



Explanatory Note on “Rules for Coordination and Congestion Management”

September 2019

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Introduction to the Explanatory Note

The underlying document serves to support the reader of the “**Rules for Coordination and Congestion Management**” (hereafter referred to as the “**Rules**”) in understanding the scope, the structure and the formulation of those Rules.

This version of the explanatory note accompanies the version of the Rules that Elia published for public consultation in September 2019.

Structure of the Rules:

After an introduction in Title 1 and an overview of relevant legislation and information in the Whereas section, Title 2 describes the scope of the Rules (as also explained in section 1 in this document), some rules on implementation and publication of the Rules, and a list of relevant definitions.

The core text of the Rules is divided in two main sections:

- Title 3 on the Coordination or Technical units (Articles 4 – 8)
This section focuses on the procedures related to outage planning and Must-Run/May-Not-Run schedules, typically procedures before the Day-Ahead Market.
- Title 4 on Congestion Management:
This section focuses on congestion management, the means for Elia to activate Remedial Actions (in general in the Day-Ahead and Intraday timeframes), the compensation mechanism to neutralize possible effects of congestion management on the system imbalance, and the Red Zones mechanism.

The final Title 5 gives an overview of monitoring and publications related to the topics discussed in the document.

1 Legal Basis for the Rules

1.1 Electricity Law & Electricity Directive

As specified in **Title 1** of the Rules, the Belgian Electricity Law and the European Electricity Directive require the creation of a set of rules concerning:

- the coordination of the use of power units (Electricity Law, article 8, §1, 5°);
- and the management of congestions (Electricity Law, article 23, §2, alinea 2, 36°; and Electricity Directive, article 59 (10)).

As the coordination of the use of power units serves for congestion management in addition to other purposes, both rules for coordination and rules for congestion management are merged in the one document of the Rules.

The specific topics listed in the abovementioned articles of the Electricity Law and the Electricity Directive are elaborated in the Rules as described in **Article 1.2**.

Some topics are subject to European methodologies that pursuant to the entry into force of the European Guidelines on electricity transmission system operation (SOGL), capacity allocation and congestion management (CACM) and forward capacity allocation (FCA), have already been submitted for regulatory approval via other procedures or will be in the (near) future and therefore fall out of scope of the Rules. This is particularly the case for topics concerning capacity allocation (fully covered by the CACM, as noted in **Article 1.3**) and interconnections, for which a section is included in the Rules only in anticipation of the entry into force of European methodologies (as noted in **Article 1.2(iii)**). The relevant legal framework and concerned European methodologies are referred to in the **Whereas** section of the Rules. It concerns references to legislation that are relevant to understand the context in which the Rules apply, but the details of that legislation is regulated via other trajectories and therefore out of scope of the Rules. Table 1 in section 3 of this explanatory note provides an overview to support the comprehension of the Rules vis-à-vis the relevant procedures regulated in other legislation.

1.2 The Rules vis-à-vis the Terms & Conditions

The Terms and Conditions for the Outage Planning Agent and for the Scheduling Agent include the contractual rights and obligation with respect to the data and services provided by each party taking on the respective market role (either the Outage Planning Agent or the Scheduling Agent) to Elia.

The Rules describe the rights and obligations of Elia when managing the grid in a secure way, given the impact and the use of different operations and ancillary services.

Therefore while the Rules include transversal activities across market parties (e.g. how to decide which Remedial Action to activate), the Terms and Conditions include detailed processes and modalities in case Elia decides to utilize a specific Technical Unit from a specific Outage Planning Agent or Scheduling Agent.

2 Technical units versus grid elements

Coordination of Technical Units (which may represent facilities for production, consumption, or storage of electricity) and grid elements both play a crucial part in operating the grid securely.

Also Remedial Actions for congestion risks may make use of Technical Units as well as grid elements. In line with the request for rules on coordination of the use of power units (in article 8, §1, 5° of the Electricity Law) the Rules primarily serve to describe the coordination of Technical Units and their use in congestion management as described in **Article 1.1 of the Rules**. The Rules refer to procedures described in the Terms and Conditions for the Outage planning Agent and Terms and Conditions as explained

previously in section 1.2. Note that the same Technical Units may also be used to deliver other ancillary services for balancing, voltage control, or restoration: coordination of the Technical Units may also be for the purpose of managing those other ancillary services, as described in **Article 4 of the Rules**.

