

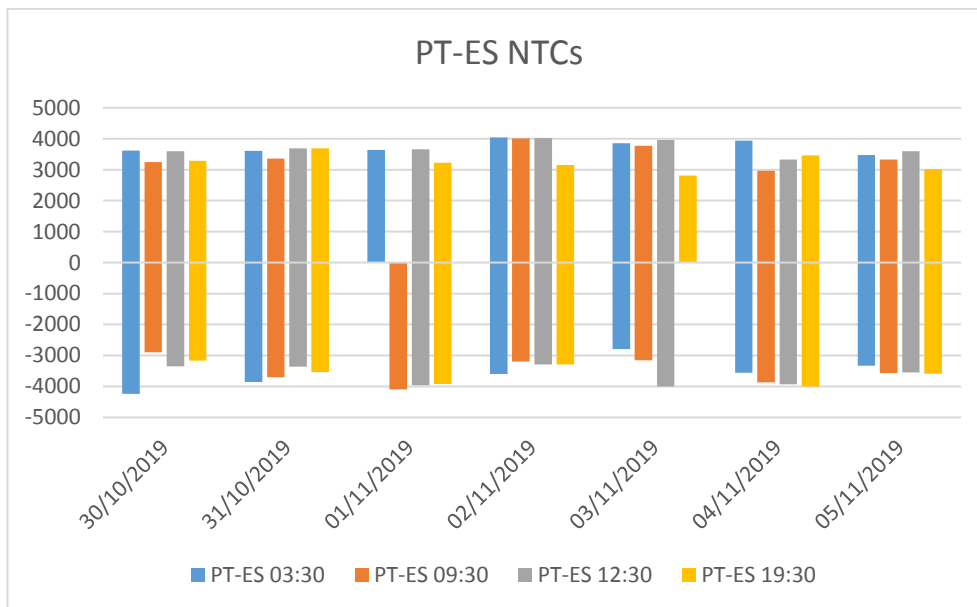
SWE Capacity Calculation report for Stakeholders

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 30/10/2019 to the 5/11/2019.

PT-ES NTCs

	30/10		31/10		01/11		02/11		03/11		04/11		05/11	
	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	3621	3300	3611	3300	3641	3300	4040	2900	3849	2900	3937	2900	3467	2900
09,30	3240	3800	3357	3800	N/A	3300	4012	3000	3773	2900	2970	3000	3330	3000
12,30	3600	3800	3690	3800	3661	3300	4015	3000	3960	2900	3330	3000	3600	3000
19,30	3285	3800	3690	3800	3221	3800	3150	2800	2813	3000	3465	3000	3015	3000
PT->ES														
03,30	4241	3800	3858	3800	N/A	3800	3600	3500	2790	3500	3555	3500	3330	3500
09,30	2894	3200	3697	3200	4095	3800	3195	4100	3150	3500	3870	4100	3566	4100
12,30	3346	3200	3364	3200	3960	3800	3285	4100	4005	3500	3926	4100	3548	4100
19,30	3168	3200	3540	3200	3915	3200	3285	4100	N/A	4100	4002	4100	3589	4100



