



# leanwind

## Logistic Efficiencies And Naval architecture for Wind Installations with Novel Developments

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### **D8.2: Economics Model Report** **WP8: Economic and Market Assessment**

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## Executive Summary

The following document provides an outline of the structure and intended use of the financial models such that a potential user can understand clearly the capabilities of the model and how to use it effectively. It details the assumptions made; and the functionality and limitations of the model.

The LEANWIND financial model has three primary purposes. In order of priority, the financial models were developed in order to:

1. Financially assess the merits of the technical innovations in the LEANWIND project.
2. Provide recommendations on cost reductions for representative offshore wind farm sites (through sensitivity analysis and scenarios testing).
3. Provide a financial life cycle costing model, useful after the lifetime of the project.

The financial model is an excel cash flow sheet with a number of user data entry sheets and output sheets. This over-arching financial model then interacts with a number of dedicated time series simulation modules which calculate the cost of the project phases: installation, operations and maintenance (O&M) and decommissioning. These can also be used as stand-alone models and are outlined in detail in the Appendices. The financial results are then used to populate an investment risk analysis module using @Risk software. The outputs from the individual project phase modules will be used as input to environmental Life Cycle Assessment models being developed in Task 8.4.

The LEANWIND financial model is a non-proprietary and therefore unbiased, independent financial assessment tool for use by numerous potential users. Expected users are outlined in more detail in section 4.1. The intention is to be useful to users ranging from students and academics to industry funding bodies and project or technology developers.

This financial model and its capabilities are particularly timely with the recent industry and international commitments to reduce costs in the Offshore Wind sector (outlined in section 2.2.1) and particularly with DONG's announcement at a Dutch auction on the 29<sup>th</sup> July 2016 that they have broken the €10/kWh barrier in their Borssele site. This announcement will put all offshore wind farm developers under the spotlight to also meet this target in the coming months.

The next step for the financial model is to be further developed in order to integrate with the logistics models (described in D5.7) which will be described in D8.3 (due September 2016).

These models will then be validated together to provide a starting point for the work in Task 7.4; to assess the innovations developed in the LEANWIND project.