

EDITORIAL



Global wind energy is experiencing significant growth and technological advancements, with a strong push towards offshore wind farms and larger, more efficient turbines.

The Indian wind energy sector is witnessing the deployment of larger, more efficient turbines with taller towers and longer blades, designed to capture more energy from diverse wind profiles. Hybrid models, combining wind and other renewable sources, are also gaining traction, along with the integration of smart grid technologies for better grid management. With the increase in high-rise buildings, rooftop wind turbines are finding a place as small-scale wind power generators. These silent roof-top wind turbines are capable of meeting half of the energy requirement in a household.

MNRE has sanctioned Met-Ocean Measurements project at Gulf of Khambat and Gulf of Mannar to NIWE to Foster the growth of Offshore Wind in the Country. Under this project, as per the approval of the Project Monitoring Committee directions, 3 sites have been identified to map offshore wind resource along the Gulf of Mannar, Tamil Nadu coast.

Following the formal launch of the collaborative project between NIWE and NIOT in early 2025 significant strides were made during the April-June quarter toward realising India's first indigenous Floating LiDAR Offshore Wind Measurement System. The R&D agreement was signed, initial funds disbursed, and core technical and administrative teams were on boarded.

The Wind Resource Assessment Division had successfully commissioned 3 nos. of Wind Monitoring Stations (WMS) at Manglutan, Bharatpur, and Sigmundera sites in the Andaman & Nicobar Islands, 4 nos. of Wind Monitoring Stations (WMS) in Leh, Ladakh for

which the measurements are under progress. The division has also successfully completed three Wind Monitoring Station (WMS) projects for Energy Yield Assessment.

The certification division had signed 3 agreements with various manufacturers in connection with certification of their wind turbines. NIWE has successfully undergone the 2nd Surveillance Office Assessment conducted by NABCB in accordance with ISO/IEC 17065:2012 to maintain accreditation as Product Certification body.

The Standards & Regulation division had completed review of documentation for 08 numbers of RLMM applications of various wind turbine models submitted by wind turbine manufacturers for RLMM and also completed the review of documentation of one prototype wind turbine model.

The Testing division has successfully conducted the workshop on wind turbine maintenance and repair strategy on 03.06.2025.

The Skill Development and Training Division of NIWE was granted the status of an Awarding Body and Assessment Agency (Dual Recognition) by National Council for Vocational Education and Research (NCVET), Ministry of Skill Development and Entrepreneurship, Govt. of India. The Qualification Pack approved by NCVET is being used for rolling out VSDP - Phase-II (under approval by MNRE) to provide a structured and comprehensive learning pathway for aspiring professionals in the wind energy sector. The division has scheduled to conduct two National Training Course during this financial year.

Looking ahead, we anticipate further innovations and collaborations that will drive the industry forward. Your continued support and engagement are vital as we navigate the challenges and opportunities that lie ahead.

Stay connected for our next issue as the winds of change continue to blow strong.

Dr. Rajesh Katyal, Director General



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Research and Development

The Research & Development Division at NIWE continues to drive India's wind energy agenda with remarkable strides in global collaboration, technological innovation, and community engagement. This quarter, our efforts have focused on advancing offshore wind capabilities, fostering inclusive development, and reinforcing NIWE's leadership in sustainable energy research. We are excited to share these achievements, which reflect our commitment to shaping a resilient and renewable energy future for India.

Global Leadership in Wind Energy R&D

NIWE proudly represented India at the 96th Executive Committee (ExCo) meeting of the International Energy Agency's Wind Technology Collaboration Programme (IEA Wind TCP), held virtually in March 2025. With the meeting minutes finalized in the third week of April 2025, we're delighted to share these significant outcomes in this quarter's newsletter, reflecting NIWE's pivotal role in global wind energy advancements.

As India's delegate, NIWE, represented by Shri David Solomon, Director & Head, R & D, WTRS (In-charge) engaged with over 25 member countries and organizations to shape the future of wind energy research and policy. The ExCo unanimously approved the extension of Task 51 (Forecasting for Weather-Driven Energy Systems, Phase II) for 2026–2029. The meeting also greenlit Task 48 (Airborne Wind Energy, Phase II) in principle, alongside discussions to streamline Task governance, enhance communication strategies, and amplify the global impact of collaborative outcomes.

