European Network of
Transmission System Operators
for Electricity

entsoe

ENTSO-E WORK PROGRAMME 2014 THROUGH DECEMBER 2015

AS OF 1 March 2014

After Acer opinion

Edited with greater detail on network code implementation

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1. Executive Summary

ENTSO-E is established under Regulation 714/2009 and was founded in December 2008. Additional roles and responsibilities are contained in Regulations 838/2010, 543/2013, and 347/2013. ENTSO-E works closely with the Commission and ACER when carrying out the duties set down in these regulations. ENTSO-E's mission is to fulfil its various legal mandates for the benefit of electricity customers, and to leverage its mandated work products to shape future energy policy for the benefit of society at large in the face of significant challenges in the areas of:

Security - pursuing coordinated, reliable and secure operations of the interconnected electricity transmission network, while anticipating the decision to cope with upcoming system evolutions.

Market – providing a platform for the market by proposing and implementing standardised market integration and transparency frameworks that facilitate competitive and integrated continental wholesale and retail markets.

Sustainability - facilitating secure integration of new generation sources, particularly renewable energy, as well as significantly contributing to the EU's greenhouse gases reduction and renewable energy supply goals.

These challenges also imply addressing:
Network Adequacy - promoting the adequate development of the interconnected European grid and investments for a reliable, efficient and sustainable power system.

ENTSO-E's sixth Annual Work Programme for the year 2015 is a plan of transition; our task of network code drafting will be nearing completion and activities will switch from development to commencing implementation of some elements and the detailed implementation planning of others. For the Ten-Year Network Development Plan (TYNDP) considerable effort is forecast for the planning and development of the 2016 TYNDP, and also explaining the details and messages from the 2014 TYNDP which will receive its ACER opinion late in 2014 and will be a key document for pan–European discussions on infrastructure through 2015.

ENTSO-E's immediate effort is dominated by the continuing focus on network codes delivery and Comitology and the preparations and delivery of the 2014 TYNDP. This focus is partly derived from the three year work plan agreed and updated between ACER, EC and ENTSO-E. However, network codes are only part of the ENTSO-E work programme and this wider work load is important for meeting the other duties described in Regulation (EC) 714/2009 and for the successful cooperation of European TSOs in support of the European energy policy goals of security of supply, sustainability and competitiveness.

2. Strategic Planning

In developing the best strategy for the coming years and the time of transition described above, ENTSO-E's members were led by the realisation that TSOs need to shape the change which the energy industry is undergoing. For example, the changes in resource mix, smart grids and customer empowerment present enormous opportunities and risks for the system and for society, and TSOs need to contribute their expertise towards policy makers' many necessary decisions and adjustments of market design, security of supply, viability of the energy mix, competitiveness and sustainability. Stakeholder feedback which ENTSO-E sought and received also points in the direction of taking a clear European perspective, being more active in

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explaining identified areas for improvement to the public, and taking a leading role in coordinating the implementation of adjustments which have been decided.

The key elements of ENTSO-E's updated strategy therefore are:

Policy development. We need to be clear and pro-active in the positions the Association takes, engaging transparently on how society's best interests are advanced across the entire European power system.

Regional coordination. The Association shall be the platform to coordinate regional developments, thus avoiding contradictions between TSOs/Regions, sharing learning, aligning external communications and avoiding the need for additional bodies to be created.

Legal mandates and specific tasks. The Association will continue to deliver against its legal mandates and on the additional tasks explicitly assigned to us.

Visibility and transparency. The Association will increase its public visibility in order to ensure the TSOs' input and system perspective on security of supply, competitiveness and sustainability get considered in energy policy decisions. There will be further increased transparency on information sharing between TSOs, and between TSOs and society at large. We intend to transparently disseminate relevant power system data to the market and ensure data is supported by sufficient context and explanation to avoid mis-interpretation.

Focus on project management and fast delivery. We will implement more efficient and effective methods of working with shorter delivery timescales. This will involve a project-style definition of work areas, with a move to fuller time expert involvement over shorter periods where this is more efficient. We will make more use of facilitated retreats, continuously balance our resources and introduce more cross-Committee working.

3. General Description of the Work Programme

Introduction

This work programme covers the period from January 2015 through to the end of 2015. The work programme describes the results of the Board's strategic review of ENTSO-E working practices and decision making and its impact on how work is done and the way ENTSO-E presents itself to stakeholders. The resources of ENTSO-E are described as they relate to the various tasks undertaken by the secretariat. Because of the importance of the network codes for ENTSO-E's work and for the European electricity market and system, and also because the codes constitute one coherent overall project with many inter-relationships between them, the work programme contains a separate network code chapter. The other chapters follow the organisation of ENTSO-E work in Committees.

ENTSO-E is organised into four Committees which have policy and operational responsibility for delivering the work programme of projects and on-going work, and this work programme describes the deliverables and calendars under the headings of these Committees. They are 'System Development' – planning and development of the transmission infrastructure, 'System Operations' – enhancing cooperation in the secure operation of the transmission system including emerging relationships with non-ENTSO-E TSOs, 'Market' – developing and implementing the commercial rules necessary to support the internal market for energy; finally 'Research and Development', with content scope covering all three aforementioned committees, to keep TSOs at the vanguard of innovative solutions to energy and power challenges in Europe. Chapters on the 'Legal and Regulatory Group' and on communal tasks complete the work programme.

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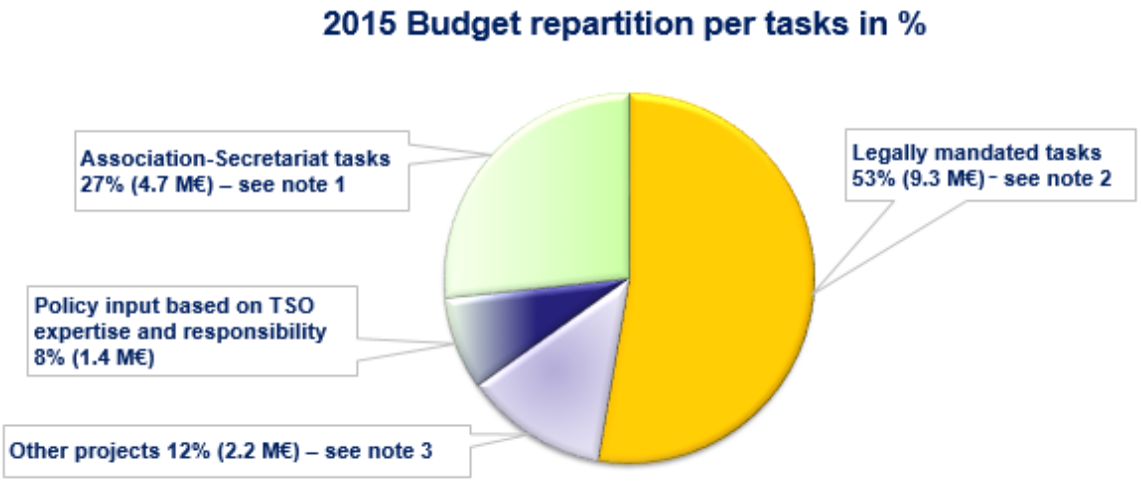
Resources

The resources summary below covers the tasks which the ENTSO-E Secretariat will be involved in during 2015. However, even on this horizon, significant uncertainties exist around some tasks. For example, the timing of the Comitology proceedings for the various network codes is more uncertain than anticipated, and for this and other reasons the amount of Member TSO and Secretariat experts needed is only a rough estimate.

Since Winter 2014 ENTSO-E is using facilitated workshops and retreats in the context of a project style of working aimed at faster resolution of policy discussions. An additional benefit is to reduce the overall costs of ENTSO-E activities to members by shorter, more concentrated efforts compared to the standard Association work. The first of these projects reported to the ENTSO-E Assembly in July 2014.

In assessing resource requirements the ENTSO-E Board analysed the workload of tasks required by ENTSO-E. Figure 1 shows the budget proposal for 2015 which separates the tasks of ENTSO-E into main categories. ENTSO-E's strong growth in legally mandated tasks (shown in blue and disaggregated in major legally mandated deliverables) have entailed a significant expansion over the years of the Members' and Secretariat's workload and of the Association's budget. Other projects are necessary for the running of the Association (shown in yellow). Finally, we show the costs for policy positions, advocacy and communication (growing as explained above but still small), and the general administration, management and support tasks of the Association and Secretariat (light green). The administration costs have grown over the years partly in proportion to the overall amount of work ENTSO-E is required to produce, i.e. they are also largely driven by the increase of legally mandated work. The total cost of these activities is 17.7 million EUR for the year 2015, including the remuneration for ENTSO-E's Secretariat staff of 69 employees (target for end 2015, either directly employed or seconded from TSOs), and shorter-term contractors mostly for IT projects.



[1] **Association-Secretariat tasks:** Includes support to ENTSO-E bodies and groups, and support functions like IT, legal services, etc.; partly proportional to the legally mandated task workload.
[2] **Legally mandated tasks:** Includes ENTSO-E Awareness System 3%; system adequacy assessments 5%; Ten-Year Network Development Plans 14%; network code development 11%; Common Grid Model 6%; Electricity Market Fundamental Information Platform 14%.
[3] **Other projects:** Includes implementation of the IT strategy and of a SharePoint extranet system; R&D activities.

4. Network Codes Development and Implementation

ENTSO-E has resources committed to ten different network codes (covering connection requirements, the coordination of system operations and the completion of the internal electricity market). Each code is at a different phase of development, though all of them should have entered the process of becoming law by the

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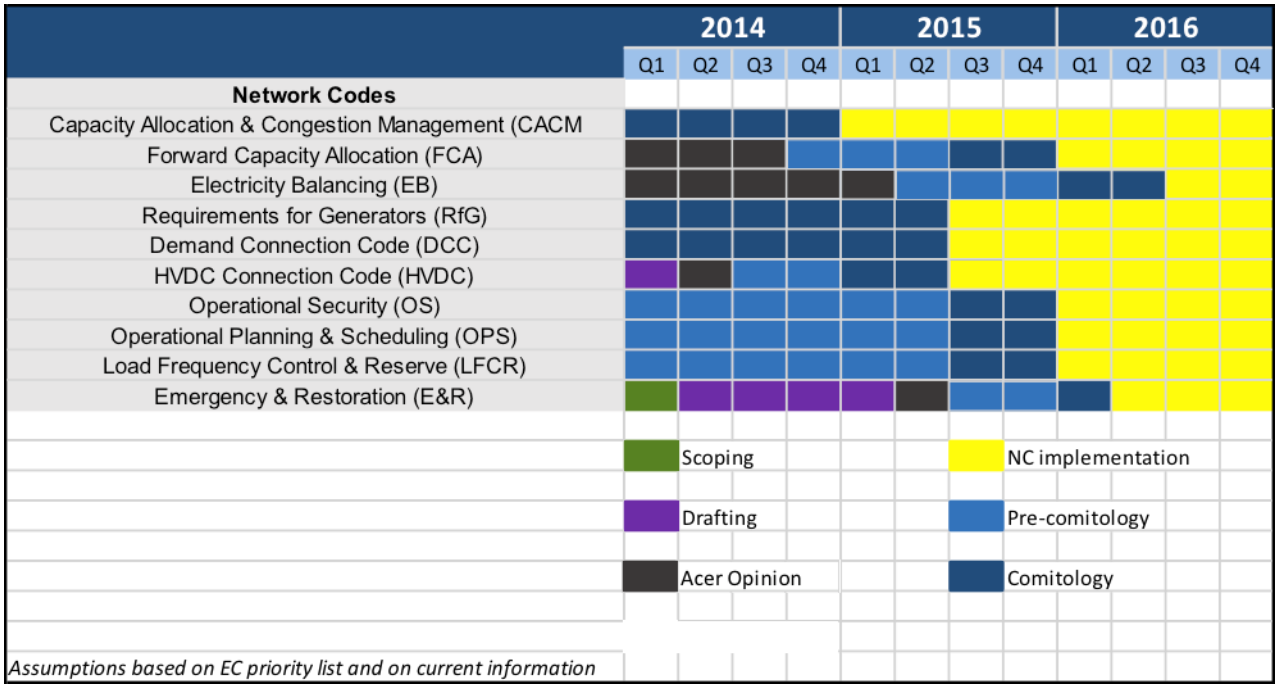
end of 2015. It is expected that several codes could enter into force during this period. Therefore, ENTSO-E's focus through 2015 will be dominated by further cooperation with the European Commission, ACER and all stakeholders to support the Comitology process, and by the network codes implementation program.

