

GERMI, an ISO 9001: 2008 certified institute, is a centre for excellence in industry learning, research & development and education. It is set up to develop human resource assets to cater to the renewable and non-renewable energy sectors, improve knowledge base of policy-makers and technologists, and provide a competitive edge to leaders to compete in the global arena. GERMI is a Scientific and Industrial Research Organization recognized by the Department of Scientific and Industrial Research (DSIR), Govt. of India.



# SOLAR POWER PROFESSIONAL WORKSHOP

**A COMPREHENSIVE COURSE IN  
SOLAR PHOTOVOLTAIC DESIGN,  
TECHNOLOGY AND APPLICATION**

**GUJARAT ENERGY RESEARCH AND  
MANAGEMENT INSTITUTE (GERMI)**

is offering a comprehensive capacity - building workshop for professionals entering or already established in the solar photovoltaic power sector.

## KEY TAKEAWAYS:

- In-depth knowledge of basics, various components of a photovoltaic power plant such as photovoltaic modules, inverters, charge controllers, batteries, switchyard, SCADA, structures, and so on.
- Photovoltaic system types, design philosophy, principles, examples and calculations.
- Hands-On: Site survey tools, weather measurements, photovoltaic system installation.
- PV Syst: Comprehensive learning of industry-standard software.
- Project management, economics and finance of projects, solar policies, REC and carbon credits.
- Immense information and material through worked-out examples, data sheets, discussions, etc.
- Site visit to megawatt-scale PV power plant.

## SOME PROJECTS EXECUTED BY GERMI:

- 5 megawatt Gandhinagar Photovoltaic Rooftop Programme
- Net 100+ MW photovoltaic power plant consultancies using various technologies
- Solar Policies and Regulation Advisory
- Performance and safety testing of photovoltaic modules, inverters, LEDs and various other electrical components
- Third-party inspection of photovoltaic plants
- Establishment of state-wide ITI vocational solar training programme including syllabus development, training of teachers, laboratory setup and student placement

**25<sup>th</sup> to 30<sup>th</sup> July, 2016**

## PREVIOUS WORKSHOP CLIENTS:

- Aries Waaree
- Electrotherm India
- Essar Steel
- GMR Group
- Gujarat Industries Power Corporation Ltd.
- Harsha Abacus Solar

- HCL Infosystems
- Kalpataru Projects
- Sunedision Energy India
- Polycab Wires Pvt. Ltd.
- Godrej & Boyce Mfg. Co. Ltd.
- Schlumberger Ltd.
- Goldline Contracting LLC

- Gujarat Power Corporation Ltd.
- Tata Power Company Ltd.
- American Society of Mechanical Engineers
- Cairn Energy
- Gamesa Wind Turbines
- Coastal Projects

- BSNL
- Gujarat Electricity Regulatory Commission
- HCL Infosystems
- NTPC
- GAIL and many more

## PROGRAM DESIGN

### DAY-1

#### PV Foundation Course

- Introduction to Solar Energy
- Solar Radiation and Geometry
- Site Survey and Shadows
- Crystalline Silicon PV Modules
- Inverters, Control Devices and Other BoS
- Hands- on Site Survey
- Batteries

### DAY-2

#### System Design Course

- Hands-on Solar Resource Measurement and Analysis
- PV System Configurations and Design Philosophy
- PV System Designing and Sizing
- General Arrangement of Switch yard and metering
- General Arrangement of Utility-Scale Power Plant
- Lightening and Surge Protection

### DAY-3

#### Field Visit to MW Size Power Plant

- Visit to MW-Scale PV Power Plant
- Plant Operation and Maintenance
- Best Practices and Trouble Shooting

### DAY-4

#### Best Practices and Performance

- Standards in Design, Safety and Performance
- PV Array Structural Design
- Opportunities in off grid/micro grids

### DAY-5

#### PV-Syst and kW-Scale PV Plant Installation

- PV-Syst and Detailing
- Hands-on: kW-Scale PV Plant Installation

### DAY-6

#### Project Management of Utility - Scale Power Plant & Economics

- Grid-Connected PV Plant: An EPC Experience
- Economics of Solar PV Projects
- Solar Project Finance - Private Sector Overview
- REC and Carbon Credits
- Solar Scenario in India/State and Opportunities Ahead
- Certificate Distribution & Closing

## INSTRUCTORS

### Dr. Omkar Jani

Principal Research Scientist,  
Solar Energy Research Wing, GERMI

### Mr. Akhilesh Magal

Head-Solar Advisory, GERMI

### Dr. Sagar Agravat

Scientist, GERMI

### Mr. Ashish Jasani

Technical Officer (Civil), GERMI

### Mr. Shatrughan Yadav

Technical Officer, GERMI

### Mr. Pulkit Dhingra

Project Officer, GERMI

## GUEST LECTURERS

### Mr. Arvind Karandikar

Director, Nexus Energytech Pvt. Ltd.

### Mr. B. N. Raval

Ex- Chief Electrical Inspector, Gujarat

### Mr. Rajneesh Sharma

Sr. Manager, Consulting -Energy & Resources  
Deloitte Touche Tohmatsu India LLP

### Mr. Vikas Almadi

Director, Dehn India Pvt. Ltd.

### Mr. Vishal Pandya

Director, RE Connect Energy

### Mr. Tanmay Bisnoi

Head - Standards & Research  
Skill Council for Green Jobs

### Prof. Jignesh Bhatt

Principal Investigator, Solar City - Smart Grid Project, Gujarat and Sr. Assistant Professor, Dharmsinh Desai University

## FEE

- INR 48,000/- per participant (Indian National) (*plus 15% service tax*)
- USD 1100 per participant (Foreign National) (*Inclusive of all taxes*)

Discounts available for participation in groups, government/PSU and full time students

## DATE

25<sup>th</sup> to 30<sup>th</sup> July, 2016

## VENUE

Gujarat Energy Research and Management Institute, PDU Campus, Raisan, Gandhinagar - 382 007, Gujarat

Organized and  
Conducted By



**GERMI**

GUJARAT ENERGY RESEARCH  
AND MANAGEMENT INSTITUTE

## GUJARAT ENERGY RESEARCH & MANAGEMENT INSTITUTE TRAINING & DEVELOPMENT CENTRE

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