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NATIONAL OFFSHORE WIND ENERGY POLICY

Consequent to the approval of Cabinet dated 09th September, 2015 on National Offshore Wind Energy Policy, the Ministry of New & Renewable Energy hereby releases the National Offshore Wind Energy Policy for information of the stakeholders and general public. The Policy however will come into force with effect from the date of publication of the Policy in the Official Gazette.

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DIRECTOR

National Offshore Wind Energy Policy

Government of India
Ministry of New and Renewable Energy

Renewable Energy is Green,Clean and Sustainable

Government of India
National Offshore Wind Energy Policy

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1. Introduction

Worldwide, wind energy is accepted as one of the most developed, cost-effective and proven renewable energy technologies to meet increasing electricity demands in a sustainable manner. While onshore wind energy technologies have reached a stage of large scale deployment and have become competitive with fossil fuel based electricity generation with supportive policy regimes across the world, exploitation of offshore wind energy is yet to reach a comparable scale. India has achieved significant success in the onshore wind power development with about 24 GW of wind energy capacity already installed and generating power. With introduction of this policy, the Government is attempting to replicate the success of offshore wind power development in the offshore wind power development.

1.1 Global Status

Over 8.7 GW offshore wind capacity has already been installed around the world and approximately an equal capacity is under construction. There are offshore wind farms existing and under development in United Kingdom (4494 MW), Denmark (1271 MW), Germany (1049 MW), Belgium (712 MW), China (670 MW), The Netherlands (247 MW) and Sweden (212 MW).

1.2 Developments in India

In India, preliminary assessments along the coastline have indicated prospects of development of offshore wind power. Wind resource data collected for the coastline of Rameshwaram and Kanyakumari in Tamil Nadu and Gujarat Coast shows reasonable potential. A preliminary assessment suggests potential to

establish around 1 GW capacity wind farm each along the coastline of Rameshwaram and Kanyakumari in Tamil Nadu.

1.3 Maritime Zones

There are two main maritime areas in which structures such as offshore wind farms can be built:

- Indian territorial waters, which generally extend up to 12 nautical miles (nm) from the baseline; and
- Exclusive Economic Zone (EEZ), beyond the 12 nm limit and up to 200 nm, where under international law, India has right construct structures such as wind farm installations.

1.4 Challenges

The significant challenges that exist in offshore wind power deployment relates to resource characterization, subsea cabling, turbine foundation, installation of turbines including logistics, grid interconnection and operation, development of transmission infrastructure and coastal security during construction and operation period. Adding large capacities of offshore wind generation to the power system would also require reliable integration to the national grid.

2. Vision of the Government

Electricity generation from renewable sources of energy is an important element in the Government's National Action Plan on Climate Change (NAPCC) announced in the year 2008. With introduction of this plan, the Government of India is committed to provide a conducive environment for harnessing offshore wind energy in India. In consonance with the mandate and

responsibility, the Government envisions to carry forward, in a systematic manner, the development of offshore wind energy in the country, to overcome the existing barriers and to create technological and implementation capabilities within the country.

3. Title and Enforcement

This policy will be known as the “National Offshore Wind Energy Policy – 2015”. The policy will remain in force in its entirety unless withdrawn or suspended in whole or part by the Government of India. The Government of India will undertake a review of this Policy as and when required in view of any technological breakthrough or any changes taking place in any related policy or goals.

4. Objectives

The Government of India in its interest to develop Offshore Wind Farm has decided to have a Policy that will enable optimum exploitation of Offshore Wind energy in the best interest of the nation and to achieve the following objectives.

- To Explore and Promote Deployment of Offshore Wind Farms in the Exclusive Economic Zone (EEZ) of the country, including those under Public Private Partnership.
- To Promote Investment in Energy Infrastructure.
- To Promote Spatial Planning and Management of Maritime Renewable Energy Resources in the Exclusive Economic Zone of the country through suitable incentives.
- To Achieve Energy Security.
- To Reduce Carbon Emissions.

- To Encourage Indigenization of the Offshore Wind Energy Technology.
- To Promote Research and Development in the Offshore Wind Energy Sector.
- To Create Skilled Manpower and Employment in the offshore wind energy sector.
- To facilitate development of Project EPC and Operation & Maintenance with regard to offshore wind industry.
- To develop coastal infrastructure and supply chain to support heavy construction & fabrication work and the Operation & Maintenance activities.