For detailed information on network codes please see the dedicated section of the ENTSO-E website. As part of the explanation efforts on the network codes ENTSO-E launched a dedicated network codes website aimed at a wide audience: networkcodes.entsoe.eu.

Overall activity

The calendar below shows the expected timelines for work on each of the ten network codes. There are considerable uncertainties around timings; however there is no question that the effort required at European, regional and national level will be not only substantial but also increasing especially with respect to implementation.



Network code drafting

At the beginning of 2015 only one network code will be at the drafting phase: Emergency & Restoration, due to ACER before 1 April 2015. Work on this network code will focus on ensuring it meets framework guidelines. ENTSO-E consults fully and effectively, including many discussions in stakeholder groups, and responding to comments received via workshops and public feedback; for especially important topics, additional discussions with strongly affected stakeholders can complement the consultations and will be documented transparently. ENTSO-E also works closely with the European Commission and ACER so that the overall time needed until the codes take effect is minimised, while they provide the largest possible benefit to European customers and achieving energy policy objectives. Interactions with the Network Codes on Load-Frequency Control and Reserves, and on Electricity Balancing, but also the connection NCs, will be carefully taken into consideration.

It is possible that ENTSO-E may be requested to begin work on additional network codes in 2015; though this will be driven by the European Commission's priority list and work of European regulators and ACER.

ENTSO-E notes in ACER's work programme for 2014 it intends to commence the scoping process of possible framework guidelines on Rules on Harmonised Electricity Transmission Tariff Structure. Although not being

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a part of the network codes development, ENTSO-E would be monitoring this framework guidelines scoping process.

The European Commission is also considering developing framework guidelines and network codes on third party access, including a network code on connection procedures, and energy efficiency regarding networks as announced through the release of the electricity three-year plan. No provisional date is however foreseen.

Supporting the process of making network codes law

At the time of writing nine network codes have been submitted to ACER. Seven of these codes have been already recommended for adoption to the European Commission. Network Codes on Capacity Allocation and Congestion Management, Requirements for Generators, and Demand Connection began the Comitology process (i.e. discussions with Member State representatives) in late 2013 and early 2014, respectively. Network Codes on Operational Security, Operational Planning and Scheduling, Load-Frequency Control and Reserves, Forward Capacity Allocation and High Voltage Direct Current Connections are all expected to start Comitology before the end of 2015.

The timescales for the Comitology process are highly uncertain; as are the steps, including the preparation of a final text, legal review, translation and the completion of an impact assessment, which will need to take place before the end of the process. The actual schedule of Comitology will in particular depend on the interrogations and contributions from Member States.

Nevertheless, ENTSO-E is playing a significant role in the process of making network codes law: During the Comitology phase, ENTSO-E will keep working with the European Commission to clarify aspects of the text and, if necessary, fine tune a draft code according to the Commission's legal review. ENTSO-E will also produce material to explain the content and purpose of each network code, to place it within the wider context of European energy policy and to demonstrate the benefits it will deliver.

Network code implementation

It is likely that the first network codes will become law in early 2015. ENTSO-E Members have already begun work to implement provisions of the network codes. The network code implementation challenge is considerable. It will require action at European, regional and national level and will involve significant volumes of TSO resources.

Each network code sets a series of rights and obligations on various market players and often on TSOs. In many cases, network codes also require actions to be taken or parameters to be specified in order to implement that code. While ENTSO-E has no formal role in ensuring compliance with network codes it does have a role in ensuring the smooth implementation of network codes and in ensuring that rules are working effectively.

As drafter of the network codes ENTSO-E is well placed to assist stakeholders in understanding their roles and obligations under network codes. ENTSO-E also believes that many parties will be keen to understand how non-exhaustive requirements are being set and, in some cases, to draw on experience from other countries. For this reason, ENTSO-E intends to promote the sharing of information on national implementations.

ENTSO-E sees stakeholders' involvement as critical to the success of the implementation programme. The importance of continuous and valuable exchanges goes far beyond the strict consultation responsibilities, which will be met and exceeded. By the beginning of 2015 and the entry into force of the first codes, ENTSO-E expects to have discussed and established a formalised structure to discuss issues relating to network codes development and implementation. This could take the form of a permanent stakeholders' forum chaired by ENTSO-E. Such a group could prove beneficial in raising and resolving concerns, in overseeing code implementation and in coordinating views such that network codes are efficient and effective.

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Smooth and continuous collaboration of ENTSO-E and all stakeholders with ACER and NRAs, as well as with the European Commission, is essential to delivering full implementation of the network codes. In ENTSO-E's view, beginning implementation work ahead of the formal approval of a network code is a pragmatic approach and is a prerequisite for delivering the benefits of network codes quickly. However, the work carries a risk that the level of expertise available to ENTSO-E for European work will decline as ENTSO-E experts are required to implement network codes within their home countries.

Early implementation work is already underway for several codes.

CACM guideline

The table below provides estimated dates for the completion of tasks defined in the CACM guideline. All dates are provisional, and depend on a number of factors external and internal to ENTSO-E, including the date of entry into force of the regulation. A public consultation on the determination of capacity calculation regions will be organised in 2015. Detailed information will be available on ENTSO-E website.
Tasks marked in bold are on-going as off January 2015.

TASK	Art.	Responsible party	Estimated date of submission
Determination of capacity calculation regions	**14**	**All TSOs**	**October 2015**
Generation and Load Data Provision Methodology	**15(1)**	**All TSOs**	**2016**
Publish List of entities to provide information & content of information & time schedules for provision of information (related to Generation and Load Data Prov meth)	15(6)	ENTSO-E	2017
Common Grid Model Methodology	**16(1)**	**All TSOs**	**2016**
Capacity Calculation Methodology	19(2)	All TSOs of CCR	2017
Common framework for coordination and compatibility of flow based methodology across regions	19(2)	4 CCRs	2017
Establishment of process for IGM merging	26(1)	All TSOs	2017
Establishment of a Coordinated Capacity Calculator	26(2)	All TSOs of CCR	2018
Biennial Report on Capacity Calculation and allocation (collection of data & writing report)	30	ENTSO-E	2017
Definition of Indicators for Biennial Report on capacity Calculation and allocation	30 (4)	All TSOs	2017
Triennial technical Report on BZ	33 (1)	ENTSO-E	2018
Redispatching methodology	34(1)	All TSOs of CCR	2017
Report assessing the progressive coordination and harmonisation of RD and CT mechanisms and agreements	34(3)	All TSOs of CCR	2018
Backup methodology	35(3)	NEMOs in cooperation with TSOs	2017
Requirements for the Price Coupling & Continuous Matching Algorithm	36(1)	All TSOs	2016

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Common set of requirements for price coupling & continuous matching algorithm	36(3)	All NEMOs supported by all TSOs	2016
Review of operation of Price Coupling Algorithm and Continuous Trading Matching Algorithm	36(6)	All TSOs and All NEMOs	
Maximum and minimum prices	40(1), 52(1)	All NEMOs in cooperation with all TSOs	2017
Methodology for scheduled exchanges	42(1), 54(1)	TSOs	2016
Review of scheduled exchange methodology	42(4), 54(4)	TSOs	
Fall back	43	Each TSO in cooperation with all TSOs of the CCR	2016
Intraday Capacity Pricing	53(3)	All TSOs	2017
Intraday Cross Zonal Gate Opening and Closure time	56(1)	All TSOs	2016
Complementary regional auctions	60	NEMOS and TSO per border	2017
Day Ahead Firmness deadline	66	All TSOs	2016
Congestion Income Distribution Arrangements	**70**	**All TSOs**	**2016**
Redispatching cost sharing methodology	71	All TSOs of CCR	2017
Harmonisation of redispatching and countertrading methodologies across CCRs	71(7)	All TSOs	2018
Monitoring plan for Agency opinion	79(3)	ENTSO-E	2016
List of information to be communicated by ENTSO-E to the Agency	79(4)	ACER in cooperation with ENTSO-E	2016

Other projects

Harmonisation of Allocation Rules	
Network code	Forward Capacity Allocation
The draft network code FCA tasks all TSOs to "develop a proposal for harmonised Allocation Rules" (HAR) no later than 12 months after its entry into force. These rules may need to be amended on a more frequent basis than the regulation in order to meet the needs of market participants, and are therefore not explicitly included in the regulation.	
Responsible party	All TSOs. Tasked delivered through ENTSO-E structures
Start date	2014
Scheduled end date	End 2015
Main steps and stakeholder engagement for 2015	ENTSO-E has decided to set up a stakeholder advisory group early in the process, aimed at organisations with a particular interest in following the day-to-day development of the project. Later in 2015, ENTSO-E will also hold public workshops and public consultations based on the draft HAR.

Standard balancing products definition	
Network code	Electricity Balancing
Responsible party	All TSOs. Tasked delivered through ENTSO-E structures
Start date	Q4 2013
Scheduled end date	- TBD

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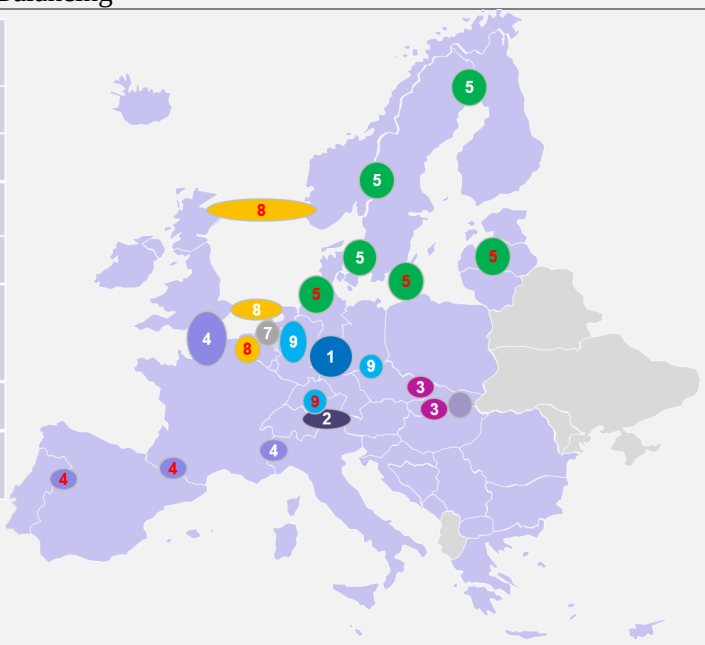
Main steps and stakeholder engagement for 2015	The set of manual products (mFRR and RR) will be consulted with stakeholders.

Balancing Cost Benefit Analysis	
Network code	Electricity Balancing
Responsible party	All TSOs. Tasked delivered through ENTSO-E structures
Start date	Q4 2014
Scheduled end date	June 2015: report on general methodology applicable to all CBAs foreseen in the NC EB and of the final report on a specific methodology for the harmonisation of imbalance settlement period, including analysis of planning cases
Main steps and stakeholder engagement for 2015	March 2015: 4-week public consultation on the general methodology for CBAs and the parameters of the specific CBA for harmonisation of the imbalance settlement period.

