IMPACT ASSESSMENT FOR THE PLANNED SIMULTANEOUS OUTAGE OF TWO ELIA/RTE 380KV CROSS-BORDER LINES

Paris, Brussels, 28/02/2019

CONTEXT

In the CWE Consultative Group of 30/03/2016 it was agreed that TSOs would perform a Standard Procedure for Assessing the Impact of Changes (SPAIC) for grid outages with a duration exceeding one month.

A SPAIC analysis consists of a comparison of flow-based domains for a set of typical "reference" days, commonly predefined by CWE TSOs, in order to estimate the impact of a change in grid topology or flow-based parameters.

RTE & Elia plan grid reinforcement on the two 380 kV cross-border lines between Avelgem (Elia) and Avelin (RTE) - Mastaing (RTE) substations. More specifically, the pylons of the lines are being replaced and the foundations reinforced, in anticipation of an upgrade of the AMS conductors with high-performance HTLS conductors that will be performed starting from 2020 and is expected to be finalized in 2022.

The simultaneous outage of the interconnectors is currently planned to start on 04/03/2019 and is expected to end on 29/03/2019. The most recent information regarding the outage period can be retrieved from the ENTSO-E Transparency platform. Since the outage is only planned during winter and spring period, the impact was only assessed on a reduced number of typical days (8 out of a total of 12). Typical days representing the summer period were not considered of interest and excluded from the study[2].

This document provides some background to the results of the performed SPAIC analysis.

For this SPAIC analysis:

- The most up to date CWE grid topology was considered during the outage period when performing this SPAIC analysis.[3]
- The Long Term Values have been adapted to the considered outages on the cross-border lines.
- MinRAM of 20% was applied for all days in CWE[4].

The SPAIC is based on 2017 data and does not include simulation of market results, in accordance with the Market Message published by CWE TSOs on 28.02.2019 on the JAO TSO Message Board.

[1] In details the following typical days have been excluded: 24/05/2017, 10/06/2017, 03/07/2017, 01/08/2017.

[2] NemoLink was included in the results. No reduction was applied to the flow over NemoLink.

[3] MinRAM was applied via a negative FAV value as during the intermediate period (26/04/2018 – 01/10/2018) before the update of the Flow Based Common System.

Thermal limits and FRM of the overhead lines on the interconnexion between France and Belgium, expressed in MW:

Rating	Season	Elia/RTE	
		Start	End
Fmax1	Winter	16/11	15/03
Fmax2	Spring	16/03	15/05
Fmax3	Summer	16/05	15/09
Fmax2	Autumn	16/09	15/11

In the following table, the distinction is made between temporary admissible current limit (TATL: without any curative remedial actions) and the permanent admissible current limit (PATL: including curative remedial actions). The values corresponds to coordinated current limit (in A) between Elia and RTE.

Element Name	EIC	Fmax1 (A)		Fmax2 (A)		Fmax3 (A)		FRM (MW)	
								FR>BE	BE>FR
L 400kV N0 1 AVELGEM-AVELIN	10T-BE-FR-000031	2600	3284	2461	3109	2322	2933	160	334
L 400kV N0 1 AVELGEM-MASTAING	10T-BE-FR-10004U	2240	2829	2120	2678	2000	2526	98	230

1. Methodology

The following results are simulated and published:

1. The new pre-solved Flow-Based domains and CNECs, corresponding with the most probable grid topology (when writing this document) applied to all reference days.

The data of the simulation results is joined to this document.

2. Published datasets

The table below summarizes the standard outputs of a SPAIC analysis that were agreed upon, including a reference to the joined datasets indicating where the corresponding information can be found.

#	Expected output	Description	Dataset
1	Description change and features of the typical days	A qualitative description of the foreseen change, period and expected high-level impact resulting from this A description of the main quantitative features of the 8 typical days	• Foreseen change: Cover note • Description of the typical days: Dataset 5
2A	Capacity calculation indicators Dataset *historical benchmark* • 16 PTDF matrixes + RAM for each typical day and for all fixed labels • Min/max Net positions • Volume	This is the dataset that is used as a reference for the change that is subject of the change	• PTDF matrices + RAM: Dataset 1 – Sheet "Historical Benchmark 2A" • Min/Max NP: Dataset 2 – Sheet "Historical Benchmark 2A" • Volume: Dataset 3
2B	Capacity calculation indicators Dataset *updated historical benchmark* • 16 PTDF matrixes + RAM for each typical day and for all fixed labels • Min/max Net positions	This is the dataset that is updated, including all methodological changes that are known at the time of the study	• PTDF matrices + RAM: Dataset 1 – Sheet "Updated Historical Benchmark 2B" • Min/Max NP: Dataset 2 – Sheet "Updated Historical Benchmark 2B" • Volume: Dataset 3

	• Volume		
2C	Capacity calculation indicators Dataset *<u>including change</u>* • 16 PTDF matrixes + RAM for each typical day and for all fixed labels • Min/max Net positions • Volume	This is the dataset that includes the change that is subject of the impact assessment	• PTDF matrices + RAM: Dataset 1 – Sheet “SPAIC 2C” • Min/Max NP: Dataset 2 – Sheet “SPAIC 2C” • Volume: Dataset 3