The coordination of Elia’s grid element and their use in Remedial Actions are referred to in the Rules where relevant, especially where grid elements offer alternatives to the actions available on Technical Units (see **Articles 4.2(i) and 10.2(a) of the Rules**). However, the specific rules concerning purely the coordination of grid elements are out of scope of the Rules.

3 Process, temporal and regional scope

The coordination of Technical Units and the management of congestion risks touches upon different processes across time to maintain and operate a secure grid, either in coordination with other TSO’s or managed only nationally. As explained previously, the Rules only contain those aspects that are to be defined on a national level by Elia and as far as not yet subject to guidelines or methodologies approved on a European level. The following section serves to provide a summary of the national and cross-border processes from multi-year-ahead to real-time and thereby shows the interaction between the actions of Elia in accordance with the Rules vis-à-vis the actions of Elia in accordance with the concerned European methodologies.

TABLE 1. OVERVIEW OF ELIA’S ANALYSES & PROCEDURES FOR NATIONAL OR INTERNATIONAL PURPOSES AND WHERE THESE ARE REFERRED TO IN THE RULES

Multi-year-ahead

International

- ENTSO-e 10-year Network Development Plan (TYNDP)	European infrastructure development plans are submitted for regulatory approval by all TSOs every 2 years.	Proposals for grid investments triggered by risks of structural congestion are approved by the relevant regulatory authority.
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National

- Federal Grid Development Plan	- Federal: submitted by Elia every 4 years and in line with TYNDP	⇒ Separate regulatory tracks ⇒ Referred to in Whereas 12 of the Rules
- Regional Grid Development Plans	- Regional: yearly updates	

Year-ahead

International

- Outage Planning Coordination (OPC) of Cross-border Relevant Assets	Regional harmonization and coordination among TSO’s and Regional Security Coordinator (RSC) ’s of the TSO’s outage planning processes. The year-in-advance assessment aims to identify major outage incompatibilities the upcoming calendar year at an early stage	ENTSO-e methodologies following the SOGL ⇒ Separate regulatory track ⇒ Referred to in Whereas 13 and 14 of the Rules ⇒ Amendments of Technical Units that are Cross-border Relevant assets:
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	and enable the optimisation of individual outage plans.	Article 6.1 of the Rules
<i>International</i>		
- Yearly capacity calculation	The Elia grid models and outage planning information serve as input for the capacity calculations performed at the level of the Capacity Calculation Region (CCR).	CCR level methodologies following the FCA ⇒ Separate regulatory tracks ⇒ Referred to in Whereas 18 of the Rules
<i>National</i>		
- Outage planning of Elia grid elements	Identified maintenance needs and infrastructure development projects for the Elia grid are translated into a planning for grid outages needs.	Internal processes that are matched with information from Outage Planning Agents ⇒ Interaction with outage planning of Technical Units is described in Article 4.2(i) of the Rules ⇒ Amendment of outage planning of grid elements possible as remedial actions to solve congestion risk: described in Article 10.2(a) of the Rules ⇒ Conditional Outages possible
<i>National</i>		
- Outage planning of electricity generating Technical Units	Information exchanges on planned outages with the aim of achieving approved outage planning of Technical Units before the start of the calendar year.	The Technical Units are those subject to the Terms and Conditions for the Outage Planning Agent as described in Articles 1.1 and 5(i) of the Rules . Specific rules are described in Articles 4.1-2, 6 and 8 of the Rules . In specific, the interaction with the international OPC is described in Article 4.1 and 6.1 of the Rules .
12 to 4 weeks ahead		
<i>International</i>		
- Outage Planning Coordination (OPC) of cross-border relevant assets	Continued OPC among TSO's and RCS's	[Reference in the Rules: same as for year-ahead (see earlier)]
<i>International</i>		
- Monthly capacity calculation	Same methodology as yearly capacity calculation with better estimations	[Reference in the Rules: same as for year-ahead (see earlier)]
<i>National</i>		
Rolling window of 12 weeks:		
- Updates of outage planning of Elia grid elements	Recurring project planning 12 weeks ahead and maintenance planning 8 weeks ahead. The final planning is fixed 3 weeks ahead.	[Reference in the Rules: same as for year-ahead (see earlier)]
<i>National</i>		
- Updates of outage planning of electricity generating	Continued coordination together with the outage planning of Elia	[Reference in the Rules: same

