



*Training Course:
Solar Photovoltaic (PV) Systems*

*14 - 18 September 2025
In-House*

Training Course: Solar Photovoltaic (PV) Systems

Training Course code: EN236139 From: 14 - 18 September 2025 Venue: In-House - Training Course Fees: € Euro

Introduction:

As the global demand for renewable energy continues to rise, solar photovoltaic PV systems have become one of the most effective and sustainable solutions. This training program, designed by Global Horizon Training Center, aims to equip professionals with the technical, practical, and operational knowledge required to effectively design, install, operate, and maintain PV systems. The course covers fundamental and advanced concepts, including system sizing, performance analysis, safety standards, and economic viability, ensuring that participants are fully prepared to support solar energy projects in both grid-connected and off-grid environments.

Objectives:

By the end of the program, participants will be able to:

- Understand the fundamentals of solar energy and photovoltaic technology.
- Identify the components and configurations of PV systems.
- Perform basic design and sizing of solar PV installations.
- Interpret key performance metrics and evaluate system efficiency.
- Address safety standards, installation practices, and maintenance procedures.
- Analyze economic and environmental impacts of PV system deployment.

Course Methodology:

The course will be delivered using a mix of:

- Interactive lectures and visual presentations
- Case studies of real-world PV installations
- Group activities and technical discussions
- Practical design exercises using simulation tools
- Review of international standards and best practices

Organizational Impact:

Organizations will benefit from:

- Improved capacity to implement cost-effective and sustainable energy solutions
- Enhanced technical knowledge for evaluating and managing solar projects
- Increased operational efficiency through optimized PV system maintenance
- Support for green initiatives and reduced carbon footprint
- Reduced energy costs and improved energy security

Target Audience:

This training program is ideal for:

- Electrical and renewable energy engineers
- Energy consultants and technical supervisors
- Facilities and operations managers
- Government and utility personnel involved in energy projects
- Technicians and professionals involved in installation and maintenance of solar systems

Outlines:

Day 1: Introduction to Solar PV Systems and Energy Basics

- Overview of global and regional solar energy trends
- Solar radiation and solar geometry fundamentals
- Photovoltaic effect and solar cell operation
- Types of solar PV systems grid-tied, off-grid, hybrid
- Components of PV systems: modules, inverters, charge controllers, batteries

Day 2: PV System Design Principles and Sizing

- Site assessment and solar potential analysis
- System sizing for residential and commercial applications
- Orientation, tilt angle, and shading analysis
- Inverter selection and string configuration
- Battery storage considerations and capacity calculation

Day 3: Installation Standards and Safety Practices

- Electrical wiring and protection systems
- Mounting structures and installation guidelines
- Safety standards IEC, NEC, OSHA
- Fire protection, grounding, and surge protection
- Best practices in field installation

Day 4: Operation, Monitoring, and Maintenance

- PV system performance parameters PR, efficiency, etc.
- Monitoring tools and data logging systems
- Maintenance protocols and troubleshooting techniques
- Common faults and diagnostics
- Remote monitoring and SCADA integration

Day 5: Financial Analysis and Project Development

- Cost breakdown and financial modeling of PV systems
- Payback period, ROI, and LCOE Levelized Cost of Energy
- Incentives, subsidies, and regulatory frameworks
- Project planning, procurement, and quality assurance
- Final project case study and group presentation.

Registration form on the Training Course: Solar Photovoltaic (PV) Systems

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

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Payment Method

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