Highlights included country presentations showcasing innovations like China's 26 MW offshore wind turbine and Japan's newly commissioned offshore wind farms, inspiring NIWE's efforts to integrate cutting-edge offshore Wind practices into India's Offshore Wind sector. The meeting also laid the groundwork for the 2025 Annual Report and upcoming Topical Expert Meetings, reinforcing a commitment to knowledge-sharing.

NIWE's active participation underscores its dedication to advancing global wind energy innovation while strengthening India's position as a leader in sustainable energy development.

Advancing Just Transitions in Offshore Wind Development

As part of its growing global partnerships in offshore wind research, NIWE continued to support the community engagement study for the Gulf of Mannar region, being undertaken in collaboration with Ocean Energy Pathway (OEP), Global Wind Energy Council (GWEC), and the University of Massachusetts Amherst. In this quarter, OEP officially on boarded a renowned consulting partner to lead the work, which focuses on integrating global best practices in stakeholder engagement, especially with coastal and fishing communities.

With stakeholder consultations underway and expert inputs being actively gathered, the study is progressing toward completion in the upcoming quarter. The findings are expected to inform more inclusive offshore wind development strategies in India. OEP and ERM will present the final outcomes through a dedicated knowledge dissemination workshop, aimed at catalysing dialogue among developers, regulators, researchers, and coastal stakeholders across the Indian offshore sector.

Pioneering Offshore Wind Measurement Technology

Following the formal launch of the collaborative project between NIWE and NIOT in early 2025, significant strides were made during the April–June quarter towards realising India's first indigenous Floating LiDAR Offshore Wind Measurement System. The R&D agreement was signed, initial funds disbursed, and core technical and administrative teams were on boarded. Field visits and preliminary planning have enabled early-stage procurement and system design activities to commence in line with the defined timeline.

A key highlight of this quarter was the convening of the first Project Monitoring Committee (PMC) meeting in June 2025. The committee reviewed the project's progress and endorsed the direction and pace of implementation. Deliberations covered buoy design, deployment strategy, and operational logistics. With foundational elements in place, the project now advances towards system finalisation and validation—paving the way for full-scale offshore deployment in the coming months.

Outlook for FY 25-26

The R&D Division at NIWE is poised to amplify its global leadership in wind energy innovation, building on its 2024-25 successes. Through robust international collaborations, the division will advance cutting-edge wind energy technologies. By emphasizing inclusive stakeholder engagement, NIWE will integrate community-focused strategies into its research efforts. This comprehensive approach positions NIWE to spearhead India's sustainable energy future with innovative solutions.



Offshore Wind Development

Met-ocean Measurements (Wind Resource Mapping in Tamil Nadu coast line):

MNRE has sanctioned a project Met-Ocean Measurements at Gulf of Khambhat and Gulf of Mannar for Fostering the Growth of Offshore Wind in the Country to NIWE with the objective of quantifying the wind potential of offshore regions towards demarcating the offshore wind energy blocks.

Under the project, as per the approval of the Project Monitoring Committee directions, 3 sites have been identified to map offshore wind resource in Gulf of Mannar, Tamil Nadu coast.

NIWE has deployed the Offshore Lidar at VOC port (4 to 5 km from the sea shore) and Udangudi Thermal Coal jetty (8 to 9 km from the sea shore) which together with the measurements at sub-zone 1 will cover wind profile of the Tamil Nadu coast. The 1-year measurement campaign has been completed.

