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## Report on EU-India CECP session on

# “Tapping the Offshore Wind Energy Potential in India” at

## Renewable Energy India (REI) Expo 2021

September 2021



 Renewable Energy  
India Expo  
15 - 17 SEPTEMBER 2021  
India Expo Centre, Greater Noida

# TAPPING THE OFFSHORE WIND ENERGY POTENTIAL IN INDIA

16<sup>TH</sup> SEPTEMBER, 2021

3:30 PM - 4:30 PM (IST) | 12:00 PM - 1:00 PM (CET)



A project implemented by  
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## 1. Introduction

On 16<sup>th</sup> September 2021, the Delegation of the EU to India, hosted a session at the REI Expo 2021 titled ‘Tapping the Offshore wind energy potential in India’. In this session, a report on ‘Gap Assessment of training and skill building in Offshore wind energy sector in India’ was presented. The session aimed at discussing the current gaps in the skilling and training aspects in this sector in India and assessing the common avenues through which the Indian and European partners can bridge the gap.

The session was supported by the EU-India Clean Energy and Climate Partnership (CECP) project ([www.cecp-eu.in](http://www.cecp-eu.in) and [@EU\\_India\\_CECP](https://twitter.com/EU_India_CECP)) and was attended by various participants representing the government agencies, project developers, manufacturers, EPCs, think tanks, consultants and academia. Both EU and India have set ambitious targets for RE and are keen on further strengthening their cooperation in this area under the EU-India CECP. In addition to cooperation on solar energy and integration of RE in the grid, EU and India are working together in the area of off-shore wind, including through the former extensive [FOWIND](#) and [FOWPI](#) projects.

### 1.1 Inaugural and presentation of report

#### Introduction and welcome of participants

**Mr. Edwin Koekkoek, Counsellor- Energy and Climate Action, European Union (EU) Delegation**, welcomed the participants to the EU session at REI Expo on ‘Tapping the Offshore wind energy potential in India’. He elaborated on the productive cooperation between EU and India in the sectors of energy and climate change, supported through the EU India Clean Energy and Climate Partnership (CECP). He highlighted the work undertaken as part of this partnership in the areas of energy efficiency, renewable energy, power market design, smart grid, and climate action. He then introduced the topic of discussion i.e., the current gaps in the skilling and training aspects in the offshore wind sector in India and assessment of the common avenues through which the Indian and European partners can bridge the gap.

He mentioned the two projects i.e., Facilitating Offshore wind in India (FOWIND) and First Offshore Wind Project of India (FOWPI) that EU has undertaken with the Ministry of New and Renewable Energy (MNRE) and National Institute of Wind Energy (NIWE). He emphasized the need for skills required for Offshore wind and the assessment undertaken to analyse the skills required for these projects. He then highlighted the current skills that are already there in India in this area, training facilities available and the subsequent certifications required in both EU and India. He then encouraged the panel to discuss the findings of the study on gap assessment of training and skill building in the sector in India.





## 1.2 Presentation of Report - Tapping the Offshore wind energy potential in India

**Mr. Niels Bahnsen, Project Director, NIRAS A/S**, presented the report on Gap Assessment of Training and Skill Building in Offshore wind energy sector in India. He provided the following key inputs through his presentation:

- He mentioned India's long-term target of 30 GW Offshore wind power capacity additions by 2030 and the need for local training and skill development programs. It is thus relevant to take stock of the current situation with respect to active institutions, available training, key gaps, training requirements in the Offshore wind sector.
- He explained the objectives of the report - to assess the key institutes in India, identifying the gaps, map technical expertise and then put forward some recommendations to develop the Offshore wind sector skill base in India.
- He mentioned that the main findings of the report highlight that there is a considerable demand and thrust to develop capacity buildings, Qualification Packs (QPs) and suggested to create a common knowledge portal and develop the framework including on safety aspects. The report also highlighted the various collaboration opportunities and the role that the conducive policies can play that without the need for external funding support.
- The key institutes in India and EU along with the training providers were identified in the report along with the qualifications needed in the development, construction, and operation phase of an Offshore wind project.
- Some of the key improvement needs in Offshore wind sector skills or training ecosystem in India were identified and later some recommendations were provided in key action areas for enhancing Offshore skill development framework.