5. Geographical Coverage and Scope

This policy document is the primary policy decision-making document for offshore wind energy development, including, setting up of offshore wind power projects and research & development activities, in waters, in or adjacent to the country up to the seaward distance of 200 nautical miles (EEZ of the country) from the base line. The Research & Development activities would also be carried out up to 200 nautical miles from the base line.

6. Essential Elements of Development of Offshore Wind Energy

The essential components of a policy for development of offshore wind farm will contain:

- Preliminary Resource Assessment and preliminary oceanographic & bathymetric studies for demarcation of blocks.
- Environment Impact Assessment (EIA) study of proposed Offshore Wind Farms regarding aquatic life, fishing etc., studies relating to navigation,

undersea mining and related exploration/exploitation activities and other users of the sea.

- Detailed studies & surveys - These studies will determine the construction costs for special foundations, special ships for both operation and maintenance requirements.
- Sea Bed Lease Arrangement.
- Statutory Clearances and NOCs.
- Grid Connectivity and Evacuation of Power (both offshore and onshore)
- Technology
- Incentives
- Security of offshore installations and confidentiality of the data collected during studies and surveys.
- Financing and Insurance.

7. Policy

7.1 Nodal Ministry

Ministry of New & Renewable Energy (MNRE) will be the Nodal Ministry for development of Offshore Wind Energy in India and act as one of the government entities, among others, for Development and Use of Maritime Space within the Exclusive Economic Zone (EEZ) of the country. As the nodal ministry, role of MNRE will include but not limited to the following.

(i) Overall monitoring of the offshore wind development in the country.

(ii) Co-ordination with other Ministries/Departments.

(iii) Issuing guidelines/directives for development of offshore wind energy.

(iv) Oversee working and to provide necessary support to the Nodal Agency i.e. NIWE for smooth functioning.

(v) Development of International Cooperation.

(vi) Coordination towards tariff setting and regulatory issues.

7.2. National Institute of Wind Energy (NIWE) – Nodal Agency

National Institute of Wind Energy (NIWE) will act as the Nodal Agency for the development of offshore wind energy in the country. NIWE will be strengthened to carry out the following activities for offshore wind power development in the country.

(i) Call for proposals for development of offshore wind power projects in the specified blocks under International Competitive Bidding (ICB).

(ii) Entering into contract with the project developers for development of offshore wind power project within the EEZ of the country.

(iii) Collect lease from developer/owners as per specified guidelines.

(iv) Carry out and also coordinate resource assessment and surveys in the EEZ of the country.

(v) Demarcation of offshore wind energy blocks.

(vi) Compliance of Ministry of Defence (MoD) guidelines.

(vii) Facilitation to project developers in getting clearances from concerned Ministries/Departments.

(viii) Coordinate and monitor technical activities of the ongoing projects.

(ix) Promoting indigenous research for technology development.

(x) Technical & financial evaluation and review of development.

(xi) Creation and maintenance of offshore wind energy database and archive system.

(xii) Upgrade information database in the assessed areas.

(xiii) Capacity building in the offshore wind energy sector.

7.2.1 Facilitation in Clearances

NIWE will accept applications for Clearances/NOCs from the project developers and coordinate with concerned Ministries/Departments for the Clearances/NOCs. However, NIWE will only act as a facilitator for getting Clearances/NOCs and applications will be dealt in entirety by the concerned Ministry/Department.

7.2.2 Administrative Divisions & Staffing

NIWE will have personnel of technical expertise in wind energy/offshore operations. The details of the experts, and their qualifications will be decided, depending on the quantum of work, by NIWE.

NIWE may also draw experts from Central Government Departments and Public Sector Enterprises working in energy & power sector on deputation. Further staffing requirement may be met through appointments on short term contracts.

7.3. Other Implementing and Monitoring Agencies

7.3.1 Offshore Wind Energy Steering Committee (OWESC)

Offshore Wind Energy Steering Committee (OWESC) under the chairmanship of Secretary, MNRE will steer the offshore wind energy development in the country by providing policy guidance and will oversee the execution and effective implementation of specific offshore wind energy activities.