LiDAR Location

Location	LiDAR Serial number	Latitude/Longitude	Installation Date
VOC_Port_1	ZX300M-996	8° 44' 58.2"N /78°13'36.19"E	25-11-2023
VOC_Port_2	ZX300M-997	8° 45' 19.58"N/78°13'16.24"E	02-12-2023
UDANGUDI	ZX300M-998	8°23'35.763"N/78°8'0.686"E	02-02-2024



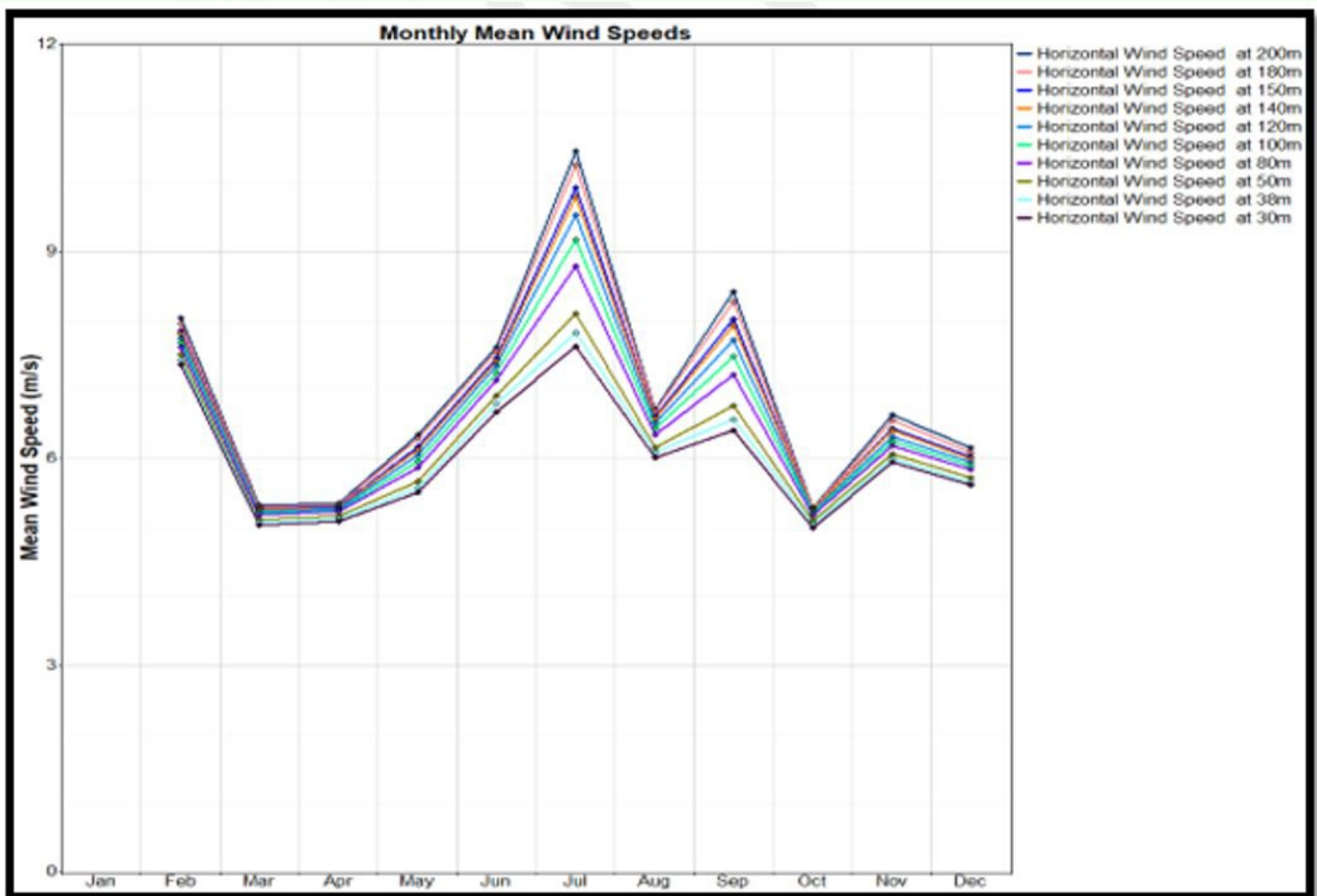
LiDAR location: VOC Port



LiDAR location: Udangudi Thermal Jetty



LiDAR installed at VOC Port, Gulf of Mannar



Monthly Mean Profile of Wind Speed (30m to 200m) for LiDAR 996 VOC_Port_1

Wind Resource Assessment

Data Collection and Analysis

Andaman & Nicobar Islands

The division had successfully commissioned 3 nos. of Wind Monitoring Stations (WMS) at Manglutan, Bharatpur, and Sigmundera sites in the Andaman & Nicobar Islands. The required No Objection Certificate (NOC) has been obtained from the respective landowners. The measurements are under progress. The summary of measurement is given in table below.