The screenshot shows a Zoom meeting interface. The main slide is titled "Main Findings" and contains a list of bullet points on the left and a central diagram. The diagram is a flowchart with the heading "The study shows that the following areas within the Offshore wind and training framework would require further consideration:". It consists of several interconnected boxes: "Development of qualification packs (QPs) for Offshore wind", "Creation of knowledge portal", "Creation of tools/framework for financial institutions", "Institutional level capacity building of certain institutes", "Need a development of Offshore wind standards", "Collaboration opportunities for institution", "Collaboration opportunities for R&D, institutional development", "Development of separate education and training courses in university level", "Leverage skills from offshore on and job", "Share experience gained during work and case sharing", and "Creation of conducive policy environment".

On the right side of the Zoom interface, there is a "Next slide" preview showing "Key Institutes in India and EU" with sub-sections for "Indian institutes" and "EU Institutes". Below the preview, it says "No Notes." and the Zoom logo is visible at the bottom right.

## 1.3 Panel Discussion

Following the inaugural session, a panel discussion was conducted with the industry players on key areas including skill development in the areas of Offshore wind. The panel discussion was moderated by **Mr. Amit Kumar**, Team Leader (CECP Project) and Leader- Energy (PwC India).



Mr. Amit Kumar welcomed everyone on behalf of the EU and CECP team. He emphasized about the target set by the Government of India i.e., 175 GW by 2022 and 450 GW by 2030 and explained the need for ecosystem to achieve the target across all RE technologies in wind sector. He highlighted the importance of wind energy sector, especially Offshore in the European market and in India to meet the targets set. He introduced the panelists from EU and India and sought their inputs in the areas of capacity building and skill development required for Offshore wind to support India progress in this sector.

### 1.3.1 Key messages from panelists

#### **Dr. Jochen Dirksmeyer, Head Development, wpd offshore solutions GmbH**

Dr. Dirksmeyer explained that they have been following the development of India closely in the Offshore wind sector from 2018 when the first initiative from the Government had come up. He then recognised the progress in the industry for the last couple of months which fits perfectly for the development of Offshore specially in the Eastern Asia markets where the focus on Offshore is increasing every year. He mentioned that they are excited with the 30 GW target set by India and have recently set up their own footprint in India.

He then mentioned the following takeaways based on European experiences:

- Stronger commitments from government towards this industry is visible. He further mentioned that a detailed roadmap with annual targets can help the stakeholders.
- The roadmap must be supplemented by relevant support mechanism to promote the sector. He also mentioned that cost is very sensitive in case of India and a clear framework such as grid evacuation system is required to transmit the planned 30GW capacity to consumers across the country.
- He suggested that similar to European countries wherein Transmission System Operator (TSO) is responsible for grid connection, similar approach can help India expand the base of energy generation from sea as well, through Offshore wind projects.
- Dr. Dirksmeyer mentioned that infrastructure wise the ports are very important and that the governments in the European countries take responsibility to develop the ports to meet the requirements of Offshore wind and thus significant investments need to be undertaken to improve such facilities.

#### **Dr. K. Balaraman, Director General, National Institute of Wind Energy (NIWE)**

Dr. Balaraman thanked the moderator and organisers for the invitation and then briefed about NIWE's current projects which includes the 1 GW Offshore wind project in the state of Gujarat and associated studies undertaken. He mentioned that some of the data of the study has been made public for stakeholders to analyse, and most of the de-risking mechanism required has already been done for Gujarat. He mentioned that resources has been spent for conducting studies in Tamil Nadu coast (Zone C, Zone A, Zone E) where wind potential is higher than that of the Gujarat.

He mentioned that the main challenges are linked to high Levelized Cost of Electricity (LCoE) and that lessons can be learnt from the Onshore journey for the Offshore wind projects. He emphasized on specific turbines for India to support cost economics and allow them to operate in medium to low wind regions as well.

He acknowledged that skilling and reskilling is an important aspect for Offshore market. NIWE is working with Skill Council for Green Jobs (SCGJ) on various courses. In addition, NIWE is promoting skilling and reskilling of the people to develop a skilled workforce for the sector and expand the employment opportunities by collaborating with training providers and academia such as DTU.

