



CLEAN ENERGY

An overview of our energy production system, based on fossil fuels and the main contributor to the emission of greenhouse gases, a reflection on the urgency to shift to clean technologies in order to limit climate change, and a review of the role and challenges of renewable energy sources (solar, wind,...), which are becoming the core of our energy systems.

› Course duration: 10 contact hours

› Dates: 3, 4 & 7 July 2023

■ Recommended background knowledge for students:

- Interest in energy-related issues.
- Basic notions about energy and power

Meet Our
INSTRUCTORS



David Fuertes Marrón is tenured associate professor at UPM and researcher at the Solar Energy Institute. He has been working on the growth, fabrication and characterization of PV devices of different technologies over the last twenty years. He holds a BSc in Physics (UAM, Madrid, Spain), M.Eng.Sc. (UNSW, Sydney, Australia), Dr.rer.Nat. (Freie Universität Berlin, Germany) and has been visiting scientist at INL (Portugal), HZB (Germany) and MIT (MA, USA).



Carlos del Cañizo is full professor at the UPM, specializing in photovoltaics since 1994. He is Director of the Solar Energy Institute, a pioneering R&D center belonging to the UPM founded in 1979 focusing on PV. He has lengthy experience in silicon solar cell fabrication and characterisation, and also works on the topic of silicon ultrapurification and alternative routes for PV applications.

LEARNING GOALS

■ Analyse

Information



Energy technologies and environmental impacts

■ Evaluate

Key properties



Clean energies

■ Acquire

Overview



Current energy system

■ Learn

Potential



Renewable energies, especially photovoltaics

SYLLABUS

MODULES

01

02

03

04

Environmental impact of energy systems, Climate change, pollution and the need of clean technologies

Renewable technologies for energy provision, From conventional energy sources to renewables, status of development and challenges

Photovoltaic solar energy (PV), Operation principles, components, applications, economics. Manufacturing of PV cells and modules

Industry talk and question and answer session

Meet Our
INDUSTRY SPEAKER



Eduardo Forniés received a PhD in Physics from the Universidad de Alcalá. He has worked for several photovoltaic companies and is currently quality manager at Sonnedix, a global independent solar power producer with around 400 solar PV plants worldwide.