

Laboratório Nacional de Energia e Geologia (LNEG)

Decision support systems (DSS) for offshore windfarm siting

LNEG actively utilises DSSs. Key decision support tools include ArcGIS Pro and numerical tools for energy simulation according to the technology in question – fixed bottom and Floating wind turbines. In some cases, Multi-Criteria Decision Analysis is also used, although for specific cases, and Excel or other similar software is used to build point layers. Parameters are weighted and/or standardised using GIS.

Outputs include geological maps of seabed substrate, pre-quaternary geology, landslides, slopes, seabed dynamics, bathymetry and structures (faults, strike-slips, etc.).

Input parameters mentioned in the figure may comprise multiple sub-parameters. For more information on the input parameters see Larsen et al. (2025; Table 3, p 27).

Further readings:

Larsen, I. R., Ernstsén, V. B., Maspataud, A., Dakin, N., van Heteren, S., Koutroulli, A., Poyiadji, E. & the GSEU T5.4 Consortium (2025). EGDl multifunctional 2D/3D decision-support module v1. GSEU Report on Deliverable 5.7, 165 pp.

