

# SWE Capacity Calculation report for Stakeholders

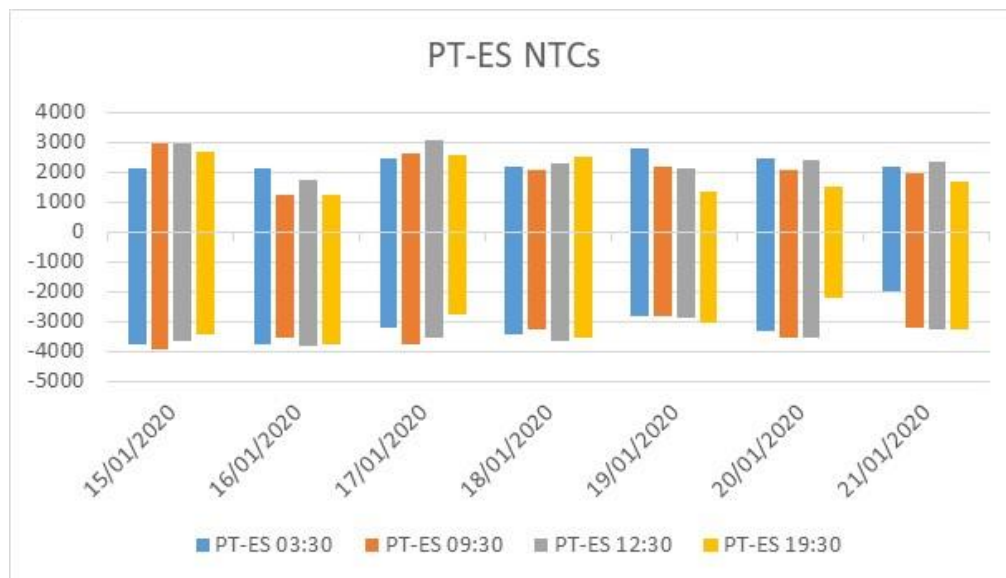
The elements in this report are based on ongoing experimentation with continuous tool improvement. The tables/limiting elements

This document reports results of the external parallel run from the 15/01/2020 to the 21/01/2020.

SWE TSOs inform that the conditions to start the go-live of the D-2 Capacity Calculation process are met. The first D-2 Capacity Calculation will be carried out according to the new methodology (approved by the SWE regulators in Nov/2018) on 27<sup>th</sup> of January, with the first application date on 29<sup>th</sup> of January.

## ES-PT NTCs

	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
21/01/2020	2205	2300	1980	3100	1980	2800	3195	3100	2340	2800	3240	3100	1665	2800	3285	3100
20/01/2020	2430	2300	3330	3100	2070	2800	3510	3100	2385	2800	3555	3100	1530	2800	2205	3100
19/01/2020	2790	2300	2835	3100	2205	2300	2835	3100	2115	2300	2880	3100	1350	2800	3015	3100
18/01/2020	2205	2300	3420	3100	2070	2800	3285	3100	2295	2800	3645	3100	2520	2800	3510	3100
17/01/2020	2430	2600	3195	2900	2610	2300	3735	3600	3060	2300	3555	3600	2565	2300	2745	3600
16/01/2020	2115	2600	3780	2900	1215	2300	3511	3600	1755	2300	3825	3600	1215	2300	3780	3600
15/01/2020	2115	2600	3780	2900	2970	2300	3915	3600	2970	2300	3645	3600	2700	2300	3420	3600



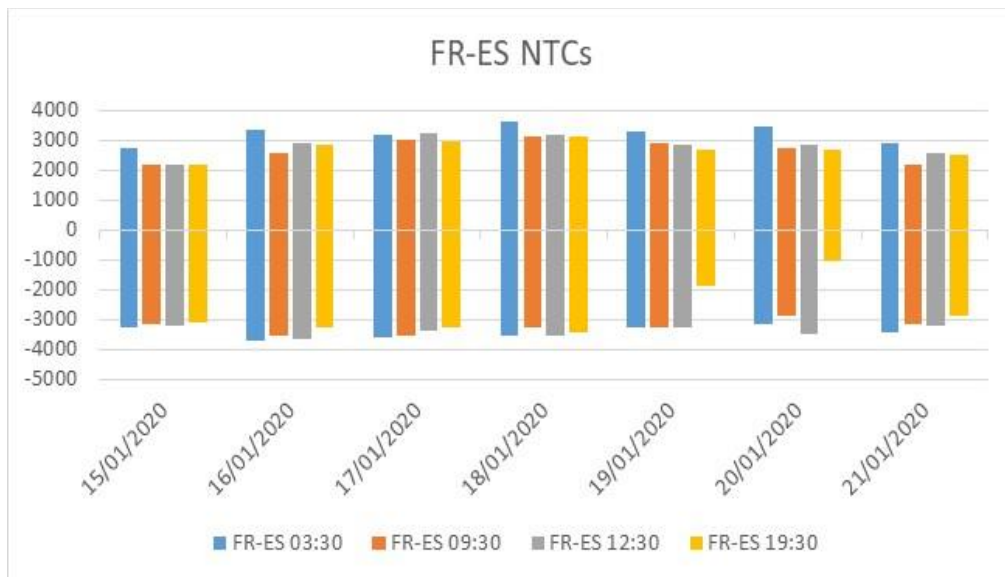
### Comments:

No computation failed for the PT-ES border over this twenty-seventh week of External parallel run with good results. Please note that not all the hours have been validated by TSOs at this moment

Please keep in mind from 12<sup>th</sup> January onwards multiple voltage angle started to be monitored and can limit the capacity.

