
REGIONAL COOPERATION AND GOVERNANCE IN THE ELECTRICITY SECTOR

HOW TO INTEGRATE
AT LEAST 45 % RENEWABLES,
KEEP SECURITY OF SUPPLY
AND DEVELOP EFFICIENT
MARKETS IN EUROPE

Policy Paper
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This paper is ENTSO-E's response to the debate on electricity regions as “**stepping-stones**” for the **Energy Union**. ENTSO-E suggests policy regions bringing political, regulatory, but also technical and commercial competences together, not to be mixed-up with functional areas needed to ensure optimal and fit-for-purpose TSO cooperation.

YES TO REGIONAL COOPERATION

Interconnection implies that changes in one area have an impact on interconnected neighbouring systems. **Neighbours have to rely on and coordinate with each other following rules agreed on in a stable political framework, in order to ensure security of supply and well-functioning markets.** This is particularly highlighted in the framework of the EU target of at least 45 % of renewable electricity by 2030.

The Energy Union concept builds on regions as “stepping-stones”. Sustainability, one of the goals of the Energy Union, requires increasing share of renewable energy sources (RES). If not managed and coordinated well, RES can challenge security of supply and cost efficiency to the customer. Competitiveness is enhanced by the completion of the internal energy market (IEM). RES integration, security of supply and IEM completion require stronger and deeper political coordination at regional level in line with the perspectives of the Lisbon treaty, in particular interconnection development for increasing the cross border capacity where this remains scarce with significant price differences and congestions. ENTSO-E therefore supports a process establishing energy policy regions bringing political, regulatory, technical/commercial competences and guidance together to avoid market distortions and thus benefit European citizens.

These energy policy regions should be manageable in size and number and ensure the involvement of strongly interconnected non-EU members. These regions should be defined in a voluntary process in order to address issues such as energy mix, planning of interconnectors, market development, integration of RES into the market, supporting risk preparedness, adequacy issues and cooperation between capacity mechanisms without questioning Member State decision-making power.

Policy regions should not be mixed-up with functional areas needed to optimise TSO cooperation and ensure it is fit for purpose to optimise a particular function. A one to one correspondence between political regions defined using a top-down approach and functional areas, which should be fit for purpose for ensuring security of supply and facilitate the completion of the internal market, would introduce significant risks and impose considerable costs on European energy market participants.



In this document, by security of supply we understand system adequacy as well as operational security.

POLITICAL, REGULATORY AND TECHNICAL/COMMERCIAL COMPETENCES TO ENSURE SPEED

Experience has shown, e. g., in the Pentalateral Forum (PLEF) and the Nordics, that **regional success requires systematic involvement and support from governments, regulators, TSOs and other stakeholders**. This is of particular importance in areas where significant investments are involved. ENTSO-E therefore supports the formation of regions, which cooperate efficiently.

“Common views” and “common concerns” should provide common ground on which to work together based on a history of political and power system cooperation, geographical proximity, limited cultural barriers and a fairly high level of integration of the power systems, markets and operations. Regional voluntary governance should include EC, ministries, regulators, TSOs and stakeholders. Enhanced regional policy coordination among Member States should not imply the creation of additional institutional bodies.

Wherever possible existing regional cooperation structures based on historical, geographical, operational and market cooperation aspects should be used to form energy policy regions providing a stable framework for further development of the IEM, security of supply and integration of at least 45 % renewable electricity by 2030.





POLICY REGIONS VERSUS FUNCTIONAL AREAS

Energy policy regions are based on historical, geographical, and market cooperation. **This brings together political, regulatory and technical/commercial competences and guidance such as the PLEF, the Nordics and other successful regional cooperations.** This should not be confused with functional areas as defined in the network codes such as capacity calculation regions (CCRs) and coordinated balancing areas (CoBAs) or services such as that provided by Regional Security Coordination Service Providers (RSPs). Functional areas shall be developed in interaction with the emerging energy policy regions.

