



OpTEAsoft Wind: Optimising offshore wind farm electrical architectures

A unique decision-making software tool to design your projects faster

Our specialised software **OpTEAsoft Wind** optimises the inter-array design of AC-connected offshore wind farms. It accurately models and assesses the full wind farm connection architecture using widely recognised KPIs, enabling project owners, developers & consultants to make decisions quickly and precisely.



OVERVIEW

To reach the EU's climate targets and reduce CO2 emissions, current plans expect more than 300 GW of electricity to be produced by offshore wind farms in Europe by 2050.

SuperGrid Institute has developed a unique decision-making software to speed-up the lengthy electrical architecture design process of these huge, complex wind farms.

KEY FUNCTIONS

OpTEAsoft Wind is a decision-making software that studies multiple grid connection architecture possibilities for your offshore wind farm projects and selects the best option in just a few minutes. It takes into account:

- Wind turbines and obstacles layout
- Component database (cables, transformers) with electrical parameters
- Techno-economic analysis parameters (lifetime, discount rate, ...)

You can create your own design or let the software optimise each part of your electrical architecture (inter-array, export, substation architecture). For your inter-array design, you can assess a wide number of cable section combinations.

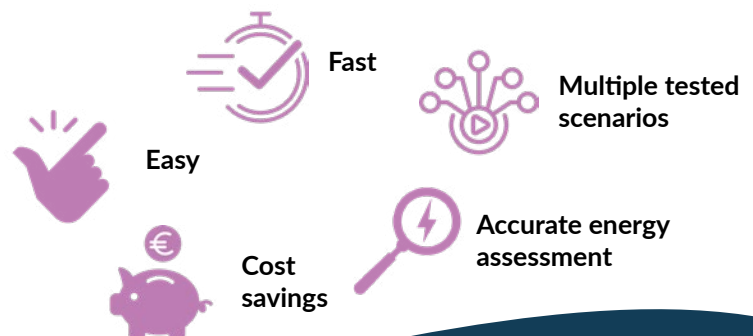
A QUICK & EASY DECISION PROCESS

Our software enables you to perform a fast and thorough optimisation of your design. Simply define the options you want to assess (voltage, cable sections, number of substations, etc.) and let the software compute an optimised solution for each combination of these inputs.

The results are sorted so you can identify the optimum solution(s) according to your priorities (LCOE, CAPEX, losses, ...). Changed your mind? Don't run a new study, just modify the sorting filters and your financial hypotheses.

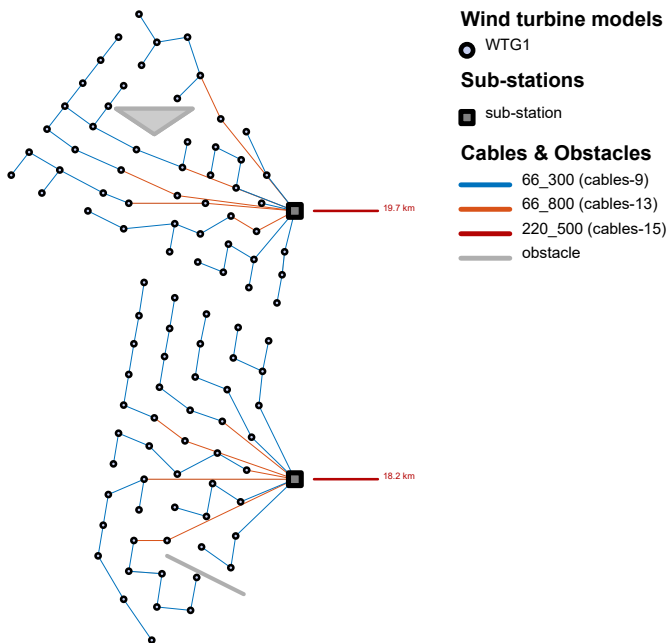
KEY BENEFITS

- The best economical optimisation of inter-array routing cables in the fastest time
- Energy analysis based on power flow
- Techno-economic comparison of architectures with different specifications (voltage, cable sections, ...)



VISUALISING YOUR RESULTS

OpTEAssoft Wind provides visual representations of your designs, as well as tables and graphs detailing your wind farm's KPIs and those of your components. The software also summarises power-flow results and signals if your design exceeds the voltage/current/power constraints of your components.



Architecture	Annual energy indicators			Life-cycle project costs			
	ID	Extraction (GWh)	Losses (GWh)	Losses (%)	CAPEX (M€)	Losses cost (M€)	LCOE (€/MWh)
architecture-0x2		3852.90	89.10	2.26	2323.0	83.5	38.60
architecture-0x4		3863.60	78.40	1.99	2335.3	73.5	38.69
architecture-0x3		3849.63	92.37	2.34	2337.6	86.6	38.87

OUR SERVICES

- OpTEAssoft Wind by SuperGrid Institute software licence sale
- Technical support on request (training, maintenance, knowledge on power electric grids, etc.)

OPTIONAL SERVICES:

- Additional studies thanks to our other related tools:
 - Wake effect impact on LCOE taking into account the wind rose or main prevailing wind
 - DC export system studies
- Additional features can be developed upon request (fees apply)

SOFTWARE PROCESS SEQUENCE

Electrical architecture design

- Design of export cables
- Automatic positioning of the offshore substations
- Optimisation of the inter-array routing cables for the specified parameters
- Network model building

Energy analysis

- Modelling of wind turbines' production (including the wind distribution)
- Power flow calculation for each operating point
- Energy production over the life cycle of the project

Economic analysis

- Calculation of the CAPEX of the project and for each component
- Calculation of the project's LCOE

Results

- Tables to compare results per KPI (CAPEX, losses, LCOE, ...), with details per component
- Tables with warnings if certain constraints (voltage, current, power) are exceeded in the computed power flows
- Inter-array cable routing drawings and coordinates

Want to try it?

Contact our sales team to get a 1-day free trial version for one PC.

(Ensure your PC runs Windows 10)

We can provide an online-demo on request.

Still not convinced? Don't feel confident about using the software yourself?

We can run the study for you!

CONTACT

For additional information or to ask for a quote, please contact: sales@supergrid-institute.com