

10th National Training Course on

WIND ENERGY TECHNOLOGY

25th to 27th May 2011



ISO 9001:2008

Organized by

CENTRE FOR WIND ENERGY TECHNOLOGY

An Autonomous Research and Development Institution

Ministry of New and Renewable Energy, Government of India

Chennai – 600 100



The wind power programme of the Ministry is the fastest growing renewable energy programme. Indian wind power potential is 49,130 MW and the installed capacity is 13,065 MW as on December 2010. Wind power contributes to around 75% of the grid-connected renewable energy power installed capacity in the country. The major wind power capacity is in the states of Tamil Nadu, Gujarat, Maharashtra, Karnataka and Rajasthan. The wind energy market is continuing to grow steadily in India along with the rest of the world. India is all set to become one of the global manufacturing hubs for wind turbines with about 18 large wind turbine manufacturers, capacity ranging from 225 kW to 2500 kW and several small wind turbine manufacturers producing capacity ranging from 300 W to 50 kW. The main driving force for development of wind energy sector has been the programmes and provisions of Government of India (Major highlight: Accelerated Depreciation of 80%) which enabled large profit making companies, small investors and captive users to participate in the sector. Ministry has also launched a scheme for Generation Based Incentives (GBI) through which more Independent Power Producers (IPPs) and Foreign Direct Investment (FDI) are attracted towards the sector.

Indian Wind Industry faces serious deficit of skilled man power to meet the huge demand of this booming industry. Completely Indigenous and low-cost wind turbine design remains as challenge due to non-availability of human resource and research infrastructure. To assure timely evolution of wind industry and to meet India's demands and development of rural areas, human resource development is a matter of immense interest. Centre for Wind Energy Technology (C-WET), Chennai is continuously addressing these issues by organizing national & international training programmes since 2004 to produce quality human resource for windustry. Till now, about 600 national and 100 international participants were trained by C-WET through its ten national training courses including one special training course for professionals from Ministry & SNAs and Seven international training courses including one special training course for AOI engineers from Egypt.

With this background, we are happy to announce the 10th National Training Course on "Wind Energy Technology" to address all aspects of Wind Resource Assessment, Wind Turbine Testing, Standards & Certification and Operation &

Maintenance of Wind Electric Generators (WEGs) in a focused manner. This short course offers a unique opportunity to learn about fundamentals of wind turbine technology and has been well received by the public and appreciated for wide coverage of interdisciplinary syllabus and quality of lectures.

COURSE OBJECTIVES

The objective of the training course is to transfer knowledge and needed special skills to the wind energy personnel active in technical and operational fields. The idea is to provide specialized training and knowledge to industry, utilities, technical institutions and various central and state governmental implementing agencies.

- ❖ Build personnel to meet the huge demand of skilled human resource in India, and specifically to do extensive research and evolve innovative strategies.
- ❖ Disseminate knowledge and develop special skills using lectures from scientists and leading professionals in the wind energy sector, interactive sessions with the leading personnel in the Wind Energy field and learning materials.
- ❖ Provide an invaluable platform for exchange of professional and cultural experiences among diverse participants from all parts of the country.
- ❖ At the end of this course, participants will have strong understanding on fundamentals of wind energy technology along with applications, standards, certification, economics, CDM and policies.
- ❖ Leverage on the research that continues to shape this rapidly evolving discipline.

THE PROGRAMME

The total course duration is three days from **25th to 27th May 2011** encompassing presentations, lectures with case studies and success stories. The training course timing will be from **09.00 a.m. to 06.00 p.m.**

METHODOLOGY & COURSE OUTLINE

The course content for the training is a carefully thought out syllabus with specific subject experts giving lectures. The course is designed to address all the aspects of wind power



harnessing starting from wind resources assessment to project implementation and operations & maintenance in a focused manner. The three day course gives an overview covering the following multi-disciplinary topics:

