European Network of
Transmission System Operators
for Electricity

ENTSO-E WORK PROGRAM

2009 THROUGH DECEMBER 2010

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1. INTRODUCTION

The preparation of an annual Work Program is one of the key deliverables required from ENTSO-E under the EU's third Energy Package. As the third Package has now begun its implementation phase (which will be complete in March 2011), ENTSO-E has decided to publish a Work Program *now* such that it can make best use of the implementation period to test the third Package processes and to advancethose issues of most interest to stakeholders, regulators and the European Commission. One goal is that formal work on network code developments can progress rapidly after March 2011. The formal process can only begin after the Agency for the Cooperation of Energy Regulators ACER can execute its tasks 18 months after the Electricity Regulation takes effect, as the code process includes major ACER tasks such as framework guidelines. Nonetheless it is essential that as much preparatory work as possible be carried out between now and spring 2011 as this should be in the best interests of all concerned.

The ENTSO-E Work Program is therefore structured into the following sections:

- **Pilot code**
- **Preparing other priority code areas**
- **Further key areas of TSO cooperation**
- **Conclusion**
- **Indicative schedule**

Network codes are very important deliverables of ENTSO-E. The third Package defines the code development process in great detail and lists 12 topic areas for network codes (see section 3). More importantly, Comitology procedures are foreseen to make ENTSO-E's network codes binding not only for TSOs but also for other affected market participants. The involvement of the European Commission, the Member States, ACER and extensive consultation will ensure that the codes are well balanced. Making the codes binding for others remedies a difficult shortcoming of the European energy market before the 3rd Package, i.e. that TSOs could make their operational rules binding for themselves through instruments such as Operation Handbooks and Multilateral Agreements, but that no one could impose these rules on other market participants whose cooperation is often crucial for operational security and market integration.

Sections 2 and 3 motivate the choices of priority network code areas: wind connection (pilot code), transparency, preparations for market integration-related codes, general generation connection, load flow management, balancing tools/ancillary services, and standardized coordination methodology/procedures.

Other outstanding priorities that are also required of ENTSO-E as stipulated in the third Package are highlighted at the beginning of section 4, i.e. the Ten-Year Network Development Plan, a consolidated R&D plan, and measures for improved operational coordination. Overall, the chosen priorities are not only informed by the third Package but also by the other pieces of legislation relevant to TSOs.

2. PILOT CODE

The pilot code for grid connection with special focus on wind generation will experiment the process of framework guidelines and code drafting and the associated consultations according to the Regulation's Article 6 even before ACER's tasks are in force. It is intended to demonstrate the efficiency and the practical benefits for the new approaches made possible by the third Package's network code processes.

For the pilot code topic, one important focus on wind generation connection conditions was chosen by ENTSO-E and ERGEG, with support from the European Commission and the Florence Forum, acknowledging that wind energy is set to shoulder the greatest part of renewable energy growth over the next years. A goal is to identify and develop European rules harmonizing Grid Code requirements particularly relevant to connecting wind generators to transmission networks across Europe. To ensure consistency of connection conditions for all types of generation resources and to find the best overall set of future connection conditions, the pilot code is to include a chapter applicable to all generators. With only a slight delay after the pilot work, additional chapters will be added to the network code covering specificities of other types of generation resources.

Harmonising wind generator connection rules is a relatively new issue and is urgent not only in the perception of TSOs, but also of ERGEG, the European Commission, stakeholders including the European Wind Energy Association EWEA, and of the European Wind Integration Study (EWIS). The available EWIS outputs provide a valuable starting point for these codes.

This pilot code will relate to a planned ERGEG framework guideline to be worked out between March and September 2010. This framework guideline together with the initial impact assessment shall lead regulators to select between possible policy options; the framework guideline will cover the network connection issue as a whole. ENTSO-E and ERGEG have already begun to coordinate these two mutually dependent pilot projects closely. Where needed, issues impacting Distribution System Operators (DSOs) will have to be also addressed and included in the network code in a consistent way. Furthermore, ENTSO-E is well aware that important aspects (such as priority or guaranteed access for all renewable energy sources) are already legal requirements and will as such need to be consistently addressed in the ongoing processes.

