



Impact of the new 2030 RES targets on the HV Power System Operation

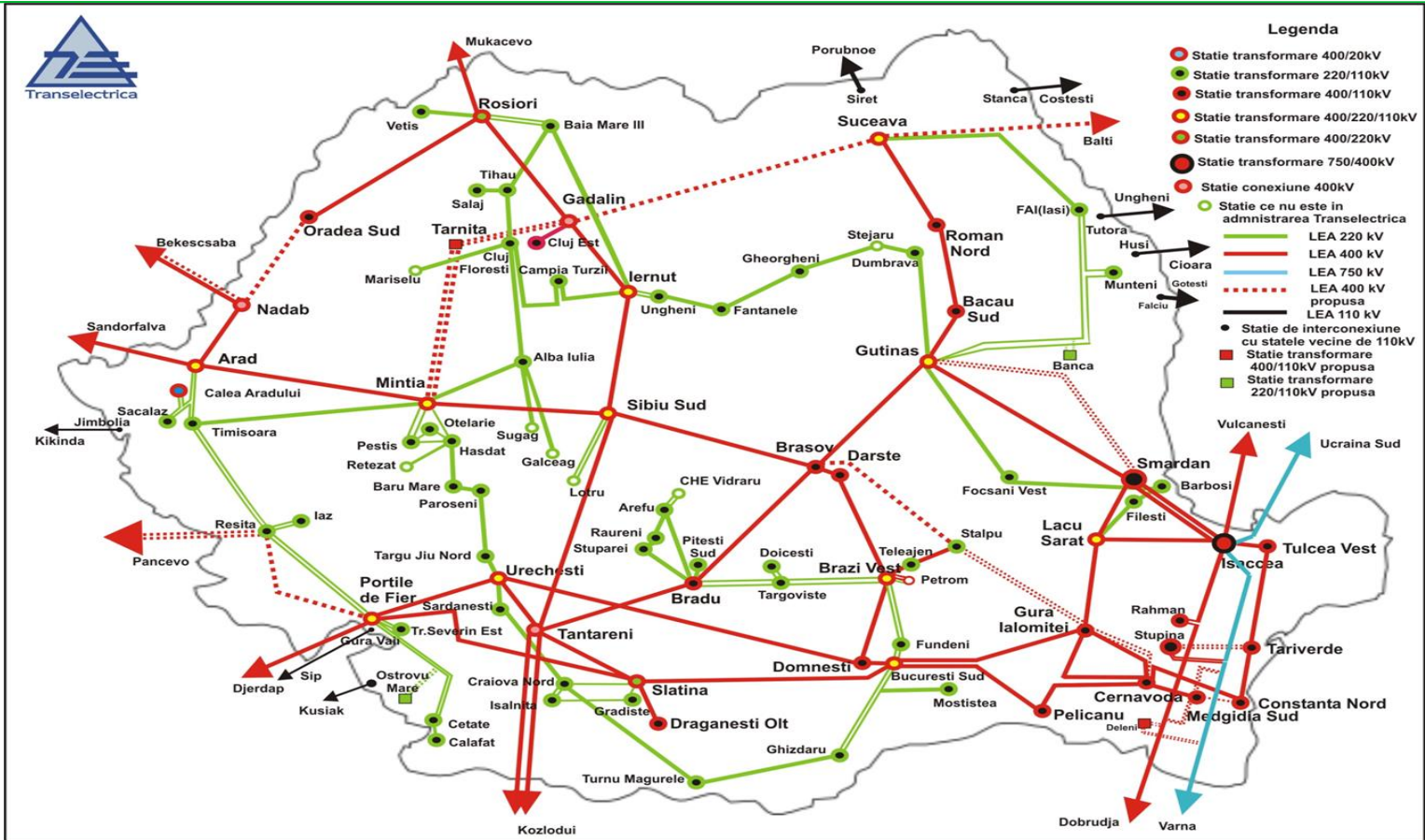
21st November 2018

Brussels, Belgium

dr. Dan Preotescu
Romanian Energy Center



CASE STUDY: ROMANIAN POWER SYSTEM





Distribution of Hourly RES generation: May 2017 - April 2018





CURRENT SITUATION: SIGNIFICANT PARAMETERS

EU target RES penetration [%]	20
Average RES penetration in RO PS in 2017/2018 [%]	15
Maximum RES generation percentage [%]	52
Number of hours with maximum RES generation percentage [hours/year]	2
The most often RES generation percentage [%]	11
Number of hours with 11% RES generation [hours/year]	404
Number of hours with more than 40% RES generation [hours/year]	166

Values are not including the large hydro generation.