7.3.2 Ministry of Shipping /State Maritime Board /State Government

The Ministry of Shipping in case of major ports and State Government or State Maritime Board where constituted in case of minor ports may provide access to port or port like facilities with sufficient infrastructural facilities to enable heavy construction / fabrication work / O&M activities at seashore from where it will be moved offshore to the wind farm site. A specific charge may be made payable to the respective Central Government or State Government Agencies for enlisting their services.

7.3.3 Central and State Transmission Utility

Central Transmission Utility (CTU) and/or State Transmission Utility (STU) will undertake onshore evacuation and grid connectivity. CTU/STU will also carry out the testing and certification of the evacuation infrastructure. Concerned STU/State Government may facilitate allocation of land on shore near to wind farm site to enable establishment of substations to evacuate power generated from Offshore Wind Farms.

7.4 Developmental Model

7.4.1 Studies & Surveys

Preliminary wind resource assessment, oceanography & bathymetric surveys etc. will be carried out by NIWE for demarcation of offshore wind energy blocks. Services of expert agencies within the Government could also be utilized for collection of seabed and resource data. In addition, interested private players having proven expertise in offshore studies and surveys may also be granted permissions on case to case basis, to collect data and have shared ownership on it. This data could

be shared with other Ministries. Detailed guidelines would be issued by NIWE, once the policy is approved. However, NIWE would reserve rights to refuse participation to an entity on grounds of national security without giving specific details.

The process of studies and surveys are critical from naval operations point of view. Therefore, similar to the data collection policy being followed for oil & gas exploration and production, private players would need to submit the detailed information as per the formats & guidelines for clearance from the Ministry of Defence. Procedure for naval security clearance for vessels involved in construction/support activities of wind power installations will be in accordance with the extant Government of India regulations for research, survey, exploration and exploitation of resources in the coastal and Maritime Zones of India.

The surveyor or the project developer, as the case may be, will have to take prior permission/clearance from the Ministry of Defence before commencing any activity in the EEZ. Such permission/clearance shall be routed through NIWE. NIWE will have a royalty-free license for the use of the survey data and maps (which will be an intellectual property of the surveyor/developer) for the purposes of the Government.

The surveyor or project developer will submit an undertaking to NIWE to the effect that no data/information collected through surveys and studies under permission granted by NIWE (after getting necessary clearances from Ministry of Defence) will be concealed or suppressed from NIWE.

7.4.2 Request for Clearances/No Objection Certificates

The clearances/NOCs required before commencing installation in the sea (survey or Wind Turbine Generator) are related to Ministry of Defence, Ministry of Shipping/State Maritime Board/State Government, Ministry of Petroleum & Natural Gas, Ministry of Environment & Forests and some other agencies. A list of related Ministries and Departments where a clearance or an NOC will be required is given at **Annexure A**.

Work related to studies & surveys or construction in offshore cannot be commenced until the "Clearance" wherever required, is granted by concerned Ministries/Departments. However, in cases where a No Objection Certificate is required, the same will be deemed as granted upon expiry of the stipulated period.

Besides the Clearances/NOCs, the project developer, while planning the project will take into account the impact of the project on the livelihood of local fishing communities and make all efforts to stay out of the fishing grounds in and around the development site. In extreme cases, where fishing grounds/ fishing colonies are to be relocated, the developer will provide adequate compensation to the aggrieved communities in line with the Central/ State Government policies on the subject.

7.4.3 Leasing of the Seabed and Allocation of Blocks

The offer of blocks will be made through an open International Competitive Bidding (ICB) process. The bidder can be a company, consortium or a Joint Venture. NIWE will enter into contract with the successful bidder i.e. the developer of offshore wind energy power

project and collect lease fee from the developer during survey, construction and operation phases. NIWE would reserve rights to refuse participation of an entity in the International Competitive Bidding (ICB) on grounds of national security without giving specific details.

The lease will be limited to exploration and exploitation of wind energy in the allocated block(s). The broad parameters of the contract will include, time frame for completion of the installation & commissioning of the wind farm, period of contract, committed Minimum Work Programme (MWP) in terms of project capacity in the allocated block, monitoring & inspection by MNRE/NIWE and decommissioning plan. The lease and area will stand automatically relinquished, if the contractor is unable to start commercial production of wind electricity within a specific time period from the date of signing the contract.

