



11th International Training Programme on
**WIND TURBINE TECHNOLOGY
AND APPLICATIONS**

4th September - 2nd October 2013

Organized by



C-WET

CENTRE FOR WIND ENERGY TECHNOLOGY
Chennai, India

Sponsored by

MINISTRY OF EXTERNAL AFFAIRS (MEA)

Government of India, New Delhi

Supported by

MINISTRY OF NEW AND RENEWABLE ENERGY (MNRE)

Government of India, New Delhi



Introduction

Wind power is being adapted the world over as the most efficient power generation source that does not cause greenhouse emissions. With the raising concerns on climate change, countries are under pressure to turn renewable energy (RE) sources and reduce CO₂ emissions. Amongst RE sources, Wind energy is proved to be more successful energy option next to hydro and about 290 GW has been installed worldwide. Earth's commercially viable wind power potential is estimated at 72 TW which is five times more than World's total energy demand. With such a huge potential, only very few countries are really using wind power at a large scale for electricity production. Deficit of skilled human resource has been one of the main barriers to hinder wind energy and other renewable energy diffusion.

Centre for Wind Energy Technology (C-WET), Chennai, India, being first of its kind institution in Asia, has responsibilities to take up this issue. C-WET has contributed for diffusion of wind energy as one of the primary energy source in India. Now India, over the years has been a trend-setting nation with regard to Wind Power Utilization. Decades of concentrated efforts have started to yield gratifying results and today, Wind power contributes about 8.5 % of the total energy mix of 2,23,343 MW and stands fifth in terms of installed wind power capacity worldwide (19051 MW) as on March 2013. With this vast experience, it is worth effort that India can incorporate lessons learnt from her own experience and foster elsewhere in the globe. In this context, a five week 11th International Training programme is scheduled by C-WET. To highlight, C-WET has so far successfully organized 10 international, 13 national and 2 special customized training programmes, where in 185 professionals from 50 countries and more than 850 professionals from all parts of the India including students.

Objective

- ❖ The prime objective is to transfer knowledge and special skills to the international participants.
- ❖ Build skilled human resource so that there will be advancement of wind energy in the participants' country.

- ❖ Provide an invaluable platform for exchange of professional and cultural experiences among diverse participants from different parts of the globe.
- ❖ Leverage the research that continues to shape this rapidly evolving discipline.

Training Methodology

The classroom lectures include exercises and case studies to stimulate active participation and dialogue. Hands-on training on wind energy equipments and excursions to operating wind farms and wind turbine manufacturing facilities are also scheduled to enhance transfer of knowledge practically.

Resource Persons

The resource persons will be the C-WET scientists, industry professionals, academicians and other national experts who have significantly contributed for the wind energy development.

Programme Syllabus

The programme content for the training is a carefully thought out syllabus with specific subject experts giving lectures and going through the specific case studies such that at the end of the day considerably useful knowledge transfer is perceived.

The training will address the following aspects:

- ❖ Wind energy conversion technology and power generation
- ❖ Wind turbine technology developments
- ❖ Wind turbine components and performance characteristics
- ❖ Design aspects of wind turbine
- ❖ Wind resource 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
- ❖ Wind farm monitoring & management
- ❖ Testing & Certification of wind turbines
- ❖ Small wind turbine and hybrid systems
- ❖ Indian government policies and schemes.

- ❖ Wind energy developments in India
- ❖ CDM related to wind energy development

During study visits, additional lectures at wind farms and manufacturing facilities would also be organized to give a complete picture of the know-how and how to go about setting up a coordinated wind energy programme at international level.

Targeted Participants

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

- ❖ Academic Institutions
- ❖ R & D Institutions
- ❖ State Nodal Agencies (SNA)
- ❖ Wind Turbine Manufacturing Companies
- ❖ Suppliers and Distributors
- ❖ Project Developers and Investors
- ❖ Independent Power Producers (IPP)
- ❖ Consulting Firms
- ❖ Financial & Insurance Institutions
- ❖ Media Personnel
- ❖ Non-Governmental Organizations (NGO)
- ❖ Government Organizations

Eligibility

- ❖ Applicants should be from any one of the ITEC / SCAAP countries
(Find the list of ITEC / SCAAP countries in <http://itecmea.gov.in>)
- ❖ Degree / Diploma in Engineering / Science with good knowledge in English
- ❖ Age should be between 25 to 45 years
- ❖ Relevant experience in wind energy is preferred

Programme Fee

The programme is completely free and sponsored by Ministry of External Affairs (MEA), Government of India. The Air travel from respective participant's country to Chennai, India and return, local travel, accommodation, living allowance, food and book allowance will be taken care as a

part of the programme. Accommodations provided will be of international standards.

Reason to Attend

The programme will offer a good foundation on the principles of engineering behind wind energy technology, power generation & distribution along with financial viability and entrepreneurial opportunities. This programme would facilitate an invaluable forum for dialogue and open exchange of views and experiences with Indian scientists and professionals. The programme would give a picture of complete know-how and pave the way to go about setting up a financially viable wind farm project.

The Programme

The total programme duration is 29 days from 4th September to 2nd October 2013 encompassing presentations, lectures with case studies, success stories and exercises.

Venue

Centre for Wind Energy Technology (C-WET), Chennai, India will be the venue of the programme

How to Apply?

The interested candidate may contact Indian Embassy / High Commission of the respective countries to submit application to forward to MEA and C-WET for processing. Details regarding Indian Embassy / High Commission in your country can be found at <http://itec.mea.gov.in>. Upon selection, the Embassy / High Commission of India will inform the Nodal / Designated Department / Agency of the nominating country and the candidate.

Course Coordinator

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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 following 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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