Technical Units	grid elements.	as for year-ahead (see earlier)]
<i>National</i>		
- Must-Run & (partial) May-Not-Run schedule requests possible	Possible alternative solution to modifications to the outage planning of Elia grid elements.	The Technical Units are those subject to the Terms and Conditions for the Scheduling Agent as described in Articles 1.1 and 5(ii) of the Rules . Specific rules are described in Articles 4.3, 7 and 8 of the Rules .
<i>National</i>		
- Calculations in week - 4 (load flow, security analysis)	Calculations for 4 days with 4 scenarios	
Week-ahead		
<i>International</i>		
- Outage Planning Coordination (OPC) of cross-border relevant assets	Thorough week-in-advance assessment and final validation of all the planned outages among TSO's and RSC's. RSCs will execute contingency analysis calculations to ensure the compatibility of the outage plans. In case of security constraint detected, RSCs will look for Remedial Actions to solve the constraint (eventually in consultation with the concerned TSO(s)). If no Remedial Action can be found (except outage cancellation), an outage planning incompatibility is reported and TSOs shall coordinate to resolve or acknowledge this incompatibility.	[Reference in the Rules: same as for year-ahead (see earlier)]
<i>National</i>		
- Updates of outage planning of electricity generating Technical Units	Continued coordination together with the outage planning of Elia grid elements.	[Reference in the Rules: same as for year-ahead (see earlier)]
<i>National</i>		
- Must-Run & (partial) May-Not-Run schedule requests possible	Possible alternative solution to modifications to the outage planning of Elia grid elements.	[Reference in the Rules: same as for 12 to 4 weeks ahead (see earlier)]
<i>National</i>		
- Calculations (load flow, security analysis)	Calculations for 7 days of week W with 2 scenarios	
Day - 2		
<i>International</i>		
- Two days ahead congestion forecast process (D2CF) coordinated at CCR level (Coreso)	Elia produces 24 hour network models (individual grid models) for day D based on best estimates (of net exchanges, planned grid outages, thermal limits of grid elements including dynamic line rating, load	CCR methodologies following the CACM ⇒ Separate regulatory track ⇒ Referred to in Whereas 20 of the Rules

forecasts, renewable generation, outages and if available other information of electricity generating Technical Units) and shares these with Coreso (who merge it to common grid model of all TSO's in CCR)

Day-ahead (in chronological order)

<i>International</i>		
- Capacity calculation at CCR level	Day-ahead capacity calculation on Nemo and within CWE (in anticipation of CORE methodology)	CCR methodologies following the CACM ⇒ Separate regulatory track ⇒ Referred to in Whereas 19 of the Rules
<i>National</i>		
- Reception of Daily Schedules & congestion bids of Technical Units from Scheduling Agents	In line with the Terms and Conditions for the Scheduling Agent (e.g., with respect to the timing of providing the information)	The reception of information in accordance with Terms and Conditions for the Scheduling Agent is referred to in Whereas 15 of the Rules.
<i>National</i>		
- Security analysis - Validation of Conditional Outages	Elia produces 24 hour network models (individual grid model IGM) for day D based on Daily Schedules, cross-border nomination, and best estimates (of load, renewable generation, and thermal limits of grid elements including dynamic line rating). Based on the results decisions are taken or prepared on Conditional Outages and Remedial Actions.	Analysis in accordance ENTSO-e methodologies following the SOGL and CACM ⇒ Separate regulatory track ⇒ Referred to in Whereas 23 of the Rules
<i>National</i>		
- Activation of Preventive Remedial Actions - Planning of Curative Remedial Actions	Depending on the results of the Security analysis Remedial Actions are prepared and/or activated.	Specific rules are described in Articles 11 of the Rules.
<i>National</i>		
- First determination of Red Zones		Specific rules are described in Articles 17 of the Rules.
<i>International</i>		
- DACF coordinated at CCR level (Coreso) - Coordinated security analysis	Elia shares the IGM with Coreso (merge to common grid model CGM). Coordinated & National Security Analysis in parallel: IGM & CGM iterations until no more contingencies on continental European Grid (including validation of conditional outages, activation of coordinated Preventive Remedial Actions and planning of Curative Remedial Actions).	ENTSO-e methodologies following the SOGL and CACM ⇒ Separate regulatory track ⇒ Referred to in Whereas 23 of the Rules

<i>International</i>		
- Cross-border redispatching and countertrading		Specific rules are described in Articles 13 of the Rules , in anticipation of CCR level methodologies following the CACM ⇒ Separate regulatory track ⇒ Referred to in Whereas 8 of the Rules