Existing lease holders of seabed for other purposes such as oil & gas exploration and exploitation, seabed mining etc., interested in installation of offshore wind farm on their existing lease must route the proposal through NIWE.

7.4.4 Power Evacuation

A designated agency or distribution utility or a private company will enter into Power Purchase Agreement (PPA) with offshore wind power generation project developers and will directly purchase the offshore wind power as per the norms and guidelines fixed by the appropriate Commission as per the Electricity Act 2003 as amended from time to time.

Central Transmission Utility (CTU) /State Transmission Utility (STU) will provide necessary onshore infrastructure for evacuating the power generated by Offshore Wind farms. The Central Government may provide support to State Governments in creation of evacuation infrastructure for offshore wind power projects.

Bundling schemes with power from other sources and Centralized Procurement may be introduced as and when required for promotion of offshore wind power development and making it cost effective.

7.4.5 Final Approval for Commissioning of Offshore Wind farm

The certificate for commencement of operation of the Wind farm shall be issued by NIWE. This will enable verification of all statuary and regulatory guidelines by the NIWE before commissioning.

7.4.6 Security of Offshore Wind farm

The security of the offshore wind energy installations will be responsibility of the developer/operator who must carry out a vulnerability assessment. The developer is also required to provide evidence of comprehensive insurance coverage of the installations. Headquarter, Offshore Defence Advisory Group (HQODAG) functions as the nodal agency for matters relating to defence of offshore installations within the maritime zones of the country. HQODAG advises Ministries of Defence, Petroleum & Natural Gas, Shipping and Civil Aviation on all planning and policy aspects of offshore security and defence covering territorial waters, the continental shelf, the Exclusive Economic Zone and other Maritime Zones of the country. Similar services may be provided

by HQODAG to NIWE/MNRE with respect of defence/security of offshore wind power installations. Directorate General of Shipping, in consultation with the Ministry of New & Renewable Energy, will issue a notification declaring offshore wind farm as a “Restricted Area”.

7.4.7 Decommissioning

Where NIWE decides to grant lease for a proposed offshore wind farm, it will also include a condition requiring the developer/owner to submit a decommissioning and site restoration programme to NIWE before any offshore construction works begin. The programme shall be a part of EIA, and necessary clearances will be required from the Ministry of Environment & Forests (MoEF). A deposit or a financial guarantee will be submitted by the developer to ensure proper decommissioning.

7.4.8 Monitoring

Offshore Wind Energy Steering Committee (OWESC) headed by Secretary, MNRE will monitor the overall development of the offshore wind energy in the country. Development, allocation and construction in new offshore wind energy blocks will be monitored by NIWE. State designated agencies of the concerned coastal State may also monitor the development along their coastline to plan for logistical and grid infrastructure. The respective State Governments may form a committee for monitoring of offshore wind power projects and development in their State. State Governments are encouraged to include this policy in their State Action Plan on Climate Change for effective monitoring and promotion.

7.5 Incentives

The policy may support the development of offshore wind energy through fiscal incentives, allowing Foreign Direct Investment (FDI) participation, Public Private Partnership, and international collaborations.

Fiscal and financial incentives available to onshore wind power projects may also be made available to offshore wind power projects. Besides, Government may promote bundling of power generated from offshore wind power projects with conventional power subject to availability of unallocated conventional power to bring down the cost of power generated resulting in better acceptability.

7.6 Capacity Building

NIWE will undertake promotional activities such as organizing workshops & symposiums to bring awareness in the local wind turbine manufacturers and components manufacturers including potential investors to boost offshore wind power development.

8. Technology

National Institute of Wind Energy (NIWE) has been established as an autonomous R&D institution by MNRE in testing of complete Wind Turbine Generator systems (WTGs) according to international standards (IEC, GL etc.) and verification of test reports for Onshore Wind Turbine Models. Similar services will be provided/facilitated by NIWE for Offshore Wind Turbine Models.

The wind turbines and foundation structures will be as per recognized international standards. Project risks including those arising out of geological conditions will be that of the project developer.

