



# leanwind

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

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## Definitions

BP	Bollard Pull
Cs	Current Speed
DP	Dynamically Positioned
GBF	Gravity Based Foundation
Hs	Significant Wave Height
HLV	Heavy Lift Vessel
kW	Kilo Watt
MCR	Maximum Continuous Ratio
USD	United States Dollar
Ws	Wind Speed
LCOE	Levelised Cost Of Energy
SPMT	Self propelled Modular Transporter
WTG	Wind Turbine Generator
DWT	Deadweight tonnage
IFPS	Inclined Fall Pipe System
DPFV	Dynamically Positioned Fallpipe Vessel
SPM	Scour Prevention Mat
EPC	Engineering, procurement and construction
PSV	Platform Supply Vessel

## Executive Summary

This document aims to provide an overview of the opportunities and constraints of the current supply chains for the further development of the European offshore wind industry. The key objective is to identify supply chain challenges effecting substructure manufacture across Europe.

This report relates to WP2 activities and therefore discusses the Construction, Transportation and Installation stages for several of the most commonly adopted bottom fixed support structure types, including monopiles and other lattice steel structures and concrete gravity base foundations. The objective of this document is to highlight weaknesses within the supply chain, and thus, suggest improvements upon the existing methodologies for all aspects of the development of the above-mentioned foundation types.

A list of current suppliers has been compiled and is provided in the document in order to identify the most relevant stakeholders involved throughout the various stages of the manufacturing, transport and installation processes. To evaluate the suppliers' capabilities, several parameters have been identified to assess the extent of each individual supplier's proficiency.

A set of questionnaires have been prepared and distributed to the suppliers to obtain first-hand information regarding the evaluation parameters identified. The results are included in this report as an Annex 1. Due to the limited industry participation in these questionnaires, some information has been completed with data from the related web sites.

Based on the survey of the supply chain network, it can be concluded that there is an opportunity to tackle cost reductions by improving foundation design practices. However, evolution of the design methodologies is limited by industry features that trigger the development of certain production paths.