S.No.	Site Names	Data Period
1	Manglutan	01.05.2024 to 05.02.2025
2	Bharatpur	01.04.2024 to 31.05.2025
3	Sigmundera	01.06.2024 to 31.05.2025

Leh, Ladakh

The division had successfully commissioned 4 nos. of Wind Monitoring Stations (WMS) at Kharnak-1&2 and Pang-1&3 sites in the Leh, Ladakh. The measurements are under progress. The summary of measurement is given in table below.

S.No.	Site Names	Data Period
1	Kharnak 1	13.09.2022 to 09.06.2025
2	Kharnak 2	01.06.2023 to 09.06.2025
3	Pang 1	05.05.2022 to 09.06.2025
4	Pang 3	06.05.2022 to 09.06.2025

Lakshadweep

- Successfully completed data collection and rectification of offshore LiDAR at Kadamat, Lakshadweep Island.
- Data from the LiDAR is being monitored and downloaded daily.
- The wind-farm installation logistics and power-evaluation studies on Lakshadweep Island were completed during the tour from 07.05.2025 to 15.05.2025.

Data Analytics

Consultancy projects

The WRA Division has successfully completed three Wind Monitoring Station (WMS) projects for Energy Yield Assessment:

- **M/s Adani** – 110 MW Wind Farm Project at Khavda, Gujarat
- **M/s Inox Clean Energy Limited** – 50 MW (2×25 MW) Project at Dayapar, Gujarat
- **M/s Greenam Energy** – 40 MW Project at Tuticorin, Tamil Nadu

The Division has also completed elevation-certificate related activities. Additionally, it is actively engaged in an ongoing verification project for GRIDCO at Chudamani, Tamil Nadu

Geotagging

Geotagging is a process that involves capturing GPS coordinates of wind turbine locations and assigning a unique ID to each turbine. In the case of a wind farm site with multiple turbines, this process was implemented to accurately map the precise location of each turbine. During the period, 150 geotagging IDs have been created.

Issuance of Elevation Certificate for MoD NoC Applications for Wind Power Projects

- The purpose of the project is to validate the elevation certificate and the inputs given by the surveyor and client. To do this, DGPS will be used to conduct joint site visits. High-resolution terrain modeling and desktop GIS tools will be used to validate the coordinates of all proposed wind turbine locations, and a report and certificate will be provided.
- Visited 3 WTGs in Tuticorin, Tamil Nadu for issuance of Elevation Certificate.

Certification & Information Technology

CERTIFICATION

- An agreement has been signed between NIWE and M/s. Siva Windturbine India Private Limited for the second stage of Type Certification Process viz., “Evaluation of Siva U57 WT model in connection with Type Certification”. The Evaluation process is ongoing.
- An agreement has been signed between NIWE and M/s. Inox Wind Limited for the second stage of Certification process viz., Evaluation of documentation in connection with the inclusion of additional component supplier in the existing Type Certificate issued by NIWE for wind turbine model viz., “INOX DF/3000/145 3.0 MW Power Booster Mode 3.3 MW Rotor Blade Type SR71 V2 (T-Bolt) / WBSR146-3.0 Hub Height 100m/122.5m/140m IEC WT Class IIIB/S”. The Evaluation process is ongoing.
- An agreement has been signed between NIWE and M/s. Pioneer Wincon Energy Systems Private Limited for the second stage of Certification process viz., Evaluation of documentation in connection with Type Certification of “Pioneer Wincon 750/57, 750.0kW, PW28.0, HH 90.0m, IEC III A” for the inclusion of 110m Hub Height tower design and the re-evaluation of existing 90m Hub Height tower design. The Evaluation process is ongoing.
- NIWE successfully had undergone the 2nd Surveillance Office Assessment conducted by NABCB in accordance with ISO/IEC 17065:2012 to maintain accreditation as Product Certification Body on 28.04.2025 & 29.04.2025 at NIWE, Chennai.
- An agreement has been signed between NIWE and M/s. Siva Windturbine India Private Limited for the first stage of Type Certification Process viz., Pre-evaluation of documentation in connection with the inclusion of additional components in the existing Type Certificate issued by NIWE for the wind turbine models viz., “Siva 250/50 and Siva

