



12<sup>th</sup> National Training Course on  
**Wind Energy  
Technology**

**Specially for Students**

**18<sup>th</sup> to 20<sup>th</sup> July 2012**



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

12<sup>th</sup> National Training Course on

# Wind Energy Technology

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In dealing with Climate Change, we are focusing more and more on renewable energy sources for sustainable development. Wind Power has been one of the most promising options for a better life and greater independence from fossil fuels. India's present wind energy installed capacity is about 17,100 MW, globally holding the fifth position. Wind power contributes to around 80% 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. India is all set to become one of the global manufacturing hubs for wind turbines with about 20 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.

As wind power is being adapted the world over as the most efficient power generation source that does not cause greenhouse emissions, there is a huge demand for human resource to meet national and international business expansion. There are estimates that a target of 12% wind power for South Asia (India, Pakistan, Bangladesh, Sri Lanka and Nepal) will result in 50 GW wind power in the region by 2020 and most importantly providing employment to 2,66,400 people.

Indian Wind Industry faces serious deficit of skilled manpower 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 and international training programmes since 2004 to produce quality human resource for windustry. Till now, about 750 national and 150 international participants were trained by C-WET through its twelve national training courses including one special training course for professionals from Ministry & SNAs and nine international training courses including one special training course for AOI Engineers from Egypt.

With this background, we are happy to announce the 12<sup>th</sup> National Training Course on "Wind Energy Technology" especially for students. The course will 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 have 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 students who are keen to focus their career on renewable energy. The idea is to provide fundamental knowledge on wind turbine technology and to take up research challenges in the field.

- ❖ 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 ideas 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 **18<sup>th</sup> to 20<sup>th</sup> July 2012** encompassing presentations, lectures with case studies, success stories and exercises. 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 and class room exercises. 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
- ❖ Wind turbine technology developments
- ❖ Wind resources assessment and techniques
- ❖ Planning including design of wind farms
- ❖ Design of wind turbine
- ❖ Wind turbine components and performance characteristics
- ❖ Control system engineering
- ❖ Feasibility study & technology assessment 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 & 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 is specially framed to cater the student community. Students and research scholars from Technical Institutions / Colleges / Universities can attend the course.

## 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 Lecture Hall of 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.5,000/- plus service tax of 12.36% per participant.** Students need to provide a supporting bona fide certificate authorized by the head of the institution (Applications without bona fide certificate will be rejected). The course fee must be paid by demand draft drawn in favour of the “**Centre for Wind Energy Technology**” payable at Chennai. 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 02-07-2012** 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 of Rs.5,000 plus service tax of 12.36%.

## REFLECTIONS FROM PREVIOUS PARTICIPANTS

“Beneficial course for those who are going to enter in wind energy profession...”

“Technical content was too right considering diverse mix of people...”

“Very informative program covering all aspects of wind energy development with excellent presentations...”

“It might be a good for beginners in the field of wind energy technology...”

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## 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 Test Station (WTTS) 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.



## CENTRE FOR WIND ENERGY TECHNOLOGY

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