

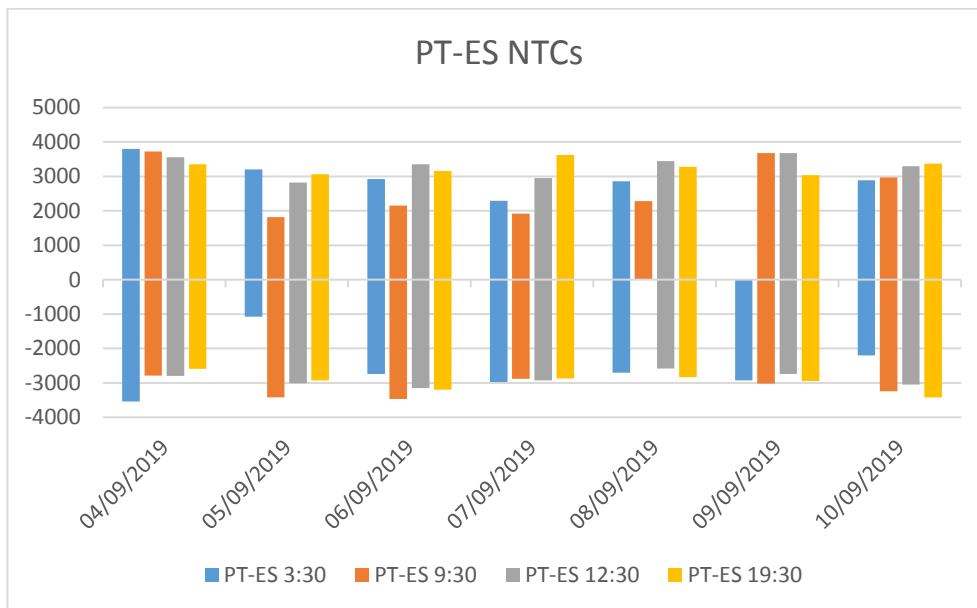
SWE Capacity Calculation report for Stakeholders

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 4/09/2019 to the 10/09/2019.

PT-ES NTCs

	NTC PT-ES															
	3:30				9:30				12:30				19:30			
	ES>PT		PT>ES		ES>PT		PT>ES		ES>PT		PT>ES		ES>PT		PT>ES	
	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly
10/09/2019	2883	3300	2205	3100	2969	2300	3240	3100	3295	2300	3051	3100	3375	2300	3424	3100
09/09/2019	N/A	3300	2926	3100	3676	2300	3018	3100	3677	2300	2745	3100	3038	2300	2948	3100
08/09/2019	2858	3300	2700	3100	2279	3300	N/A	3100	3443	3300	2580	3100	3274	2300	2833	3100
07/09/2019	2292	3300	2970	3100	1922	2300	2880	3100	2955	2300	2925	3100	3623	2300	2875	3100
06/09/2019	2926	3000	2745	2900	2150	2400	3465	2800	3351	2400	3150	2800	3155	2400	3199	2800
05/09/2019	3204	3000	1080	2900	1820	2400	3420	2800	2821	2400	3015	2800	3067	2400	2925	2800
04/09/2019	3802	3000	3542	3000	3727	2400	2785	2800	3555	2400	2795	2800	3353	2400	2589	2800



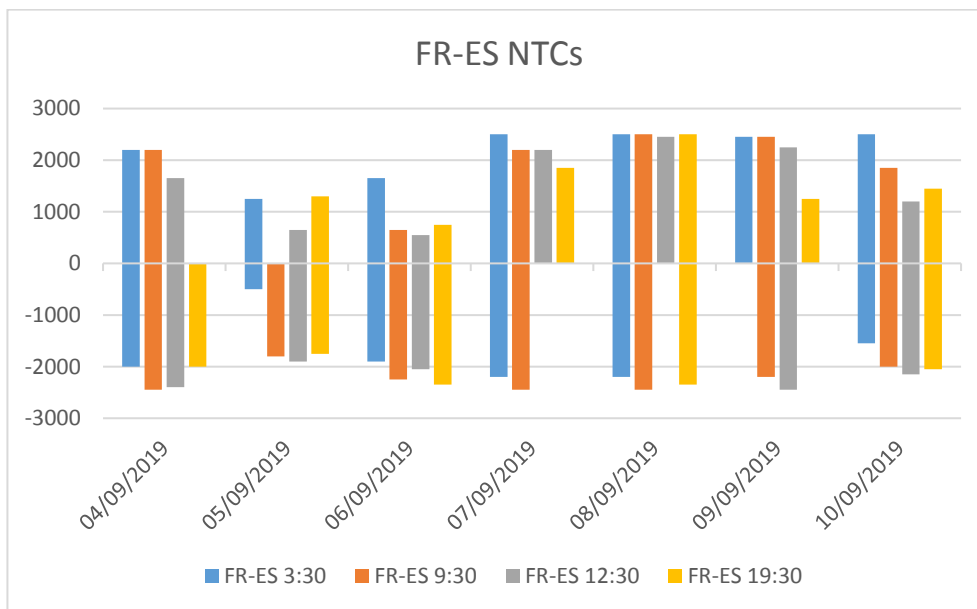
Comments:

