

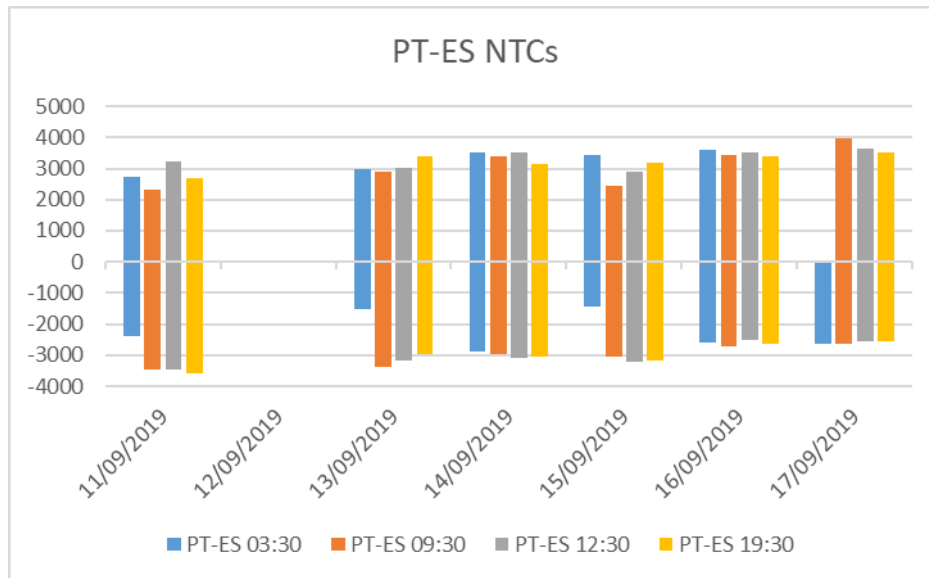
# SWE Capacity Calculation report for Stakeholders

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 11/09/2019 to the 17/09/2019.

## 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
17/09/2019	NA	2900	2624	3100	3960	2300	2639	3100	3645	2300	2542	3100	3510	2300	2561	3100
16/09/2019	3612	2900	2583	3100	3454	2300	2712	3100	3515	2300	2506	3100	3377	2300	2633	3100
15/09/2019	3431	2900	1454	3100	2445	2900	3067	3100	2877	2900	3214	3100	3182	2300	3157	3100
14/09/2019	3517	2900	2866	3100	3395	2300	2959	3100	3532	2300	3082	3100	3164	2300	3035	3100
13/09/2019	2992	3300	1531	3100	2894	2300	3371	3100	3009	2300	3183	3100	3390	2300	2960	3100
12/09/2019	NA	3300	NA	3100	NA	2300	NA	3100	NA	2300	NA	3100	NA	2300	NA	3100
11/09/2019	2740	3300	2385	3100	2313	2300	3479	3100	3218	2300	3445	3100	2680	2300	3600	3100



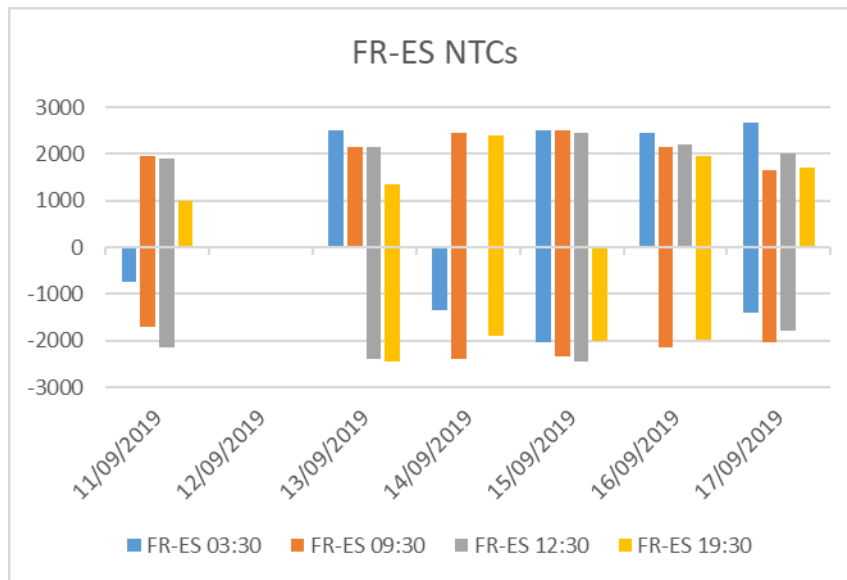
### Comments:

Due to IT problems, it was not possible to present results for 12<sup>th</sup> September. This failure is under investigation. Apart of that, only one computation failed for the PT-ES border over this ninth 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

