Internship #2015-I2
Electrical Engineer

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Introduction

IBIS Power is a company developing renewable energy technologies in a most effective and acceptable way for society. Our motto is "Redesigning Renewable Energy", where we take state-of-the-art technology and transform it with added value into products that have highest impact in society towards a green and healthy future. Our team exists from scientist, engineers and architects who work together in R&D and project management to marketing and sales people focusing on implementation and supplying society for highest impact.

As a part of the 6 month research project, an internship in IBIS Power is carried out with the objective to optimize the electrical grid of the Integrated Roof Wind Energy System (IRWES). The focus of the assignment will be on the design of an electrical micro grid in order to maximize the performance on-grid and off-grid. During the project, the design will be tested in real pilot projects. At the end, the results and the conclusions will be presented and documented in a thesis. You will work in the R&D team of IBIS Power, and will have close collaboration with ongoing projects.

The Project

The recently received EU project includes the complete R&D and business development for the European market of an innovative energy system for the built environment. Ibis Power is currently preparing the accomplishment of the first IRWES pilots. In order to fulfill this goal, the IRWES needs to be integrated and connected to the electrical grid of the particular building. The work will consist of designing a commonly applicable micro grid for a hybrid renewable energy system including solar and wind energy and implement the model in pilot projects. The proposed work will exist of:

- Create a model of micro energy grid including IRWES,
- Implement the model on-grid and off-grid situation,
- Optimize the model in order to power and cost efficiency,
- Include solar energy system in the model,
- Optimize wind turbine electrical performance,
- Assist at the build of electrical connection of pilot projects,
- Propose and model another designs for future improvements and revealing sensitive dominant aerodynamic parameters,
- Make an energy potential prediction and compare result with in-field measurements.