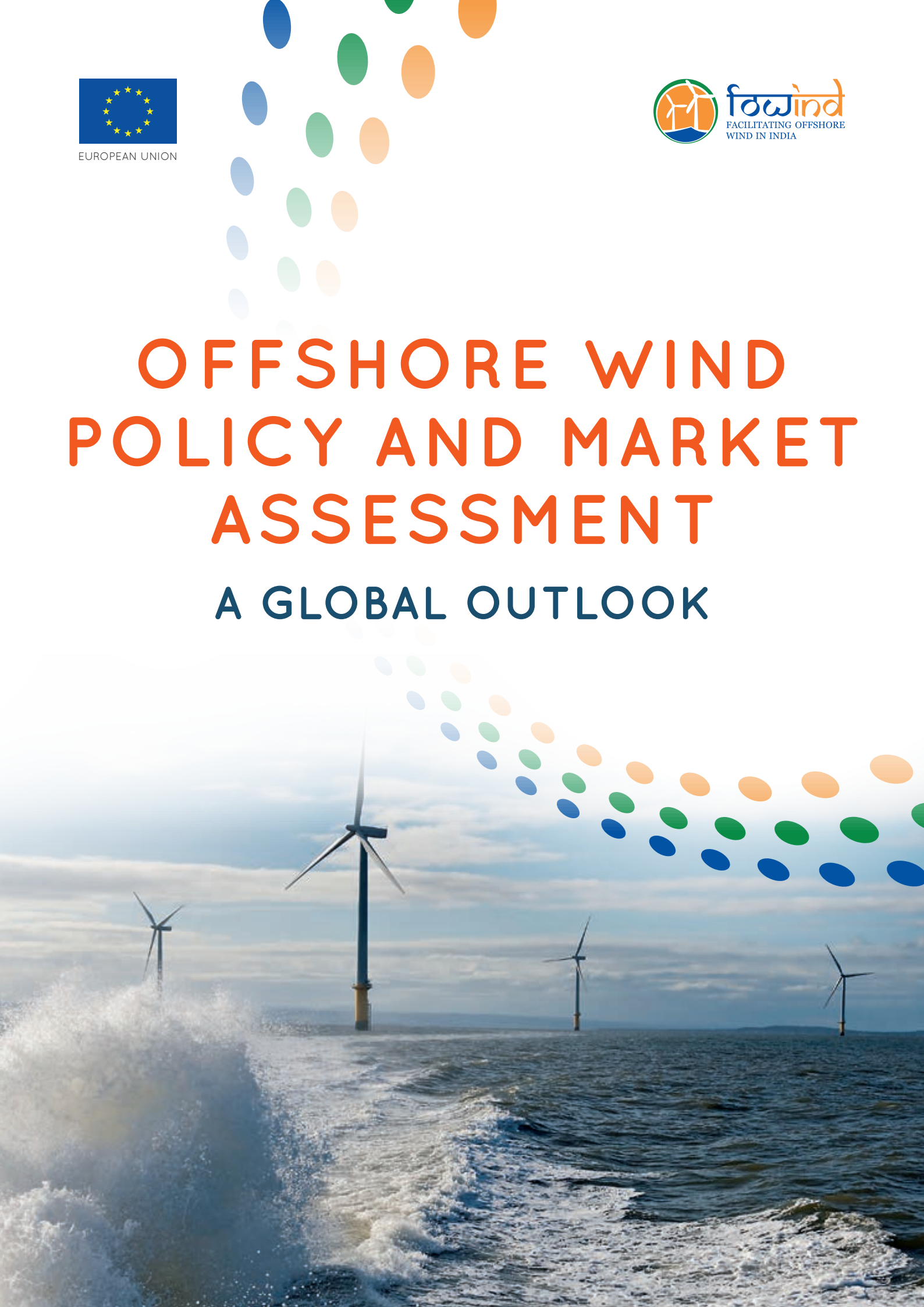




OFFSHORE WIND POLICY AND MARKET ASSESSMENT

A GLOBAL OUTLOOK



EXECUTIVE SUMMARY

India has a strong need for large-scale, indigenous and clean energy production.

