Power Systems Researcher
Energy Systems modelling and simulation (M/F)

The Company:

- R&D Nester comes from REN and State Grid Corporation of China's (SGCC) will to synergize core competences and create an R&D centre in order to promote and implement applied research, development, demonstration and testing in an international context, innovating for a smart energy system.
- We are a global and independent R&D centre, with a multicultural DNA and a long run strategic thinking, innovating for a smart, clean, efficient and sustainable energy system, aiming to be a prestigious R&D centre with a leading position in the intelligent management of energy systems.
- With a vibrant culture of creative and long run strategic thinking, focused on finding and developing unique opportunities to create value, we shall bring unconventional strategies that will shape the future of the energy market.
- We believe in Talent, Multiculturalism, Audacity, Agility and Flexibility.

Function details:

- Researcher – Multi-energy storage planning (Full-time)

R&D Nester has built an energy forecasting tool and distributed energy storage planning tool, relying on statistical signal processing, machine learning and multi-criteria optimization. The research projects will leverage and improve these tools towards modelling the energy supply and demand, by considering the regional geographical (e.g. islands vs continental interconnected systems) and climate context, and towards boosting the regional consumption of RES in different energy networks through the use of multi-vector energy storage to perform multiple services to the electricity grid. The successful candidate will benefit from a state of the art research environment and a dynamic research team.

Main Duties and Responsibilities:

The main objective of this position is to perform research on energy systems' modelling and simulation. The research work will focus on the planning multi-vector multi-service energy storage systems to improve the flexibility and reliability of the energy system. The successful candidate will be involved in the following:

- Development of applied research to multi-energy storage systems planning and operation using stochastic and global optimization methods addressing the provision of multi-services to increase the flexibility and reliability of the electricity distribution grid;
- Development of short-term prediction tools to produce wind, solar and demand forecasts, using physical, machine learning and hybrid approaches to leverage heterogeneous data and mathematic models for the energy supply (renewable and non-renewable) and demand (building, transport, production, etc.);
- Design of business and technical process flows using the use-case and the Smart Grid Architecture Model approach

- Development of applied research to power system planning or operation using stochastic and global optimization methods addressing engineering problems RES integration, reactive power management and congestion management;
- Involvement in European R&D Projects in which R&D Nester participates in the abovementioned areas.

Qualifications:

Candidates should have strong analytical skills, knowledge of energy systems modelling and simulation and be open to work closely with international partners.

The successful candidate should have / be:

- Master / higher degree in electrical engineering (Power Systems), preferably with optimization and machine learning knowledge and with minimum final grade of 14/20;
- Familiar with relevant offline simulation software, such as Matlab SPS/Simulink , EMTP/EMTDC (preferably) and PSS/E (preferably);
- Strong programming skills;
- Preferably, good understanding of electricity markets and energy regulation;
- Preferably, experienced in the application of stochastic mixed-integer optimization algorithms;
- Preferably, experienced in the application of use-case and SGAM approach;
- Preferably, knowledgeable in power system simulation, including electromechanical and electromagnetic transients simulation, and experienced in application of real time power system simulator
- Preferably, professional experience in relevant fields;
- Fluent in English.

Personal profile:

Team working

- Goals oriented
- Scientific maturity and autonomy
- Proactivity
- Flexibility and resilience
- Multi-tasking
- Written and oral proficiency
- Accountability.

Others:

- Job is located in Sacavém (Portugal).

How to apply:

This position is available for entry from January 2019 onwards. Potential applicants are invited to upload their CV and a covering letter highlighting their interests and suitability for the vacancy.