

# Engineering Courses

## Fundamentals of Renewable Energy Systems

### Training objectives:

The participants will acquire extensive basic knowledge of renewable power plants. They will learn to understand the engineering and application of the components of wind and solar plants as well as basic knowledge of systems engineering for planning and design of reliable and cost-effective plants. Participants will also learn about the behavior and economics of power systems with substantial amounts of renewable generation.

### The course is intended for:

Engineers and planners who work for power supply companies and industry and who have to solve integrated network and systems engineering problems within the context of new business development activities, planning, and application in connection with the use of wind plants.

### Main features:

- Wind and solar power basics: how does a wind turbine or solar array work; what constitutes a wind or solar plant
- World energy trends; growth, distribution and politics
- Characteristics of different types of wind generators and characteristics of solar arrays and inverters.
- Plant collector systems; engineering and economic considerations
- Plant protection basics
- Plant interconnection; substation design, SCADA, utility interface
- Dynamic performance
- Technical Regulations, Standards and Interconnection Codes for renewable generation
- Modeling for system planning; loadflow and stability studies
- Behavior and operation of power systems with substantial amounts of renewable generation
- Economics and Consequences for power system and power plant operation
- Special topics include “Distributed Renewables” and “Special Controls”

### Recommended prior knowledge:

Basic knowledge of electrical engineering.

**Note: The course is held in English. Class subject to change. Class times are 8-4.**

For more information visit: [www.geenergyconsulting.com](http://www.geenergyconsulting.com)



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