Notwithstanding the policy regions, the perimeters of functional areas are determined on physical and operational aspects and could differ between functions. Functional areas/services support the objectives of market integration, security of supply, competitiveness and sustainability. They shall be focused, fit for purpose and develop over time. These functions for planning, market and operations defined in the network codes shall be implemented in parallel with the policy regions. Thus, there is no strict correlation between policy regions and functional areas. One or several functional areas may serve one or several policy regions. The functional areas for planning, market and operations shall develop in parallel according to the network codes and other regulations.

RSPs are service providers to TSOs, whose highest priority is to deliver five core services to all TSOs in Europe by the end of 2017, namely short and mid-term adequacy, security analysis, common grid model, outage planning and capacity calculations. RSP co-ordination is ensured through ENTSO-E members' Multilateral agreement. The setup of RSPs is designed to provide one or more services to one or more functional areas and is flexible enough to cope with the future evolutions of new functional areas. RSPs are designed to coordinate TSO decisions but not to shift decision-making powers from national to regional level. They perform regional calculations and provide recommendations to TSOs.

However, they are not entitled to decide on measures with significant technical, commercial and security of supply-related implications. An RSP is not in a position to decide on the most appropriate actions in case of contingency; for example an RSP cannot choose and implement detailed procedures in case of major system disturbance such as "brown outs". Policy regions can bring political, regulatory and technical/ commercial competences together to facilitate decision-making on a regional level. The RSP concept is future-proof and can be extended beyond 2017 to provide additional regional services to the TSOs where seen necessary and beneficial for security of supply and system security and contribute to reducing network costs through increased efficiency in system operation.

In a context characterised by regulatory asymmetries between Member States, the services (analysis) provided by RSPs contribute to the cross-border cooperation and will become an inherent part of the TSO's business. RSPs are crucial initiatives for providing mutual cross-border services in order for TSOs to exercise their operational responsibilities in the most efficient and secure way despite the RSPs not having an operational role and responsibilities. Considering the interest of improving security operation activities, and setting up fair market mechanisms, it is crucial to have policy regions for coordinating the decision-making responsibilities of Member States.

TOPICS FOR POLICY REGIONS

Energy policy regions should address **issues requiring political and regulatory attention** beyond the technical/commercial competences of the TSOs such as energy mix, planning regional interconnectors, market development, RES market integration, risk preparedness, adequacy issues and capacity mechanisms.

A policy region can take responsibility for mid- to long-term activities such as:

MARKET DEVELOPMENT AND CAPACITY MECHANISM:

Policy regions will promote cooperation on RES and capacity support systems in different countries, as well as implementation of the Third Package or of other national regulations influencing consumer prices or terms and conditions aimed at limiting market risks for European energy market players. As such, policy regions are key to avoid distortions in the functioning of the European electricity market with respect to optimal resource usage and optimal investments.

RES SUPPORTING SCHEMES AND ENERGY MIX:

RES supporting schemes and energy mix have a strong influence on RES generation volume, the location of renewable generation between Member States, market and system operation. Coordination within a policy region will strengthen system security, enhance a well-functioning market, will allow keeping fair costs for society and being a basis for consistent grid planning at national, regional and pan-European level. A way to achieve more harmonisation of RES support schemes could be to discuss and better coordinate the national support schemes, leading to eventual regional convergence.

MARKET INTEGRATION OF RES:

Different approaches to market integration of renewables in strongly interconnected power systems lead to operational, market and planning challenges due to different national legislation e.g., with respect to priority treatment of RES and not standardised ancillary services requirements.

ADEQUACY (5–10 YEARS):

The pan-European adequacy methodology of ENTSO-E serves as a basis for enhancements of security of supply and market integration at pan-European level. This methodology is also applied at regional level in order to fine-tune the pan-European studies and to take into account interactions more effectively. In addition, adequacy evaluation are performed at national level for a detailed and in depth analysis.