Cross Border Pilot Projects	
Network code	Electricity Balancing

1 CMOs for mFRR and aFRR with real Time Flow Based congestion management
2 Cross-border market for FCR based on TSO-TSO model
3 E-GCC
4 TERRE: Trans-European Replacement Reserves Exchange
5 Development of the Nordic RPM
7 Design and evaluation of a harmonised reactive balancing market with XB optimisation of Frequency Restoration while keeping control areas, bid zones, and Regulatory oversight
8 BritNed / TenneT / National Grid Balancing Services
9 IGCC Imbalance Netting, aFRR-Assistance and Flow-Based Congestion Management.

*Pilot 6 has been put on hold for the time being



Responsible party	TSOs on a voluntary basis. ENTSO-E coordinates the projects.
Start date	Kick-off meeting: November 2013
Scheduled end date	
Main steps and stakeholder engagement for 2015	A Cross Border Balancing Pilot Projects Stakeholder Group was set up in 2014, and will continue meeting on a regular basis in 2015.

Common Grid Model	
Network code	Operational Planning and Scheduling
Description: The aim is to enable the execution of operational and capacity calculation processes as defined in the Network Codes. To this end, the project will (a) develop methodologies that support the use of common grid models (b) support the implementation of the CGM Exchange Standard by the TSOs (c) develop and deliver an Operational Planning Data Environment (d) implement a European Merging Function including quality assurance.	

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Responsible party	All TSOs. Tasked delivered through ENTSO-E structures
Start date	Q1/2014
Scheduled end date	Q4/2017
Main steps and stakeholder engagement for 2015	For 2015: OPDE business requirements complete, European merging function complete, and base cases complete Q4/2015. ENTSO-E shall submit the adopted specifications by 16 May 2015 according to Art. 8(3) Reg. 714/2009 (as amended with Reg. 347/2013)

European Awareness System	
Network code	Operational Security
Awareness in real time of the operational state of the whole synchronous area and other interconnected synchronous areas is critical for TSOs and TSO cooperation. EAS is the technological platform for the exchange of information in real time. (Reg. 714/2009). All TSOs with interconnections connected. Displays are in TSO control rooms and display Frequency, System state, Imbalance, Exchange and Generation Make up.	
Responsible party	All TSOs. Tasked delivered through ENTSO-E structures
Start date	Project started 2009
Scheduled end date	Project end December 2016
Main steps and stakeholder engagement for 2015	• Fully operational since November 2013 • Updates will be made to align thresholds with the Network Code requirements. • Awaiting finalised text

5. Research and Development Activities

Objective

The Research and Development Committee (RDC) is in charge of TSO cooperation regarding research and development (R&D) activities. Its main mission is to facilitate the fulfilment of the Third Energy Package mandate, requesting Member States, regulators, transmission operators and distribution operators to launch innovation programs with appropriate incentivizing schemes, much beyond 2020. The objectives of the RDC lie in defining appropriate activities to ensure the cross-functional role of coordination within R&D activities in all subjects in relation to the TSO business, i.e. system operations, facilitation of electricity markets, and transmission grid development.

Key deliverables for 2014 – 2015

Although ENTSO-E's role is to facilitate and coordinate activities mainly in areas with an EU or European dimension, R&D is and remains a business of individual TSO companies and their consortia. However, ENTSO-E may actively participate in consortia answering EU calls for proposals.

In this framework, RDC elaborates tools and provides the organisation to coordinate ENTSO-E members and the association's involvement in the R&D activities related to European initiatives such as the Strategic Energy Technology Plan (SET Plan) and the European Industrial Initiative on the Electricity Grids (EEGI) aiming at an adequate European grid for the purposes of achieving European policy goals (integration of renewables, well-functioning European electricity market and high standard of interoperability, reliability and security).

In the period 2014-2015, ENTSO-E is expecting to participate in the preparation of project proposals to answer announced Horizon2020 calls. The expected role of ENTSO-E is to ensure that there is sufficient

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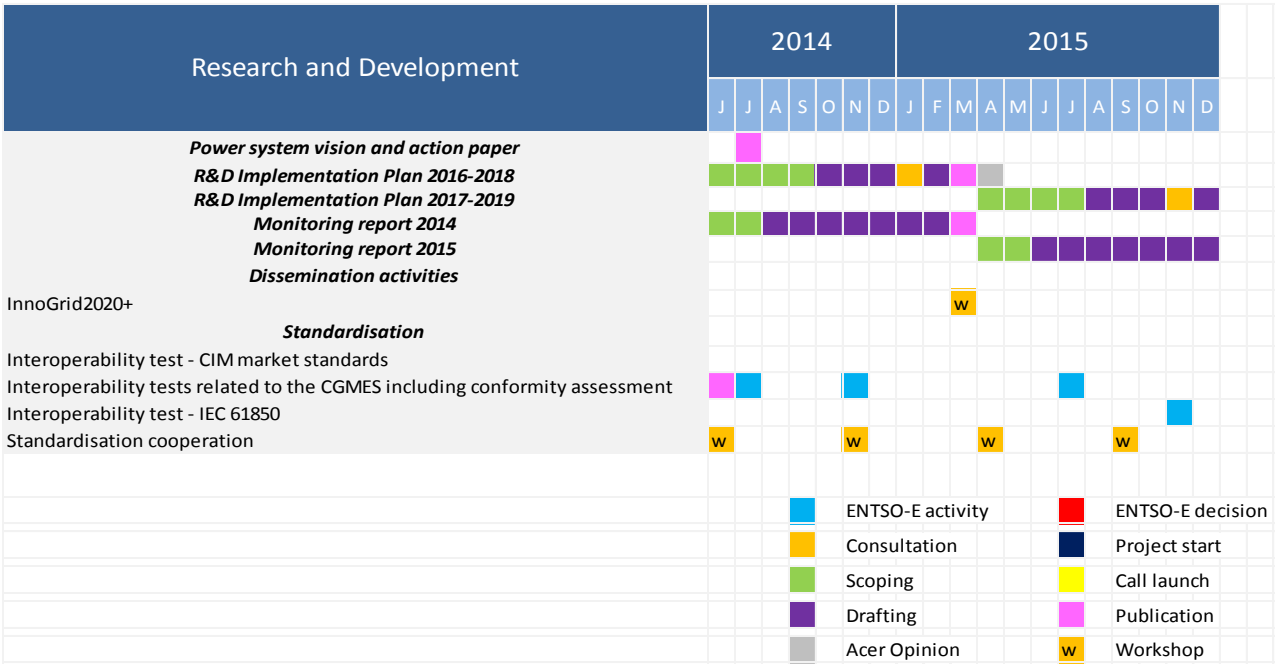
interaction between different projects and the deliverables are consistent which allows for a higher degree of scalability and replicability of R&D results.



Taking into account ACER's opinion on the ENTSO-E Annual Work Programme 2013, the following key activities are planned for the period 2014-2015.

Power system vision and action paper

The power system vision and action paper, scheduled for publication in Q3/2014, will:

- provide to key stakeholders (amongst others EC and ACER) a clear vision of the challenges that the European power system faces in future years
- show how ENTSO-E work products and their interrelations answer these challenges
- address calls from stakeholders for such a paper (e.g. ACER opinion of R&D Roadmap, May 2013, calling for a 'grand design' paper)
- provide direction and reference to all teams in their work within ENTSO-E.

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R&D Implementation Plan 2016 – 2018

The ENTSO-E R&D Roadmap 2013-2022, published in December 2012, is closely tied to the EU's Strategic Energy Technology (SET) Plan and, in particular, to the European Electricity Grid Initiative (EEGI), one of the SET Plan's industrial initiatives combining EU and Member State R&D activities to achieve synergies. Since 2012 ENTSO-E published the R&D Implementation Plan 2014-2016 and R&D Implementation Plan 2015-2017. The objective of the Implementation Plans is to outline planned activities for the next three years.

In 2013 the EC started activities related to the development of an Integrated Roadmap. The objective of this roadmap is to address R&D needs in the energy sector from a holistic point of view. These new developments as well as the adoption and publication on the work programme for 2014-2015 of EC Horizon2020 are impacting the schedule and the prioritization of activities on R&D efforts related to the transmission system.

In 2014, and in the beginning of 2015, ENTSO-E will be working on the Implementation Plan 2016-2018. The objective of the Implementation Plan is to consider not only new directions set by the EU but also the outcome of the Monitoring Report 2014. ENTSO-E is confident in making sure that the right priorities are assigned according to the TSOs' needs and the requirements derived from the political targets of the EU. However, there are limited resources available for TSO R&D activities, which is a significant challenge that is impacting the planning.

In order to work towards resolving the above mentioned challenges, the ENTSO-E work programme 2014-2015 foresees necessary public consultations and open dialogue with the EC, EEGI, ACER, CEER and other relevant stakeholders.

Monitoring Report 2014

The main objective of the R&D Monitoring Report 2013 published in 2014 is to inform stakeholders about the recent R&D work and share new knowledge. Furthermore, it allows monitoring the progress in pursuing the destinations of R&D Roadmap 2013–2022. The results presented in this report are used to perform a gap analysis for further prioritization of specific Clusters and Functional Objectives.

ENTSO-E identified a need to adjust the scope of the Monitoring Report 2014 (scheduled for publication in 2015) to include the results of an assessment of the follow up of the R&D results and their impact on transmission activities on ENTSO-E and its TSO members. A set of projects which already delivered their results or are close to the end will be selected in 2014 for this analysis. The analysis will also present in which areas R&D results were successfully implemented and where implementation was delayed or infeasible due to different circumstances.

Standardisation

Standardisation activities are one of the important areas in which coordinated processes are crucial. The Memorandum of Understanding between ENTSO-E and CEN/CENELEC facilitates cooperation and allows early consideration of topics of standardisation interest. Furthermore, ENTSO-E is extending its liaisons with IEC and is actively involved in the IEC Common Information Model and IEC 61850 interoperability aspects. In 2014 ENTSO-E is developing a tool to support harmonisation of TSOs' requirements related to IEC 61850 standard and its interoperability. In 2014-2015 ENTSO-E will focus on:

- improving the interactions with standardisation bodies
- taking actions to improve interoperability of software applications using the ENTSO-E Common Grid Model Exchange Standard (CGMES) by applying a conformity assessment framework
- Interoperability when using IEC 61850; an interoperability test is planned in the second half of 2015.

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6. System Development Activities

Objective

The main objectives of the System Development activity remain the mandated tasks of delivering a biennial pan-European Ten-Year Network Development Plan (TYNDP) with a set of Regional Investment Plans, as well as the annual System Adequacy Reports. The year 2015 will see a significant amount of activity in the preparation phase for the 2016 TYNDP. Stakeholders have asked for better access to data and better visibility on models planning methodologies as well as greater participation in the TYNDP development process. ENTSO-E looks forward to demonstrating this enhanced cooperation and transparency during this important year.

Towards the next Ten-Year Network Development Plan 2016 & Regional Investment Plans 2016

The TYNDP package is published by ENTSO-E every two years; it consists of several documents: a European-wide TYNDP, a set of Regional Group Investment Plans (RgIPs) and a Scenario Outlook and Adequacy Forecast (SOAF).

Under Regulation (EC) 714/2009, ENTSO-E was entrusted to produce TYNDPs with the objective to provide a long-term vision for the electricity grid, including a generation adequacy outlook, and increase transparency to market participants. Regulation (EC) 347/2013 has expanded the role of the TYNDP, making it the foundation of the European grid planning and the sole base for transmission projects that are eligible to be characterised as of "Common Interest" (PCI). Such a label aims to address the chronic problem in electricity infrastructure development of long permitting times by providing for mechanisms at national level to limit the duration of the process, and in some cases that of financing leverage; the strict and reliable application of those mechanisms is key for achieving this objective.