Only two computations failed for the PT-ES border over this eighth week of External parallel run with generally good results. TSOs are still in the process of improving and adjusting their inputs, sometimes leading to excessive computation time and lost timestamps. Replacement strategy will be presented during the next Stakeholders workshop before Go-Live. 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

	NTC FR-ES															
	3:30				9:30				12:30				19:30			
	ES>FR		FR>ES		ES>FR		FR>ES		ES>FR		FR>ES		ES>FR		FR>ES	
	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly	D-2	Weekly
10/09/2019	2500	2500	1550	2350	1850	1500	2000	2400	1200	1500	2150	2400	1450	1500	2050	2400
09/09/2019	2450	2500	N/A	2350	2450	1500	2200	2400	2250	1500	2450	2400	1250	1500	N/A	2400
08/09/2019	2500	2500	2200	2350	2500	2500	2450	2350	2450	2500	N/A	2350	2500	1500	2350	2400
07/09/2019	2500	2500	2200	2350	2200	1500	2450	2400	2200	1500	N/A	2400	1850	1500	N/A	2400
06/09/2019	1650	2400	1900	2400	650	1650	2250	2400	550	1650	2050	2400	750	2200	2350	2400
05/09/2019	1250	2400	500	2400	N/A	1650	1800	2400	650	1650	1900	2400	1300	1650	1750	2400
04/09/2019	2200	2400	2000	2400	2200	1650	2450	2400	1650	1650	2400	2400	N/A	1650	2000	2400



Comments:

Seven computations failed for the FR-ES border over this eighth week of External parallel run with generally good results. TSOs are still in the process of improving and adjusting their inputs, sometimes leading to excessive computation time and lost timestamps. Replacement strategy will be presented during the next Stakeholders workshop before Go-Live. 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	L-400 kV Interconnector	ES-PT	60.7%
	N-2 Interconnector 400 kV (ES-PT)		60.7%
# 2	Angle difference	PT	14.3%
	N-2 Interconnector 400 kV (ES-PT)		14.3%
# 3	L-400 kV	PT	10.7%
	N-2 Interconnector 400 kV (ES-PT)		10.7%
# 4	L-220 kV	ES-PT	7.1%
	N-2 400 kV (ES)		7.1%
# 5	Computation Failed		3.6%
	Computation Failed		3.6%
# 5	L-220 kV Interconnector	ES-PT	3.6%
	N-1 Interconnector 400 kV (ES-PT)		3.6%

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

Critical Network Elements and Contingencies ES->PT		Location CNE	Frequency
# 1	GLSK limitation	PT	42.9%
	N state		42.9%
# 2	Angle difference	PT	32.1%
	N-2 Interconnector 400 kV (ES-PT)		32.1%
# 3	L-400 kV Interconnector	ES-PT	14.3%
	N-2 Interconnector 400 kV (ES-PT)		14.3%
# 4	Computation Failed		3.6%
	Computation Failed		3.6%
# 4	Partial failure¹		3.6%
	Partial failure		3.6%
# 4	L-400 kV	PT	3.6%
	N-1 Interconnector 400 kV (ES-PT)		3.6%

¹ Scenarios with TTC value calculated without identifying the associated CNEC (partial failure).

Limiting elements FR-ES

Please 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	L-400 kV	ES	46.4%
	N-1 400 kV (ES)		42.9%
	N-1 Nuclear Power Plant (ES)		3.6%
# 2	L-220 kV Interconnector	ES-FR	21.4%
	N-1 Nuclear Power Plant (ES)		10.7%
	N-1 Interconnector 400 kV (ES-FR)		7.1%
	N-1 400 kV (ES)		3.6%
# 3	Computation Failed		17.9%
	Computation Failed		17.9%
# 4	L-220 kV Interconnector	ES-FR	10.7%
	N-1 Interconnector 400 kV (ES-FR)		7.1%
	N-1 Nuclear Power Plant (ES)		3.6%
# 5	L-400 kV	ES	3.6%
	N-1 400 kV (ES)		3.6%

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	28.6%
	N-1 Interconnector 400 kV (ES-FR)		10.7%
	N-2 400 kV (ES)		7.1%
	N-1 400 kV (ES)		3.6%
	N-1 400 kV (ES)		3.6%
	N-2 400 kV (ES)		3.6%
# 2	L-220 kV Interconnector	ES-FR	21.4%
	N-1 Interconnector 400 kV (ES-FR)		10.7%
	N-2 400 kV (ES)		7.1%
	N-1 400 kV (ES)		3.6%
# 3	L-220 kV	ES	14.3%
	N-2 400 kV (ES)		10.7%
	N-1 400 kV (ES)		3.6%
# 4	L-220 kV	ES	10.7%
	N-1 400 kV (ES)		10.7%
# 5	L-400 kV	ES	7.1%
	N-1 400 kV (ES)		7.1%
# 5	Computation Failed		7.1%
	Computation Failed		7.1%