RISK PREPAREDNESS:

Each country is responsible for its own power system security. Rules on how to handle scarcity, major outages of transmission or generation components, cyber security or terrorist attacks already exist at national level and must be retained, as a solid, well-proven foundation. However, strong interconnections and high levels of renewable generation lead to significant and increasing mutual dependency of neighbouring power systems. Member States and TSOs shall maintain their decision-making power, but on the other hand, regional coordination on how to be prepared for such risks is considered helpful.

VOLUNTARY CREATION OF POLICY REGIONS

The policy regions should start from and be defined through the powerful voluntary commitment of Member States which has already been seen. The forthcoming EU legislative proposals do not necessarily have to define them in a top-down approach.

However, the forthcoming legislation should include a provision for the commitment of Member States stating that policy regions shall be formed, and that every country shall be part of at least one policy region. The overlap of regions should be allowed.

Successful cooperation is often based on voluntary coalitions between Member States. Examples can be found in cases such as the Nordics, the PLEF, the North Seas Countries' Offshore Grid Initiative (NSCOGI), MIBEL (Iberian Electricity Market) and other successful regional cooperation, as well as among TSOs, like TSCNet, CORESO, SCC, JAO and the establishment of market coupling etc.

Apart from common history and trust, the following criteria could be helpful in identifying fit-for-purpose regional configurations:

- Geographical proximity;
- Interconnections and complementary energy mix;
- Common concerns in particular with respect to security of supply and market integrity;
- Market conditions and maturity;
- Manageable size of regions;
- If possible, build on existing regional cooperation structures.



GOVERNANCE

The governance structure of energy policy regions as stepping stones to building the Energy Union requires political decision-making at Member State and EU level based on political, regulatory and technical/commercial competences.

These structures should therefore include also EC, Member States, national regulators, TSOs and other stakeholders, taking advantage of the existing regional cooperation. ENTSO-E is committed to providing technical and commercial competences relative to

system operations and development and to market design. The policy regions should establish a roadmap for the development of relevant issues. To ensure continuity, a small secretariat such as in the PLEF could support the regional development.



THE WAY FORWARD

Current and foreseeable challenges in market integrity, completion of the IEM, RES integration and security of supply provisions require stronger cooperation and coordination at regional level. A view of power systems and market developments limited to the Member State level alone is not relevant anymore.

TSOs are already pushing cooperation very far within the given legal and regulatory frameworks and will continue doing so according to the provisions of the network codes. The concept of functional areas is key in this regard to ensure optimisation of future system operation activities, given that TSO coordination is most efficient when organised across functional areas with perimeters that are determined with regards to physical and operational aspects. In addition, policy regions bringing together political, regulatory and

technical/commercial competences in stable regional frameworks are needed in order to reach the Energy Union's policy objectives. Reasonably sized voluntary policy regions are important stepping stones for building the Energy Union at the right speed. ENTSO-E is fully committed to supporting the European institutions, Member States, national regulators and other stakeholders with all of its technical and commercial competence in building up this regional approach.

APPENDIX: PENTALATERAL ENERGY FORUM (PLEF)

SUMMARY

The PLEF was initiated in 2005, as a Member State cooperation forum to facilitate the implementation of the pan-European internal energy market. It aims at enabling electricity market integration in the region and improving security of supply.

The Memorandum of Understanding of the Pentalateral Energy Forum (2007) set as its goal the ‘analysis, design and implementation of a flow-based

market coupling’ by the target year 2009 through the removal of barriers to the regional integration of energy markets and improved security of supply in Central and Western Europe.

Since completion of the day-ahead market coupling in 2010, the PLEF has continued to work further on intensifying market integration and has increased its focus on regional security of supply issues.