In line with Regulation (EC) 347/2013, ENTSO-E has developed the methodology to assist in the selection of the PCIs based on a cost-benefit analysis (CBA). A first version was submitted to ACER in November 2013, with an improved version to be available in August 2014 based on opinions given by ACER, the EC and Member States. The initial methodology has already been applied to all TYNDP 2014 projects. ENTSO-E will continue working on improving the CBA methodology in 2015 in collaboration with various stakeholders, for example on the assessment methodology of storage infrastructure, of avoided generation investment, and of ancillary services.

The building of TYNDP 2016 scenarios is already starting in 2014 and will continue in 2015. CBA studies and planning studies for the TYNDP 2016 will also be carried out through 2015. The 2nd PCI selection by the European Commission is expected to commence in March-April 2015, where ENTSO-E intends to facilitate the process.

The next TYNDP 2016 will also see a stronger interaction with the gas TYNDP (developed by ENTSOG in alternating years with the electricity TYNDP), also meeting the requirements of Regulation (EC) 347/2013. Both ENTSOs are already exploring how scenario building (a key component in any TYNDP) can be more closely linked, and which other actions are possible for the next TYNDPs. Further communication and interaction with EC, ACER and stakeholders on this topic is expected in 2015.

Throughout the entire TYNDP development ENTSO-E will continue its fruitful collaboration with stakeholders, for example within the Long Term Network Development Stakeholders Group which was created as an open and transparent environment for discussing present and future situations and systematic problems along with the possible solutions to be implemented locally and/or Europe-wide. One example of

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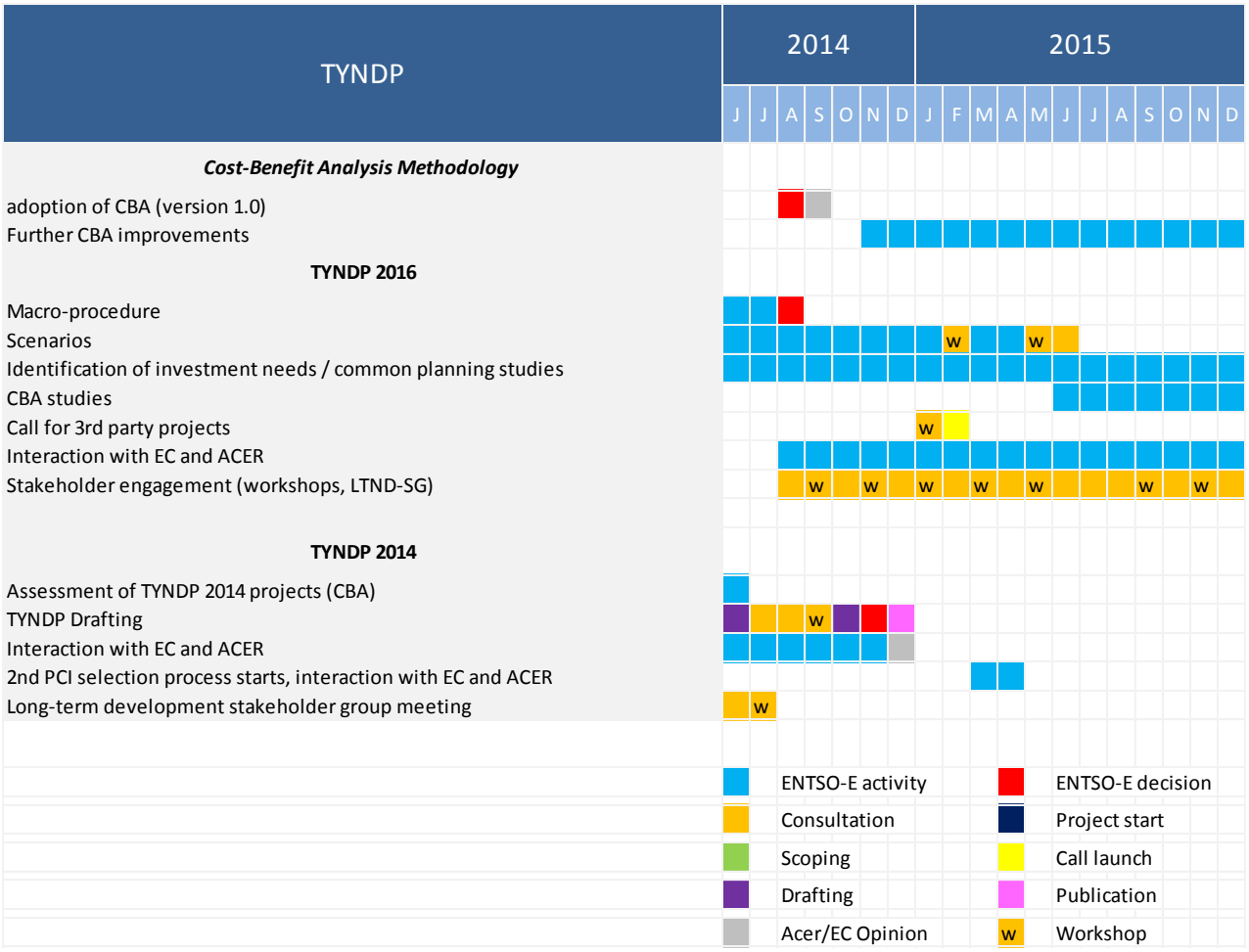
past TYNDP 2014 experience is the report on scenarios and stakeholder involvement drafted by this group. ENTSO-E is looking forward to receiving further suggestions on other topics, feeding into the TYNDP 2016 report. Additionally, ENTSO-E strives to keep the TYNDP 2016 development as transparent as possible - process, methodology and scenarios - by organising more and earlier stakeholder workshops at the European and regional level dedicated to collecting ideas and suggestions for future improvements of the ENTSO-E outcomes.

The TYNDP 2012 and 2014 reports already included projects of 3rd party promoters (i.e. non-ENTSO-E members). The role of the TYNDP in the Regulation (EC) 347/2013 contributed to seeking an improved procedure for doing so and ENTSO-E has proposed, in consultation with all impacted parties and EC and ACER, a new procedure in 2013. Third party projects included in the TYNDP 2014 have been assessed with the same methodology as projects promoted by ENTSO-E's members, with their promoters regularly informed throughout the process. ENTSO-E is expecting further guidelines from the EC for 3rd party project inclusion in the TYNDP, and plans to open a submission window for TYNDP 2016 during the first quarter of 2015.



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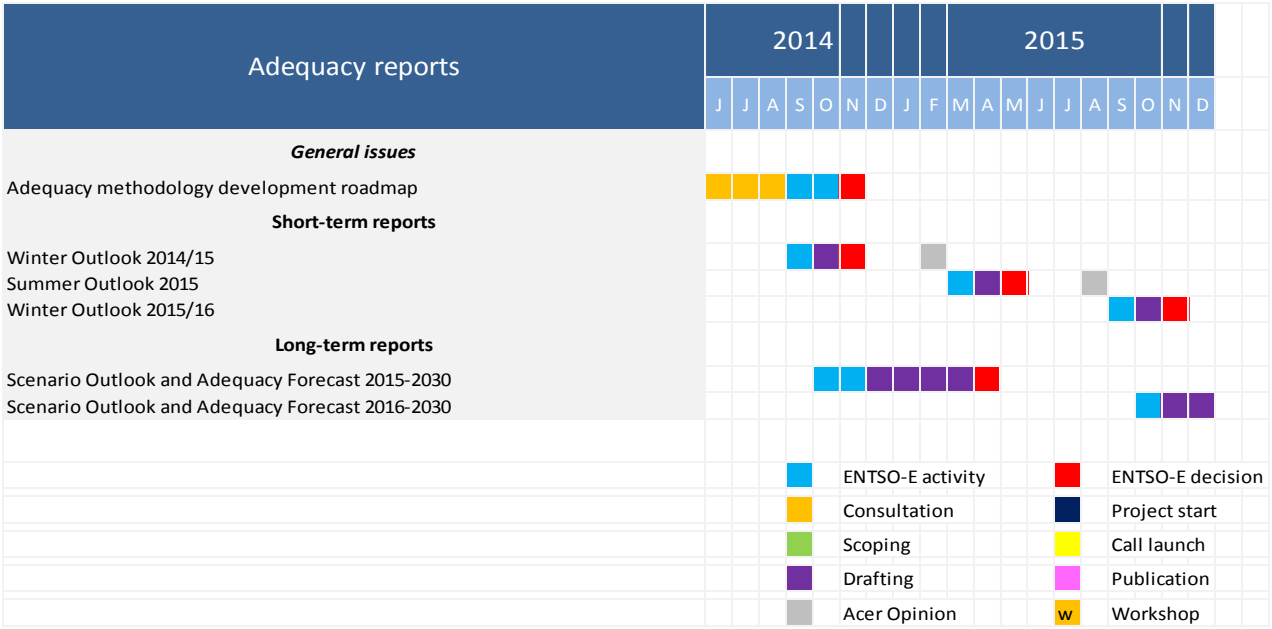
System Adequacy Reports

Under Regulation (EC) 714/2009, ENTSO-E is mandated to issue reports assessing generation adequacy of the European power system on two markedly different time horizons: short-term "seasonal outlook" reports biannually, covering the coming summer and winter periods, respectively, as well as a mid-to long-term assessment every two years, as part of the TYNDP package and covering up to 15 years ahead. Regarding the seasonal generation outlooks, the proposed NC on Operational Planning and Scheduling (Art. 47(2)) further specified that the reports shall be issued by 21 May and 21 November. As for the long term reports, ENTSO-E intends to continue its past practice of issuing an update of the Scenario Outlook and Adequacy Forecast in the years in-between the TYNDP packages.

As to the content, structure and assessment behind the reports, the integration of large amounts of renewable energy sources, the internal electricity market, new storage technologies, demand side response and evolving policies all require revised system adequacy assessment methodologies. ENTSO-E is committed to developing its existing European adequacy methodology with a special emphasis on harmonised inputs, system flexibility and interconnection assessments. Due to increasing levels of interconnection in Europe, pan-European and regional adequacy assessments are required to complement the national adequacy assessments.

In the context of market design and capacity mechanism discussions, ENTSO-E deems it crucial that stakeholders are involved in the process of developing a new methodology for system adequacy from the outset. Through dialogue, our aim is to become aware of concerns, expectations and requirements of stakeholders and interested parties with regards to the new adequacy methodology. The 2015 adequacy reports will incorporate the first steps of the methodology review based on the public consultation in 2014 and in particular the five main areas identified as high priority for the new adequacy methodology: Market rewards of flexibility; harmonisation of the methodology; data transparency; cross-border exchanges; and deterministic vs probabilistic approach.

The 2015 issues of the adequacy reports will see the first major steps in the implementation of the developed methodologies which emerge as an outcome of extensive consultation and of redefining the reports through Q2 and Q3/2014.



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e-Highway2050 Project

Supported by the EC-DG Research, e-Highway2050 is a research and development project in which ENTSO-E is an important consortium member. 15 TSOs, members of ENTSO-E, are direct partners (8) or third party partners (7). The project aims at developing a new planning methodology able to deliver, in three years, a first version of coherent Modular Development Plans of the pan-European power transmission system, going from 2020 to 2050.

The resulting pan-European grid is supposed to enable electricity market integration and the 2050 decarbonisation goals of the electricity system, therefore integrating large quantities of renewables to be transported over long distances from production sites to load centres. The newly developed top-down methodology is built around four main steps discussed and agreed with the stakeholders. The first two steps are already performed:

- The description of possible assumptions from 2020 to 2050 involving technology, socio-environmental and political boundary conditions,
- The building of energy scenarios involving the foreseen generation and demand profiles, while taking into account storage, demand-side management and transmission technologies available by 2050.

