EC) Annex 1
- ▲ Direct link to corresponding section of TSO individual website
- ▲ Any further individual information on requirements (e.g., exemptions, definitions, interpretations specific to a country or TSO)

This standardized section has been adopted by the majority of the TSOs and has been well received.

REGULATION ON ENERGY MARKET INTEGRITY AND TRANSPARENCY

The Regulation on Energy Market Integrity and Transparency (REMIT), which applies to all European players in the gas and electricity market and has significant consequences for European TSOs and ENTSOG, was on the agenda of each Transparency Group meeting. Regulation (EC) 1227/2011 was published on 25 October 2011 and was followed by additional ACER documents (Guidance 2 Update and Guidance 3). In 2013, the European Commission issued a draft of the Implementing Acts that will establish rules to prohibit abusive practices on the wholesale energy market. This document will clarify which information market participants must report to ACER for market monitoring purposes.

The main activities of TRA WG can be summarized as follows:

- ▲ Organization of workshops with ACER and European Commission for clarifying legislation and proposing implementation solutions for data provision
- ▲ Participation in public consultations and workshops organized by the European Commission and ACER
- ▲ Participation in REMIT IT expert group meetings
- ▲ Participation in ACER pilot project for data uploading to ACER database for REMIT purposes
- ▲ Refinements to text copy, definition of table structures for data provision and taxonomy for drafting implementing acts to be proposed to the European Commission and ACER
- ▲ Development of Urgent Market Message structure and its implementation in Upgrade Transparency Platform

TRANSPARENCY WORKSHOP

ENTSOG's 7th Transparency Workshop was successfully organized on 11 December 2013. Participants from all sectors of the gas industry had the chance learn and discuss:

- ▲ Features and functionalities of upgraded Transparency Platform
- ▲ Plans for New Transparency Platform
- ▲ ACER's views on implementation of transparency guidelines
- ▲ REMIT implementing acts and data to be reported by TSOs
- ▲ Framework guidelines on tariffs and new transparency requirements

Implementation of Network Codes

Following Regulation (EC) 715 / 2009, Article 8(8)

“ENTSOG shall monitor and analyse the implementation of the network codes (...).” This is an early report of the initial activities that commenced 1 October 2013.

CAPACITY ALLOCATION MECHANISM (CAM)

Parallel to developing the CAM Network Code (CAM NC), ENTSOG facilitated and supported its early implementation by publishing the ACER/ ENTSOG CAM Roadmap and conducting related workshops. The CAM Roadmap is produced as a cooperative effort between the ACER, ENTSOG, TSOs and NRAs. During the early implementation phase, it promotes transparency for market participants and network users.

Early in 2013, a large number of TSOs performed pilot projects and cooperated with NRAs in 12 Member States to implement provisions of the network code. These included harmonised auctions and bundled capacity offers, on a voluntary basis.

ACER, European Commission, TSOs, NRAs and ENTSOG have cooperated closely to expand CAM Roadmap to accommodate experiences gained during pilot projects. The aim is to facilitate early adoption of CAM network codes by:

- ▲ Outlining the governance structures during the implementation stage,
- ▲ Describing roles and responsibilities for all parties involved in developing and facilitating projects.
- ▲ Providing an overview of the implementation process, including how current projects are implementing key provisions of CAM NC.
- ▲ Reporting on implementation challenges and issues identified by project participants, alongside key factors that have been identified as contributing to the success of early implementation efforts.
- ▲ Eventually enabling the convergence of current (or yet to be started) projects towards integrated solutions.

CAM Roadmap notes that certain conditions, such as the legal and regulatory requirements, must first be met before voluntarily beginning the implementation process. Furthermore, all relevant stakeholders must support the process and all appropriately incurred costs must be covered.

The first version of CAM Roadmap was published by ENTSOG and ACER on 1 March 2013 and updated in October 2013. It will be updated by ENTSOG and ACER periodically to reflect progress made during the early implementation of the CAM network code.

