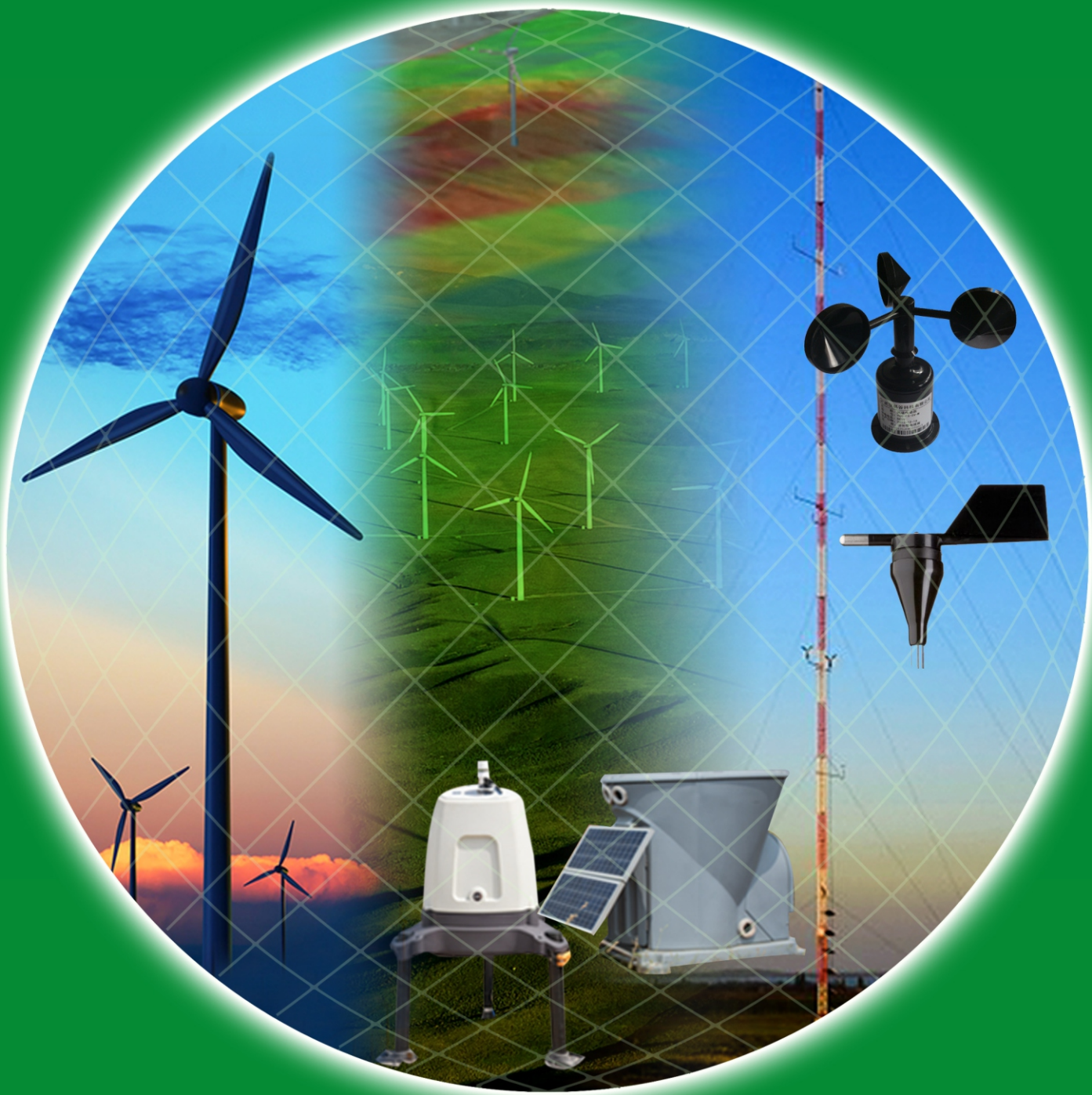


Special International Training Course on  
**WIND RESOURCE ASSESSMENT AND WIND FARM PLANNING**  
5<sup>th</sup> to 21<sup>st</sup> July 2017