Compared to the present situation of having wind-generator-to-network connection requirements specific to each EU Member State, there are a number of benefits that result from harmonisation across Europe:

- Common standards promote the adoption of best practices across Europe and thereby facilitate the achievement of policy goals (i.e. with respect to security/quality of supply, economic efficiency and environmental objectives).
- Manufacturers and developers of wind turbine generators would be able to reduce costs by standardising the design of wind generator equipment, protection and controls (rather than needing to meet the specific requirements of each Member State).

- Wind generation developers and network operators would benefit from lower costs of interfacing standardised turbines (i.e. reduced costs in connection design, commissioning/compliance testing and implementing operational requirements).
- A European harmonisation mechanism for structure and technical content of generation requirements would increase transparency and bring benefits to every affected party. With structure, it is meant that all EU Member states would have generation connection requirements using the same format and definitions including the requirement for criteria to relate to the point of common coupling between a wind park and the network.
- The respective challenges and resulting effects of achieving a “generic format” and a “content-related harmonisation” for the requirements set to the generation type under review will be considered.

The resulting network code will need to go through the formal steps again after the Agency’s tasks are in force, but should pass through them much faster, leading to swift submission to – and passage through – the Commission’s Comitology process. This will not only lead to speedier completion of one specific urgent network code, but would also provide a much firmer basis for future swift adoption of network codes building on improved common understanding of the network code establishment process.

ENTSO-E will plan its work such that the above mentioned additional chapters for specificities of connections of other types of generators will be worked out swiftly after the pilot project with the aim of including them in the formal consultation and Comitology phases. They are also urgent because of the large number of existing power plants retiring over the next decade, of the large number of distributed resources coming on-line, and of the need for consistency between wind generation connection and the connection of other plants. These chapters will depend on policy choices in the same framework guideline on connection; this also will help ensure consistency. Aspects of energy efficiency will be also duly taken into account.

3. PREPARING OTHER PRIORITY CODE AREAS

In addition to the reasons given in the Introduction, the importance of network codes also stems from the extensive list of operations, development and market-related problems they are to cover according to Article 8 (6) of the Regulation (EC) 714/2009:

1) Operations-related code topics:
   - (a) Network security and reliability rules including rules for technical transmission reserve capacity for operational network security;
   - (e) Interoperability rules;
   - (f) Operational procedures in an emergency;
   - (j) Balancing rules including network-related reserve power rules;

2) Development-related code topics:
   (b) Network connection rules;
   (l) Energy efficiency regarding electricity networks;

3) Market-related code topics:
   (c) third-party access rules;
   (d) Data exchange and settlement rules;
   (g) Capacity allocation and congestion management rules;
   (h) Rules for trading related to technical and operational provision of network access services and system balancing;
   (i) Transparency rules;
   (k) Rules regarding harmonised transmission tariff structures including locational signals and inter-transmission system operator compensation rules.

Together, these codes have the potential to become ***the*** framework of consistent detailed rules needed for the secure operation of the European power systems and to implement the liberalized Europe-wide electricity market according to the third Package. For TSOs' activities and role are today very different compared to 20 years ago. Due to the worldwide impact of climate change, connecting wind generation and other renewable energy sources will lead to profound changes both of the power systems and the market models. This "facilitating role" of TSOs to integrate renewable resources has to be recognized as one of the key challenges not only for ENTSO-E but also for its stakeholders. The counterpart of this important role is that policy must be clear before network codes can implement it. Although the third Package specifies yet more policy questions than the second Package, several important policy issues remain open, e.g. related to renewable energy support and cost assignment questions, or to cross-border markets under conditions of network congestion and differently structured power markets or exchanges.

ENTSO-E's network code priorities for 2010 are thus based on the importance for secure network operation, integration of renewable energy sources and market integration, and on the other hand on enough clarity and consensus between TSOs, regulators and market participants on goals and methods. From this perspective, network codes in the operational area will focus first on operational security while some of the most important market integration codes may be set to begin in the 4th quarter of 2010, given the currently known plans for ERGEG inputs to framework guidelines.