SIGNIFICANT PARAMETERS FOR RO PS IN 2030

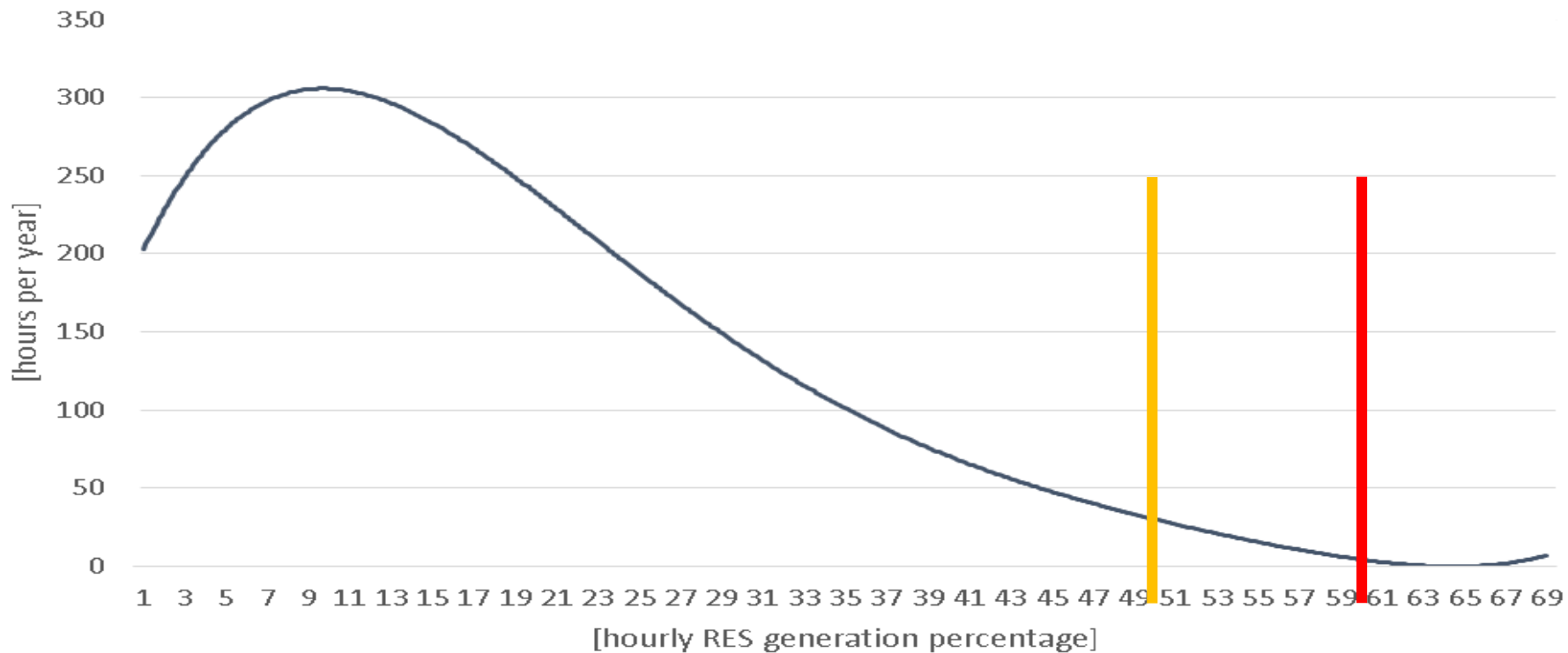
EU target RES penetration [%]	32
Annual increase of total consumption [%]	1.5
Total increase of wind generation [%]	50
Total increase of photovoltaic generation [%]	80
Nuclear generation [%]	0
Large hydro generation [%]	0
Other RES generation (bio mass, bio gas etc.) [%]	0



FORECAST FOR ROMANIAN POWER SYSTEM



Distribution of Hourly RES generation: forecast 2030





FORECAST 2030: SIGNIFICANT PARAMETERS

EU target RES penetration [%]	32
Average RES penetration in RO PS in 2017/2018 [%]	18
Maximum RES percentage [%]	69
Number of hours with maximum RES generation percentage [hours/year]	1
The most probable RES generation percentage [%]	15
Number of hours with 15% RES generation [hours/year]	303
Number of hours with more than 50% RES [hours/year]	192
Number of hours with more than 60% RES [hours/year]	25

Values are not including the large hydro generation.



CONCLUSIONS

- The implementation of the new EU RES target of 32% will in fact lead to high levels (up to 70%) of RES penetration in the power systems operation. For specific operation regimes.
- The current regulatory framework it is not able to support the proper operation of the power systems at such high levels of RES and therefore the curtailments will be the most probable solution for the dispatchers.
- In order to facilitate the achievement of the new EU RES target it is necessary to update the regulatory framework by defining new ancillary services and changing the approach for some of the exiting ones.



Thank you for your attention!