Research topic: Georeferenced viability of a decentralized electricity system in Spain (LIVEN1)

- Research line: Sustainability modelling for the ecological transition
- Research group: Sostenipra

CONTACT: cristina.madrid@uab.cat

Supervisors:
Miquel Sierra Montoya (ICTA-UAB)
Dr. Cristina Madrid López (ICTA-UAB)

The **energy sector will be strongly affected** by net zero emissions goals, and will need to experience a **rapid transition from fossil fuels to renewable energy**. Therefore, future energy systems will become more **decentralized** than current systems. In this context, understanding **where the energy is being produced and consumed** might be crucial and could have strong **implications for energy planning**.

In this Master Thesis, the student will contribute to the LIVEN data base and create a georeferenced **database of power plants in Spain** merging **publicly available datasets**. With these data, the student will create **maps for Spain** and analyze their **implications for the Spanish National Plan for Energy and Climate (PNIEC).**

The student will work within the **LIVEN project**, where we co-develop with decision-makers and stakeholders open access software to **assess the socio-environmental impacts of the energy transition** in Spain at national, regional and local levels. LIVEN has the form of a living lab with participants from different sectors and an international advisory board.

Main aim: to do a spatial analysis of the electricity production and consumption in Spain

MAIN TASKS:

1) Literature review on regionalized definition of energy systems
2) Create a georeferenced database of Spanish power plants, combining data from different sources (medium level of R, python or similar desirable).
3) Spatial analysis of the energy production and consumption in Spain
4) Create electricity production and consumption maps for Spain (knowledge of GIS desirable).
5) To write a peer-review paper for submission in a peer-review journal

icta Institute of Environmental Science and Technology • UAE

UAB Universitat Autònoma de Barcelona