

R&D
NESTER

WIND POWER CURTAILMENT TOOL

The challenge: With the ever increasing levels of RES (Renewable Energy Sources) being connected in energy systems, grid operators will be facing with the need to manage those variable resources and in some situations curtail wind power to avoid congestions. The challenge thus is operating the system as efficiently as possible using smart and optimized wind power curtailment strategies.

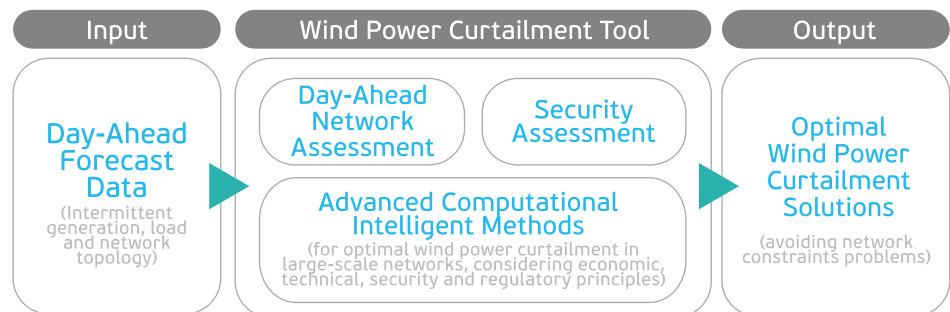
THE PROPOSED SOLUTION

R&D Nester developed a wind power curtailment optimization tool using Python + Siemens PTI PSS®E that provides optimal wind power curtailment solutions for decision support to system operators on how much and where to curtail.

An ex-ante assessment of the grid is available which allows system operators to anticipate network constraints on an hourly basis for day-ahead operational planning purposes, while respecting a large and complex set of constraints.

The network constraints identified in advance are solved taking into account economic, technical and security criteria such as (i) location of the RES, (ii) FRT capabilities available in the network, (iii) state of the network under both normal and contingency conditions (N-1), (iv) load level as well as the expected generation profile. This tool was successfully applied to a large scale transmission network of an European TSO.

These solutions are obtained efficiently in order to provide robust operational solutions to the system operator in a timely manner allowing a more efficient and secure system operation.



Contact us

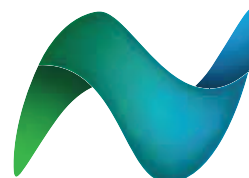
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