Besides the pilot code which addresses 2b above, ENTSO-E's 2010 network code development priorities thus include:

a. Transparency (3i above): With the third Package, additional progress has become possible on transparency of market information. Transparency is an important aspect of well functioning European wholesale markets. It is also an area where a lot of

preparatory work has already been done and rapid progress towards European rules can be made.

The Market Committee will provide an ENTSO-E view on what information should be published, by when, how, and where. This will take the form of an ENTSO-E transparency policy and will also serve as input to the ERGEG and European Commission work preparing a European Commission transparency Guideline that is expected to go to Comitology around year-end 2010. Since pre-trade transparency is important, much like for financial markets, the Market Committee will further develop the transparency platform "entsoe.net" (former ETSOVista) to meet the needs of the market and to ensure high quality and easy accessibility of data. Potentially it can become a compliance tool regarding the official requirements of TSO data publication depending on the approach adopted in the Guideline.

b. Design for market integration (3g above): The highest priority of the Market Committee and its most important preparatory work for network codes concerns designs for market integration. This was the subject of the most recent Florence Fora (June and December 2009) for how congestion management and other market aspects could develop. It is now clear that future work in this area should proceed as follows:

ERGEG will work towards a capacity allocation and congestion management framework guideline until September 2010. ENTSO-E network codes development work can start thereafter, depending on priorities, building on the framework guideline and also on three new implementation projects (see below). A new Ad-Hoc Advisory Group of stakeholders, beginning in January 2010, will assist ERGEG with the co-ordination of these implementation projects, and ENTSO-E will play its full part in this co-ordination work. The three implementation projects also begin early in 2010; together with the Ad-Hoc Advisory Group they constitute a scoping exercise for market integration framework guideline and network codes and will also lay the foundation for network code work beginning after September 2010:

- ENTSO-E will chair a project to develop a European capacity calculation concept.
- ENTSO-E will chair a project to develop the target model for intraday trade as well as means for its implementation where appropriate.
- ENTSO-E will contribute vigorously to a project to design a governance framework for day-ahead market coupling followed by implementing a common European day-ahead market coupling by 2015 including price-coupling methodology. This project will be chaired by the European Commission.

Apart from these preparations for later codes, ENTSO-E will support and implement forthcoming Guidelines on Inter-TSO-Compensation (ITC) and tariffs and ensure a temporary ITC mechanism for 2010 until the Guideline is in force.

System operation codes

ENTSO-E is already beginning the necessary scoping work for framework guidelines and network codes in the area of system operation, to prepare for and accompany 2010 ERGEG work on an operations-focused framework guideline. Given the complex and sensitive nature

of this activity in relation to maintaining network related aspects of security of supply, ENTSO-E will engage with the European Commission and ERGEG to agree the precise topics to be covered, prior to engaging in stakeholder consultation. At present the following three areas are planned to be the focus:

c. Load flow management (1a and 1e above): This is particularly urgent because increasing amounts of fluctuating renewable energy make load flow management a more and more difficult challenge. The preparatory work will analyze the existing, proven load flow management rules from the five synchronous areas and derive as many as possible aspects that can be formulated as pan-European rules. As other operational codes, this one is thus needed to ensure a high standard of operability, reliability and security of the European electricity transmission systems within the framework of liberalised energy markets.

d. Use of balancing tools and of ancillary services (1j above): This also is urgent because of fluctuating renewable energy growth, as those can lead to higher balancing and ancillary services needs. This tends to make balancing and ancillary a more expensive part of overall transmission costs, although other future improvements in day-ahead, intraday and balancing trading across borders may mitigate this effect. The preparatory work will analyze the existing rules from the five synchronous areas and derive as many as possible aspects that can be formulated as pan-European rules. This work will be closely related to the market-related topics above and to similar operations-focused work on clear, Europe-wide definitions of the functions the different market actors fulfil. Related to balancing, ENTSO-E will work on a survey, presenting the state of the art of relevant balancing aspects.

e. Standardized coordination methodology/procedures (including coordination in emergency situations) (1e and 1f above): Both in routine and in emergency situations neighbouring TSOs need to be aware not only of each other's equipment settings and procedures, but also of load flow data forecasts and numerous other operational data. This is made more urgent because of fluctuating renewable energy which potentially leads to much more frequent surprises about load flows in neighbouring systems and the increasing volume of intraday trading. Much progress is being made in different regions, and the pan-European code preparatory work will build on that progress.