The missing link for integrating renewable energy into the electricity supply is a smart power storage concept. Renewable electricity can be stored as natural gas and use the existing gas infrastructure



Image courtesy of Latvijas Gāze



Replacing coal by gas is the fastest and cheapest way to meet CO₂ reduction targets.

BALANCING NETWORK CODE (BAL NC)

At the Madrid Forum XXIII of 17–18 April 2013, ENTSOG was requested to study the possibilities for early implementation of BAL NC. Since the provisions of BAL NC do not necessitate cross-border cooperation, ENTSOG opted to provide an initial assessment of the implementation challenges for TSOs on a national basis.

All TSOs provided estimations of their expected implementation dates as well as indicating how challenging various chapters of BAL NC will be. A report of these findings was presented to ACER on 30 November 2013. The main conclusions of the report are the following:

- ▲ Half of the European TSOs expect to fully implement BAL NC either by 1 October 2015 or by 1 October 2016. The remaining half of the Member States expects to postpone the full implementation of BAL NC until 1 October 2019 by applying for a set of interim measures (subject to NRA approval). This makes it possible to establish a balancing platform or apply tolerances that will stimulate the short-term market.
- ▲ The introduction of short-term standardised products (STSPs) is foreseen by many TSOs to be a significant challenge. This is because STSPs are not yet developed in some countries and in some cases network users do not have access to trading platforms.
- ▲ The provisions on within-day obligations (WDOs) will not incur significant changes for the majority of TSOs. Currently, only a few countries use WDOs in their daily balancing regimes.
- ▲ The changes regarding information provisions are expected to necessitate considerable modifications in national IT systems as well as significant national cooperation between TSOs, DSOs, shippers and NRAs.
- ▲ Long-term flexibility contracts with infrastructure providers or shippers providing balancing gas were only offered by one TSO.

The report could potentially be updated in late 2014 to reflect the implementation progress of BAL NC across Europe.

Image courtesy of Gas Connect Austria

CMP MONITORING

The Guidelines for Congestion Management Procedures (CMP) were developed by the European Commission in 2010–2011 and approved by the EU Gas Committee on 24 August 2012. The implementation date was 1 October 2013.

Under Article 8(8) of the Gas Regulation, ENTSOG has monitored the implementation of the CMP Guidelines. The monitoring process will be developed in close cooperation with ACER to avoid overlapping and duplication of work. This process will be developed during the year 2014.

Therefore, ENTSOG launched its own monitoring process in January 2014 to ensure timely publication of results in 2013 Annual Report. For this initial monitoring exercise in 2014 – and due to a parallel compliance monitoring from ACER – ENTSOG has chosen to use a rather high level of self-assessment for TSOs. The aggregated results are shown below.

Overall, the following characteristics emerge:

- ▲ 16 ENTSOG members from two countries have implemented Firm Day-Ahead UIOLI.
- ▲ 12 ENTSOG members have implemented and four are implementing an Oversubscription & Buy Back Scheme representing 15 countries.
- ▲ 29 ENTSOG members have made it possible to Surrender Contracted Capacity, four are in the implementing process of this measure.
- ▲ 29 ENTSOG members have introduced Long-Term UIOLI, five are currently in implementation.

In conclusion, most ENTSOG members have already fully implemented the CMP Guidelines. A few (3–5) members are still in the process of implementing some of the above-mentioned mechanisms.

CMP Implementation: ENTSOG Members Self-Assement as per January 31, 2014

(based on 39 responses from 43 members and three associated partners representing 23 of 26 countries)

| | OVERSUBSCRIPTION & BUY-BACK SCHEME OR FIRM DAY-AHEAD UIOLI | SURRENDER OF CONTRACTED CAPACITY | LONG-TERM UIOLI |
|-------------------------------------|--|----------------------------------|-----------------|
| IMPLEMENTED | 28 | 29 | 29 |
| IN PROCESS OF IMPLEMENTATION | 4 | 4 | 5 |
| DEROGATION GRANTED BY EC | 4 | 4 | 4 |
| IMPLEMENTATION NOT REQUIRED | 3 | 2 | 1 |

The 39 European responses represent 97 % of the total length of the gas transmission pipelines of all ENTSOG member-TSOs (including associated partners) as listed on page 43

TRANSPARENCY PLATFORM

The liberalization process aimed at creating an internal gas market has significantly changed the gas transmission business and increased the need for transparency. In this respect, specific obligations for TSOs have been introduced at both the national and European levels.

