



Project funded by
European Union



FOWPI
FIRST OFFSHORE WIND
PROJECT OF INDIA

FOWPI

COWI A/S (Denmark) is project manager and contract holder
WinDForce Management Services Ltd (sub-supplier)
COWI-India Ltd (sub-supplier)

Expected Results

- Enhance the capacity of National Institute of Wind Energy (NIWE) to act as the nodal agency for the offshore wind sector in India. Also assist in capacity building of the MNRE for offshore wind energy
- Preliminary design and technical specifications of the first offshore windfarm
- A financial investment model for the first Indian offshore windfarm
- At least one EU-India partnership formalized to support the launch of the 200 MW offshore windfarm project.
- Procedures created for the 200 MW windfarm project based on EU experience and best practice
- Support for stakeholders with technical inputs and logistical support

Contact

FOWPI Project Management Team

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Project Office:

FOWPI has offices in Copenhagen, Denmark (Project management) and Gurgaon, India (secretariat services)

Project Key Experts Team:

Per Vølund, Team Leader
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**FIRST OFFSHORE WIND
PROJECT OF INDIA
200 MW**

Contract No. 2015/368469 Start 01-2016

Introduction

FOWPI project is part of the “Clean Energy Cooperation with India (CECI)”, which aims at enhancing India's energy generation capacity with least carbon residual and improve energy efficiency, thereby contributing to the mitigation of global climate change. Project activities will support India's efforts to secure the energy supply security, within a well-established framework for strategic energy cooperation between the EU and India. The project will facilitate the transfer of knowledge and technological know-how from the EU experience in the sector and its adaptability to the Indian context, also through the involvement of the European businesses in the energy technologies sector (renewables, energy efficiency, electrical network equipment) and by fostering their cooperation with Indian actors. The project is funded by the European Union.

About FOWPI

First Offshore Wind Project of India (FOWPI) is planned to achieve 200MW sized offshore wind farm near the coast of Gujarat, approx. 25km from Jafarabad.

FOWPI emphasis on finalisation of design and technical specification of the windfarm including foundations, structures, turbines etc. This includes specific technical studies for the selected area (as outcome of FOWIND project) covering below services for 200MW project:

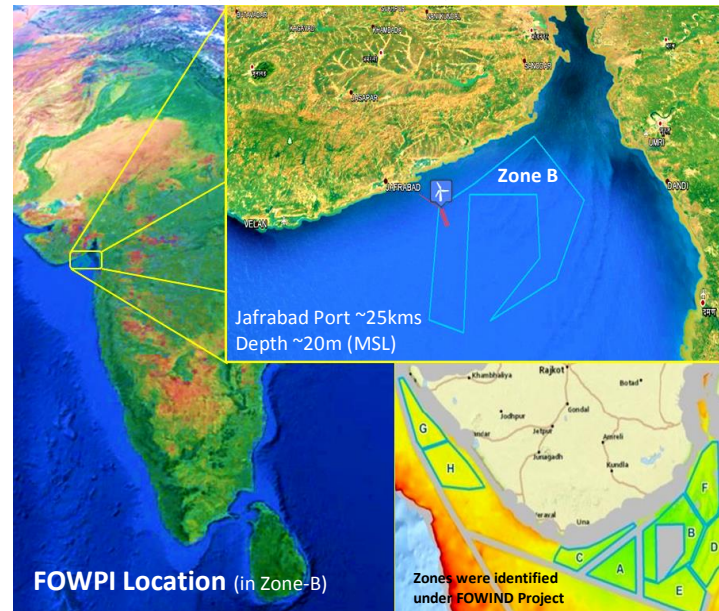
- (i) Knowledge Bank & Capacity building
- (ii) Farm Layout and Annual Energy Production
- (iii) Environment & Consent
- (iv) Metocean
- (v) Geophysical and Geo-technical studies
- (vi) Preliminary foundation design, including appurtenances
- (vii) Electrical Services
- (viii) Coastal and Onshore identification
- (ix) Financial Modelling

The project is expected to be operational by 2022. The total area occupied by the Project site is approximately 70 km² with an average water depth of about 20m.

FOWPI Site Location (in Zone B)

From the outcome of FOWIND project, the first Offshore Wind Project of India (FOWPI) is planned to be carried out under Zone-B out of 8 identified zones.

FOWIND will see the deployment of offshore LIDAR for wind measurement campaign for the FOWPI project.



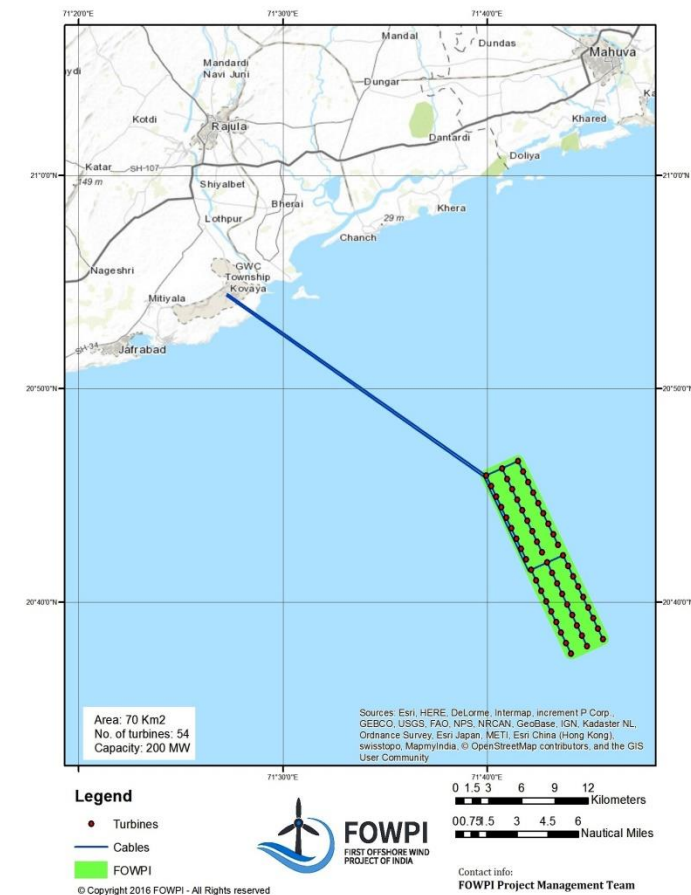
Design and Technical Specifications

Preliminary Design and Technical Specifications will be prepared to guide and support for the possible tendering of FOWPI in order to assess the risks and budget realistically.

It includes:

- Geophysical site survey providing bathymetric map and soil information, with geotechnical desktop study
- Preliminary foundation design, including appurtenances
- Preliminary electrical design, including cabling, substation and grid connection
- Preliminary windfarm layout and production estimation
- Environmental Studies
- Coastal and Onshore study, including guidance on construction and O&M harbor

FOWPI tentative site lay-out



The wind turbine generators will likely be organized in three rows with a distance of about 1500m between each row. The spacing between wind turbines is expected to be in range between 500m to 1000 m. The exact wind turbine model and number of turbines will not be known until the final project design is determined.

The preliminary design basis for the project is expected to consider a range of turbines from 3MW to 8MW capacities. This range would lead to an indicative number between 67 and 25 wind turbines.