The monitoring of the implementation of codes and guidelines according to Art. 8(8) of Regulation 714/2009 will also be developed over the coming years with only initial work in 2010. This may partly build on the compliance monitoring experience of TSOs in Continental Europe and will thus include important regional aspects.

A network code change management process will also need to be developed with the aim of the best balance between openness of the future network codes and the flexibility for initiating changes, and on the other hand not unduly disturbing the positive consequences of having clear, binding codes. The above list illustrates that ENTSO-E intends to propose

network codes as much as possible at Pan-European level, and as few as needed at regional level. In general, more detailed regional codes would of course follow the respective Pan-European codes. The code development process will be designed in such a way that it best copes with the diversity and number of requested codes in the priority list consulted with the European Commission and regulators. A basic issue to settle early is the definition, clarification (where needed), and consistent use of terminology related to the TSO business; this task should derive from the analysis by TSOs of their activity and from the functional definitions of the different actors relevant for the transmission sector.

Due to inherent specificities of synchronous areas, the current regional operational rules differ widely in terms of scope, content and applied technical solutions. The System Operations Committee will compare the approaches and develop common terminology, ensuring the same understanding of technical terms used in different synchronous areas. Such common understanding is a prerequisite for further work related to pan-European Network Codes, in both operational and market areas.

4. FURTHER KEY AREAS OF TSO COOPERATION

Finally, among the other activities and products to be developed by ENTSO-E, the Ten-Year Network Development Plan (TYNDP) and the Research and Development (R&D) Plan for TSO needs rank clearly among the most important for the entire association given the very high expectations already voiced by stakeholders.

a. Ten-Year Network Development Plan (TYNDP): Besides the network codes, the TYNDP is indeed the most important *new* task given to TSOs and ENTSO-E by the third Package.

   The main challenge of the Plan consists doubtlessly in combining the bottom up approach underpinning national or regional investment plans with a top-down designed policy goals laid down in scenarios (e.g. primarily 20-20-20 target but also the 10% installed capacity target from the Barcelona summit 2002). As a long term forecasting tool, the TYNDP will identify capacity gaps requiring actions reflecting the evolution of political contingencies and technological progress. The combination and consolidation of both above mentioned approaches will be performed by ENTSO-E; however it will be crucial that investment projects not yet reflected either in national investment or regional investment plans are duly notified to ENTSO-E together with the relevant market information in order to perform such a consolidation under a clear European perspective. Among the results of the TYNDP, not only new transmission infrastructures but also replacements with sustainably mature new technologies will be reflected.

   The first releases of TYNDP will bring to evidence whether without formal obligation on all grid users to provide necessary information (backed by a strong commitment of TSOs to ensure due confidentiality protecting commercial interests of market players), the underlying main objectives of the plan (i.e. drawing an as accurate as possible picture of the investment needs) can be achieved.

The ENTSO-E objective in this Work Program is to issue a first release of the TYNDP in 2010, aiming also at experimenting the development process of the Plan, including the consultation with stakeholders, methodology work, and discussing with ENTSO-G the interactions between the gas and electricity ten-year plans. Chosen scenarios and duly documented methodologies will also be part of this inherently evolving document that will also aim at being consistent to longer-term visions and analysis by both TSOs and stakeholders towards the horizon 2050 (“smart grids”, “supergrids”) (see also section 4b below on the ENTSO-E R&D plan)

Ultimately, all stakeholders should be able to rely on a common and consolidated non-binding vision for the development of the Pan-European high voltage transmission infrastructures, derived from expected needs of system users (including the announced new power plants) but also from the expected contribution of the transmission grids to fulfill several key objectives of European energy policy. The TYNDP will be the first plan for Europe not just assembled bottom-up from projects planned by each TSO, but also tested as an integrated plan against the 2020 energy policy goals. As such, the TYNDP will play a major role for the achievement of the energy policy goals, in particular the integration of the ambitiously targeted amounts of renewable energy, because a lot of new transmission infrastructures will be needed to transport that energy to the load centers.