In 2014-2015 ENTSO-E TSOs will focus on the third and fourth steps of the project e-Highway 2050:

- The grid and market simulations to find optimised grid architectures, which help matching electricity production with demand profiles at European level,
- The proposal of modular development plans of the pan European transmission system, covering each scenario and optimised by taking into account social welfare, environmental constraints, as well as grid operations and governance issues.

One overall result in 2015 is the Modular Development Plan which will present the architectural possibilities of the electricity transmission network in 2050, including, among other information, the assumptions and calculations for electricity generation, demand and transmission technologies until 2050. Moreover, a network planning method will be developed to serve as the basis for all future long-term network planning. The ‘body of knowledge’ will present all project results in a target group-specific and interactive format. Further information at http://www.e-highway2050.eu/

The lists of deliverables expected by the end of 2014 and in 2015 are included in the table below.

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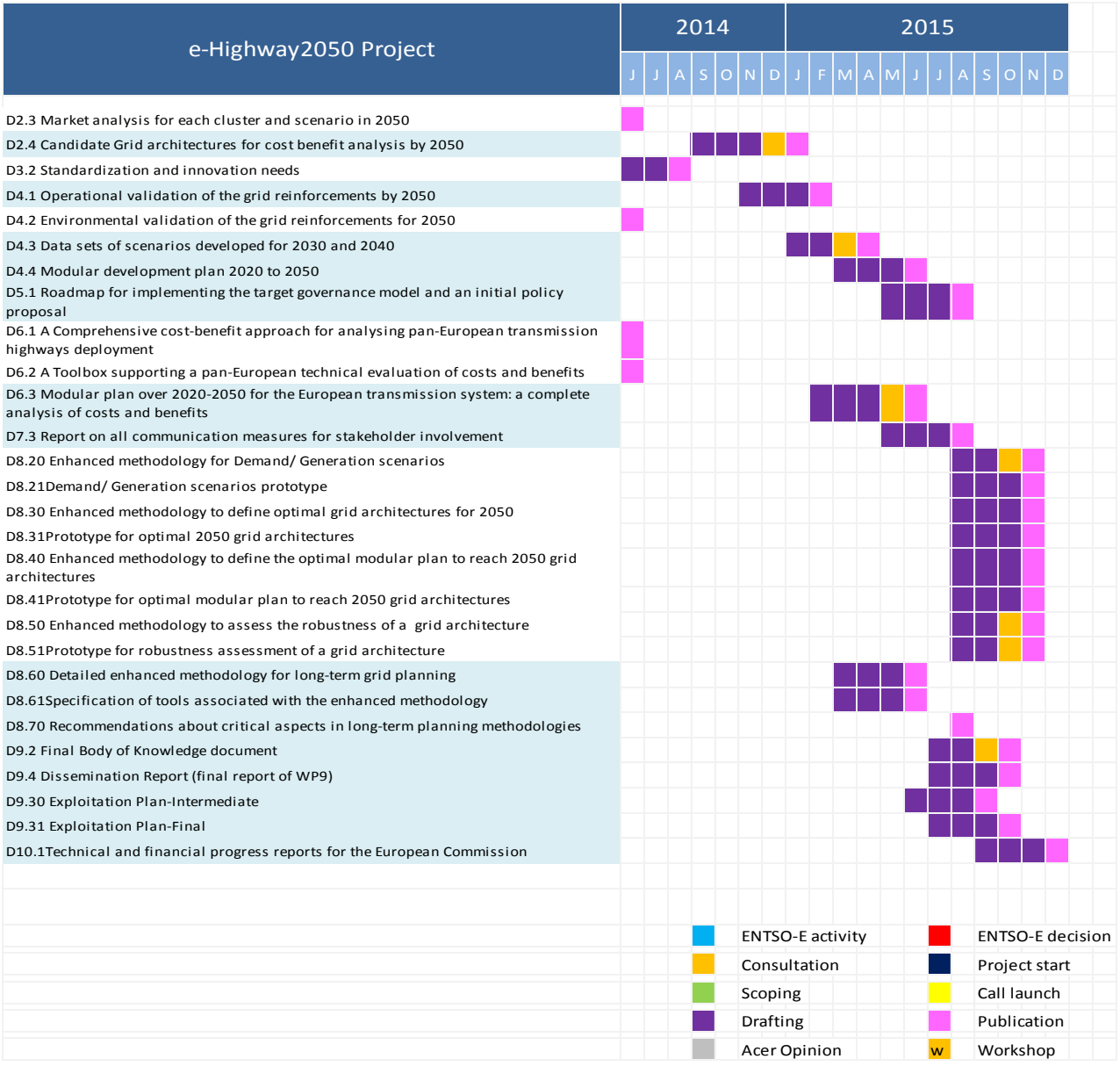

Projects and tools

The preparation of the TYNDP and various system development studies on national or regional levels involves a significant amount of data collection processes. This involves mainly market modelling, power system modelling, network modelling, system adequacy analysis and information on network projects and investments. In order to facilitate these processes as well as to increase the benefits for the TSO community and improve the quality of common studies and deliverables, ENTSO-E agreed on a strategic programme for information integration and studies (SPRINTS). This programme governs various projects launched to develop tools or methodologies necessary for the system development activities.

In 2014-2015 ENTSO-E will focus on the following:

- Launching of the ENTSO-E Common Grid Model Exchange Standard (CGMES) Conformity Assessment Framework which aims to ensure interoperability between various systems using this standard to exchange network models.

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- Update of the ENTSO-E Network Modelling Database to support CGMES exchanges and new requirements set by TYNDP processes.
- Update of the ENTSO-E Market Modelling Database aiming at data integration of system adequacy and market modelling types of data.
- Developing a set of methodologies that will aim at improving data consistency and reusability of data in different studies. These methodologies will contribute to the efforts to increase efficiency in performing system development studies.
- Improving quality of input data and the results by putting in place quality a control scheme. The quality control scheme will ensure that all parties involved in the exchanges or studies comply with agreed methodologies.

The first three deliverables are available on the website of the project: www.e-highway2050.eu/

7. System Operations Activities

Objectives

The system operations activity supports TSO coordination at the pan-European level and promotes coherent system operations across and within synchronous areas. It contributes to ensure compatibility between system operations, market solutions and system development issues. This work programme provides in some detail the deliverables or issues to be worked on in 2015. This is the first time the ENTSO-E Annual Work Programme has provided such depth to the activities and it is hoped by providing this information stakeholders can see how the various coordination activities contribute to security of supply and to efficient pan European system operations.

Challenges and focus for 2015

The System Operations Committee will focus on network code implementation including the Common Grid Model (CGM), strengthening the TSOs' coordination framework and the further development of the ENTSO-E Awareness System (EAS).

Common Grid Model

The foreseen activities on this crucial aspect of the implementation of operational and market network codes are:

- Development and implementation of the Operational Planning Data Environment in cooperation with RSCIs, including contractual work
- Further development of exchange profiles and associated test models
- Training and support of TSOs when implementing the CGMES
- Development of procedures, methodologies and contracts for the European Merging Function.
- Migration testing of the implemented data exchanges.

TSO cooperation

One key objective is to develop further the framework for TSO coordination and facilitate the cooperation between Regional Security Coordination Initiatives (RSCIs); this framework will be based on the network

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codes. Tools that support coordination (e.g. EAS) will be further developed to meet the needs of the TSOs; these tools will be gradually integrated into the system operation processes. Further policy initiatives are likely to be announced in the autumn of 2014.

The ENTSO-E Awareness System

TSOs need a real-time view of energy flows and the system state across the whole of Europe. EAS delivers this essential pan-European view to ENTSO-E member TSOs, thereby increasing security of supply for consumers. The system allows TSOs to monitor real-time information on the transmission systems across Europe and react quickly with assistance or system measures if an area appears to be under stress, both in the prevention and resolution of disturbances. EAS has been running operationally in control rooms across Europe since November 2013 and displays real time data in graphical format and with colour coding for different operational states. The EAS is an example of cooperation between both TSOs and synchronous areas. Cooperation between synchronous areas is needed as development of HVDC links continues. Work will continue in 2015 on operational developments, aids for reporting and assessing the changes needed for network code implementation and for the Incident Classification Scale.

Interoperability of synchronous areas

Work will continue enhancing the cooperation between the involved TSOs with the aim of promoting frequency improvements, optimal management and technical development of HVDC links interconnecting any two of the five synchronously operated ENTSO-E electricity transmission systems (Great Britain, Ireland, Nordic, Baltic, and Continental Europe). This will provide mutual benefit by enabling power transfers and reserves.

Continental Europe dynamic model

The continuous monitoring of distributed generation (DG) effects on system operation and security with particular reference to Continental Europe (CE) joins different aspects and interfaces:

- Simulations of impact on different scenarios and risk evaluations for the system
- Continuous dialogue with the main European involved subjects (CENELEC, distributors, vendors, research institutes and universities, ad hoc projects)
- Definition of countermeasures and mitigation actions (procedures, settings, retrofit on DG)

The definition of a common dynamic model for CE is a must in order to permit evaluation on network developments, particular studies and information to external subjects involved in extended system studies (i.e. new HVDC links or extension of interconnections).

The dynamic model can be split into two different options: external distribution and internal (ENTSO-E) use. Both models must be used in the standard calculation software to ensure transparency and portability.

The revision of policies and network codes requires work to assess the potential impact on system dynamics and security. Directly related to this task is a study on the impact of load shedding plans, of changes to some requirements and of possible policy refinements.

Regional Groups

The System Operations Committee's Regional Groups will continue supporting the work associated with the frequency quality and TSO cooperation through activities to address technical and operational aspects specific to the synchronously interconnected areas.

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Critical systems protection

Work will continue in 2015 assessing and enhancing the protection of critical infrastructure. The foreseen activities will be focused on: Holistic risk analysis (Port scan), cyber security issues and physical protection issues and continuing improvements.

Electronic Highway

ENTSO-E has established a communication network (Electronic Highway - EH) that provides the necessary infrastructure to support all operational data exchanges among TSOs, including the EAS and RSCIs. The draft plan for year 2015 related with the EH is the following:

- During the first quarter of 2015, a "Route analytic tool" will be installed.
- As a consequence of the results of the EH port scan analysis that is planned for the last quarter of 2014, it will be necessary in the first quarter of 2015 to apply the fixes to eliminate the vulnerabilities detected during the port scan.
- In the second quarter of 2015, ENTSO-E will execute the holistic risk analysis of EH, that in some cases may affect the TSO SCADA system. As a consequence of the results of this analysis, it will be necessary during the Q3 and Q4 to eliminate or mitigate vulnerabilities detected.
- During 2015 the EH will be upgraded to facilitate the secure connection to the EH backbone of RSCIs.
- All the TSOs will need to apply changes to their own EH infrastructure.
- Work will be carried out to analyse and propose solutions for all the new interchanges over the EH.
- Work will be carried out to monitor and control the backbone and data interchange over the EH in order to provide secure and reliable information exchange for system operations throughout Europe.

ENTSO-E Academy

ENTSO-E actively supports the improvement of knowledge sharing and consolidation of best practices in the TSO community. The workshops and training initiatives that the Academy plans and develops will continue in 2015 with a new working plan featuring a variety of trending topics at pan-European level. New initiatives such as the translation and population of the Academy website with training material will continue enriching the platform and make it a reference for training professionals within the European TSOs.

Synchronous area extensions

Connection of Turkey to Continental Europe Synchronous Area (CESA)

By April 2014 the Regional Group Continental Europe Plenary and Regional Group Continental South East (RG CSE) took the decision on permanent synchronous operation of the Turkish system with the system of Continental Europe. Within 2014 the Long-Term Agreement will be presented to TEIAS and is expected to be signed. Within 2015 the operational performance of the Turkish System operated by TEIAS will be monitored by the Project Group Turkey.

