

**Publish date: October 4, 2023**

**Ref: 23/051**

**Project: NETBUILD**

**Area: Energy Efficiency in Systems, Buildings and Communities Area**

**Group: Energy Systems Analytics Group**

**Group leader: Dr. Josh Eichman**

## **R1 position in the field of smart building modeling and energy markets**

### **Description:**

The Energy Systems Analytics group is actively seeking a candidate specializing in the field of smart building modeling and energy markets. This position offers an exceptional opportunity to engage in cutting-edge research focused on developing novel techniques for intelligent energy management of IoT devices and other technologies. The research spans a wide range of areas, including electricity trading between local communities or buildings, as well as fine-grained control of energy within individual rooms. As a member of the esteemed Energy Systems Analytics group, the selected candidate will collaborate closely with a diverse team of highly qualified researchers, fostering a stimulating and collaborative environment.

### **Responsibilities:**

- Contribute to the integration of buildings in the development of Smart Cities and future energy systems and markets.
- Design and implement optimization solutions to improve energy efficiency while reducing environmental impact for energy systems using software tools such as Python, GAMS, and R.
- Analyze data to enable load management of heating and electrical equipment, integrating price signals, peak shaving, and other techniques to add value at the building level.
- Develop black-box models for forecasting HVAC flexibility.
- Evaluate the environmental performance of holistic management algorithms, focusing on energy efficiency, indoor comfort, and air quality.
- Produce impactful research papers and present findings at conferences and workshops, covering theoretical, conceptual, and methodological aspects.
- Collaborate with ICT companies, industry partners, and the research team.
- Collaborate with national and international stakeholders to develop competitive project proposals.

## **Qualifications and experience required:**

### ***Required:***

- Candidates should have a master's degree (or equivalent experience) in Operations Research, Computer Science, Electrical Engineering or a related discipline.
- Experience of optimization, modelling and statistical analysis.
- Experience with energy systems and related fields Knowledge of programming, simulation and optimization software capabilities
- Strong communication skills and ability to work in cross-functional teams
- Self-motivated and able to work independently

### ***Desired:***

- Experience in renewables, and smart buildings or energy markets.
- Experience in building modelling and optimization.

### ***Language required:***

Fluent in Spanish and English.

### ***Personal Skills:***

- Team Worker
- Initiative in Research and Innovation.
- Flexibility
- Results-oriented
- Analytical and synthesis capabilities

### ***Salary:***

Salaries will be paid in accordance with the IREC's salary policy, depending on the candidate's qualification and professional experience.

Send applications by email directly to [irecjobs@irec.cat](mailto:irecjobs@irec.cat) including:

- Ref. 23/051 in the subject of the e-mail
- A motivation letter with reasons for applying, qualifications and the intentions and visions for the position
- Curriculum vitae with personal, academic and professional data