The first release of the TYNDP will propose: a generation adequacy outlook; the modeling of integrated networks taking advantage of the inputs of the EWIS study in order to assess most probable power flow patterns, an identification of investment gaps and investment projects, particularly with respect to the development of cross-border capacities, an assessment of the resilience of the proposed reinforcements, a review and discussion of barriers arising from approval procedures and practices to developing transmission infrastructures and increasing cross-border capacities. Related to TYNDP questions, the System Development Committee will play a leading role in the definition of a concrete roadmap towards the development of offshore wind generation and the related grid infrastructure as addressed within the framework of the Project of the EU Coordinator for “Connection to offshore wind power in Northern Europe”. Further there will be mutual influence between TYNDP, the TEN-E revised instrument for “EU Energy Security and Infrastructures” and the EC Blueprint of a North Sea Offshore Grid.

The TYNDP should be also a basis for further input and discussions by regulators towards clarification of the cost allocation aspects for new infrastructures and cost recovery via tariffs for projects of European interest, regional projects and national projects – especially when such infrastructure is built predominantly in the interest of the European society’s welfare and energy policy goals rather than in the mere interest of national customers. The TYNDP may point at “regulatory gaps” when these inhibit or hold back a sound development of the European power system, e.g. due to the lack of harmonization of incentives granted to TSOs carrying out investments having an impact on cross-border capacities.

In line with the time horizon of TYNDP, ongoing projects related to the interconnection with non-EU or non-ENTSO-E member TSOs should be taken into consideration in

specific scenarios of the TYNDP while longer term perspectives for the development of such relations will be addressed in other areas of ENTSO-E work (Support to EC Working Groups on 2050); This relates more specifically to main principles and guidelines of cooperation as well as specific tools and mechanisms of interaction.

b. A consolidated R&D Plan for TSO needs: The System Development Committee will prepare a consolidated R&D Plan for TSO needs and contribute to the process launched by the European Commission for a Strategic Energy Technologies Plan that lead to multiple initiatives (electricity grids, wind, solar…). This R&D Plan will define priority research fields as a basis for ENTSO-E's active participation in the new EU guidance structure on smart grids. ENTSO-E will ensure the cross-functional coordination over all TSO research subjects. ENTSO-E will define and monitor a portfolio of TSOs' R&D innovation projects covering system design and technology, optimization of assets, system operation, market facilitation and system technology. ENTSO-E may need to engage both in promoting common R&D actions and projects among TSOs and also in direct participation in pan-European R&D initiatives, if appropriate.

   Priority research fields which may be included in the R&D plan and subsequently in R&D projects managed by ENTSO-E members and monitored in the ENTSO-E R&D Working Group, and which are to begin during 2010 and 2011, include the following: architecture and planning tools for the Pan-European network, tools to prove the efficiency of critical technologies aiming at increasing both the flexibility and the security of operation of the transmission system, new tools based on simulation techniques that will give rise to new market design options. The specific R&D products will likely extend from advanced tools for designing the future energy scenarios, tools for a Pan European network behavior monitoring for better transmission adequacy assessments, tools for better surveys of Pan-European markets, new tools for market modeling taking into account the rapidly increasing penetration of renewable energy sources, complementary tools for facilitating the specific market integration of these renewable energy sources as well as planning tools dedicated to take into account active demand.

c. Common operational tools: As a first initiative towards "common network operation tools to ensure co-ordination of network operation in normal and emergency conditions", the System Operations Committee plans to engage in working out a list of functionalities to be made available in control centers, also indicating which specific network code requirements these functionalities are relevant to; a basic procedure for enhancing the interface compatibility between the different specific software tools used in different control centers is also planned.

