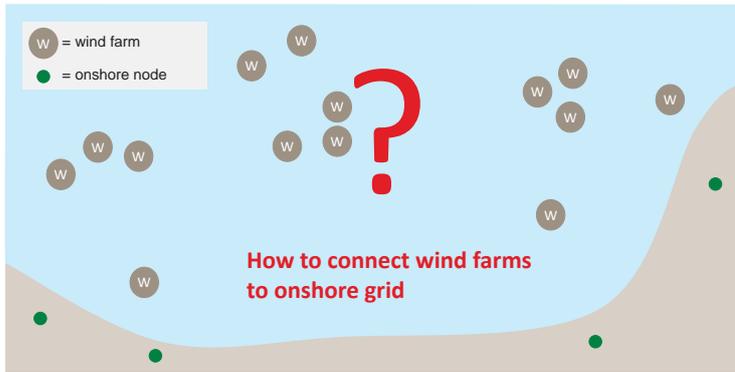


Network Optimisation (Net-Op)



Innovation description

Net-Op is a Matlab toolbox for automated clustering of wind farms and offshore grid layout optimization, developed by SINTEF Energy Research.

- The tool uses mixed-integer linear optimization and a sampling of operating states to account for the variability in power generation and demand/power prices.
- Net-Op is expert software that can be used as service for industry on a project basis.

Impact

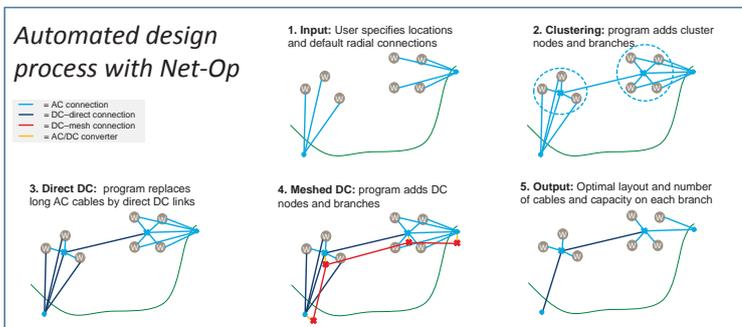
- Identify economically sound grid connection alternatives for offshore wind.
- Useful in an early strategic planning phase, enabling cost reductions by allowing timely and sound grid planning.
- Applied in several research and student projects

Further development

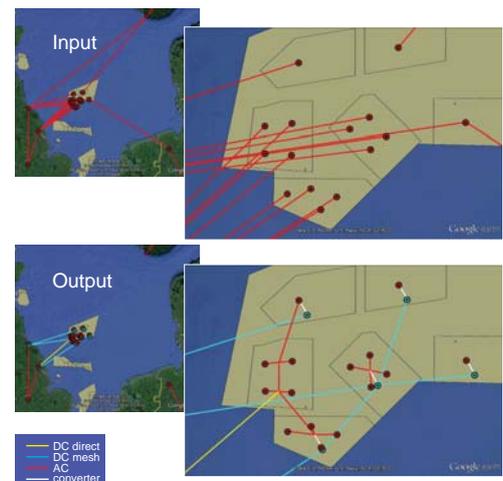
A stochastic optimization version of Net-Op is currently under development. The aim is to develop a version that better takes into account uncertainties and

References

- T. Trötscher, M. Korpås, Wind Energy 14 (2011) 8, p. 977–992, DOI 10.1002/we.461.
- H. G. Svendsen, Energy Procedia 35 (2013) 297–30, DOI: 10.1016/j.egypro.2013.07.182.



Clustering and grid layout optimisation for wind farm areas



Example: Doggerbank