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ANNEXURE A

Clearance/No Objection Certificate (NOC) for Surveys & Studies and Development of Offshore Wind Power Projects

NIWE will take in-principle clearance from the Ministries of Defence, Home, External Affiars, Environment & Forests and Department of Space before notifying the offshore wind energy blocks for International Competitive Bidding (ICB) (Stage-I Clearances). On allocation of block, the successful bidder/developer will have to take Clearances/NOCs from various Central and State Government Ministries/Departments (Stage-II Clearances). The Central Government Ministries/Departments which will be involved in the process of granting clearance or No Objection Certificate, as the case may be, for Offshore Wind Power Projects with the nature of clearance are listed below.

S. No.	**Ministry/Department**	**Stage-I Clearances**	**Stage-II Clearances (or NOCs)**
1.	Ministry of Environment & Forests	In-principle Clearance	EIA and CRZ clearance
2.	Ministry of Defence	In-principle Clearance	Clearance related to defence & security aspects, related to Army, Navy, Air force, DRDO and other such institutions under MoD.
3.	Ministry of External Affairs	In-principle Clearance	Clearance for development of offshore wind energy projects within the maritime zones of India.
4.	Ministry of Home	In-principle	Clearance regarding

	Affairs	Clearance	deployment of foreign nationals in offshore wind energy blocks.
5.	Ministry of Civil Aviation	No clearance needed at this stage.	Clearance for construction near aviation radars/aerodromes. No clearance/NOC required for all other locations.
6.	Ministry of Petroleum & Natural Gas	No clearance needed at this stage.	Clearance for offshore wind power installations proposed in Oil & Gas Blocks. No Objection Certificate for construction outside the offshore Oil & Gas Blocks.
7.	Ministry of Shipping	No clearance needed at this stage.	Clearance for projects near Major Ports. No Objection Certificate to operate away from shipping lanes.
8.	Department of Space	In-principle Clearance	Clearance from security angle with regard to Dept. of Space installations and for minimum safety distance to be maintained from the Dept. of Space installations.
9.	Department of Telecommunication	No clearance needed at this stage.	No Objection Certificate to operate outside subsea communication cable zones.
10.	Ministry of Mines	No clearance	No Objection Certificate

		needed at this stage.	to operate outside mining zones.

NIWE will facilitate the Stage-II Clearance and coordinate with concerned Ministries/Department for grant of Clearances/NOCs. Additional clearances/approvals may be required from State Government bodies for creating evacuation infrastructure, logistics etc. Developer may directly apply for such clearances/approvals to the concerned State Government bodies.

A clear time schedule for approvals, clearances and NOCs will be issued by MNRE separately to facilitate developers.

Glossary of Important Terms

- **Exclusive Economic Zone (EEZ):** It is a concept adopted under United Nations Conference on the Law of the Sea (UNCLOS), whereby India has jurisdiction over the exploration and exploitation of marine resources in its adjacent section of the continental shelf, taken to be a band extending 200 nautical miles from the shore.

- **Nodal Ministry:** Ministry of New & Renewable Energy (MNRE) will act as Nodal Ministry for development of offshore wind power in the EEZ of the country.

- **Nodal Agency:** National Institute of Wind Energy (NIWE) will act as the Nodal Agency for exploration and exploitation of offshore wind power in the EEZ of the country and carry activities such as call for proposal, entering into contract with developer and collection of lease fee.

- **Project Developer:** The successful bidder who will enter into contract with NIWE for development of offshore wind power project in the EEZ of the country and sell power to a distribution utility/designated agency/private entity as per the Power Purchase Agreement (PPA) signed with the distribution utility/designated agency/private entity.

- **State Transmission Utility:** A Board or a Government company notified by the State Government to undertake transmission of electricity through intra-State transmission system under the provisions of Electricity Act 2003.

- **Minimum Work Programme:** The work programme in terms of offshore wind power capacity specified in the Contract for development of offshore wind power in the allocated block.

- **Lease:** Lease means an offshore wind power project development and operation lease as may be elaborated in the offshore wind power lease rules and shall exclude right for exploration and exploitation of any other resource in the EEZ of the country.

- **Site Restoration:** All activities required to return a site to its predevelopment state pursuant to the Environmental Impact Assessment approved by the Ministry of Environment & Forests (MoEF) or to render a site compatible with its intended after-use after cessation of offshore wind power related operations in relation thereto and shall include, where appropriate, removal of equipment, structures and debris, replacement of top soil, re-vegetation, slope stabilisation, in-filling of excavations or any other appropriate actions in the circumstances.