   The already existing processes to forecast possible congestions e.g. the Day Ahead Congestion Forecast (DACF) will be further developed and made compatible for European wide application.

   The System Operations Committee will also promote a co-operation framework for regions providing a forum for addressing the operational and reliability aspects of the regions, especially in terms of interoperability and co-ordination between those regions. It

will provide proposals for harmonization of operational standards on a Pan-European level and promote operational coherence among regions as well as short and long term actions aiming at harmonization of existing regional Network Codes.

d. Position papers on future transmission technology, EMF and licensing procedures: The development of electricity infrastructure is of crucial national and European importance. Many electricity infrastructure projects face severe obstacles during the authorization phase. The complexity, duration and ineffectiveness of authorization procedures and the lack of acceptance by civil society are among the main reasons for delays in completing high-priority electricity infrastructure projects across Europe. In this context, ENTSO-E position papers will propose common visions on the modalities of using innovative technologies, develop argumentation lines for speeding up licensing procedures, and prepare contributions to any debate on electro-magnetic fields (EMF). They will take account of the need for shorter-term developments to fit into longer-term system development strategies.

e. Long-term strategy for system development: Based partly on ongoing developments - processing of already received requests for synchronous operation, other foreseeable system extension issues, and new DC connections - and enriched by considerations how these developments serve the further integration of the European electricity market, a longer term strategy for the development of European grids will be developed under very close consultation with the European Commission.

   In order to evolve towards a more market based planning approach, the development of market simulation models and tools will be considered and intensified over the first Work Programs so that the market benefits of new investments can be better evaluated and consequently the alternative grid reinforcements prioritized.

f. Technical document on operational reserves (methodology for its determination and monitoring, risk assessment and analyses): The approach to definition and calculation of the operational reserves differs not only between the regions but for historical reasons even among TSOs within the same region. First the System Operations Committee will make an overview of applied terminologies and methodologies, and then it will propose principles for coordinated approaches. This aspect has both operational and market dimensions; therefore coordination with the Market Committee is necessary to define appropriate products.

g. Technical document on determination of incident classification and methodology of incident analyses (including structure of reports): The System Operations Committee will review the current methods of incident classification and methodologies applied in different synchronous region and will propose a common approach allowing the comparison of incidents and their impacts on the systems.

h. Ancillary services: The Market Committee will define harmonization and other requirements for enhancing market-based cross-border procurement of various ancillary services. As a first step it is necessary to investigate current best practices and what

standards are needed in the long term. In that context, the Market Committee will also analyze and define the commercial products.

i. TSOs' economic framework: Investment incentive schemes, a work area described in the new Electricity Regulation is also a priority work area for the Market Committee. The objective is to analyze the process of regulation of network investments and revenue regulation schemes with particular focus on incentives for network development and system operation. Similarly, on tariff harmonization, the objective is to assess the compliance of existing pricing structures and assess the possibility for improvements or need for further harmonization. With a longer term perspective, the Market Committee will develop positions on congestion revenues and on issues related to tariff structure. In general, ENTSO-E position papers have the aim to point out main challenges facing TSOs, and to recommend appropriate actions and solutions to regulatory bodies and stakeholders. They are also intended to provide a basis for code development.

j. Renewable energy sources: Responding pro-actively to the request by an EU Coordinator to propose a "roadmap for the development of offshore wind generation", ENTSO-E will engage in shaping a pragmatic approach towards the offshore and onshore "Supergrid" concept that for offshore cables should be based on the necessary returns on investment under the given regulatory regimes. Market and operational implications of large-scale offshore wind will be analyzed. This should also take into account the different national legal frameworks. With a longer-term view, the Market Committee will engage in analyzing and commenting the current support schemes, methods, models and practices on incentivizing the development of renewable energy sources and their connections to the transmission grids in Europe, which should later lead to recommendations for possible harmonized regulation related to renewable energy sources. An additional task will be to address the future operational needs with substantially more wind power than today injected into the power grids and possibly also offshore grids. The future scenario sets new requirements for forecasting, load flow management, balancing and real-time tools.