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System frequency

Observability of generators

The Network Code on Operational Security (September 24, 2013 release) establishes the requirements of data exchange in its 3rd chapter (articles 16-29). It is foreseen that TSOs of synchronous areas should aggregate generation and that, within six months from NC OS entering in force, all TSOs should make a proposal as to how to collect data from generators. The task is to develop and follow the process which will lead to the full TSO observability of the generators.

Financial settlement of inadvertent interchange

ENTSO-E will begin preparing a document on the financial settlement of inadvertent exchange. The document has to define the rules and procedures for the future financial settlement of inadvertent interchange envisaged by the Network Code Electricity Balancing.

Compliance monitoring

The Regional Group Continental Europe compliance monitoring process assesses whether the RGCE member TSOs are compliant with the standards of the RGCE Operations Handbook. RGCE coordinates the development of the standards as well as promotes and supports its application as approved by the RGCE Plenary.

Main objectives in 2015

- TSOs compliance monitoring process, self-assessment
- Perform onsite audits of six selected TSOs for 2015
- Publish the results in the Compliance Oversight Report
- Design the compliance monitoring programme for 2016
- Other activities (evaluation of compliance for TSO KOSTT)

The regular compliance monitoring process is based on self-assessment and on-site compliance audits:

- The compliance self-assessment is annually performed via an analysis of member self-assessments and subsequent sets of data provided by the RGCE member TSOs.
- Periodic on-site compliance audits are performed on a five years basis on every RGCE member TSO to verify compliance with a chosen set of standards.

To conclude the yearly activities related to the Compliance Monitoring Programme (CMP), an annual Compliance Oversight Report (COR) is prepared and is published on the internet site of ENTSO-E.

Other activities include the evaluation of compliance for TSO KOSTT on their compliance with the Operations Handbook. To determine this, the self-assessment process is used in this case for all standards of the Operational Handbook.

Network models and forecast tools

Work will continue supporting the development of common tools and the improvement of already used tools in the TSOs' operational environment such as data exchanges, network models and forecast tools.

System operations activity plan

The system operations activity plan is set out below.

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Activity Classification	System Operations Activities	2014							2015										
		J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
	Area: Incident Classification Scale																			
Project	Updated Incidents Classification Scale																			
Periodic Report	Quarterly review of TSOs' ICS reports 2014																			
Periodic Report	Preparation of ICS Annual Report 2014																			
Project	EDICT project: ICS web tool																			
Periodic Report	Quarterly review of TSOs' ICS reports 2015																			
	Area: ENTSO-E Academy																			
Workshop	Workshop on WAM Systems and use of PMUs	w																		
Workshop	Workshop on Forecasting real time renewable, managing of unbalances				w															
Workshop	Workshop on Lessons learnt from the year events / from disturbances / blackouts in Europe					w														
Workshop	II Workshop on European Network Codes							w												
Workshop	Workshop to be defined											w1		w2			w3	w4	w5	w6
	Area: Coordination Strategy																			
Project	Implementation of the roadmap described in the policy paper for TSO coordination (to be finalized in Q2/2014)																			
Project	Evolvement of the European Awareness System (EAS) by the CT EAS																			
Project	Implementation of Reg. 713/2009 paragraph 1 of Article 22 (as amended by Reg. 347/2013)																			
	Area: Electronic Highway																			
Project	Install "Route Analytic tool"																			
Project	Fix vulnerabilities of port scan analysis																			
Study	Performing a Hoistic Risk Analysis																			
Project	RSCI connection to the EH																			
Project	Adapt TSOs to new EH requirements																			
Project	Adapt the EH to new necessities																			
Project	Monitor and Control the Backbone																			
	Area: Project Team Common Grid Model Project Team																			
Project	Enhancing TSO cooperation																			
	Area: Critical System Protection																			
Study	Performing a Port Scan Analysis on Electronic Highway																			
Study	Performing the SCADA Self Assesment Tool (SSAT)																			
Study	Performing a Holistic Cyber Risk Analysis																			
Study	Editing a paper on Physical Protection Issues																			
	Area: Interoperability of Synchronous Areas																			
Study	Increase hourly ramping on HVDC links between Nordic and CE																			
Study	Enhancing inter Synchronous Area cooperation by using existing and emerging technology of HVDC properties for reserve sharing and exchange providing social welfare																			
Study	Enhancing inter Synchronous Area cooperation by using existing and emerging technology of HVDC properties for reserve sharing and exchange providing social welfare																			
	Area: Nordic																			
Study	Support and enable Nordic Analysis Group (NAG) to perform necessary analyses on the overall Nordic synchronous system																			
Study	Collection and analysis of data																			
Study	60 seconds oscillations mitigation study, phase 3.																			
Workshop	Nordic System Operation Workshop in 2015																	w		
Report	RPM review follow-up project																			
Project	Trial measurements on Nordic – CE HVDC links. Stop ramp. Project.																			
	Area: Isolated Systems																			
Codes	Review and comments to Network Codes -draft and final versions- from the point of view of isolated systems																			
	Area: Compliance Monitoring and Enforcement																			
Project	Compliance monitoring process for RG CE TSOs																			
Project	Onsite Audit for 6 selected TSOs																			
Project	Other activities (evaluation of compliance for TSO KOSTT)																			
Periodic Report	Design Compliance Monitoring Program 2016																			
	Area: Turkey																			
Misscellaneous	Long Term Agreement with Turkey																			
Misscellaneous	Permanent Synchronous Operation of TR with CESA - Monitoring																			
	Area: System Frequency																			
Project	Observability of generators																			
Project	Financial settlement of inadvertent interchange																			

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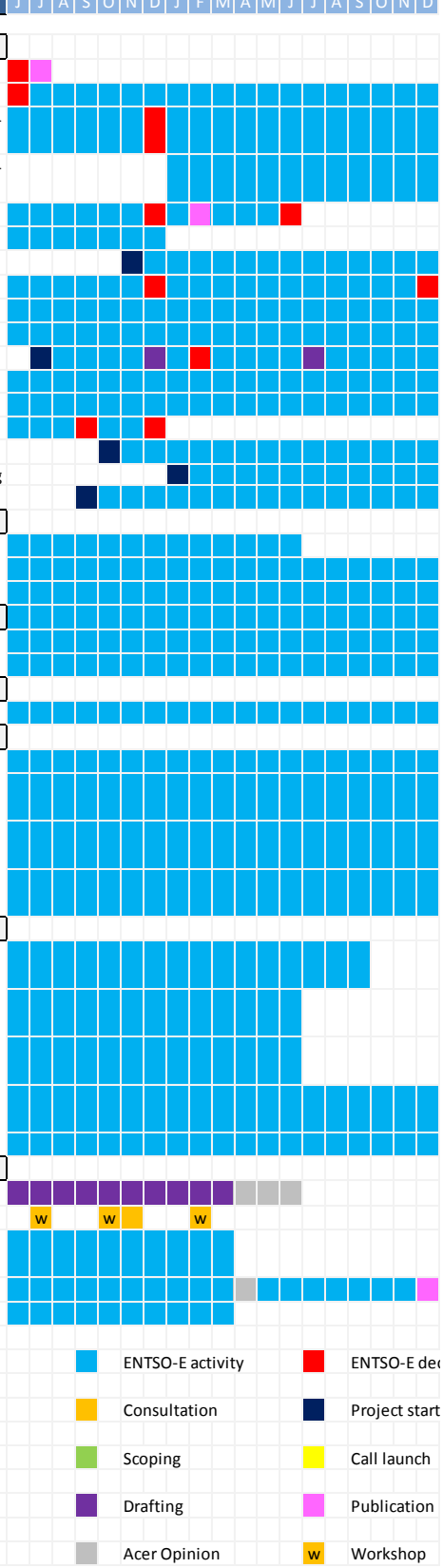
Activity Classification	System Operations Activities
	Area: System Protection and Dynamics
Report	Frequency disconnection of dispersed generation: Risk analysis
Report	Frequency disconnection of dispersed generation: Retrofit plan
Study	Under frequency load shedding: Analysis of proposed changes to Policy 5 - study
Report	Under frequency load shedding: Analysis of proposed changes to Policy 5 - support to drafting team
Project	Dynamic model of region CE: Initial model for publication
Project	Dynamic model of region CE: Controller data collection
Project	Dynamic model of region CE: Custom Controller data validation
Codes	Analysis of NC OS Article 15 (SOC 2014-04-10 TOP 10.1)
Report	Analysis and recommendation after operational incidents
Codes	Grid codes: Impact on system dynamic performances and support to
Study	Wide area monitoring (WAMS): Overview and new applications
Project	PSS settings and other countermeasures to control CE stability
Misscellaneous	CENELEC dialogue and common evaluations
Misscellaneous	Protections task forces deliverables
Report	Generation mix effect and inertia sensitivity to system dynamic
Project	System protection guidelines grids security oriented (schemes and setting
Report	Dispersed Generation Recommendations and ongoing retrofits
	Area: Network Models & Forecast Tools
Report	Operation of the Quality Assurance Portal (D-1 only)
Project	Extension of Quality Assurance Portal
Project	CGMES Migration tests
	Area: Coordinated System Operations
Project	Revision of DACF IDCF process
Project	Solar Eclipse risk assessment and coordinated risk mitigation
	Area: GB
Project	TSO Cooperation & Frequency Improvements
	Area: IE/NI
Project	Implementation of Common Grid Model for EirGrid & SONI
Project	Developing methodologies with Neighbouring TSOs in order to implement Network Codes.
Project	Detailed design of TSO dispatch systems to operate on an all-island basis for new market
Project	Progressing implementation of work streams to enable an increase in renewable generation on the power system
	Area: Baltic
Project	Update the common Baltic restoration actions plan and perform training for dispatchers
Project	Implementation of common capacity calculation method with 3rd countries.
Project	Development of the operational procedures for common Baltic balancing block.
Project	Network codes implementation plan and coordination among Baltics TSO
Report	Frequency quality report.
	Area: Network Codes
Codes	Network code Emergency and Restoration and the supporting document
Codes	Stakeholders workshops and public consultation
Codes	Network Code OS, OPS, LFCR Advocacy (Assuming LFCR, OS and OPS have entered into force 31st March 2015)
Codes	Network Code ER Advocacy
Codes	Network Code implementation for OS, OPS and LFCR



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8. Market activities

Objectives

The main objective of the market activities will be to ensure the follow-up of the network codes while the adoption process is being finalised and to focus on the implementation of the codes to establish proposals for pan-EU elements and to coordinate developments on regional processes. Positions will also be developed on market-design related topics and on any possible future ACER framework guidelines (tariff harmonisation). Again 2015 will be a very important year for power market developments in Europe and for ENTSO-E's work contributing to completing the Internal Energy Market (IEM). The impact of RES, development and market integration of DSR and storage, and further developments in smart grids and the cooperation of TSOs and DSOs will all strongly affect how electricity markets function. Below are the main features of the work expected, although changes to priorities or how these areas of work develop are likely, given the current active energy policy debates.

Regional market development

Regional developments complement the top-down approach provided by network codes and streamline bottom-up cooperation to achieve the goal of completing the IEM. A significant further step towards the IEM was reached in the first half of 2014 with the successful go-live of the full price coupling of the North-Western Europe (NWE) and South-Western Europe (SWE) day-ahead electricity markets. In 2015 ENTSO-E and its members will continue to play an active role in the next regional integration steps for the day-ahead part of the IEM. TSOs, power exchanges and ENTSO-E have also launched a pilot for the design and implementation of a cross-zonal intraday solution, largely centred around (but not limited to) the NWE area. During 2015, ENTSO-E will continue working on enhancing the coordination of the different initiatives to pave the way for a European-wide roll-out of the solutions in a manner consistent with the CACM Network Code.