Even though information is made available by individual TSOs, network users may still face difficulties when willing to transport gas across Europe due to differences in the market models used throughout Europe. For this reason, the ENTSOG Transparency Platform was developed to facilitate access to transmission networks. Among other things, the Transparency Platform makes all of this information available in a well-organized manner on a single website.

The ENTSOG Transparency Platform provides users with the requested data in three different ways as stipulated in Annex I of Regulation (EC) 715/2009:

- ▲ Per relevant point;
- ▲ Per requested route of transport;
- ▲ Per responsible TSO.

Advanced search tools allow users to search by point using the initial letters of the point, country, TSO etc. The information includes the following (historical/future):

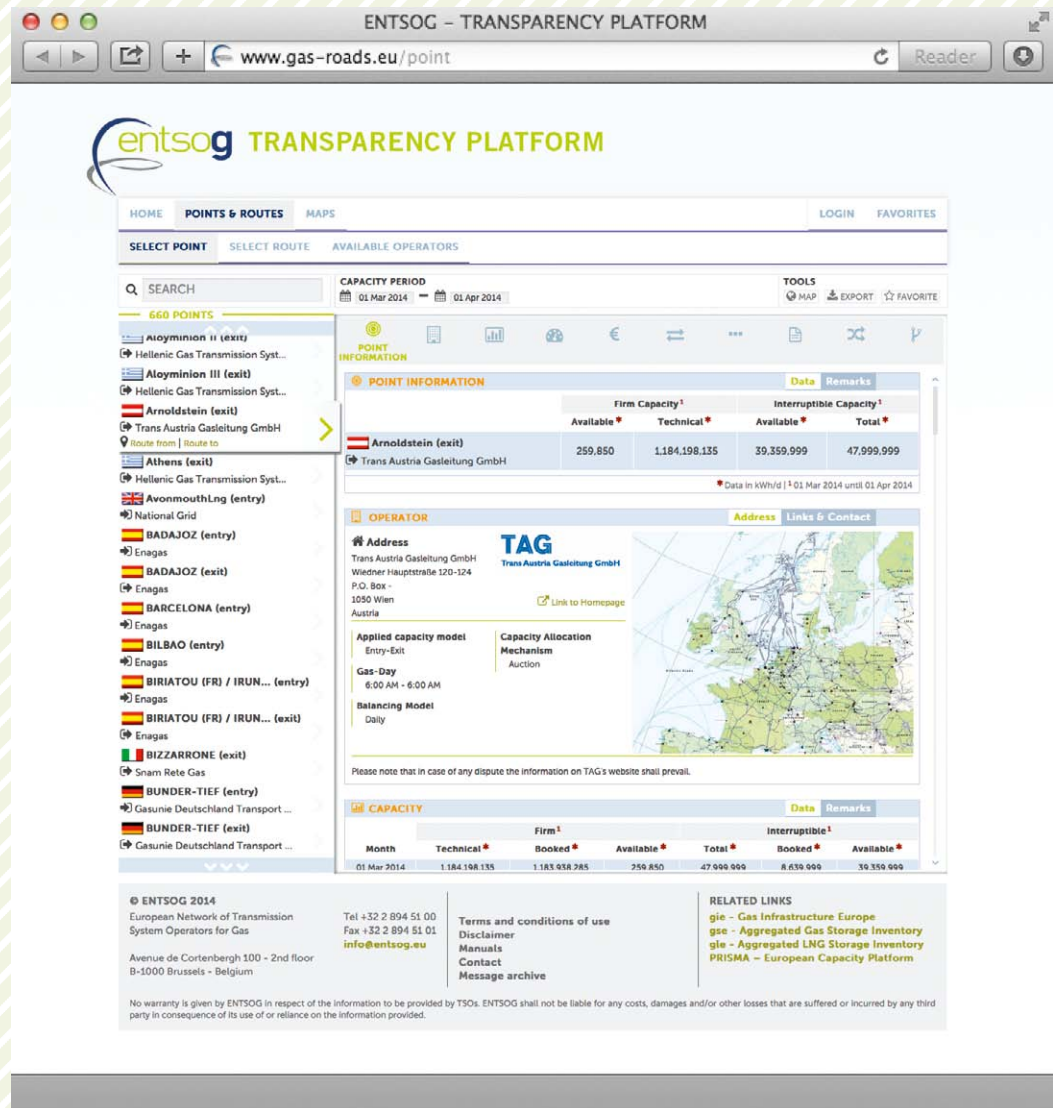
- ▲ Capacities at daily granularity level (per type and availability status)
- ▲ Balancing model and charges
- ▲ Tariffs
- ▲ Nominations and physical flows per day
- ▲ Interruptions per type of offered capacity
- ▲ Types of contracts offered
- ▲ Gas quality per day
- ▲ CMP-related data (unsuccessful requests, cleared and reserved prices, unavailable firm capacities and capacities made available through implementation of CMP tools)

