University of Applied Sciences and Arts of Southern Switzerland

SUPSI

PhD Student in the field of Sustainable Energy Transition

deadline: 08 April 2022

The University of Applied Sciences and Arts of Southern Switzerland (SUPSI), at the Department of Environment, Construction and Design (DACD), located in Mendrisio, at the Institute for Applied Sustainability in the Built Environment (ISAAC), offers a PhD position in the field of modelling of energy transition trajectories, medium-long term energy forecasts and socio-technical analysis of energy solutions.

The successful candidate will conduct research within the framework of a Swiss consortium project, funded by the Swiss Energy Research for the Energy Transition (SWEET) program, with the focus on sustainability and resilience assessment of the Swiss energy system; She/He will work as well in EU-funded research projects. The PhD would be conducted in close cooperation between the Energy transition team and professor Paulo Gonçalves from the Università della Svizzera italiana (USI), whose research combines System Dynamics Simulation, Behavioural Experiments and Econometrics. The PhD title will be granted by a co-supervising Swiss University or Federal Institute of Technology (optionally EPFL, UNIGe, USI). The co-supervisor will be decided upon on the basis of SUPSI's network and the candidate predilection.

Duties

- Model socio-technical sustainable energy transition processes.
- Apply different tools for energy grids mid/long-term planning under uncertainty.
- Elaborate spatial statistical analysis and statistical modelling of renewable energy uptake.
- Model energy systems with equity considerations, including quantification of distributional impacts across key actors in the energy system.
- Assess the qualitative and quantitative impacts of social, technical, environmental, and economic drivers on the diffusion of sustainable energy solutions.

Requirements

- Completed University master's degree in engineering, environmental sciences, or mathematics.
- Proven knowledge of energy technology, energy systems modelling, or energy economics. Candidates from other fields will be considered if they demonstrate relevant quantitative modelling skills.
- Interest in developing energy models and working with regional data and statistics in a multi-disciplinary environment that specializes in socio-technical dimensions of energy and climate change.
- Sound methodological background and ability to bridge between qualitative, quantitative, and mixed-method research approaches and tools.
- Experience in programming in Python, and/or knowledge in Systems Thinking & Causal Loop diagrams and/or System Dynamics modelling is appreciated.
- Aptitude for independent work with a sense of responsibility, and well-structured working style.
- Strong communication skills (both in speech and in writing), interpersonal relations and attitude to teamwork.
- Proficiency in written and spoken English language. Knowledge of another Swiss national language (Italian, German, French) is appreciated.

We offer

- A 3-years fixed-term fulltime position with possibility of future extension.
- Cooperation with a team of researchers with extensive experience in research and development projects in the field of renewable energies and their integration in the grid.
- Interdisciplinary working environment and collaboration within research projects of federal and European relevance, in contact with partners, companies and professionals in the field.
- Possibility to work remotely partially.