	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
17/09/2019	2683	2500	1400	1300	1650	2450	2050	1500	2000	2450	1800	1500	1700	2450	NA	1500
16/09/2019	2450	2400	NA	2400	2150	2000	2150	2350	2200	2000	NA	2350	1950	2300	1978	1800
15/09/2019	2500	2400	2050	2400	2500	2400	2350	2400	2450	2400	2450	2400	NA	2000	2000	2350
14/09/2019	NA	2400	1350	2400	2450	2000	2400	2350	NA	2000	NA	2350	2400	2000	1900	2350
13/09/2019	2500	2500	NA	2350	2150	1500	NA	2400	2150	1500	2400	2400	1350	1500	2450	2400
12/09/2019	NA	2500	NA	2350	NA	1500	NA	2400	NA	1500	NA	2400	NA	1500	NA	2400
11/09/2019	NA	2500	750	2350	1950	1500	1700	2400	1900	1500	2150	2400	1000	1500	NA	2400



### Comments:

Due to IT problems, it was not possible to present results for 12<sup>th</sup> September. This failure is under investigation. Apart of that, eleven computations failed for the ES-FR border over this ninth week of external parallel run.

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	<b>L-400 kV Interconnector</b>		<b>ES-PT</b>	<b>57,1%</b>
		N-2 Interconnector 400 kV		57,1%
# 2	<b>Computation Failed</b>			<b>14,3%</b>
		Computation Failed		14,3%
# 3	<b>L-400 kV</b>		<b>PT</b>	<b>10,7%</b>
		N-2 Interconnector 400 kV		10,7%
# 4	<b>Angle difference</b>		<b>PT</b>	<b>10,7%</b>
		N-2 Interconnector 400 kV		10,7%
# 5	<b>L-220 kV</b>		<b>ES</b>	<b>3,6%</b>
		N-2 400 kV		3,6%
# 5	<b>Non convergence</b>		<b>PT</b>	<b>3,6%</b>
		N-1 Interconnector 400 kV		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	<b>Angle difference</b>		<b>PT</b>	<b>42,9%</b>
		N-2 Interconnector 400 kV		42,9%
# 2	<b>Computation Failed</b>			<b>17,9%</b>
		Computation Failed		17,9%
# 3	<b>L-400 kV Interconnector</b>		<b>ES-PT</b>	<b>17,9%</b>
		N-2 Interconnector 400 kV		17,9%
# 4	<b>GLSK limitation</b>		<b>PT</b>	<b>14,3%</b>
		N state		14,3%
# 5	<b>L-400 kV</b>		<b>PT</b>	<b>7,1%</b>
		N-2 Interconnector 400 kV		7,1%

### 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	<b>Computation Failed</b>			<b>39,3%</b>
		Computation Failed		39,3%
# 2	<b>L-400 kV</b>		<b>ES</b>	<b>21,4%</b>
		N-1 400 kV		21,4%
# 3	<b>L-400 kV</b>		<b>FR</b>	<b>10,7%</b>
		N state		10,7%
# 4	<b>L-220 kV</b>		<b>ES</b>	<b>10,7%</b>
		N-1 400 kV		10,7%
# 5	<b>L-220 kV Interconnector</b>		<b>ES-FR</b>	<b>7,1%</b>
		N-1 400 kV		3,6%
		N state		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	<b>L-220 kV Interconnector</b>		<b>ES-FR</b>	<b>32,1%</b>
		N-1 400 kV		21,4%
		N-2 400 kV		3,6%
		N state		3,6%
		N-1 400 kV		3,6%
# 2	<b>Computation Failed</b>			<b>28,6%</b>
		Computation Failed		28,6%
# 3	<b>L-220 kV</b>		<b>FR</b>	<b>14,3%</b>
		N state		14,3%
# 4	<b>L-400 kV</b>		<b>ES</b>	<b>7,1%</b>
		N-1 400 kV		7,1%
# 5	<b>L-220 kV</b>		<b>ES</b>	<b>3,6%</b>
		N-2 400 kV		3,6%
# 5	<b>L-220 kV Interconnector</b>		<b>ES-FR</b>	<b>3,6%</b>
		N-1 400 kV		3,6%
# 5	<b>L-220 kV</b>		<b>ES</b>	<b>3,6%</b>
		N-1 400 kV		3,6%
# 5	<b>L-220 kV</b>		<b>ES</b>	<b>3,6%</b>
		N-1 400 kV		3,6%
# 5	<b>L-220 kV</b>		<b>ES</b>	<b>3,6%</b>
		N-1 220 kV		3,6%