In a Political Declaration of the Pentalateral Energy Forum (2013), the Ministers decided:

- to implement flow-based market coupling in Central West Europe by 2014; and
- to further develop a common approach for security of supply through enhanced pentalateral adequacy analysis, thus providing decision-makers with a more holistic assessment of potential capacity scarcities in the pentalateral region.



ORGANISATION AND GOVERNANCE

The PLEF is an intergovernmental initiative consisting of six full members (Austria, Belgium, France, Germany, Luxembourg, and the Netherlands) and Switzerland as an observer country.

The main characteristics of the forum are its voluntary nature and its pragmatic approach. It operates within the framework of existing legal and regulatory

arrangements, national generation mix choices and strategies. Next to the seven above-mentioned governments, the process also includes high-level representatives of the NRAs, TSOs, power exchanges and the Market Parties Platform, which is a cooperation platform of energy industry associations in the Central West European electricity market area, promoting market integration.

The PLEF has a three-level governance structure consisting of:

- 1) the Ministerial Conference (governing body, deciding by consensus);
- 2) the Coordinators Committee (representatives of Ministers, inviting experts from other Member States when appropriate);
- 3) Support Groups on market integration (SG1) and on security of supply (SG2) with representatives of the Ministers and experts from the regulators, TSOs, power exchanges, and other market participants.

In addition, ad-hoc groups of experts, may be formed. Like the North Seas Countries' Offshore Grid Initiative (NSCOGI), the PLEF is supported by the Benelux Sec-

retariat. The energy ministers provide political guidance for the process, while practicalities are discussed by officials, experts and market participants.

GOAL AND DELIVERABLES

The initial focus of the PLEF was the 'analysis, design and implementation of a flow-based market coupling' by the target year 2009 through the removal of barriers to the regional integration of energy markets and improved security of supply in Central and Western Europe. Day-ahead market coupling for the five original PLEF countries (without Austria, which joined only in 2011) was successfully completed in spring 2010 and the PLEF target model for market coupling

and explicit auctioning for long-term capacity allocation has emerged as a standard for electricity market integration, now covering large parts of Europe.

Since completing day-ahead market coupling, the PLEF has continued to work on further intensifying market integration and to place greater focus on regional security of supply issues.

Participating countries signed a new political declaration in June 2013, renewing PLEF's mandate and adopting a new working programme. New tasks include, e.g., the implementation of implicit flow based market coupling in the region (successfully launched in 2015) while ensuring compatibility with wider European integration and building an intra-day market. On security of supply, the PLEF works on assessing generation adequacy at the regional level and integrates it with network development planning through the exchange of information and common work

on assessments. The recent **generation adequacy analysis** (2015) was based on an advanced common methodology, including probabilistic modelling for all hours of the year and enabling an enhanced consistent assessment of variable renewable energy generation, projected interconnector flows, demand side response and flexibility in the market. The methodology used by TSOs in the PLEF generation adequacy assessment is fully in line with the ENTSO-E adequacy target methodology

REASONS FOR THE SUCCESS OF THE PLEF INITIATIVE:

- Strong political guidance from energy ministers;
- Shared vision of increased regional connection and common market;
- European orientation of the PLEF and its complementarity to other EU initiatives;
- Streamlined working structures;
- Involvement of technical experts and stakeholders;
- Neutral platform and pragmatic support through the Benelux Secretariat building on the long-standing tradition of regional cooperation in the Benelux countries;
- Groundwork through detailed technical discussions by national regulators in the Regional Initiative for Central and Western Europe in which almost all PLEF countries participate.



ABBREVIATIONS

BRP	Balance Responsible Party
CCR	Capacity Calculation Regions
CoBA	Coordinated Balancing Area
IEM	Internal Energy Market
ENTSO-E	European Association of Transmission System Operators for Electricity
NRA	National Regulatory Authority
PLEF	Pentalateral Energy Forum
RES	Renewable Energy Source
RSP	Regional Security Coordination Service Providers
TSO	Transmission System Operator



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