



Friedrich-Alexander-Universität Technische Fakultät

CGMES Workgroup

Revision of the 2020 TYNDP dataset for powerflow solution in PSS®ODMS and DIgSILENT PowerFactory Simon Linnert, Johannes Burkard



Ten Year Network Development Plan - TYNDP dataset 2020

About the TYNDP:

- Ten Year Network Development Plan long-term grid study
- TYNDP dataset assembled from 28 incremental network models, from Portugal to Greece to Estonia
- Influence of adjacent grids such as RG United Kingdom is replicated
- Evaluation basis for the "Projects of Common Interest"

Slacks for mismatch distribution during powerflow calculation:			
Power Plant	Туре	SynchronousMachine	Grid Section
Flamaville	Nuclear	FLAMA.TG3	Continental Europ
Fiume Santo	Thermal	F.20si	Sardinia
Avedøreværket	Thermal	s_AVV2/DT	Eastern Denmark
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In order to define a **uniform grid use case**, we used the power interchanges between the different countries at the time of the separation of the Continental Europe power system on January 8, 2021



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PSS®ODMS and PowerFactory/ENTSO caused by EquivalentInjections EquivalentInjections in PSS®ODMS treated as loads, in PowerFactory as ac voltage sources



Connectivity-/TopologicalNodes:

- Connecting incremental network
- models
- Erronous connections between Croatia and Bosnia Herzegowina



49.8

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Conclusions:

- Import to DIgSILENT PowerFactory doesn't cause issues, whereas the import to PSS®ODMS requires solving some major modelling errors in the dataset
- PSS[®]ODMS more useful in finding and solving modelling errors
- DIgSILENT PowerFactory able to visualize the whole network model even if no visualization data is included in the dataset
- Powerflow analysis results are almost identical, with some minor differences:
- Huge amount of potential use cases for the TYNDP dataset, but still very flawed. Biggest flaw: no uniform grid use case