When searching for a route, the generated response gives the user an overview of the available capacities along the route and other useful information such as available contracts, applicable tariffs, balancing rules, capacity allocation mechanisms as well as dynamic data such as flows, nominations, renominations and interruptions.

Furthermore, two additional tools enhance the user-friendliness of the platform:

- ▲ Data can be searched in a visual manner using an interactive map containing the relevant points and main infrastructure of the European map
- ▲ Data can be searched through links to individual TSO websites dedicated to transparency information thus offering a useful navigation tool for gas network users.





The screenshot displays the ENTSG - TRANSPARENCY PLATFORM interface. The browser address bar shows www.gas-roads.eu/point. The page features a navigation menu with 'HOME', 'POINTS & ROUTES', and 'MAPS'. A search bar is present, and a list of 660 points is shown on the left. The main content area displays 'POINT INFORMATION' for 'Arnoldstein (exit)' operated by 'Trans Austria Gasleitung GmbH'. It includes a table for capacity data and a map of the region.

| Point | Firm Capacity ¹ | | Interruptible Capacity ¹ | |
|--------------------|----------------------------|---------------|-------------------------------------|------------|
| | Available * | Technical * | Available * | Total * |
| Arnoldstein (exit) | 259,850 | 1,184,198,135 | 39,359,999 | 47,999,999 |

| Month | Firm ¹ | | | Interruptible ¹ | |
|-------------|-------------------|---------------|-------------|----------------------------|-------------|
| | Technical * | Booked * | Available * | Booked * | Available * |
| 01 Mar 2014 | 1,184,198,135 | 1,183,938,285 | 259,850 | 47,000,000 | 8,630,000 |

Data can be easily downloaded in Microsoft Excel spreadsheet format (xls) by simply choosing the relevant points, period and specific need of data.

As of February 2014, the platform will also allow TSOs to publish Urgent Market Messages pursuant to REMIT.

As required, all of these tools and data are available to any user without the need for a subscription. To streamline the process, ENTSG offers a subscription-based favourite points list for frequent users. Once subscribed, a user can in addition get all data directly from the database (and be informed when there is a change) in xml format through system to system communication. This fully automates downloading activity.

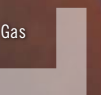
Ever since its upgrade on 1 October 2013, there has been increased activity on the platform. It is currently visited by nearly 1,000 users per day with an average of 10,000 downloads per day.



