

**ONLINE COURSE**

# ADVANCED RENEWABLE ENERGY SIMULATION

## DESIGN, DETERMINE, DIAGNOSE



March 6-20, 2027



On Zoom and Moodle



Medium of Instruction: English

Simulation plays a critical role across a project lifecycle — allowing developers and consultants to design systems before installation, ensure optimal layout and technology selection, determine the right capacity for procurement and diagnose potential problems in advance. With ambitious national targets for expanding non-fossil fuel capacity, the need for professionals who can design, simulate and evaluate RE systems is growing rapidly.

While many simulation platforms are widely used across the sector, training in these tools remains limited. This 14-day online programme addresses this gap. It will introduce key simulation tools in a practical manner, helping participants understand resource assessment, system performance, and techno-economic feasibility of RE projects.

### COURSE CONTENT

- Role of energy simulation tools across the lifecycle of RE projects, from pre-feasibility to bankable reports
- How to navigate and operate PVsyst to simulate grid-connected solar PV systems, including shading analysis and performance reporting
- Designing rooftop and C&I solar systems using HelioScope with 3-D layouts, wiring diagrammes and module-level accuracy
- Modelling hybrid energy systems using HOMER Pro for off-grid and mini-grid applications
- Techno-economic feasibility – analysis using SAM and RETScreen, including Levelized Cost of Electricity, Net Present Value and GHG savings
- Most suitable simulation tool for different project types such as rooftop, utility-scale and hybrid systems
- Key performance metrics including Performance Ratio, Specific Yield, Capacity Utilisation Factor, and Net Present Cost – and their interpretation
- Using tools like PVWatts, PVGIS and OpenSolar for quick estimates and proposals
- Development of job-ready skills and vocabulary relevant to roles in EPC, consulting, finance and public sector energy programmes

### COURSE FEES

For participants from India

**Rs 8,000**

For participants from other countries

**US \$150**

### COURSE TAKEAWAYS

- Self-paced course hosted on a digital learning platform, with pre-recorded sessions in structured modules
- Certificate of participation (after successful completion of training)
- Access to relevant learning resources from CSE
- Access to subject experts and guides
- Access to downloadable resources, templates and checklists for practical use
- Exposure to guided simulation exercises (PVsyst and HelioScope)

### COURSE COORDINATOR

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