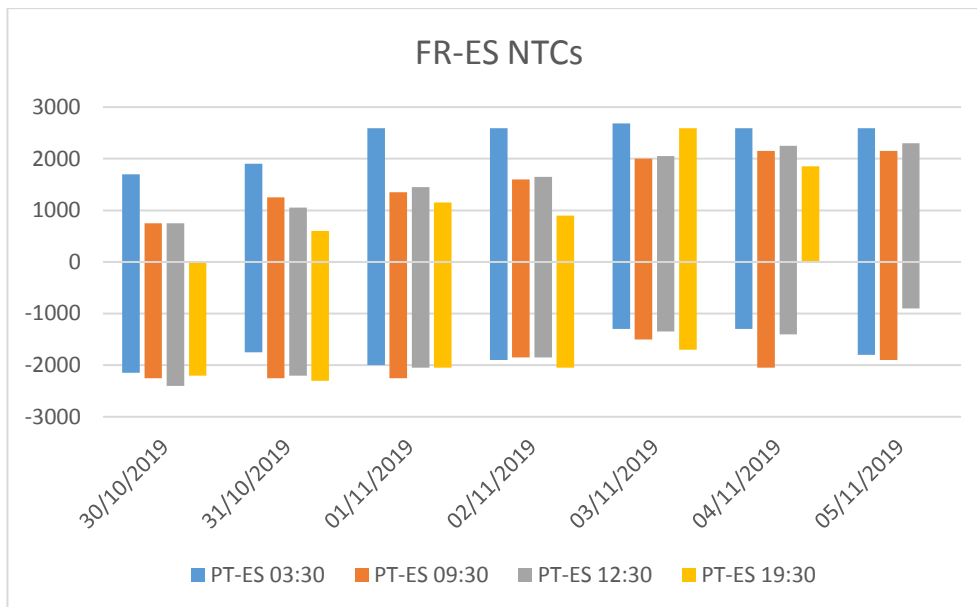
Comments:

Three computations failed for the PT-ES border over this sixteenth 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

	30/10		31/10		01/11		02/11		03/11		04/11		05/11	
	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	1700	2500	1900	2500	2590	2600	2590	2400	2683	2400	2590	2400	2590	2200
09,30	750	2350	1250	2350	1350	2600	1600	2000	2000	2400	2150	1800	2150	1800
12,30	750	2350	1050	2350	1450	2600	1650	2000	2050	2400	2250	1800	2300	1800
19,30	N/A	2350	600	2350	1150	2500	900	2000	2590	2000	1850	1800	N/A	1800
FR->ES														
03,30	2150	2050	1750	2050	2000	2300	1900	2400	1300	2400	1300	2400	1800	2400
09,30	2250	2200	2250	2200	2250	2300	1850	2300	1500	2400	2050	2300	1900	2300
12,30	2400	2200	2200	2200	2050	2300	1850	2300	1350	2400	1400	2300	900	2300
19,30	2200	2200	2300	2200	2050	2300	2050	2300	1700	2300	N/A	2300	N/A	2300



Comments:

Four computations failed for the FR-ES over this sixteenth week of External parallel run with generally good results. 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	32.1%
	N-2 Interconnector 400 kV (ES-PT)		32.1%
#2 L-400 kV Interconnector		ES-PT	32.1%
	N-2 Interconnector 400 kV (ES-PT)		32.1%
#3 GLSK limitation		PT	10.7%
	N state		10.7%
#4 L-220 kV		ES	10.7%
	N-2 (ES)		10.7%
#5 L-400 kV		PT	7.1%
	N-2 Interconnector 400 kV (ES-PT)		7.1%
#5 Computation Failed			7.1%
	Computation Failed		7.1%

Find below the only element 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 ES->FR		Location CNE	Frequency
#1 L-220 kV		FR	25.0%
	N state		25.0%
#2 L-220 kV Interconnector		ES-FR	21.4%
	N-1 220 kV (FR)		10.7%
	N-1 Nuclear Power Plant (ES)		3.6%
	N-1 Interconnector kV (ES-FR)		3.6%
	N-1 400 kV (ES)		3.6%
#3 Loadflow divergence			17.9%
	N-1 Interconnector 400 kV (ES-FR)		10.7%
	N-1 Nuclear Power Plant (ES)		7.1%
#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 FR->ES		Location CNE	Frequency
#1 L-220 kV Interconnector		ES-FR	35.7%
	N-1 220 kV (FR)		25.0%
	N state		7.1%
	N-1 Interconnector 400 kV (ES-FR)		3.6%
#2 L-220 kV		FR	32.1%
	N state		28.6%
	N-1 Interconnector 400 kV (ES-FR)		3.6%
#3 L-220 kV Interconnector		ES-FR	21.4%
	N-1 400 kV (FR)		10.7%
	N-1 Interconnector 400 kV (ES-FR)		10.7%
#4 Computation Failed			7.1%
	Computation Failed		7.1%
#5 L-220 kV		ES	3.6%
	N state		3.6%