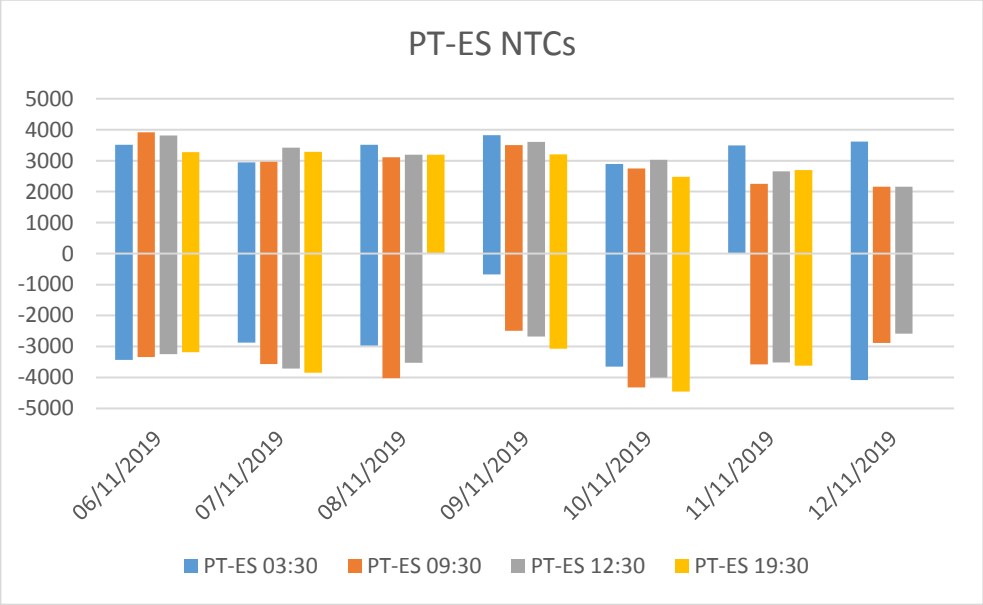
SWE Capacity Calculation report for Stakeholders

The elements in this report are based on ongoing experimentation with continuous tool improvement. The values/limiting elements can still evolve a bit until Go-Live.

This document reports results of the external parallel run from the 6/11/2019 to the 12/11/2019.

PT-ES NTCs

	06/11/2019		07/11/2019		08/11/2019		09/11/2019		10/11/2019		11/11/2019		12/11/2019	
	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly
ES->PT														
03,30	3513	2900	2948	2900	3509	2900	3821	3000	2889	3000	3497	3000	3616	3000
09,30	3915	3000	2970	3000	3105	3000	3506	3200	2752	3000	2250	3200	2160	2200
12,30	3814	3000	3420	3000	3195	3000	3602	3200	3029	3000	2655	3200	2160	2200
19,30	3279	3000	3285	3000	3195	3000	3205	3200	2475	3200	2700	3200	N/A	2200
PT->ES														
03,30	3434	3500	2880	3500	2970	3500	678	3800	3645	3800	N/A	3800	4080	3800
09,30	3344	4100	3569	4100	4020	4100	2496	4000	4320	3800	3578	4000	2882	2900
12,30	3244	4100	3708	4100	3530	4100	2681	4000	4005	3800	3513	4000	2588	2900
19,30	3184	4100	3849	4100	N/A	4100	3068	4000	4456	4000	3623	4000	N/A	2900



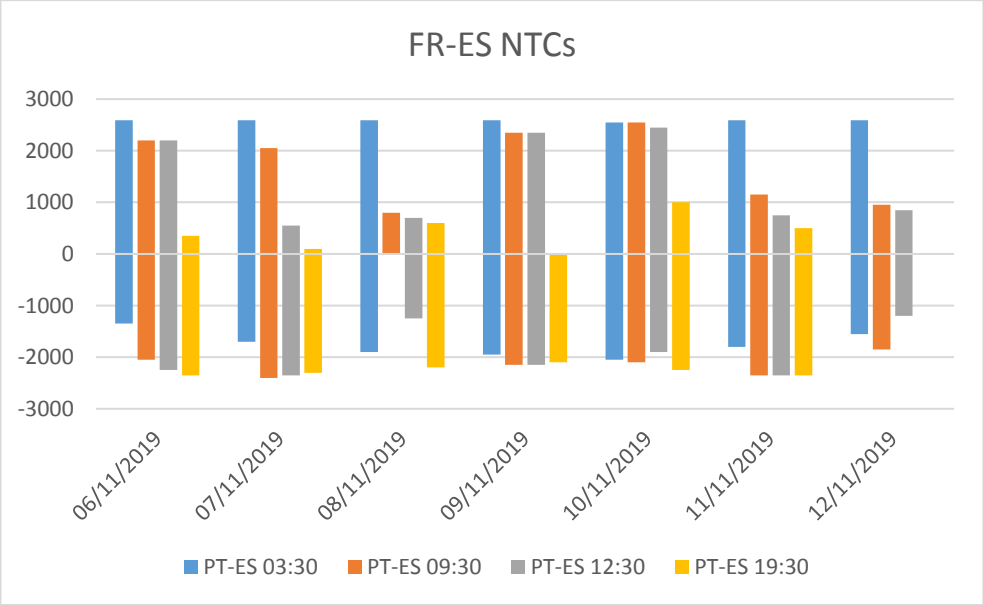
Comments:

Four computations failed for the PT-ES border over this seventeenth week of External parallel run with generally good results. Please note that not all the hours have been validated by TSOs at this moment.