## FR-ES NTCs

	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
21/01/2020	2914	3200	3423	3300	2150	2600	3145	3000	2590	2600	3191	3000	2500	2600	2868	3350
20/01/2020	3469	3200	3145	3300	2729	2600	2868	3350	2821	2600	3469	3350	2683	2600	1050	3350
19/01/2020	3284	3200	3284	3300	2914	3200	3284	3300	2821	3200	3238	3300	2683	2600	1850	3350
18/01/2020	3608	3200	3561	3300	3145	2600	3284	3350	3191	2600	3561	3350	3145	2600	3423	3350
17/01/2020	3191	3200	3608	3300	3006	2600	3561	3400	3238	2600	3376	3400	2960	2600	3238	3400
16/01/2020	3330	3200	3700	3300	2590	2600	3515	3400	2914	2600	3654	3400	2821	2600	3284	3400
15/01/2020	2729	3200	3284	3300	2150	2600	3145	3400	2200	2600	3191	3400	2150	2600	3099	3400



### Comments:

No computation failed for the FR-ES over this twenty-seventh week of External parallel run with good results.

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 6 limiting elements appearing over the period for PT->ES direction:

Critical Network Elements and Contingencies PT->ES		Location CNE	Frequency
<b># 1</b>	<b>L-400 kV Interconnector</b>	<b>ES-PT</b>	<b>60,71%</b>
	N-2 Interconnector 400 kV (ES-PT)		53,57%
	N-1 400 kV (ES)		7,14%
<b># 2</b>	<b>L-220 kV</b>	<b>PT</b>	<b>10,71%</b>
	N-1 Interconnector 400 kV (ES-PT)		10,71%
<b># 2</b>	<b>GLSK limitation</b>	<b>PT</b>	<b>10,71%</b>
	N state		10,71%
<b># 2</b>	<b>Angle difference</b>	<b>PT</b>	<b>10,71%</b>
	N-1 Interconnector 400 kV (ES-PT)		7,14%
	N-2 Interconnector 400 kV (ES-PT)		3,57%
<b># 3</b>	<b>Loadflow divergence</b>		<b>3,57%</b>
	N-2 400 kV (ES)		3,57%
<b># 3</b>	<b>L-400 kV</b>	<b>PT</b>	<b>3,57%</b>
	N-2 Interconnector 400 kV (ES-PT)		3,57%

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

Critical Network Elements and Contingencies ES->PT		Location CNE	Frequency
<b># 1</b>	<b>Angle difference</b>	<b>PT</b>	<b>89,29%</b>
	N-2 Interconnector 400 kV (ES-PT)		89,29%
<b># 2</b>	<b>GLSK limitation</b>	<b>PT</b>	<b>10,71%</b>
	N state		10,71%

## Limiting elements FR-ES

Find below the 6 limiting elements appearing over the period for FR->ES direction:

Critical Network Elements and Contingencies FR->ES	Location CNE	Frequency
<b># 1 L-400 kV</b>	<b>ES</b>	<b>25,00%</b>
N-1 400 kV (ES)		21,43%
N state		3,57%
<b># 1 L-400 kV</b>	<b>FR</b>	<b>25,00%</b>
N-1 Interconnector 400 kV (FR-ES)		14,29%
N state		10,71%
<b># 1 L-220 kV</b>	<b>FR</b>	<b>25,00%</b>
N-1 400 kV (FR)		21,43%
N-1 Interconnector 400 kV (FR-ES)		3,57%
<b># 2 L-400 kV Interconnector</b>	<b>FR-ES</b>	<b>17,86%</b>
N-1 Nuclear Power Plant (ES)		14,29%
N-1 Interconnector 400 kV (FR-ES)		3,57%
<b># 3 L-220 kV Interconnector</b>	<b>FR-ES</b>	<b>3,57%</b>
N-1 400 kV (FR)		3,57%
<b># 3 AT 400/220 kV</b>	<b>FR</b>	<b>3,57%</b>
N-1 400 kV (FR)		3,57%

Find below the 7 limiting elements appearing over the period for ES->FR direction:

Critical Network Elements and Contingencies ES ->FR	Location CNE	Frequency
<b># 1 L-220 kV Interconnector</b>	<b>FR-ES</b>	<b>50,00%</b>
N-1 Interconnector 400 kV (FR-ES)		50,00%
<b># 2 L-400 kV Interconnector</b>	<b>FR-ES</b>	<b>28,57%</b>
N state		28,57%
<b># 3 L-220 kV Interconnector</b>	<b>FR-ES</b>	<b>7,14%</b>
N-1 400 kV (ES)		3,57%
N-1 Interconnector 400 kV (FR-ES)		3,57%
<b># 4 L-220 kV</b>	<b>ES</b>	<b>3,57%</b>
N-2 400 kV (ES)		3,57%
<b># 4 L-220 kV</b>	<b>FR</b>	<b>3,57%</b>
N-1 Interconnector 400 kV (FR-ES)		3,57%
<b># 4 L-220 kV</b>	<b>FR</b>	<b>3,57%</b>
N-1 400 kV (FR)		3,57%
<b># 4 AT 400/220 kV</b>	<b>FR</b>	<b>3,57%</b>
N-1 400 kV (FR)		3,57%