#### **Mr. Gunnar Herzig, Managing Director, World Forum Offshore Wind**

Gunnar explained that setting some of the key parameters right in the beginning and then building on that has worked well in most of the countries to develop a successful Offshore industry. He then summarized these key takeaways:



- He emphasized that having a stable, clear and framework designed for the long-term is crucial for success of the industry. Further, there is a need to work closely with the government authorities on the regulatory framework to help the sector.
- He mentioned that coherent maritime spatial planning is required to distinguish between the activities and the areas to be covered in the sea. He suggested setting up dedicated zones for certain activities to avoid stakeholder conflict that can affect the Offshore wind projects.
- On the skill aspect, he mentioned the need of workforce to execute spatial planning and ensure projects can be developed adequately adhering with the planning.
- Mr. Herzig mentioned that the process to issue permits needs to be clear, supported by a single window authority to facilitate ease of approvals and permits. He also emphasized upon the need for workforce which can work under the ambit of required approvals and permits to achieve the desired milestones.
- He emphasized the need for suitable harbour infrastructure, along with skilled workforce, to be in place to accommodate large space required to store heavy and gigantic components.
- He highlighted the need for grid infrastructure to evacuate power, exemplified by the Germany's case wherein the project was setup however the grid connection was missing, to export the electricity to be generated, which affected the project timelines.

#### **Mr. Amar Variawa, Senior Director, Vestas**

Mr. Variawa highlighted that the modalities for Offshore wind projects differ from the Onshore wind projects, and hence the two segments needs to be treated differently. He highlighted that for Original Equipment Manufacturer (OEM)s to setup a facility for capacity expansion or skilling in India, there is a need to focus on key aspects such as -

- Long-Term sustainable and predictable policy regime
- Infrastructure – port requirements
- Effective financial model

He mentioned that the tariff structure will not be financially supportive if the turbines are imported and assembled in India. On the other hand, for local content development jobs and skilled workforce is essential. He illustrated that for a 75-meter turbine blade, precision manufacturing and skills are required for handling of moulds and blades. He also mentioned that Denmark has developed ports with a preassemble area to store the finished goods, which India can also consider. He emphasized the need for prudent logistics strategy along with grid integration planning.

He iterated the role Vestas has played in Onshore wind skill development activities and has developed around 8-10 QPs at National Occupation Standards for Onshore Wind which includes working at height, working with blade manufacturing process, etc. These skills have been adopted from their global experience, and then customized for India's needs. He emphasized the need for collaboration with universities and academia for skilling and training in the sector.

#### **Mr. Markus Koesters, Head- Business Development, RWE Renewables**

He mentioned their interest in Offshore wind sector in India since 2018 and have been following the market closely. He explained that India has the advantage of learnings from the European Offshore market's journey in last 20 years. He mentioned that the main aim of RWE has been to bring down the LCoE over a period of time. He also mentioned that the firm has recently received approval for two Offshore projects in Germany without the need for any subsidy, reflecting the cost economics in the region. He suggested the following factors that can help India in its journey in the Offshore wind sector:

- The roadmap for 2030 target of 30 GW is a positive starting point, however there is a need to assess the phasing of this target. He also highlighted that developers need to invest to progress towards the target, and the need for viability gap funding initially from the government to support the sector.



- He highlighted the need for regulatory regime and working closely with NIWE on the technical parameters to allow for single stop show for clearances.
- He also highlighted the importance of infrastructure hubs which not only includes the ports but also the inter-connection points for the grid infrastructure. He mentioned that the stakeholders can undertake skilling and capacity building activities which can help create jobs, along with implementation of these projects.
- Supply chain approach can be based on market needs with relaxed criteria, without mandating the need for local content requirement for initial years. The country can relax the imposition of import duties on components initially, which needs to be imported; and with time, domestic supply chain can be build up to help India achieve the long-term target.
- He mentioned that RWE supports skilling by transferring their learnings through universities and organizing training programs to translate their expertise. He stated their experience in Japan which has helped transfer knowledge through these programs.

