

# **Renewable Energy Communities: framework and main technical-economic challenges**

Proposed by

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## **Abstract**

The concept of Renewable Energy Community (REC) is quite recent and brings with it promising prospects for building a greener future. RECs are local energy systems which can promote the penetration of renewable energy sources into the electric grid, as well as they can actively contribute to facilitate decarbonisation and propel a transition to clean energy. A REC brings together groups of citizens, organisations, and enterprises with the common goal of producing and sharing renewable energy. The collaboration within these actors provides a range of benefits, including environmental, economic, and social advantages to all members.

In this course, after an overview about the main aspects related to the creation of a REC, we will deepen the analysis focusing on technical aspects, like physical self-consumption and shared energy, the presence of different kinds of renewable plants inside the community, the analysis of electrical consumption data (and how to act when they are available only in aggregated forms). Moreover, economic aspects of the topic will be investigated, providing guidelines for carrying out the investment analysis of a REC.

The course is addressed to PhD students, post-doc researchers and anyone interested in discovering what is a Renewable Energy Community and what are the main challenges related to it. The course will cover 10 hours, and it will include class exercises.