225/40”. The Pre- Evaluation process has been completed.

Visit

Shri S.A. Mathew and Shri S. Paramasivan visited China to perform the manufacturing inspection of machinery components in China for the 2nd stage of the Certification process viz. “Evaluation of documentation in connection with the inclusion of additional component suppliers in the Type certificate issued by NIWE for wind turbine model viz., “INOX DF/3000/145 3.0 MW Power Booster Mode 3.3 MW Rotor Blade Type Sr71 V2 (T-Bolt) / WBSR146-3.0 Hub Height 100m/122.5m/140m IEC WT Class IIIB/S” of M/s. INOX Wind Limited.

INFORMATION TECHNOLOGY

- Continued to maintain the IT infrastructure to keep servers, storage, systems, Firewalls, Switches, CCTV, endpoint security and software up and running.
- Continued to provide IT support for users at NIWE and its stakeholders.
- Carried out procurement of new hardware, software, and AMC services.
- Regularly taking the backup of NIWE data in DC and DR IT infrastructure.

New Infrastructure created / being proposed by Division

- Proposed to carry out the restructuring of Wi-Fi.
- Proposed to carry out the video conferencing system at Seminar Hall and purchase division.
- Procurement of a Web Application Firewall (WAF), NGFW and SIEM is proposed.
- E-Office upgradation is currently in progress.
- Migration of NIC email services to new cloud based platform is underway.
- STQC GIGW certification for NIWE website is in progress.

Testing

Calibration Wind Tunnel Facility (CTF) Project

A Request For Proposal (RFP) on “Engagement of Technical Consultant/ Consultancy Firm for the Establishment of a Calibration Wind Tunnel facility” at Mohasa-Babai Industrial Area, Narmadapuram District, Madhya Pradesh” is floated by M/s. Madhya Pradesh Industrial Development Corporation (MPIDC) on 05.05.2025. Further, an interactive session was organized by MPIDC with prospective bidders on 23.06.2025 in hybrid mode to understand insightful experience, technical queries, contributing to deeper understanding of the tender requirements and objectives. The division provides continuous support to MPIDC in Tendering process.

Quality Management Initiatives

Continual improvement and maintenance of the Quality Management System for Testing services, as per ISO 9001:2015 and ISO/IEC 17025:2017, are in progress.

Indo – Danish Research Collaboration Project

“Maintenance and Repair Strategy for Wind Energy Development”

The Division has organized an one day Workshop on “Wind Turbine Maintenance Strategies” on 03.06.2025 through virtual mode in collaboration with DTU, Denmark. Dr. K. Boopathi, Director & Division Head (Testing) presented a session on “Wind Turbine Blade Damage Mechanisms & Repair Technologies”. Experts from DTU Wind, Denmark, CSIR-NAL, IIT Delhi, M/s. Wind Care & M/s. Wish Energy have participated and delivered various technical sessions. The MAINTAINERGY project addresses critical maintenance challenges in India's Wind Energy Sector.

Publication

“Reliability analysis of fault-tolerant reconfigurable non-isolated dc-dc converter for dc microgrid” published in International Journal of Electronics Letters in Department of Electrical and Electronics Engineering, SRM Institute of Science & Technology – Authors: Divya Navamani J and Dr. K. Boopathi – <https://doi.org/10.1080/21681724.2025.2487784>

Visitor

Mr. Raghav Sharma, Consultant along with Mr. Ryo Yasui, Deputy Senior Consultant and Mr. Yoko Morita,

Senior Associate Consultant, Nomura Research Institute Consulting and Solutions India Private Limited (NRI) visited NIWE and had discussion with Dr. K. Boopathi, Director & Division Head, Testing on “Power Performance Measurements” on 04.06.2025.



