Professional course Energy storage for power networks: an introduction to the technology and the applications.

1. Presentation

This course presents the main characteristics and operating principles of different energy storage technologies. After this first module, focus is on the description of the applications these storage systems can provide in electrical power networks. The course also develops a cost model for energy storage systems so as to develop cost-benefit analysis around the application of storage technologies in power networks.

1.1. Benefits for the partaker

Participants will learn about different storage technologies covering from large scale systems, such as pumped-hydro installations, to short term storages such as supercapacitors and flywheels. Participants will also learn about the potentiality of such storages for the modernization and decarbonisation of future power networks.

1.2. To whom is it addressed

The course is focused to last course students aiming to know on energy storages, or even professionals aiming to explore new business opportunities around the application of storages in power networks.
2. Content

Module 1: Overview of energy storage technologies
- Principles of operation, main characteristics (1.5 hours)
- Balance of plant components (power electronics and ancillaries) (1.5 hours)
- Study case: assessment of cost models (2.0 hours)

Module 2: Applications of storage technologies in power systems
- Review of applications (2.0 hours)
- Study case: sizing of a battery bank for PV generating system (2.0 hours)

Module 3: Regulation and business models
- Current regulations and future trends (1.0 hours)
- Business models (1.0 hours)

3. Directorate and professorate

3.1. Academic directorate

Francisco Díaz González

3.2. Professorate

Francisco Díaz González

Francisco Díaz is Doctor in Electrical Engineering from UPC. Since 2015 he works in CITCEA at the Universitat Politècnica de Catalunya as a Postdoc Researcher. He is professor in the Master courses of UPC and he also teaches in the master and professional courses of CITCEA.
4. General Information

Modality
Presential

Duration / term
10 hours

Dates and times
January 2017. Dates to be confirmed.
Timetable to be confirmed.
This training can be custom made for businesses, planning the courses in new dates and schedules, if there is a sufficient number of students who request it.

Venue
ETSEIB, Av. Diagonal 647 2nd floor, Barcelona

Evaluation system
Continuous evaluation and minimum 80% attendance.

Price
280€
10% for students and teachers, companies that register 3 or more people and members of associations where CITCEA is associated.

Help, scholarships and grants
Paid formation by the Tripartita Foundation.

Other information of interest
For inscriptions and more information, call 93 401 67 27, or either send an email to: anna.de.casas@citcea.upc.edu.