Intraday

<i>International</i>		
- Capacity calculation at CCR level	Intraday capacity calculation on Nemo and within CWE (in anticipation of CORE methodology)	[Reference in the Rules: same as for day-ahead (see earlier)]

<i>International</i>		
- IDCF coordinated at CCR level (Coreso)	At 3:00 day D + ad hoc if needed	[Reference in the Rules: same as for day-ahead (see earlier)]
- Coordinated security analysis		

<i>National</i>		
- Possible updates of Daily Schedules & congestion bids of Technical Units from Scheduling Agents	In line with the Terms and Conditions for the Scheduling Agent (e.g., with respect to the deadline for updates)	The reception of information in accordance with Terms and Conditions for the Scheduling Agent is referred to in Whereas 15 of the Rules . Interaction with Red Zones is described in Articles 17 of the Rules .

<i>National</i>		
- Security analysis	Hourly processes between 00:00 – 23:00	Analysis in accordance with SOGL as referred to in Whereas 23 of the Rules
- Validation of Conditional Outages	⇒ Update of each remaining timestamp of IGM for day D	

<i>National</i>		
- Activation of Preventive Remedial Actions	Update of Preventive Remedial Actions, update of planning of Curative Remedial Actions	Specific rules are described in Article 11 of the Rules .
- Planning of Curative Remedial Actions		

<i>National</i>		
- Possible triggers for update of Red Zones		Specific rules are described in Articles 17 of the Rules .

<i>International</i>		
- Cross-border redispatching and countertrading		[Reference in the Rules: same as for day-ahead (see earlier)]

Close to real time / Balancing / Real time

National

- Security analysis
- Verification of efficiency of planned curative Remedial Actions + apply coordinated preventive RA

[Reference in the Rules: same as for day-ahead (see earlier)]

National

- Apply Red Zones filter on the activation of balancing energy bids

Specific rules in the Terms & Conditions of the Balancing Service Provider
 ⇒ Referred to in **Articles 17 of the Rules**

3.1 Security Analysis: the *Transitory Admissible Overload*

Article 11 of the Rules on the choice between activating Remedial Actions in a curative, preventive or restoring way refers to the ‘Transitory Admissible Overload.’

Figure 1 below shows the difference between no detection of overload and the detection of an overload, which either may be allowed for a limited period (temporary or transitory admissible overload) or which would not be allowed (inadmissible overload).

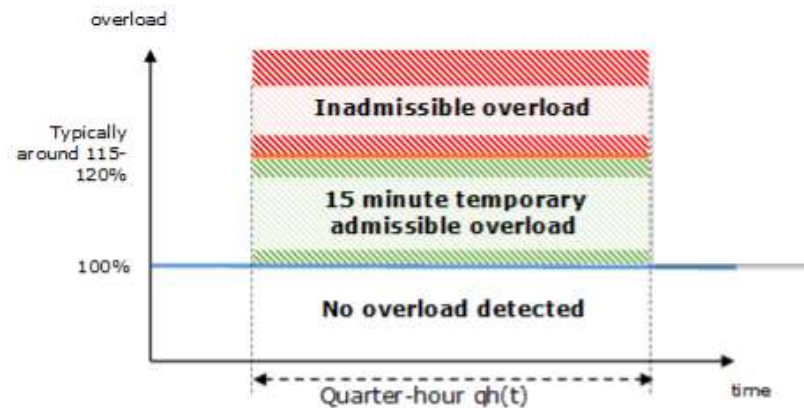


Figure 1. Example of Transitory Admissible Overload

As defined in the SOGL (article 3, definition 65) the Transitory Admissible Overload is admissible as long as the duration of the overload would remain limited. If the accepted duration of the Transitory Admissible Overload is exceeded the overload may cause physical damage to the concerned grid element. The threshold between Transitory Admissible Overload and the inadmissible overload is specified per grid element (typically around 115-120%). So is the accepted duration of the Transitory Admissible Overload (typically one quarter-hour).

Hence the Rules describe that if based on the security analysis the risk of a Transitory

Admissible Overload is detected, Remedial Actions may be taken curatively (meaning after the actual occurrence of the Contingency) if they would remain available and if their activation can be completed within the accepted duration of the Transitory Admissible Overload. Risks of inadmissible overload or risks of Transitory Admissible Overload without available Remedial Actions within the accepted duration require preventive activation of Remedial Actions as the risks for damage would be too large when waiting for the contingency to actually occur.