Organized by



नीवे NIWE

**NATIONAL INSTITUTE OF WIND ENERGY**

Ministry of New and Renewable Energy, Government of India

**CHENNAI**

Sponsored by



**MINISTRY OF EXTERNAL AFFAIRS**

Government of India

**NEW DELHI**

## Introduction

With the rising concerns on climate change, countries are under pressure to turn to Renewable Energy (RE) sources and reduce CO<sub>2</sub> emissions. Amongst RE sources, Wind energy has proved a highly successful energy option and about 486 GW has been installed worldwide by end of 2016. Earth's commercially viable wind power potential is estimated at 72 TW which is four times more than World's total energy demand. With such a huge potential, only very few countries are using wind power. USA, some of the European countries and Asian countries like China and India are using wind energy on a large scale and it is in startup stage in many parts of the world. Lack of skilled human resource has been one of the main barriers that hinders wind and other renewable energy diffusion.

National Institute of Wind Energy (NIWE), Chennai, India, being first of its kind institution in Asia, perhaps in developing countries, has responsibilities to address this issue. NIWE has contributed for diffusion of wind energy as one of the primary energy sources in India. India, over the years, has been a trend-setter nation with regard to wind power utilization. Decades of concerted efforts have started to yield gratifying results and today, Wind power contributes about 9% (32279.77 MW) of the total Indian energy mix of 329204.53 MW and stands fourth in terms of installed wind power capacity worldwide as on March 2017. With a federal mandate to achieve 175GW of Renewables by 2022 in the Indian Grid of which 60 GW solely from wind, NIWE is exploring new potential sites as well preparing Atlas for higher Elevations like 100 mtrs on so forth to help the stake holders achieve the targets by 2022. With this vast experience, India can incorporate lessons learnt from its own experience to foster growth elsewhere in the globe. In this context, a three week International Training Course is scheduled by NIWE. The Course is sponsored by Ministry of External Affairs (MEA), Government of India, for ITEC member countries. To highlight, NIWE has so far successfully organized 23 international trainings, wherein 468 professionals from 78 countries have been trained and it has also organized 24 national training courses including 3 special trainings and trained 1211 professionals.

## Objectives

- ⇒ The prime objective is to transfer knowledge and special skills to the international participants.
- ⇒ To build skilled human resource so that there will be advancement of wind energy in the participating country.
- ⇒ To provide an invaluable platform for exchange of professional and cultural experiences among diverse participants.
- ⇒ To leverage the research that continues to shape this rapidly evolving discipline.

## Training Methodology

- (a) Class room lectures including exercises and case studies to stimulate active participation and dialogue.
- (b) Practical classes different field.
- (c) Hands-on working on wind energy equipments.
- (d) Study visits to operating Wind Monitoring Stations to enhance effective transfer of knowledge.

## Resource Persons

The resource persons for this training course will be NIWE scientists, industry professionals, academicians and other national experts who have significantly contributed for wind energy development in the country.

## The Programme

The course duration will be 17 days from  
**5<sup>th</sup> August to 21<sup>st</sup> September 2017.**

## Course Syllabus

The course content for the training has been carefully thought out syllabus with specific subject experts giving lectures and going through specific case studies such that, at the end of the course considerable useful knowledge transfer is perceived.