Unplanned Flows - Bidding Zones Study and Cross-Border Remedial Actions Task Force

In April 2013 ENTSO-E has launched a pilot project to test CACM code provisions on bidding zones. The pilot project tackles the question of where and how the geographical boundaries of bidding zones should be determined, looking to improve the current market design. In 2015, the Bidding Zone Review process carried out by ENTSO-E will continue, developing the necessary studies and analyses. The content of these analyses will cover the requirements described in Art. 37 of the CACM NC (September 27, 2012 version). The outcomes of this study shall serve for decision makers to take qualified decisions on bidding zone configuration. ENTSO-E is aiming at consulting with stakeholders at different stages during the Bidding Zones Review Process, and for this purpose, has created in June 2014 the Bidding Zones Review Stakeholders group.

To define a regulatory framework for coordinated cross-border re-dispatching and countertrading including cost-sharing arrangements is important not only from a market perspective but also from a network security point of view. Such a framework should support the EU wide implementation of the CACM target model. In May 2012, ACER and ENTSO-E created a joint task force to analyse a regulatory framework for cross-border re-dispatch including cost sharing arrangements. The joint work of this task force will continue during 2015.

Electricity balancing pilot projects

As early as 2013, ENTSO-E developed several electricity balancing pilot projects with a wide geographical scope across Europe. The objectives of the pilot projects are to gain bottom-up experience for the implementation of the different steps towards a single European balancing market and to create awareness of the potential barriers such as regulatory issues, IT development, additional costs and interaction with the

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intraday markets. It is expected that the pilot projects will continue to develop throughout 2015 with the aim to expand where possible in order to promote harmonisation and to test the feasibility of the different milestones in the Network Code on Electricity Balancing and impact of the long term target.

A high level European stakeholder group was created in early 2014 to act as the forum for sharing information and to provide constructive feedback from various European associations. ENTSO-E will continue to report on the progress made for each project and on the development of the processes for the early implementation of the Network Code on Electricity Balancing.

Market design

Based on 2014 work on how to enhance the Target Model and on its mid-2014 market design policy paper, ENTSO-E will deepen its analysis on various elements of market design. First of all, ENTSO-E intends to study how the presence of different or no capacity mechanisms can be consistent with the objectives and efficiency of the Internal Energy Market and with hedging products, focusing in particular on cross-border participation in capacity mechanisms and hedging products. Moreover, it is recognised that more insight is needed on future technical issues arising from the changing energy mix that may undermine the efficacy of policy objectives. ENTSO-E will consolidate appropriate technical analyses across a range of metrics (capacity, flexibility, ramping, inertia, reactive power, etc.) and propose measures so that market design can address such technical issues. Lastly, ENTSO-E will build on the respective conditions in the Network Code on Electricity Balancing to further develop how balancing pricing better reflect system costs and thus improve the effectiveness of this important price signal in the energy market.

2030 framework and RES integration

The new EU 2030 framework will define EU energy and climate goals and policy instruments for further decarbonisation of the energy mix, including development of RES. ENTSO-E will follow closely – and give input to - the European Commission's policy proposals and the related legislative process, with a particular focus on RES support mechanisms, priority dispatch, and cooperation mechanisms, especially considering the likely upcoming review of the RES Directive. As a complement to the work on market design, ENTSO-E will also continue to investigate how the market can promote tools and technologies facilitating large scale integration of RES such as storage and demand side participation. This work will also touch upon TSO-DSO interaction with respect to market implications and barriers to allow balancing and other service provision from embedded and active demand. Lastly, ENTSO-E is committed to develop further understanding on the need for new ancillary services – and their procurement approaches – deriving from the increasing penetration of variable RES.

The challenges of financing infrastructure – investment incentives

It is vital that the regulatory and financial barriers to making infrastructure investments are tackled. ENTSO-E will continue to work with the Commission and ACER to encourage National Regulatory Authorities and Member States to improve the regulatory certainty for investors in transmission projects to encourage vital investment. In particular, ENTSO-E will work closely with ACER and lawmakers so that appropriate Europe-wide rules on investment incentives can be made binding.

Inter TSO Compensation (ITC)

ENTSO-E will continue to manage the Inter TSO Compensation (ITC) process under the framework of the ITC Multiannual Contract and the ITC Regulation No. 838/2010. The tasks involved will be the coordination of the ITC settlement process, annual ITC audit process and preparation and delivery of the ITC data for annual monitoring report developed by ACER.

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Delivery of the Annual Tariffs Report and Congestion Revenue Management Report

ENTSO-E will continue to develop two separate annual reports in 2014 and 2015:

- The ENTSO-E Overview of Transmission Tariffs in Europe provides a comparative overview of transmission tariffs for 32 European countries, including the components of the transmission tariffs and other regulatory charges recovered by TSOs.
- As set out in Regulation No. 714/2009, ENTSO-E delivers its annual Congestion Revenue Management report to regulators.

Tariffs structure harmonisation

Harmonised transmission tariff structures is one area defined for framework guidelines and network codes in Regulation (EC) No. 714/2009, Article 8(6). ACER has also recently published its opinion on the appropriate range of transmission charges paid by electricity producers (generators - G) following regulation No. 838/2010 of 23 September 2010. The work has not yet formally started (linked to EC & ACER work plan and priorities), but ENTSO-E preparatory work has begun.

The Central Information Transparency Platform

Under Regulation 543/2013, ENTSO-E is required to develop and operate a 'central information transparency platform' to publish fundamental electricity market information, publically available and free of charge. In January 2014, the existing ENTSO-E transparency platform, *www.entsoe.net*, was replaced by a first release of the new platform which took over the publication of the existing available information. According to the Regulation, the platform should be fully operational and begin to publish the required additional scope of information from 5 January 2015. Modifications to the platform to enable the publication of additional information for the purposes of REMIT or for Network Codes will continue to be developed in 2015.

Electronic Data Interchange (EDI)

ENTSO-E's EDI activities will continue to focus on harmonisation and implementation of standardised electronic data interchange. ENTSO-E will continue to develop and maintain the detailed descriptions of common business processes and 'role models', in formats which are easily understood and implemented by the software industry, partially in collaboration with other electricity and gas associations and by liaison with European and international standardisation bodies. Additionally, the drafting of network codes will be monitored closely to ensure alignment with current and future common business processes' descriptions.

1) Throughout 2014 and 2015, standardisation work on the IEC 62325 series (CIM for Market) will be carried out. This includes the drafting of the documents necessary to inform the stakeholders of the way relevant ENTSO-E recommendations can be incorporated into IEC 62325 standards, involvement in drafting of the numerous corresponding standards, and also conducting any necessary interoperability tests (IOPs) to ensure conformity.
2) Throughout 2015, work will continue on the transparency platform data exchange implementation guides. This will include pre and post go-live revising and fine tuning in order to ensure smooth operation of the platform and accommodation of any necessary maintenance requests in support of all TSOs and remaining data providers.
3) Development of the necessary electronic documents in support of the network codes under development/approval.
4) By end of 2014, a dedicated task force along with representatives from the gas sector, will review and revise where necessary the overall available documentation on ENTSO-E's Energy Identification Coding (EIC) Scheme. This will apply to EICs in the gas sector via the established ENTSOG LIO

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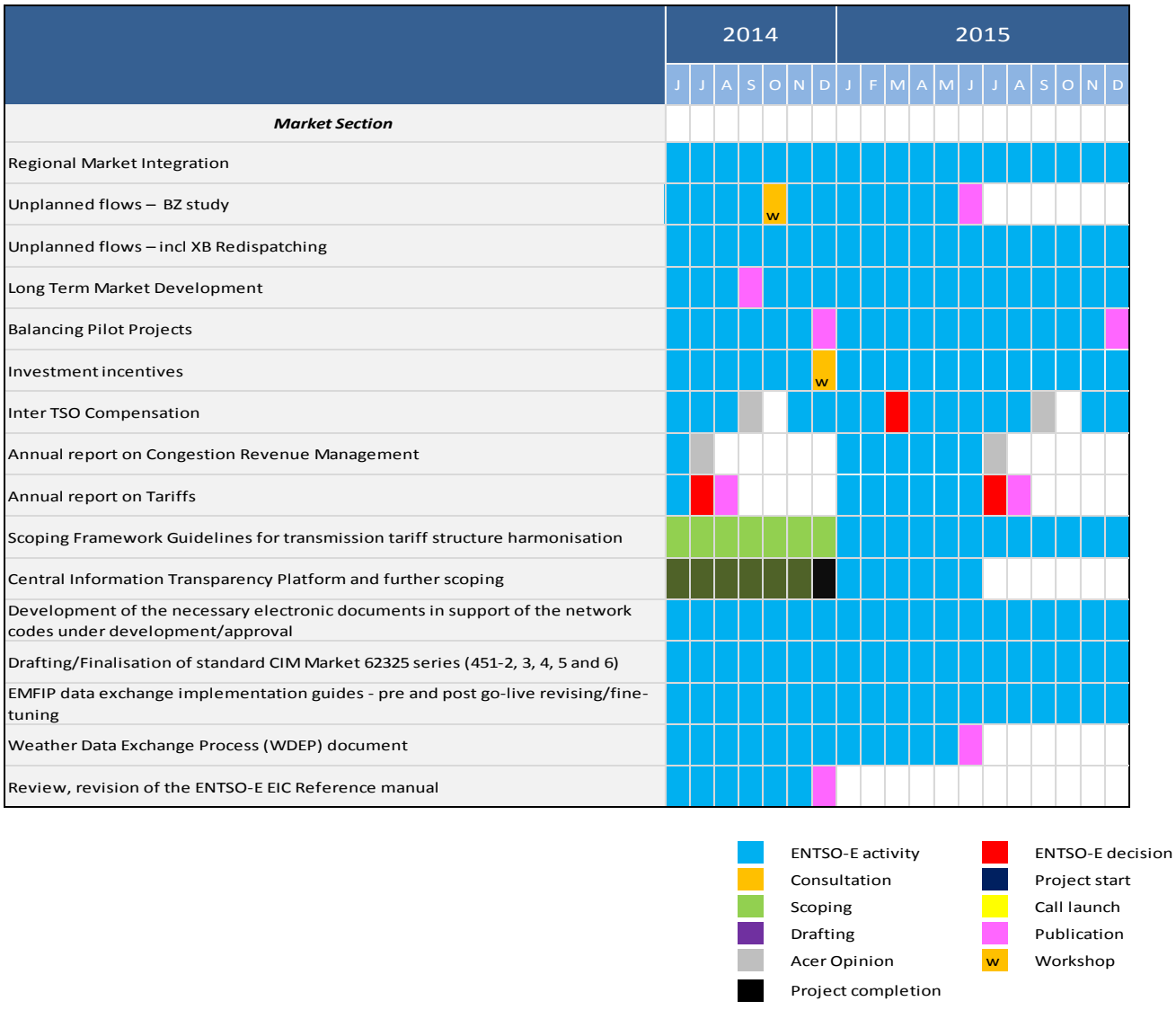
and to new applications of EIC codes, in conjunction with the transparency platform project and REMIT.

5) By mid-2015, a task force will finalise a Weather Data Exchange Process document. The task will involve the drafting of a document on a proposed standardised weather data exchange process between a weather data provider and system operator (TSO and / or DSO) to provide weather data for the operation planning and the control centres.

Overall market activities

The diagram below shows the expected timelines for work on each of the market activities which ENTSO-E is involved in covering the period 2014 to the end of 2015.



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9. Legal & Regulatory Activities

Background

The Legal & Regulatory Group (LRG) together with the legal section of the ENTSO-E Secretariat work on several legal issues which can be distinguished in two broad categories:

- legal support to all network codes throughout their elaboration, during Comitology and implementation; and
- legal support to the Association activities via its sub-groups and ad hoc teams including advice on corporate legal issues.

