REGIONAL SECURITY COORDINATORS

1 - CONTEXT

Why do we need regional coordination to operate the electricity grid?

Coordination allows to take better decisions. For instance, TSOs cooperate to decide which remedial actions close to a national border is the most efficient (measures such as ordering a power plant to start or stop in order to maintain operational security). Coordination between TSOs can also create economies of scale, for instance all TSOs can use the same IT system to perform a certain task.

European regions have always been the natural place for TSOs to cooperate. The closer a country is from another, the more impact they have on each other's power system.

Why is regional coordination of power grid operations changing now?

A much deeper coordination between operators close to real-time is needed to integrate more renewables into the grid and reduce carbon emissions cost-effectively and in all security.

Regional coordination of power grid operation is stepping up through the development of Regional Security Coordinators (RSCs). Initiated by TSOs seven years ago, these regional companies are about to extend both geographically and in terms of responsibilities.

How will European Consumers benefit from more regional coordination of TSOs?

TSO coordination through the RSCs increases efficiency in system operation, minimises risks of wide area events, such as brownouts or blackouts, and lower costs through maximised availability of transmission capacity to market participants.

2 - RSCs

What is a Regional Security Coordinator or RSC?

RSCs are companies owned by their clients, the TSOs. They perform services for the TSOs, such as providing a regional model of the grid or advanced calculations to tell TSOs which remedial actions are the most cost-efficient, without being constrained to national borders. Currently, there are three existing RSCs in continental Europe. Their offices are based respectively in Munich (TSC), Belgrade (SCC) and Brussels (Coreso).

The offices of RSCs look like TSOs' control rooms. Engineers work in a secured room, facing a giant screen representing in real-time the power flows between different countries and other information such as the quantity of wind or solar power produced in a region.

However, RSCs are not equipped to take direct control of the grid. This is an essential aspect because it allows RSCs to remain light and efficient structures and limit the need for regulatory oversight and regulatory harmonisation. Operating the power grid in real-time remains the responsibility of TSOs, but TSOs will perform this task by more and more relying on the information and strategies provided by the RSCs.

How were RSCs created and how will they develop?

The first RSCs were set up on a voluntary basis by TSOs since 2008, with Coreso (based in Brussels) and TSC (Munich) as pioneers in Continental Europe. In 2015, one RSC was created in South East Europe, SCC, in Belgrade. In 2016, the Nordic TSOs started discussing teh creation of a Nordic RSC. By end 2017, the whole European population should be covered.

Thanks to their success, European TSOs and policy makers have decided to use RSCs to implement the Third Energy Package and create the Internal Energy Market. This is why RSCs are mentioned in one of the electricity network codes: the System Operation Guideline, whose adoption took place in 2016.

On 10 December 2015, European TSOs and ENTSO-E had signed a Multilateral Agreement on Participation in the then called RSCIs. The agreement requires ENTSO-E members to participate in RSCs or to contract five essential services from them. The agreement ensures also that RSCs develop in a harmonised, interoperable and standardised way under ENTSO-E's coordination, tools, standards, and methodologies.

Currently, RSCs focus on operational planning with a regional view. RSCs have the potential to evolve and to provide even more services to the TSOs as they gain more experience.

What are the 5 core services performed by RSCs, and how are they delivered?

In the RSC model:

1. TSOs provide data to the RSCs;
2. RSCs perform analyses and provide results to TSOs;
3. TSOs take the final decisions: full decision-making responsibility remains with the TSOs based on the real-time operational conditions. Usually, TSOs directly implement the recommendations of RSCs. Particular collaboration processes are defined for the rare occasions where TSOs estimate that an action recommended by a RSC is incompatible with their own system safety constraints. These events will be registered and their list will be publicly available.

All European TSOs will delegate 5 services to RSCs by 2017, as agreed in the 2015 Multilateral Agreement.

Service	Objectives
Operational planning security analysis	To identify risks of operational security in areas close to national borders. To identify the most efficient remedial actions in these areas and recommend them to the concerned TSOs, without being constraint by national borders
Outage planning coordination	Create a single register for all planed outages of grid assets (overhead lines, generators, etc.) Enhance governance of assets' maintenance
Coordinated capacity calculation	Calculate available electricity transfer capacity across borders (using flow-based or net transfer capacity methodologies) Maximise the capacity offered to the market
Short and very short term adequacy forecasts	Providing market participants with consumption, production and grid status forecasts up to several weeks ahead
Common Grid Model	Providing a regional dynamic view of all major grid assets (generation, consumption, transmission) updated every hour

What is ENTSO-E's role with regard to RSCs?

ENTSO-E is the platform for ensuring interoperability of RSCs. ENTSO-E provides project management support, standards (methodologies and rules) for IT tools, IT-governance organisation and ensures compliance monitoring for RSCs to support their set up Europe-wide.

Network codes, drafted by ENTSO-E in cooperation with stakeholders, standardise the five services provided by RSCs, set deadlines and principles for common standards and interoperability of RSCs, tackle the required regulatory oversight associated with them and include where necessary opinions by ACER and oversight or decisions by NRAs at European or regional level.