As a rapidly developing nation, India increasingly requires secure access to modern sources of energy: this is essential for reducing poverty and improving health, increasing productivity and competitiveness, and promoting economic growth. Even today about 300 million people in the country lack access to electricity¹. In addition, rising concerns about climate change, combined with the desire to improve energy independence, is prompting policymakers to consider new energy generation options.

India already has a strong track record in onshore wind, but the rate of capacity addition has fallen in the past couple of years due in part to policy instability, but also state-specific issues linked to land acquisition for projects. As a result, **offshore wind may now have a role to play**, holding the potential for alleviating the land acquisition challenge. Although the costs are greater than its onshore cousin, offshore wind has some inherent advantages such as a large wind resource, higher wind speeds and more clarity over land tenure. Offshore wind can also play a role in meeting the demand from load centres closer to the coastline – for example, Greater Mumbai, Chennai and Surat, as well as other big cities such as Vishakhapatnam and Vadodara, subject to technical and economic feasibility.

Looking globally, offshore wind has come of age. It is well over ten years since the first commercial-scale offshore wind farm, *Horns Rev*, was completed in the Danish North Sea. Although the path to roll-out has not always been smooth, over 7 GW had


been installed in Europe and Asia by the end of 2013 – and counting. Policymakers across the world are increasingly recognizing the benefits of generating power from a clean and indigenous energy source, which not only brings industrial development possibilities, but is also starting to demonstrate cost reduction.

Yet **offshore wind represents a significant regulatory, technical and financial challenge.** Deploying wind turbines in the hostile marine environment remains complex and the risks associated with these capex-heavy investments should not be underestimated. A huge amount of regulatory change is required, involving coordination across departments and stakeholders. Experience shows that policymakers have a crucial role to play in creating the right incentive, grid connection and consenting regime that secures industry confidence and catalyzes investment, helping to lower project risk and push technologies towards maturity.

This report has reviewed progress in the sector to date and focused on the regulatory and policy frameworks in seven leading markets. It has drawn out the following **key recommendations for India:**

i. Set a clear offshore wind target and roadmap to convey the vision to industry

Experience shows that a clear, time-bound, quantitative target for offshore wind development, and a roadmap of how to achieve it, is an effective tool to focus minds on the offshore wind opportunity.



ii. Clearly articulate and affirm energy policy objectives to maintain industry confidence

A clear understanding of wider policy objectives helps to provide industry with confidence that the drivers for offshore wind will persist even if the exact milestones do not always go to plan.

iii. Ensure managed progression from demonstration to commercial projects

Demonstration sites are crucial for identifying regulatory issues, testing the local supply chain, understanding specific environmental concerns, helping transfer knowledge and testing new technology. A clear plan for well-managed progress to commercial-scale projects is also required for industry to make the necessary investment in infrastructure.

iv. Provide strong initial public investment and utilise Public-Private partnerships where possible

Public investment is needed not just to reduce project risk and to provide soft loans but also to ensure that the preliminary assessments and necessary supporting infrastructure is developed. The current high cost of offshore wind means that a mix of public and private finance is likely to be required for early projects.

v. Ensure sufficient volume, delivered in a smooth pipeline, and design risk-informed support mechanisms to drive cost reduction

Confidence in sufficient market volume helps industry to maximise local 'learning by doing' and benefit from economies of scale – thus pushing down costs. Yet it is important to ensure a smooth pipeline, as rapid increases or decreases in deployment are challenging for the supply chain to manage. A further aid to cost reduction can be designing 'risk-informed' financial support mechanisms, which are structured such as to minimise upfront developer risk, and therefore minimise the cost of financing.

vi. Carefully consider the costs and benefits of promoting a local supply chain

Job creation can be a key driver for offshore wind, yet needs careful consideration. It could be beneficial for India to promote investment in this sector with a view towards creating a robust supply chain as part of the country's industrial development strategy. However the decision to develop a supply chain must be based on whether the potential market is big enough to warrant a local supply chain that is commercially viable, and whether local companies would be able to win export opportunities in the wider global market.



EUROPEAN UNION

THIS REPORT IS CO-FUNDED BY THE EUROPEAN UNION