

INESC TEC | Research Grant (AE2024-0514) INESC TEC

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Posted Dec. 6, 2024, set to expire Apr. 7, 2025

Job Title	INESC TEC Research Grant (AE2024-0514)
Department	CPES
Institution	INESC TEC PORTO, , Portugal
Date Posted	Dec. 6, 2024
Application Deadline	Dec. 19, 2024
Position Start Date	Dec. 6, 2024
Job Categories	Graduate Student
Academic Field(s)	Electrical and/or Electronics Engineering - Other
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Job Description	

Research Opportunities

Electrical Engineering

Work description

The use of the coalition concept is growing with the need to allow small consumers to participate in electricity markets that are designed for larger consumers and retailers. Through a coalition, small consumers are able to participate in wholesale markets for the purchase and sale of energy (when they

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have their own generation), and even participate in flexibility markets. However, organizing these coalitions is not a trivial task, and a management entity, for example, an aggregator, is traditionally needed to determine the entities that will be part of each coalition.

The expected work in this area concerning the description given is as follows:

- Study in detail the existing models in the game theory literature for the study of modeling dynamic coalitions;
- Formulate the energy and flexibility transaction problem using game theory with dynamic coalitions;
- Assessment and discussion on the practical applicability of this type of models compared to traditional approaches;
- Development and implementation of an optimization module for the aforementioned model in a Python environment;
- Prepare a scientific report on activities and write scientific articles.

Academic Qualifications

Electrotechnical Engineering or similar

Minimum profile required

- Basic knowledge of the energy and flexibility market problems.
- Basic knowledge of optimization.
- Knowledge of the Python programming language.
- Fluency in English (written and spoken).

Preference factors

- Experience in the study, development and implementation of game theory.
- Experience in modeling energy and flexibility market problems.
- Experience in scientific research activities.
- Programming skills in Python.

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Application Period

Since 06 Dec 2024 to 19 Dec 2024

Centre

Power and Energy Systems

Scientific Advisor

[Tiago André Soares](#)

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Contact Information

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