One day Workshop on “Wind Turbine Maintenance Strategies” through virtual mode in collaboration with DTU, Denmark

Standards and Regulation

- Review of documentation has been completed for 08 numbers of RLMM applications of various wind turbine models submitted by wind turbine manufacturers for RLMM. Further, technical support has been provided to MNRE for implementation of Revised Lists of Models and Manufacturers of wind turbines (RLMM) process.
- Completed the review of documentation of one prototype wind turbine model. Organized the Prototype committee meeting Chaired by DG, NIWE. Subsequently, a letter dated 21.05.2025 has been issued in connection with grid synchronization for one prototype wind turbine model, as decided by the Prototype Committee.



PWMM Committee meeting

- Organized the 15th ETD 42 Wind Turbine Sectional Committee meeting of BIS held on 06.05.2025 through hybrid mode at NIWE, Chennai. The meeting was attended by DG, NIWE / Chairman ETD 42, Shri Ritwik Anand, Scientist C, BIS member secretary, Director and Division Head, S&R and division engineer and status of Indian standards and various standards related works have been discussed.



15th ETD 42 Wind Turbine Sectional Committee meeting

- Director and Division Head, S&R along with DG, NIWE and Division engineer attended the 27th ETDC Division Council meeting held on 02.05.2025 through hybrid mode.
- Shri. A. Senthil Kumar, Director & Division Head, S&R, as Management Representative (MR), carried on the following:
 - Organized the 28th Management Review meeting of Quality Management System (QMS) as per ISO 9001:2015 on 20.05.2025 at NIWE, Chennai in which the status of QMS of NIWE was presented and discussed.



28th Management Review meeting

- Successfully completed the DNV Recertification Audit of QMS as per ISO 9001:2015 held on 09.06.2025 at WTTS, Kayathar and held on 16.06.2025 & 17.06.2025 at NIWE, Chennai.



Recertification Audit conducted by M/s. DNV @ NIWE, Chennai

- The continual improvement and maintaining the quality management system are ongoing.

Skill Development and Training

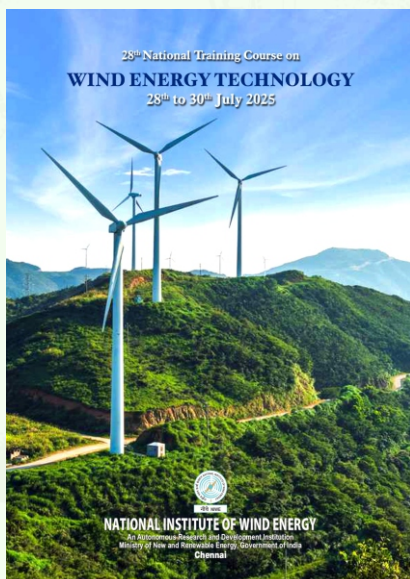
Vayumitra Skill Development Programme (VSDP)

Ministry of New & Renewable Energy (MNRE), Government of India has sanctioned a project, “Vayumitra Skill Development Programme (VSDP)” to create skilled workforce for the Indian wind energy sector especially the trained manpower for the operation & maintenance of wind farms in the country as per the industry demand/needs so as to achieve the Government of India targets and other future targets.