5. CONCLUSION

ENTSO-E's first Work Program focuses on the important new tasks assigned to the TSOs at pan-European level: network development planning, R&D, operations coordination, and especially network codes. Because of the importance of network codes and the entirely new and complex process for their development, a pilot code is one of the highest priority projects to exercise the process together with the European Commission, ERGEG and stakeholders. The urgent topic of grid connection with special focus on wind generation was chosen. There are additional urgent network codes in the areas of market integration and operations on which major progress is planned through the end of 2010. In addition, 11 other projects that do not (yet) lead to network codes are of high priority are identified. ENTSO-E will engage with the EC and ERGEG in the first half of 2010 to prepare a common view of framework guideline and network code work for 2011 and 2012, and as a consequence it may become necessary to adjust the Work Program set out in this document.

In addition to the high priority items listed in this Work Program, ENTSO-E's Committees and Groups carry out many other activities, largely in continuation of the work of the prior associations. Examples are statistical and technical data, network maps, electronic data interchange (EDI) standards, critical systems protection, asset implementation and management, requests for extensions of the continental Europe synchronous area, and legal and regulatory issues affecting many work items including network codes. Opinions from the European Commission and ACER on the ENTSO-E Articles of Association (Statutes) and Rules of Procedure according to Article 5 of the Electricity Regulation are only due in 2011 and may also lead to work items fine-tuning those basic ENTSO-E documents. It is therefore important that the ENTSO-E Work Program leaves room for flexibility in work planning within the internal ENTSO-E working structures (Committees and Working Groups) that will reassess their priorities and scheduled actions periodically. Also, in addition to the monitoring by ENTSO-E of the implementation of network codes and guidelines required in Article 8(8) of Regulation 714/2009, ENTSO-E plans to institute formal monitoring of the efficiency and effectiveness of its own activities, in comparison for example to its Work Programs.

6. INDICATIVE SCHEDULE (CODES)

The following schedule tables set carefully chosen, but still ambitious goals: However, these target dates may not be detrimental to the primary transparency goals to be achieved via a close consultation of stakeholders following the requirements especially of Art 10 of the Regulation 714/2009.

Activity	Goal	Work start Qx/yr	Deliverable & completion date end of Qx/yr	Committee / Group in charge	Upon	
					Interaction with other groups	Consultation with (start Qx/yr)
Connection of generation	Development of the pilot code for grid connection with special focus on wind generation	Q3/2009	Some draft pilot code chapters (Q2/2010); input to framework guideline consultation (Q3/2010); pilot code proposal (Q1/2011)	System Development Committee (SDC)	System Operations Committee (SOC), Market Committee (MC), Legal & Regulatory Group (LRG)	All stakeholders; in particular ERGEG regarding their pilot framework guideline on connection (Q2/2010-Q3/2010)
Other generation connection specificities	Development of remaining chapters of generation connection network code	Q2/2010	Q3/2011	SDC	SOC, MC, LRG	All stakeholders (2010)
Transparency	- Development of transparency policy as input to EC Guideline - entsoe.net (ETSOVista) development	Q3/2009 Q3/2009	a) position paper/ transparency policy Q1/2010 b) update of entsoe.net platform (Q2/2010) c) continuous input to ERGEG and EC for Guideline (until Q4/2010)	MC	Data Expert Group, LRG	All stakeholders (on position paper: beginning early in 2010)
Operational network codes	Scoping work on operational framework guideline and network codes Development of operational network codes: a. load flow management b. use of balancing tools and of ancillary services c. standardized coordination methodology/ procedures	Q1/2010 Q4/2009 Q4/2009 Q4/2010	1. Continuous input to ERGEG framework guideline (until Q3/2010) 2. Terminology (Q2/2010) 3. Comparison analyses on operational rules in synchronous areas (Q2/2010) 4. Network codes (Q4/2011)	SOC	As needed	All stakeholders; in particular ERGEG, EURELECTRIC (beginning in Q1/2010; intense on the different topics during different quarters in 2010)