The course will address the following aspects:

- ⇒ Wind Energy Technology
- ⇒ Introduction to Wind Resource Assessment
- ⇒ Wind Resource Assessment techniques
- ⇒ Site Selection for Wind Monitoring Stations (WMS), Installation, Instrumentation and Commissioning of WMS
- ⇒ Wind Resource Mapping & Atlas
- ⇒ Met Mast and Modern Measurement Techniques including measurement using remote sensing instruments (SODAR & LiDAR)
- ⇒ Data Analytics and Processing
- ⇒ Software tools for Wind data Analysis
- ⇒ Design and Layout of wind farm
- ⇒ Forecasting and Wind Energy Production

Participants will also have opportunity of hands on experience on Wind Resource Assessment equipments and climbing of WMS.

## Venue

The venue for the programme will be the Conference Hall of **National Institute of Wind Energy**, Chennai, India.

## Target Participants

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

- ⇒ Academic and R & D Institutions
- ⇒ Power Industry
- ⇒ Wind Turbine Manufacturers
- ⇒ Suppliers and Distributors
- ⇒ Utilities
- ⇒ Consultants
- ⇒ Project Developers
- ⇒ Government Organization
- ⇒ NGOs and Green Engineers

## Eligibility

- ⇒ Applicants should be from any one of the ITEC countries.
- ⇒ (List of ITEC countries can be found in <http://itec.mea.gov.in>)
- ⇒ **Degree / Diploma** in Engineering / Science with good knowledge in English.
- ⇒ Age should be between **25 to 45 years**.

## Course Fee

The Course is completely free and the entire cost of Training Course is funded by Ministry of External Affairs (MEA), Government of India under ITEC programme including **to and fro air fare, local travels, accommodation, living allowance and book allowance**. Accommodation provided will be of international standards.

## Reason to Attend

The course will offer a good foundation on the principles of engineering behind wind energy technology and detailed about Wind Resource Assessment. The course would facilitate an invaluable forum for dialogue and open exchange of views and experiences with Indian scientists and professionals. The course would give a picture of complete know-how and pave the way to go about bringing out the Wind Atlas for the Country.

## How to Apply? Step By Step Guidance

1. Those who are interested to apply for this Training Course are required to visit the website [https://www.itecgoi.in/login\\_page.php](https://www.itecgoi.in/login_page.php).
2. Click on the **NEW USER** for filling up the online application form. It will take you to the streams to be chosen where you have to choose 'Environmental and Renewable Energy Course' and then select 'National Institute of Wind Energy'.
3. It will take you to the institute page where you have to click on the '**apply**' link provided in S.No. 1 for Special International Training Course on Wind Resource Assessment and Wind Farm Planning and follow the instructions.

## Instructions

- ◆ Applicants are required to apply for ITEC training programme by filling up the online application form and take a print out of filled form. This form is to be submitted to the nodal/designated Government Department/Agency of applicant's country.
- ◆ Nodal/designated Department/Agency is, in turn, required to forward the applications to the Embassy/High Commission of India, accredited/concurrently accredited to the nominating country along with undertaking by candidate and certification from employer (Part-II of Application Form).
- ◆ Candidates may take printout of application and later check the status of their application by logging-in at [www.itecgoi.in](http://www.itecgoi.in). The credentials for log-in may be noted while filling up the application form.

## Course Coordinator

**Dr. P. KANAGAVEL**

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## ABOUT NIWE

National Institute of Wind Energy formerly Centre for Wind Energy Technology shortly known as NIWE 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 premier institution with highly experienced professionals having expertise in all related disciplines of wind energy sector. This combination makes it a forward looking and practical institution always well placed to take the next logical steps towards advancing wind technology in the right direction. With its progressive approach to all wind energy related science and technology from onshore to offshore, NIWE assures assistance from resource assessment to project implementation. As an integral part of NIWE, a world class accredited Services providing Wind Turbine Test Station (WTTS) is established at Kayathar in Thoothukudi District, Tamil Nadu.

NIWE has been vested with 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.

## QUALITY POLICY

NIWE 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.

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



नीवे NIWE

## NATIONAL INSTITUTE OF WIND ENERGY

An Autonomous Research and Development Institution

Ministry of New and Renewable Energy, Government of India

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