Solar Power System Theory and Maintenance Training

Description

Course Description

The aim of this course is to provide the participants with a complete and up?to?date overview of domains concerning Photovoltaic's (PV) with emphases on design, installation, operation & maintenance. The course covers assessment examination As well as the necessary testing requirements. Code requirements from design through start?up of new systems are identified, for instance, the 17th Edition IET Wiring Regulations and the micro?generation standards as well as standards for inspection and Maintenance of solar power systems that have been in service.

www.acclearn.co.uk

Course Objectives

Upon the successful completion of this course, the participant will gain an understanding of the physical phenomena which affect the design of systems and methods by which these phenomena can be analyzed as well as the additional requirements which need to be considered in formal specifications to ensure adequate and proper installations.

In brief, the course furnishes a confidence to plan, design, install and maintain a solar PV system and takes into consideration the majority of systems investigating different system configurations, components and operating characteristics. The course targets the aspects which are particular to solar PV systems giving operatives the buoyancy to select install and maintain systems.

Course Outlines

- The solar resource
- Overview of solar technologies
- Photovoltaic basics; cells, modules and arrays
- Module types and construction, energy payback
- Electrical characteristics (practical measurements)
- Effects of all parameters
- Series/parallel connection
- Component ratings

- Array combiners, AC and DC isolators
- PV module warranties and guarantees
- Grid?connected systems
- Module fixing; on?roof, roof?integrated, flat?roof and facade
- Grid connected inverters characteristics
- Electrical Standards
- Inverter design concepts; central, single and multi?string and module
- Planning and sizing grid?connected systems; arrays, inverters and cables
- System configurations
- Solar system design
- Solar modules
- Solar module mounting structures & arrays
- Electrical wiring of the solar system and associated components
- Grid?connected solar systems
- Charge controllers
- Stand?alone system typology
- Modules for stand?alone systems
- Battery systems and their characteristics
- Stand?alone inverters
- Hybrid systems and inverters; AC? and DC?coupled systems
- Planning and manually sizing stand?alone systems
- Computerized sizing simulation
- Planning and sizing exercise
- Manufacturers sizing tools
- Earthling and lightning protection
- Metering
- Practical sessions
- System testing & commissioning

www.acculearn.co.uk