Indicative schedule (continued – codes and further key areas of TSO cooperation)

Activity	Goal	Work start Qx/yr	Deliverable & completion date end of Qx/yr	Committee / Group in charge	Upon	
					Interaction with other groups	Consultation with (start Qx/yr)
Market integration issues	Design and implementation of market integration through contributions to Ad-Hoc Advisory Group and 3 implementation projects Code development	Q1/2010 After Q3/2010	Ultimate deliverables are network codes whose number and scopes depend on the framework guideline, the implementation projects and EC priorities: Intraday code Day-ahead code Capacity calculation code Completion dates depend on priorities and availability of experts, possibly as early as Q4/2011	 MC MC MC intensely coordinated with SOC	 SOC, LRG SOC, LRG LRG	ERGEG's Ad-hoc Advisory Group involving all stakeholders (through at least Q1/2010) ERGEG during development of (input to) framework guideline (Q2-3/2010) All stakeholders for code development (starting Q4/2010)
Network development and planning	Preparation of a pilot TYNDP (the first draft early 2010)	Q3/2009	Report (Q2/2010)	SDC	All SDC WGs and RGs; EWIS project, LRG	All stakeholders; in particular ERGEG, EURELECTRIC, EFET, EWEA (Q3-4/2009) , public consultation Q1-2/2010
R&D	Preparation of a consolidated TSO R&D Plan, contributions to EC's Strategic Energy Technologies Plan	Q3/2009	R&D plan (Q4/2009)	SDC lead, with MC and SOC	SOC, MC, LRG	EC, ERGEG, DSOs (start Q1/2010)
Operational issues	Preparations for common operational tools; coordination of regions for operational issues	Q4/2009	1. Operational experience exchange forum (Q1/2010) 2. Congestion forecasting improvements (Q4/2010) 3. Actions aiming at harmonization of regional Network Codes (Q4/2010)	SOC	-	None

Indicative schedule (continued – further key areas of TSO cooperation)

Activity	Goal	Work start Qx/yr	Deliverable & completion date end of Qx/yr	Committee / Group charge	Upon	
					Interaction with other groups	Consultation with (start Qx/yr)
Network development and planning	Development of position papers on future transmission technology, EMF and licensing procedures	From Q3/2009 to Q4/2010	Position papers (from Q1/2010 to Q4/2010)	SDC	WG R&D, MC, SOC, LRG	EC, EP, ERGEG (Q3/2009)
Network development and planning	Formulation of long-term strategy / vision for the extension of the Europ. network, possibly with a view to effects on mkt integration	Q4/2009	System extension strategy (Q4/2011)	SDC	SDC, MC, LRG	EC and other stakeholders (beginning in Q2/2010)
TSO cooperation on operational issues	Development of technical document on operational reserves	Q4/2009	1. Comparison analyses 2. Proposed common principles for meth-odology for reserves' determination (Q4/2010)	SOC	MC, LRG	ERGEG, EURELECTRIC , EFET (Q1/2010)
Operational issues	Development of tech-nical document on de-termination of incident classification and methodology of incident analyses	Q4/2009	1. Criteria for incident classification 2. Methodology of incident analyses (both Q4/2010)	SOC	None	None
Ancillary services	Ancillary services – definition of commercial products and standards	Q3/2009	Document (Q4/2010)	MC	SOC, LRG	All stakeholders; in particular EURELECTRIC (2010)
Economic framework market issues	Economic framework positions - ITC - investment incentives - tariffs	Q4/2009	Position papers: ITC Q4/2009 Others Q4/2010	MC	SDC, LRG	All major stakeholders (Q4/2009 and later)
RES integration	1. Roadmap for the development of offshore wind generation 2. Overview of policies on RES support and grid connection	Q3/2009	Roadmap and paper (both Q2/2010)	MC, intensely coordinated with SDC, SOC and LRG	-	EC, ERGEG, European coordinator (Q3-4/2009)