#### **Mr. Carl Heirmans, Senior Business Development Manager Offshore, Jan De Nul**

He mentioned the dredging activities undertaken by the firm in Gujarat, India in the oil and gas sector, which is also one of the key areas required in the Offshore wind sector. He also mentioned that the firm has invested in special equipment, new vessels to install cables, foundations and turbines and developing next generation turbines for sea projects. He stated that the main difference between dredging and Offshore wind activities is that in basic dredging projects one month study is sufficient to dredge for at least one year, however for Offshore wind, a lot of resources and extensive studying is needed for working for one month. Since a lot more engineering is required for Offshore wind, proper training programs are needed to develop sufficient manpower to deliver the projects effectively. He gave an example about the Taiwan project and the way the firm had to bring in fifty engineers to prepare the project over there and it took three years to finally train them to work in the Offshore wind industry.

#### **Mr. Vijaymurthy Tanikella, Advisor, Van Oord Offshore Wind b.v. and Director, Van Oord India Pvt. Ltd**

Vijay emphasized the importance observed of Offshore wind industry in India, though the first commercial project is yet to be implemented. He mentioned that EU and India are working closely in the Offshore wind sector and are addressing the key issues concerning the development of the sector, including in skills and training need assessment. He highlighted that the Offshore wind sector will be a key contributor to India's economy, and this will enable a lot of skilling and employment opportunities in areas of technical implementation, supply chain, logistics, port handling, etc. He explained how the cost reduction in project implementation largely depends on the generators and how they have reduced the cost of production in Germany. He mentioned that apart from the generators the supply chain also plays an important role in bringing down the cost. He shared an example wherein the LCoE has come down from Euro 1.70/kWh in 2016 to Euro 0.70/kWh in 2020, supported with effective supply chain and Balance of Plant (BoP) in Europe. He highlighted that with strong Government support in Europe, the supply chain improved progressively, and India can draw similar learning to support the sector. He also highlighted that the delays in the installation activities needs to be avoided as these increase the cost. Further, there is a need to improve the supply chain and port facilities to house large capacity units close to sites.

He shared the experience of Van Oord which has built around 14.5 GW of Offshore wind projects globally. He highlighted the need for creating an attractive support mechanism through long term policy, viability gap funding, etc. to support the financial viability of the projects. In addition, tax benefits similar to oil and gas projects can help the sector. He also suggested a period of 5 years for commissioning with required clearances from concerned ministries and departments would help the projects initially. He highlighted that in case MNRE and NIWE facilitate required approvals and clearances prior to tender process, can help gain



the interest of the project developers. He iterated the fact that early announcement of projects can help plan training and capacity building exercise to enable employment opportunities.



**Mr. Amit Kumar** summarized the panel discussion with following points:

- Clear roadmap till 2030 to achieve 30 GW is required
- Clarity on sustained long-term policy and subsidy is required
- Dedicated Renewable Purchase Obligation (RPO) for Offshore wind
- Knowledge transfer and skilling by tie ups between industry - academia and academia - academia between Europe and India.

#### 1.4 Vote of Thanks / Closing remarks

**Mr. Edwin Koekkoek, Counsellor- Energy and Climate Action, EU Delegation** thanked all the panelists for the presentations and the constructive discussion, which brought out avenues for mutual benefits to India and EU. He suggested to bring together the skilled people to make Offshore wind sector a success in India. He also mentioned that the sector may initially require selected workforce from abroad for specific tasks and the local people can be trained to take forward the initiatives. He also stressed upon the need of timely actions and to avoid delays as it has a direct relation with costs associated.

He emphasized upon drawing key insights for the way forward, given the rich opportunities for learning and emerging market coming up for Offshore wind to meet the 450 GW target in 2030 in India. He highlighted that the EU is keen to continuing corporation with India in this important sector, along with MNRE, NIWE and Dr. K. Balaraman, including by doing research and studies including in the areas of skilling and with MNRE.



## About EU-India CECP

The EU-India CECP aims to reinforce cooperation between the EU and India on climate change and energy with a view to ensure a secure, clean, affordable, and reliable energy supply for all and to progress in the implementation of the Paris Agreement.

For more details, please visit: [www.cecp-eu.in](http://www.cecp-eu.in)



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