Working Together

[Members](#) | [Team](#) | [Press Releases](#)
[Stakeholder Consultations & Workshops](#)

Image courtesy of Snam Rete Gas



STATUS: 1 JANUARY 2014

ENTSOG currently consists of 43 members, three associated partners from 26 EU countries and four observers from non-EU countries.

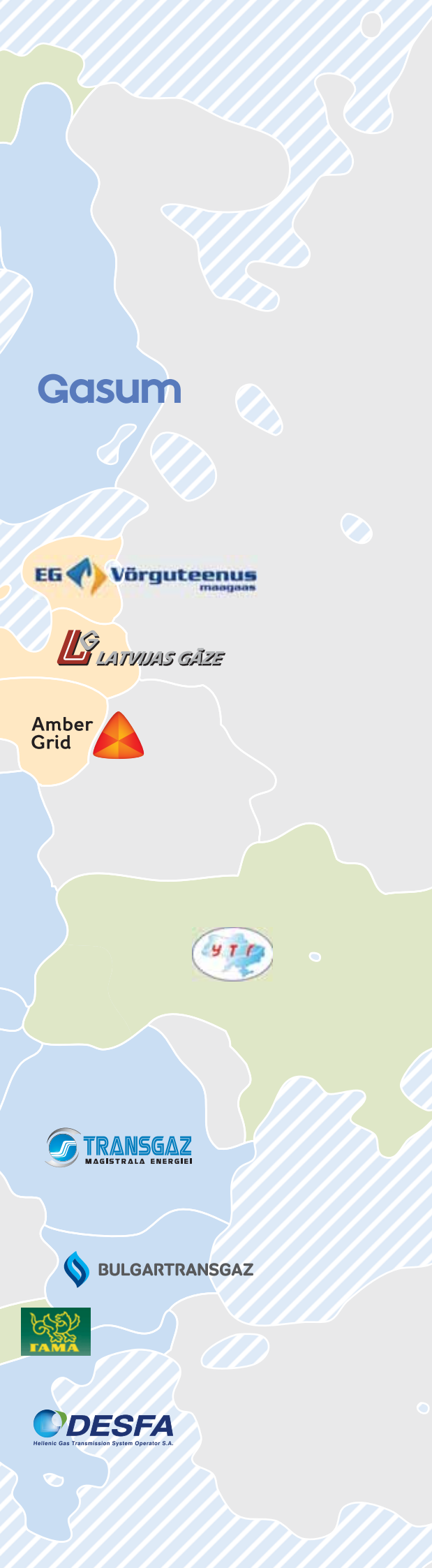
MEMBERS (43)

