4 GRADUATED RESEARCH SCHOLARSHIPS IN THE SCOPE OF PROJECT
SASGER-MeC – Simulation and analysis of smart grids with renewable energy sources in the scope of competitive markets (NORTE-07-0162-FEDER-000101)

Scholarship Ref. SASGER-MeC_2014-04

Project SASGER-MeC – Simulation and analysis of smart grids with renewable energy sources in the scope of competitive markets (NORTE-07-0162-FEDER-000101) is recruiting 4 young researchers graduated in Electrical Engineering - Power Systems or similar, with solid experience in the area of computational applications to Power Systems. This call concerns research activity in the area of simulation and analysis of smart grids considering intensive use of distributed energy resources, including renewable based distributed generation, demand response, and storage systems. The project involves the simulation of the smart grids in the scope of competitive electricity markets, using a multi-agent based modeling and simulation approach. This project is co-funded by "ON.2 – O Novo Norte", in the scope of QREN, and by "Fundo Europeu de Desenvolvimento Regional" (FEDER). The following conditions apply to this call:

1. Duration of the Grant: from December 15th until June 14th 2014 (06 months duration, eventually to be renewed according to the project execution and respective budget).

2. Workplan: Energy policies aiming to lower the environmental impact of the power sector have resulted in a significant increase of Distributed Generation (DG), namely the one based on Renewable Energy Sources (RES). The investments in DG technologies based on RES are huge, namely in the European Union and in Portugal. Some smart grid concepts and opportunities are being rapidly implemented in practice. However, there has not been sufficient effort in developing efficient methods to operate the power systems and the energy resources according to the paradigms. The lack of simulation and analysis tools that adequately model smart grids in a realistic technical and business context makes the advances in the field not only difficult but also very risky.

SASGER-MeC designs, develops and implements a scientific platform for simulation and analysis of smart grids with renewable energy sources in the scope of competitive markets, using a multi-agent based approach. The project includes a set of simulation and analysis studies with realistic scenarios adapted to Portugal and its North Region characteristics.

The candidates to be selected will participate in the following project tasks:

T1.7 – Electricity market and smart grid simulators
T1.11 – Simulation and analysis studies
T1.12 – Communication and dissemination

The Project Development includes:

- physical interfaces

- middleware
- simulation and optimization software
- agent based platform implementation

The selected candidates work includes:

- Upgrade of previously developed models, methodologies and applications;
- Design, implementation, test, and use of the models and methodologies proposed in the scope of the project;
- Installation and testing of hardware components;
- Preparation, implementation, and test of scenarios and prototypes and respective result analysis;
- Technical reports and scientific papers preparation and writing
- Other communication and dissemination activities.

This work includes the design of the foreseen methodologies, their implementation, and test.

3. Supervision: The candidate to be selected will be scientifically supervised by Professor Zita Vale.

4. Academic Degree: Graduation in Electrical Engineering - Power Systems or similar

Minimum profile required: Solid background in Electrical Engineering - Power Systems or similar, with experience in the area of computational applications to Power Systems, electrical installations and energy management. Writing and speaking proficiency in English. Good skills for team work, including close cooperation with industrial partners.

Preferred profile: Previous work experience in research activities in the area of computer applications for power systems, smart grids, real-time digital simulation of electrical components and systems, multi-agent systems, and heuristic optimization. Experience in real and/or laboratorial prototypes in the power system field. Author of scientific papers written in English.

5. Monthly maintenance stipend: As defined by FCT (€ 745.00/month), according to the table of stipends of the country (available in http://alfa.fct.mctes.pt/apoios/bolsas/valores), paid by bank transfer.

6. Workplace: The workplace is at GECAD – Knowledge Engineering and Decision Support Research Center in the following address:

ISEP/IPP
Rua Dr. António Bernardino de Almeida, 431
4200-072 Porto
Portugal

7. Legislation and regulations: "Estatuto do Bolseiro de Investigação Científica", approved by Law no. 40/2004, of 18 August, modified and e republished by Decree-law no. 202/2012, of 27 August and modified by Decree-law no. 233/2012, of October and by Law no. 12/2013, of 29 January; Regulation no. 405/2010, May.6.2010 (published in "Diário da República" no. 88, II Serie, 06.May.2010) – "Regulamento de Bolsas de Formação Avançada do ISEP"; "Regulamento de Bolsas de Investigação da Fundação para a Ciência e a Tecnologia, I.P. – 2013".

8. Candidate selection methodology: Only candidates that have presented the complete set of application documents and showed evidence of having the required minimum profile will be admitted. The selection method will take into account the graduation classification (50%) and the curriculum vitae evaluation (50%). In case of doubts, an interview can be undertaken, and it will be conducted in English. In this case, the following elements will be taken into consideration: the graduation classification (25%), the curriculum vitae evaluation (50%), and the interview (25%).

9. Evaluation panel: Prof. Zita Maria Almeida do Vale (panel coordinator), Prof. Maria Goreti Carvalho Marreiros and Prof. Isabel Cecília Correia Silva Praça Gomes Pereira**.** Members of the substitute panel: Prof. Sérgio Ramos and Prof. Carlos Fernando da Silva Ramos.

10. Results publication and notification: Candidates will be individually notified by email message on the final evaluation results.

11. Application documents: The application documents include: Curriculum vitae; graduation diploma; document with courses marks; copy of any previously published works that are relevant for the application evaluation. An application letter with the fellowship reference (ref. **SASGER-MeC_2014-04**) should be included, indicating clearly the motivation of the application and the full contact information (as minimum: email address, mobile phone number, and postal address) of the candidate. All the documents prepared by the candidate for the application should be written in English. Documents should be sent to zav@isep.ipp.pt. Additionally, they should also be sent to the following address:

GECAD (Knowledge Engineering and Decision Support Research Center)
ISEP/IPP
Rua Dr. António Bernardino de Almeida, 431
4200-072 Porto
Portugal

12. Application period: from November 3rd until November 14th 2014.

13. Additional information can be obtained by phone +351-22-8340511 or by email zav@isep.ipp.pt.