- ❖ Wind energy conversion technology and power generation
- ❖ Assembly / design of wind turbine
- ❖ Wind turbine components and performance characteristics
- ❖ Control system engineering
- ❖ Wind turbine technology developments
- ❖ Feasibility study & technology assessment of wind farms
- ❖ Wind resources assessment and techniques
- ❖ Planning including design of wind farms
- ❖ Cost benefit analysis of wind energy projects
- ❖ Installation and commissioning of wind farms
- ❖ Post installation activities - grid integration
- ❖ O & M aspects of wind farms
- ❖ Testing of wind turbines
- ❖ Certification of wind turbines
- ❖ Small wind turbine and hybrid systems
- ❖ Indian government policies, schemes and legal frameworks
- ❖ Wind energy developments in India
- ❖ CDM related to wind energy development

RESOURCE PERSONNEL

The resource persons for the training course would be from C-WET scientists / engineers, industry professionals and academicians who have contributed significantly for the developments in the field of energy, renewable energy and wind energy in particular.

TARGETED PARTICIPANTS

The course will be useful for anyone involved in wind energy industry, or those looking for an introduction. Person from the following fields will find this course very relevant :

- ❖ Power Industry ❖ State Nodal Agencies / Utilities
- ❖ Project Developers / Managers ❖ Consultants ❖ NGOs
- ❖ Academic and R&D institutions ❖ Suppliers and Distributors
- ❖ Government Organization ❖ Media

A Training programme exclusively for students is scheduled for the end of 2011. Announcement to the effect will be made available on the C-WET website www.cwet.tn.nic.in / cwet.res.in in due course. Students attending this programme should pay the full fee.

REASON TO ATTEND

The course will offer a good foundation on the principles of engineering behind wind energy technology and power generation & distribution along with financial viability and entrepreneur opportunities. The course would also outline the government policies and wind energy scenario in India. The course would facilitate an invaluable platform for dialogue and open exchange of views and experiences with scientists / professionals across the country. The course would give a picture of the know-how and pave the way to go about setting up a financially viable wind farm project.

VENUE

The venue for the course would be the Conference Hall, Centre for Wind Energy Technology, 657/1A2, Velachery - Tambaram Main Road, Pallikaranai, Chennai – 600 100.

COURSE FEE

This is a non-residential training course. The course fee is **Rs.10,000/- plus Service Tax of 10.3% (Rs.11,030/-)** per participant. The course fee must be paid in advance through demand draft drawn in favor of the **"Centre for Wind Energy Technology", payable at Chennai** along with the duly filled-in registration form. The course fee includes course material, lunch and refreshments and excludes the accommodation.

REGISTRATION

The enclosed registration form should be filled in all aspects and reach C-WET **on or before the 1st May 2011** along with the course fee. Due to limited seats, acceptance of nominations will be on the **"First-come, First Served"** basis subject to receipt of full course fee with Service Tax of 10.3%.

COURSE CO-ORDINATOR

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ABOUT C-WET

The Centre for Wind Energy Technology shortly known as C-WET is an autonomous R&D institution established at Chennai in 1998 by the Ministry of New and Renewable Energy (MNRE), Government of India. It is a young organization with highly experienced professionals with expertise in all related disciplines of wind energy sector. This unique combination makes it a forward looking and practical organization that will take the next logical steps towards advancing wind technology in the right direction. With its open approach to all wind energy related science and technology, C-WET assures assistance from resource assessment to project implementation. As an integral part of C-WET, a world class Wind Turbine Research Station (WTRS) is located at Kayathar in Thoothukudi District, Tamil Nadu. Perhaps, C-WET is the only Testing and certifying agency in the country.

C-WET has the responsibility to provide complete scientific and technical backing to all stakeholders in the field of wind energy and has stated its commitment through its quality policy.

C-WET is committed to achieve customer satisfaction, loyalty and confidence by providing credible, prompt and complete solutions of international quality to all the stakeholders in the wind energy sector.

C-WET, strives to be technical focal point of excellence for the present and future. C-WET shall stay at the forefront of Wind Turbine Technology application by continuously improving its expertise.

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