| | | | |
|-----------------------|---|---|--|
| Austria | <ul style="list-style-type: none"> – Baumgarten-Oberkappel Gasleitungsgesellschaft – Gas Connect Austria – Trans Austria Gasleitungsgesellschaft | Luxembourg | <ul style="list-style-type: none"> – Creos Luxembourg |
| Belgium | <ul style="list-style-type: none"> – Fluxys Belgium | Netherlands | <ul style="list-style-type: none"> – Gasunie Transport Services |
| Bulgaria | <ul style="list-style-type: none"> – Bulgartransgaz | Poland | <ul style="list-style-type: none"> – Gas Transmission Operator GAZ-SYSTEM |
| Croatia | <ul style="list-style-type: none"> – Plinacro | Portugal | <ul style="list-style-type: none"> – REN-Gasodutos |
| Czech Republic | <ul style="list-style-type: none"> – NET4GAS | Romania | <ul style="list-style-type: none"> – Transgaz |
| Denmark | <ul style="list-style-type: none"> – Energinet.dk | Slovak Republic | <ul style="list-style-type: none"> – eustream |
| Finland | <ul style="list-style-type: none"> – Gasum Oy | Slovenia | <ul style="list-style-type: none"> – PLINOVODI |
| France | <ul style="list-style-type: none"> – GRTgaz – TIGF | Spain | <ul style="list-style-type: none"> – Enagás |
| Germany | <ul style="list-style-type: none"> – bayernets – Fluxys TENP – GASCADE Gastransport – Gastransport Nord – Gasunie Deutschland Transport Services – Gasunie Ostseeanbindungsleitung – GRTgaz Deutschland Transport Services – Jordgas Transport – NEL Gastransport – Nowega – Ontras Gastransport – Open Grid Europe – terranets bw – Thyssengas | Sweden | <ul style="list-style-type: none"> – Swedegas |
| Greece | <ul style="list-style-type: none"> – DESFA | United Kingdom | <ul style="list-style-type: none"> – BGE UK – Interconnector (UK) – National Grid Gas – Premier Transmission |
| Hungary | <ul style="list-style-type: none"> – FGSZ Natural Gas Transmission | <hr style="border: 1px solid orange;"/> | |
| Ireland | <ul style="list-style-type: none"> – Gaslink Independent System Operator | ASSOCIATED PARTNERS (3) | |
| Italy | <ul style="list-style-type: none"> – Infrastrutture Trasporto Gas – Snam Rete Gas | Estonia | <ul style="list-style-type: none"> – EG Võrguteenus |
| | | Latvia | <ul style="list-style-type: none"> – Latvijas Gāze |
| | | Lithuania | <ul style="list-style-type: none"> – Amber Grid |
| | | <hr style="border: 1px solid green;"/> | |
| | | OBSERVERS (4) | |
| | | F.Y.R.O.M. | <ul style="list-style-type: none"> – GA-MA AD Skopje |
| | | Norway | <ul style="list-style-type: none"> – Gassco |
| | | Switzerland | <ul style="list-style-type: none"> – Swissgas |
| | | Ukraine | <ul style="list-style-type: none"> – UKRTRANSGAZ |

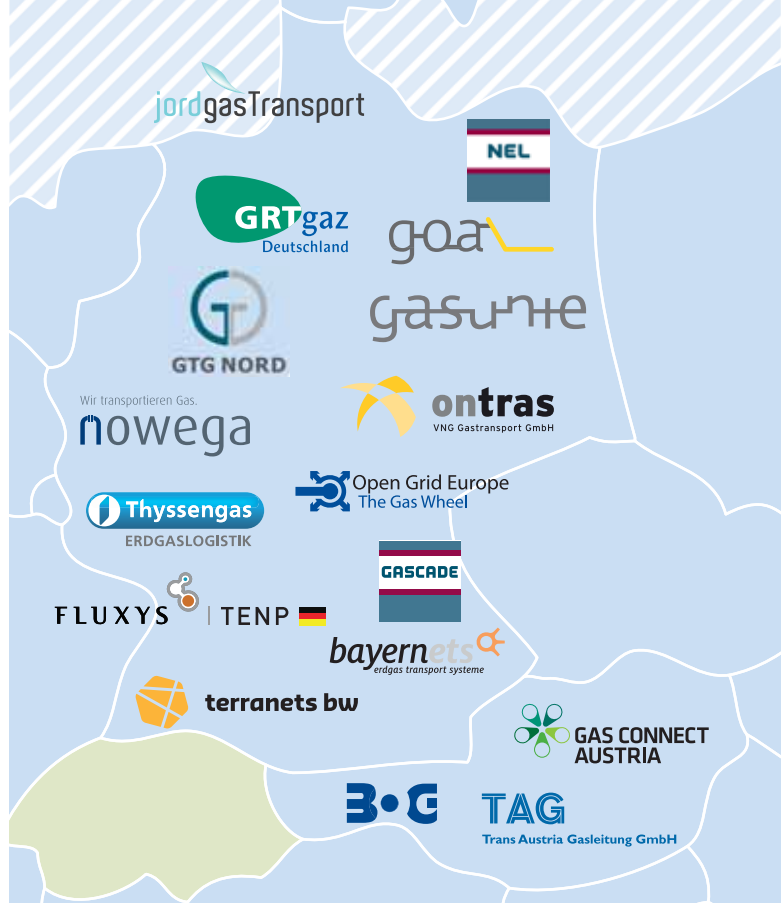
Members Map

- Members
- Associated Partners
- Observers





AUSTRIA AND GERMANY



Since its foundation, ENTSOG member TSOs have provided wide coverage of the European gas market. In addition, ENTSOG's articles of association were modified in December 2010 to admit TSOs from EU countries currently derogated from the Third Energy Package, such as the Baltic States, as associated partners able to participate in its activities.

