



First Stage Researcher / Project Engineer - Green IT Thermal Energy and Building Performance Group

The applicant will work as a first stage research engineer in a Green IT project and will report to the Head of the Thermal Energy and Building Performance Group and Researcher of Green IT research line. The project where the applicant will work on is the EU project RenewIT. The main objective of the RenewIT is to develop a simulation tool to evaluate the energy performance of different technical solution integrating RES in several European climate regions. The public RenewIT tool will be implemented in a user-friendly web interface helping actors from both the energy and IT sectors to reduce the carbon footprint of planned DCs in the horizon of 2030. The tool is based on selected meta-models extracted from advanced dynamic simulation models of challenging energy concepts for renewable energy supply of DCs.

A set of challenging energy concepts will be developed in the framework of the project under an holistic approach integrating the following technical solutions: management of the IT load following “green” objectives, low-energy air-conditioning systems, solar cooling, interaction with district heating and cooling networks, re-use of heat, optimal use of heat and cold storage, and integration in smart grids. The technical systems emerging from the energy concepts are modelled in dynamic simulation tools creating a family of new components which will be integrated in the Green DC library of components as an exploitable output of the project. Harmonised metrics able to rank the energy performance of DCs will be developed and implemented in the software tools as a result of co-ordinated work with relevant standardisation organisations, industry bodies, and other European projects. In addition, these harmonised metrics will be part of a high-quality monitoring system to monitor DCs integrating renewables.

A validation process will be developed, in close collaboration with four DCs in Southern Europe and four DCs in Northern Europe, which will exchange continuous feedback with the technical developers throughout the project. The validation process will be based on built case studies for live DCs as the means of testing the robustness and the end-user applicability both of the developed technical energy concepts and of the simulation software tools.

The project outputs will be widely disseminated throughout the project lifetime, through scientific and industry publications, web site and social media, and attendance at relevant conferences and industry forums.

Description

He/she will work on the analysis of energy consumption of data centers (DC) as well as integration of renewable energy in DC developing simulation models and comparing models with actual DC and experimental facilities. The researcher will attend to seminars and prepare technical papers related to the subject and prepare technical papers.

The research will be embedded in the Thermal Energy and Building Performance Group which main research subject is the Integrated and Systemic approach for Zero Energy Communities, Buildings and Industries. The group's special focus is on the

Mediterranean and other warm weather regions. The vision is to build an applied research group that contributes to accelerate the reduction of greenhouse gas emissions (GHG) through energy efficiency measures, production of clean energy, and integration of distributed renewable energy sources (RES)

Requirements

We are looking for excellent and highly motivated candidates with a MSC degree in Building Physics Science, Mechanical or IT engineering. Knowledge related to the design of Data Centres and energy metrics will be a value. Knowledge in heat and mass transfer phenomena, renewable energy technologies and experience in computational energy systems simulation tools is essential. We are looking for a methodical and rigorous person with a scientific spirit and results oriented. Teamwork and communication skills will also be a requirement. Mastery of English on all levels will be essential. Knowledge of other languages will be desirable.

We offer

We offer the chance to become part of an exciting project currently in a consolidation phase, with international recognition, developing cross-cutting projects in science and technology, oriented towards excellence. We also offer a research environment comprised of highly qualified and motivated professionals. The initial gross salary will be between 20.000 and 24.000 €/year depending of the evaluation of CV's applicant. Yearly evaluation of competences will be done in the framework of a three-years contract. Holiday period is 26 labour days. The project is expected to start in October 2013.

Workplace. Barcelona (IREC facilities)

For more information and applications please visit:

<http://www.b-value.com/info.php?jobid=850>