Please keep in mind that today only one voltage angle is monitored during the computation. Multiple voltage angle monitoring should be tackled before Go-Live.

FR-ES NTCs

	06/11/2019		07/11/2019		08/11/2019		09/11/2019		10/11/2019		11/11/2019		12/11/2019	
	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly
ES->FR														
03,30	2590	2200	2590	2200	2590	2200	2590	2400	2544	2400	2590	2400	2590	2400
09,30	2200	1800	2050	1800	800	1800	2350	2000	2544	2400	1150	2250	950	2000
12,30	2200	1800	550	1800	700	1800	2350	2000	2450	2400	750	2250	850	2000
19,30	350	1800	100	1800	600	1800	N/A	2000	1000	2000	500	2000	N/A	2000
FR->ES														
03,30	1350	2400	1700	2400	1900	2400	1950	2300	2050	2300	1800	2300	1550	2300
09,30	2050	2300	2400	2300	N/A	2300	2150	2300	2100	2300	2350	2300	1850	2300
12,30	2250	2300	2350	2300	1250	2300	2150	2300	1900	2300	2350	2300	1200	2300
19,30	2350	2300	2300	2300	2200	2300	2100	2300	2250	2300	2350	2300	N/A	2300



Comments:

Four computations failed for the FR-ES over this seventeenth week of External parallel run with generally good results. For ES->FR direction and peak scenarios, some values are lower than expected in comparison with weekly values and they are under investigation. Please note that not all the hours have been validated by TSOs at this moment.

For the moment, the voltage is monitored in the computation but cannot limit the capacity. During External parallel run voltage will be monitored through the local validation of results by TSOs even if it is a common task.

Limiting elements PT-ES

Please find below the 5 limiting elements appearing more often over the period for PT->ES direction:

Critical Network Elements and Contingencies PT->ES	Location CNE	Frequency
#1 Angle difference	**PT**	**28.6%**
N-2 Interconnector 400 kV (ES-PT)		28.6%
#2 L-400 kV	**PT**	**25.0%**
N-2 Interconnector 400 kV (ES-PT)		25.0%
#3 L-400 kV Interconnector	**ES-PT**	**25.0%**
N-2 Interconnector 400 kV (ES-PT)		25.0%
#4 Computation Failed		**10.7%**
Computation Failed		10.7%
#5 GLSK limitation	**PT**	**10.7%**
N state		10.7%

Find below the 2 limiting elements appearing over the period for ES->PT direction:

Critical Network Elements and Contingencies ES->PT	Location CNE	Frequency
#1 Angle difference	**PT**	**96.4%**
N-2 Interconnector 400 kV (ES-PT)		96.4%
#2 Computation Failed		**3.6%**
Computation Failed		3.6%

Limiting elements FR-ES

Find below the 5 limiting elements appearing more often over the period for FR->ES direction:

Critical Network Elements and Contingencies FR->ES		Location CNE	Frequency
#1 Loadflow divergence			**25.0%**
	N-1 Interconnector 400 kV (ES-FR)		14.3%
	N-1 Nuclear Power Plant (ES)		7.1%
	N-1 400 kV (ES)		3.6%
#2 L-220 kV		**FR**	**25.0%**
	N state		10.7%
	N-1 Nuclear Power Plant (ES)		10.7%
	N-1 Interconnector 400 kV (ES-FR)		3.6%
#3 L-220 kV Interconnector		**ES-FR**	**17.9%**
	N-1 Interconnector 400 kV (ES-FR)		14.3%
	N-1 400 kV (FR)		3.6%
#4 AT 400/220 kV		**FR**	**14.3%**
	N-1 AT 400/220 kV (FR)		14.3%
#5 Computation Failed			**7.1%**
	Computation Failed		7.1%

Find below the 5 limiting elements appearing more often over the period for ES->FR direction:

Critical Network Elements and Contingencies ES->FR		Location CNE	Frequency
#1 L-220 kV Interconnector		**ES-FR**	**42.9%**
	N-1 220 kV (FR)		21.4%
	N-1 Interconnector 400 kV (ES-FR)		14.3%
	N-1 400 kV (FR)		7.1%
#2 L-220 kV Interconnector		**ES-FR**	**32.1%**
	N-1 220 kV (FR)		17.9%
	N-1 Interconnector 400 kV (ES-FR)		10.7%
	N-2 400 kV (ES)		3.6%
#3 L-220 kV		**FR**	**10.7%**
	N state		10.7%
#4 Computation Failed			**7.1%**
	Computation Failed		7.1%
#5 L-220 kV		**ES**	**3.6%**
	N-2 400 kV (ES)		3.6%
#5 L-220 kV		**ES**	**3.6%**
	N state		3.6%