In February 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.

MANAGEMENT SUPPORT TEAM



MARKET TEAM



SYSTEM DEVELOPMENT TEAM



SYSTEM OPERATION TEAM





Press Releases 2013

| | |
|---------------------|--|
| 21 February | ENTSOG adopts the Ten-Year Network Development Plan 2013–2022 |
| 27 February | ENTSOG publishes draft network code on Interoperability and Data Exchange Rules for consultation |
| 01 March | ENTSOG and ACER publish Roadmap for the early implementation of the CAM network code |
| 20 March | ENTSOG launches a preliminary public consultation on developing a CBA methodology (PCI) |
| 21 March | ENTSOG discusses their Ten Years Network Development Plan in a public workshop in Riga (Latvia) |
| 04 April | NW GRIP 2013 Public Consultation |
| 30 April | Release of Summer Supply Outlook 2013 and the accompanying Summer Review 2012 |
| 06 May | ENTSOG publishes Annual Report 2012 |
| 08 July | Call for updated information on infrastructure projects for GRIPs |
| 15 July | ENTSOG opens public stakeholder consultation on AWP 2014 |
| 19 July | ENTSOG published the new editions of Capacity Map and System Development Map |
| 25 July | ENTSOG launches a formal public consultation on the development of CBA methodology for Projects of Common Interest |
| 06 September | ENTSOG ambitiously decides to pursue an Internal Energy Market in Europe within the given timeframe |
| 30 September | ENTSOG launches the Transparency Platform |
| 23 October | ENTSOG: Increased Transparency |
| 05 November | The North West European Gas Transmission System Operators publish their Gas Regional Investment Plan |
| 14 November | ENTSOG publishes Cost-Benefit Analysis Methodologies in support of Project of Common Interest process |
| 28 November | ENTSOG publishes Winter Supply Outlook 2013/14 and Winter Review 2012/13 |
| 12 December | The North West European Gas Transmission System Operators launch a consultation on their GRIP content |
| 17 December | ENTSOG calls stakeholders to participate to TYNDP/CBA SJWSs |
| 18 December | Changes in ENTSOG: appointment of new business area managers |
| 18 December | ENTSOG: Resubmission of revised Network Code on Interoperability and Data Exchange Rules |
| 19 December | ENTSOG launches a formal consultation for the Project Plan related with the Network Code on Capacity Allocations Mechanisms (CAM NC) |

Stakeholder Consultations & Workshops 2013

STAKEHOLDERS CONSULTATIONS

Capacity Allocation Mechanism

- 06 March** 1st CAM Coordination Group Meeting and 1st EU Stakeholders Group Meeting on CAM Implementation, co-hosted by ACER and ENTSOG
- 18 September** 2nd CAM Coordination Group Meeting and 2nd EU Stakeholders Group Meeting on CAM Implementation, co-hosted by ACER and ENTSOG

Interoperability

- 28 February** INT NC Consultation (begin, till 26 April)
- 09 July** INT NC Stakeholder Support Process (begin, till 23 July)

STAKEHOLDER SESSIONS/WORKSHOPS

Tariffs

- 28 June** High-level Informal Stakeholder Meeting (TAR)
- 16 September** High-level Informal Stakeholder Meeting (TAR)

Interoperability

- 20 March** INT NC Consultation Workshop
- 16 April** INT NC 3rd Countries Workshop
- 23 April** INT NC Data Exchange Workshop
- 28 May** INT NC Conclusions Workshop