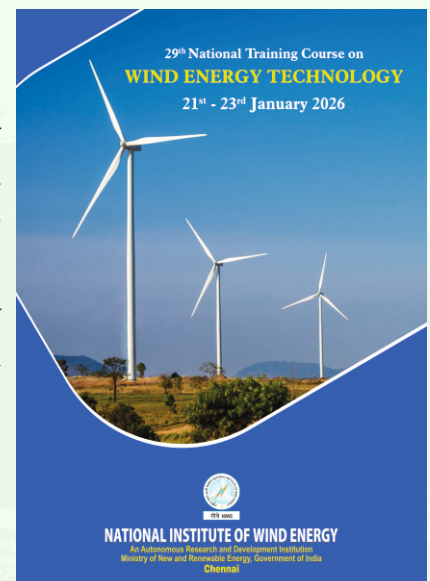
NIWE had got an approval for a new QP through NCVET which is a shift towards new-age job roles aligned with the New Education Policy (NEP) of the Government of India. Since NIWE has been recognized as an Awarding Body (AB) and Assessment Agency (AA) by the National Council for Vocational Education and Training (NCVET) with a new Qualification Pack (QP) viz. Wind Farm Engineer. Recently, the MNRE committee constituted for Review and Monitoring the VSDP Project advised NIWE to roll out VSDP - Phase-II due to the expiry of the old QP. This QP integrates to provide a structured and comprehensive learning pathway for aspiring professionals in the wind energy sector. Also MNRE had directed NIWE to conduct a Stakeholders meeting for obtaining concurrence for the QP “Wind Farm Engineer” for VSDP Phase-II. The participants from associations / experts from wind industry took part in the meeting held on 06.03.2025. All participants unanimously supported the new QP, agreeing that they were in line with the current industrial standards and are fully updated. In connection with this, NIWE had submitted a proposal to MNRE for conducting ToT and ToP programmes with a participant strength of 210 and 900 respectively as part of VSDP Phase – II programme. The approval for the same is expected from MNRE.

Upcoming Training Courses

NIWE proposes to conduct the following Training Courses in the near future. This is done to equip participants with comprehensive knowledge of wind energy systems and their applications, to share updates on global and national wind energy scenarios, government policies, legal frame works and capacity enhancement in the sector.



- 28th National Training Course on Wind Energy Technology scheduled during 28.07.2025 to 30.07.2025.
- Special Training Course on Wind Energy Technology for the Officials of ReNew Pvt Ltd scheduled during 15.09.2025 to 20.09.2025.
- Special Training Course on Wind Energy Technology for the Officials of Envision Wind Power Technologies India Pvt Ltd scheduled during 06.10.2025 to 10.10.2025.
- 29th National Training Course on Wind Energy Technology scheduled during 21.01.2026 to 23.01.2026.



Internship Programme

The “NIWE-Academic Associate Programme” (NIWE-AAP) aims to encourage students and provide an opportunity to choose renewable energy as their career option. To create awareness and interest in the field of renewable energy research among the young talented Sciences, Management and Engineering students NIWE invites applications from the eligible candidates for the “NIWE-Academic Associate Programme” (NIWE-AAP).

The duration of the Internship is normally in the range of two weeks to six months. NIWE-AAP will provide opportunities for the students / post studies students / Lecturers / Professors to work with scientists / engineers on NIWE's projects.

- From April to June 2025, our internship program saw significant activity. Totally 155 applications were received and 44 students have successfully enrolled. 14 students have received their Internship Certificate and 12 students currently in the process of completing their internships.

Industrial Visit

To create awareness and to motivate towards research on wind energy, achieving the indigenization and also to create awareness about the activities and services of NIWE, schools and college students / institutions are encouraged to visit the campus.

During the period from April to June 2025, 22 officials from M/s Vestas Technology and Operations Chennai had visited on 16.06.2025. The officials had appreciated the presentation and stated that it was a truly enriching experience and also the talk was highlighting the importance of conserving energy in our daily lives and also appreciated the Renewable Energy facility available at NIWE campus.



Officials from Vestas, Chennai visiting RE facility at NIWE campus



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NATIONAL INSTITUTE OF WIND ENERGY (NIWE)

An autonomous R&D Institution under the Ministry of New and Renewable Energy (MNRE), Government of India
Velachery - Tambaram Main Road, Pallikaranai, Chennai - 600 100.

Phone : +91-44-2246 3982, 2246 3983, 2246 3984 Fax : +91-44-2246 3980

E-mail : info@niwe.res.in URL : <http://niwe.res.in> [www.Facebook.com/niwechennai](https://www.facebook.com/niwechennai) [www.Twitter.com/niwe_chennai](https://www.twitter.com/niwe_chennai)

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