



Call for candidates for a doctoral position at GEP

REF. G2214

Published: 31/05/2022

Deadline: 15/06/2022

Reference: G2214

Research Activities: Electrical Engineering – Smart Grids/Microgrids

Candidate: Ph.D. Student

Location: Benguerir

Duration: 20 months

Eligibility: Be enrolled in a doctoral thesis at a National University

DESCRIPTION

As part of a collaborative R&D project, funded by **IRESEN** (Morocco) and **CDTI** (Spain) within **INNO-ESPA** call for projects, 1 funded Ph.D. position in "Smart Grids/Microgrids" is open.

This project, named "**Green Grid**", has been submitted jointly by the **Green Energy Park** (Morocco), **Elexpert** (Morocco), and **IDEAS TX INGENIERÍA** (Spain), and aims to design, deploy and demonstrate an intelligent microgrid with advanced control strategies and management services in the African context.

The proposed microgrid will integrate renewable energy production and energy uses for thermal energy, energy storage technologies, smart street lighting, and charging infrastructure for electric vehicles. The services proposed for the Microgrid cover demand, production, and flexible management to ensure the maximization of renewable energy production.

The main outcomes of the project will be:

- Advanced knowledge of the design and deployment of intelligent grids in the African context, including design optimization and business models
- Advanced services for smart grids management adapted to the African context.

This microgrid and the related services will be jointly deployed and tested by the Green Energy Park in collaboration with the Moroccan industrial partner Elexpert and ITX within a living lab in Green & Smart Building Park where demonstrating advanced technologies and solutions related to the Moroccan city of the future.

ROLE OF Ph.D. STUDENT

During her/his journey in GEP, the PhD student will have to perform the following tasks:

- Detailed bibliographic study and state-of-the-art on recent advances in Microgrids.
- Initial studies, simulation and optimal design of the microgrid.
- Development of advanced grid management services.
- Preparation and technical assistance for the microgrids systems installation.
- Test & Validation and final optimization of the microgrid.
- Business model and replication analysis for the African context.
- Deliverables, monitoring and progress reports.
- Trainings and scientific activities of GEP through publications, scientific communications, patents, etc.



REQUIREMENTS

The candidate must have an **Engineering degree** or **Master training** in **Electrical Engineering**, with advanced skills in **Electrical Grids**, and extensive knowledge in **Smart Grids** and **Microgrids**. We are looking for an autonomous student capable of innovation and initiative, wishing to work on a multidisciplinary research project:

- Consciousness of the new challenges in Electrical Grids and excellent knowledge in recent advances in Smart & Microgrids fields.
- Mastery of simulation software for Electrical Engineering, especially: Matlab/Simulink, and Etap.
- Excellent coding skills in Python.
- Good knowledge of optimization algorithms.
- Skills in new digital technologies: IoT, AI, Big Data, and good knowledge about their applications in Energy Systems.
- Good level in English and French, creative spirit, and autonomy.
- Strong interest in interdisciplinary research.

The candidate should send the following documents to contact@greenenergypark.ma

- A curriculum vitae
- Copies of university degrees (doctorate registration certificate)
- A research proposal linked to the project description and to one of the issue areas of the call (2000 words, containing an explanation of topic, Scientific background of candidate, Methodology for completion of research proposal)
- Letter of recommendation by the PhD supervisor professor.