Transparency

- 11 December** 7th Transparency Workshop

TYNDP and CBA

- 21 March** 7th TYNDP Workshop in Riga (LV) 2 days
- 06 June** 1st Stakeholders Joint Workshop on Cost-Benefit Analysis Methodology
- 02 July** 2nd Stakeholders Joint Workshop on Cost-Benefit Analysis Methodology
- 09 October** Joint ENTSO-E/ENTSOG Workshop for Member States on Cost-Benefit Analysis Methodology
- 20 November** 8th TYNDP/CBA Workshop
- 26 November** Gas Regional Investment Plan (GRIP) North-West

Abbreviations

| | | | |
|----------------------|--|---------------------|---|
| ATSO KG | Adjacent TSO Kernel Group | ET&TI KG | Economic Test and Tariff Issues Kernel Group |
| AUC KG | Auctions Kernel Group | EU | European Union |
| ACER | Agency for the Cooperation of Energy Regulators | FG | Framework Guidelines |
| AWP | Annual Work Programme | GCG | Gas Coordination Group |
| BAL NC | Network Code on Gas Balancing of Transmission Networks | GIE | Gas Infrastructure Europe |
| BAL WG | Balancing Working Group | GRIP | Gas Regional Investment Plan |
| bcm | Billion cubic metres | GTE | Gas Transmission Europe |
| BOA | ENTSOG Board | INC AKG | Incremental Advisory Kernel Group |
| BRS | Business Requirements Specifications | INT NC | Network Code on Interoperability and Data Exchange Rules |
| CAM | Capacity Allocation Mechanisms | INT WG | Interoperability Working Group |
| CAM NC | Network Code on Capacity Allocation Mechanisms in Gas Transmission Systems | KG | Kernel Group(s) |
| CAM WG | Capacity Allocation Working Group | MW | Megawatt |
| CARP KG | Cost Allocation and Reference Price Kernel Group | NeMo KG | Network Modelling Kernel Group |
| CBA | Cost-Benefit Analysis | NRA | National Regulatory Authority |
| CBC&IP KG | Cross-border Coordination and Information Provisions Kernel Group | PCI | Projects of Common Interest |
| CEER | Council of European Energy Regulators | OS KG | Open Seasons Kernel Group |
| CEF | Connecting Europe Facility | REMIT | Regulation on Energy Market Integrity and Transparency |
| CEN | European Committee for Standardization | RES | Renewable Energy Sources |
| CMP | Congestion Management Procedures | ResDis KG | Reserve Prices and Discounts Kernel Group |
| CNOT | Common Network Operations Tools | S & D KG | Supply & Demand Kernel Group |
| DE KG | Data Exchange Kernel Group | SJWS | Stakeholder Joint Workshops |
| DSO | Distribution System Operator | SoS | Security of Supply |
| EC | European Commission | STSP | Short-term Standardised Products |
| EDS | European Dispatch Service | TAR NC | Network Code on Harmonised Transmission Tariff Structures for Gas |
| EFTA | European Free Trade Area | TEN-E | Trans-European Energy Networks |
| EIP | Energy Infrastructure Priorities | TP | Transparency Platform |
| ENTSO-E | European Network of Transmission System Operators for Electricity | TRA WG | Transparency Working Group |
| ENTSOG | European Network of Transmission System Operators for Gas | TReRe KG | Transparency and Revenue Directory Kernel Group |
| ERGEG | European Regulator's Group for Electricity and Gas | TSO | Transmission System Operator |
| ESW | Energy System-Wide | TYNDP | Ten-Year Network Development Plan |
| | | UIOLI | Use it or lose it |
| | | UGS | Underground Gas Storage |
| | | WDO | Within-day Obligations |
| | | WS | Workshop(s) |

Publisher ENTSOG AISBL
Avenue de Cortenbergh 100
1000 Brussels, Belgium

Editor Vittorio Musazzi

Design DreiDreizehn GmbH, Berlin
www.313.de

Printed by Lechte Medien, Emsdetten

Cover image Courtesy of Thyssengas

Group images Dragan Markovic, Brussels
André Loessel, Essen

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