Network code related activities

LRG will be called to provide legal support regarding the network codes (NCs) in the following three ways:

- firstly, it will continue supporting the drafting of the NC under elaboration (i.e. NC ER); while doing so, the LRG has to ensure the legal coherence of this future code with all the other network codes drafted by ENTSO-E as they may subsequently be modified during (pre) Comitology or as they may be fine-tuned in the context of early implementation;
- secondly, it will assist the pre-Comitology and Comitology process for the large number of NCs already delivered by ENTSO-E (i.e. NC RfG, NC DCC, NC HVDC, NC CACM, NC FCA, NC OS, NC OPS, NC LFC&R and NC EB), which will result in those network codes becoming legally binding; while doing so the LRG has to ensure the legal coherence and robustness of all the NCs which includes effective legal coordination; and
- finally, the LRG will support the network code implementation work. In particular, the work on the early implementation of the NC CACM (bidding zone study, establishment of the capacity calculation regions) as well as of the NC EB (CBA methodology) and NC FCA (harmonisation of allocation rules) already started in 2014 will be further supported by the LRG within 2015.

To achieve the above in the best possible way, the LRG, supported by the Secretariat, interacts with the drafting teams of the NCs as well as the teams working on early implementation of NCs and all bodies of the Association, as well as with ACER and the European Commission.

Other non-network code related legal work

The LRG advises on legal matters upon questions of other bodies of the Association (drafting legal reports, evaluating or drafting contracts, supporting implementation of contracts, general legal assessments etc.) or identifies legal risks on its own initiative in its area of expertise. As examples of this activity for the upcoming period referred to in this work programme, the LRG and the legal section of the Secretariat will support:

- the Market Committee on the implementation and annual update of the Inter-TSO Compensation Agreement (ITC) and on remaining implementing issues concerning the transparency platform and REMIT
- the System Development Committee on all legal questions raised during the preparation of the TYNDP 2016 and the selection of the PCIs as well as on other projects such as CGMES, CERTI II and PROFI;
- the Research & Development Committee in the setting up of ENTSO-E's involvement in R&D projects in areas such as smart grids or energy storage applying for EU support under Horizon 2020. This will more particularly involve elaboration of or advice on consortium agreements, multi-TSO

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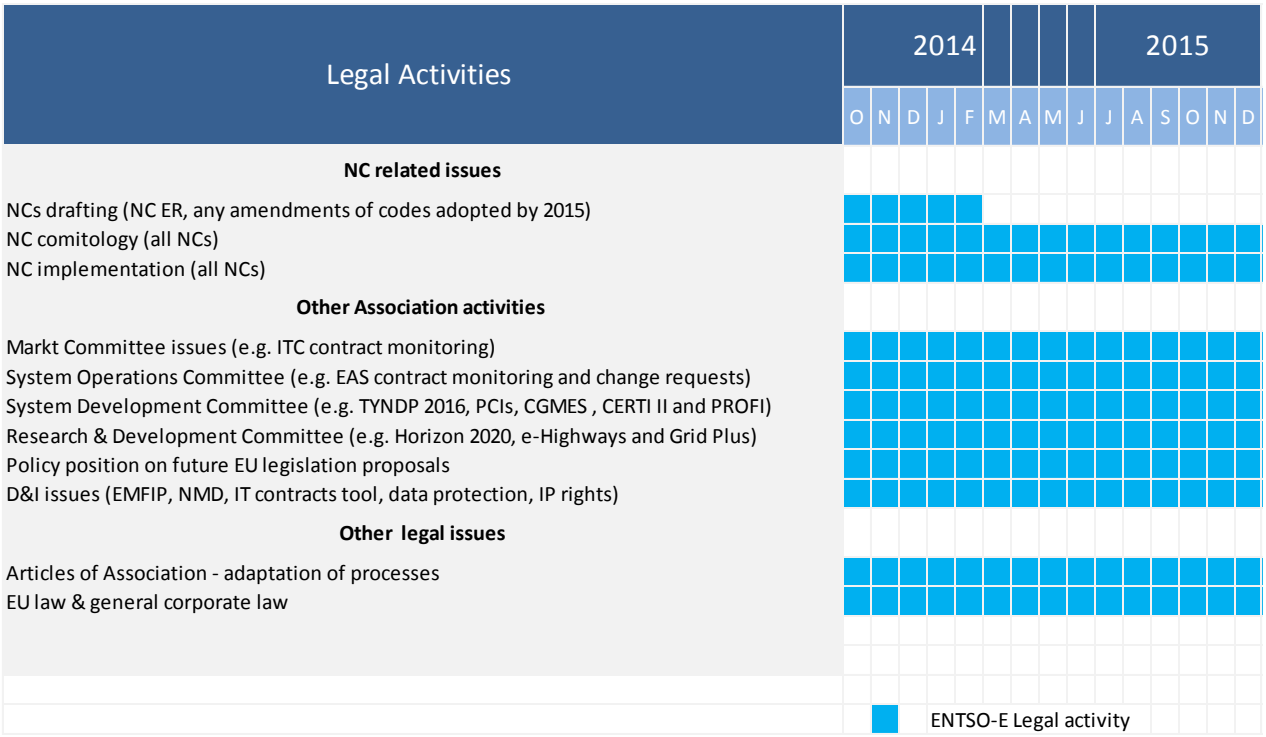
agreements to organise ENTSO-E R&D work internally, legal advice on specific IP rights and R&D issues and follow-up legal work on e-Highways and Grid+ projects;

- the System Operations Committee regarding the implementation of the ENTSO-E Awareness System contracts and on advising on legal matters related to synchronous extension agreements and external relations issues;
- the corporate affairs section of the Secretariat on the legal evaluation of future EU legislation proposals and legal aspects of ENTSO-E's positioning in public consultations; and
- the data and infrastructure section of the Secretariat on contractual issues related to major projects such as EMFIP, NMD, IT contracts tool, data protection, IP rights).

Further, legal work will be required to adapt the processes of the Association to updates of the Articles of Association and provide legal support to all bodies in this respect. In addition, legal support is provided to the Association on the following areas: EU law, with a focus on energy law, institutional law, general competition law and general corporate law.

Work plan

This work takes place on a continuous basis.



10. General Activities

Key deliverables

Annual Work Programme

ENTSO-E will continue to use the multi-lateral discussion and agreement in the Planning Group on the contents of the 3 year work programme to influence the 2015 annual work programme. Also relevant to ENTSO-E's planning is the 'Florence Forum' the gathering of the electricity industry (usually twice yearly) to review progress of European reforms and to form common agreement on immediate and longer term initiatives. The ENTSO-E annual work programme will target consultation in July 2014 in order to enable

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this feedback to be reviewed in time for submitting the work programme for ACER opinion in the late autumn.

Annual Report

The Annual Report informs stakeholders on the achievements and progress of ENTSO-E in delivering its annual work programme and carrying out its obligations under European regulations. ENTSO-E will publish its Annual Report in May 2015. This report will build on the feedback provided by stakeholders and ACER on the 2014 Annual Report.

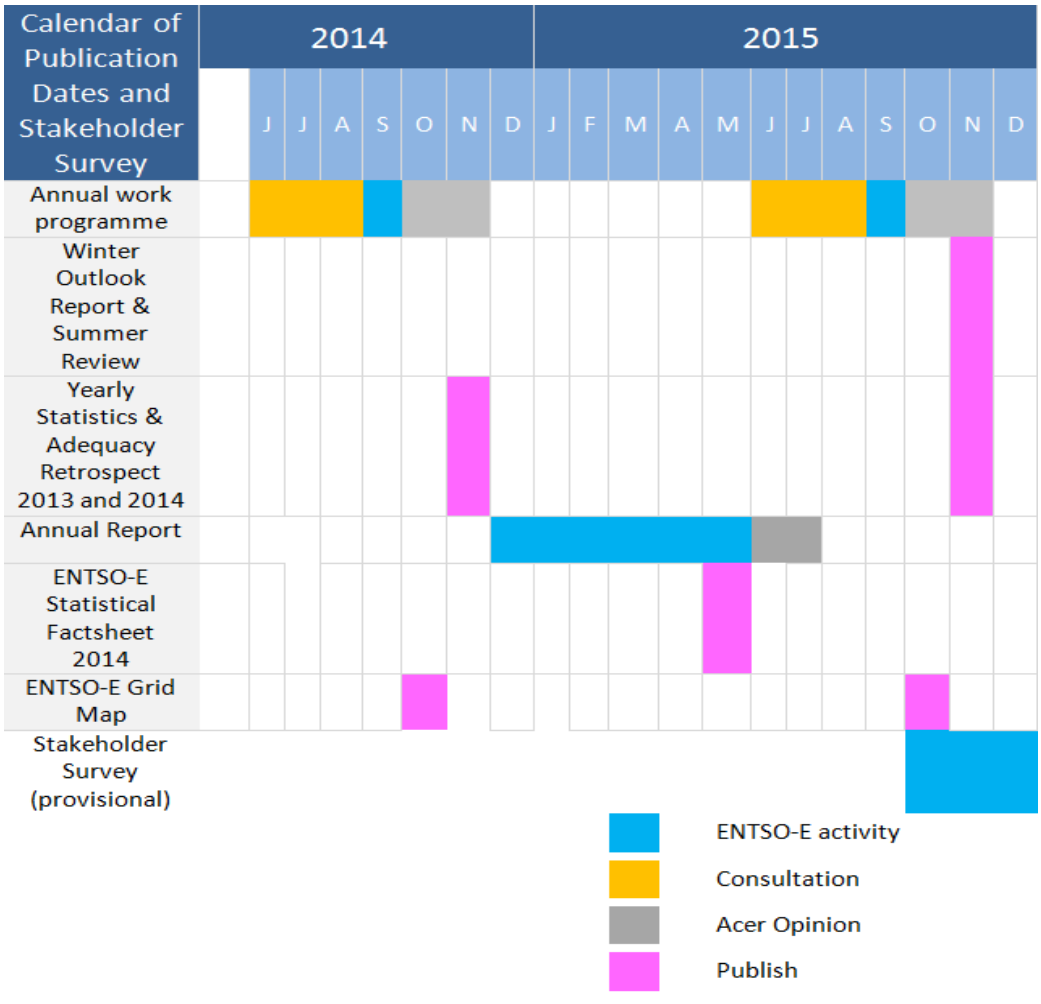
Communicating the benefits of grid infrastructure to European citizens

The European Commission has completed its study on how best to communicate the importance and necessity of grid infrastructure for energy security and energy policy objectives. ENTSO-E will review the report and will work on recommendations to the Commission on future related work.

Stakeholder relationships including with ACER, Commission and EU associations

In 2013/14 ENTSO-E undertook a review of stakeholders' opinions of ENTSO-E; the feedback identified several areas of improvement. The ENTSO-E Board considered this feedback and a number of actions are planned to address these improvement areas. The plans for these are being developed in mid-2014 and the impact of these should be visible in near term matters as well as the later part of 2014. Another stakeholder survey is planned for 2015 to build on comments received.

Plan of Major Publication Dates in 2015



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11. Conclusion

This annual work programme sets out an ambitious plan of activity for ENTSO-E members. The programme describes activities that are now routine operational tasks, but for ENTSO-E there is a clear aspiration to improve the quality of deliverables and the interaction with stakeholders in development and consultation stages of the work. In addition to the legally mandated tasks this work programme has set out in considerable detail the TSO coordination functions; examples are:

- TSO coordination in the field of network planning – TYNDP
- TSO coordination for data publication and rending the service of publication – transparency platform
- TSO coordination in the fields of system adequacy and system awareness.

ENTSO-E TSOs are strongly driven by the EU legislation, and ENTSO-E fulfils and develops this important TSO coordination function which is not a typical association task but which has become necessary for the European electricity system.

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