CALL FOR GRANT APPLICATIONS

(AE2026-0105)

INESC TEC is now accepting grant applications to award 1 Research Grant (BI) within the scope of the Multiannual Funding of R&D Units 2025-2029, with the reference UID/50014/2025, Funded by national funds through the Portuguese Foundation for Science and Technology (FCT), I.P.

1. GRANT DESCRIPTION

Type of grant: Research Grant (BI)

General scientific area: ENGINEERING

Scientific subarea: Electrical engineering

Area of Work: Power Systems

Grant duration: 5 months, starting on 2026-08-01, with the possibility of being renewed until the end of the project.

Scientific advisor: Ignacio Gil

Workplace: INESC TEC, Porto, Portugal

Maintenance stipend: € 1359.64, **according to the table of monthly maintenance stipend for FCT grants**, paid via bank transfer. Grant holders may be awarded potential supplements, according to a quarterly evaluation process (Articles 19, 21 and 22 of the **Regulations for Grants of INESC TEC** and Annex II), up to a maximum limit of 50% of the monthly maintenance stipend.

INESC TEC supports costs with registration, enrolment or tuition fees, during the grant duration, under the terms established in the internal document: **Payment of Tuition fees to grant holders**.

The grant holder will benefit from health insurance, supported by INESC TEC.

2. OBJECTIVES:

- Enlarge the knowledge of the state of the art regarding Hosting Capacity assessment for distributed energy resources (DER) integration;

- Identify and develop probabilistic and data-driven methodologies to quantify network flexibility in multi-level power systems;

- Develop a scalable framework combining stochastic methods and machine learning techniques for power system analysis;

- Evaluate the impact of DER penetration on system operation, including reliability, operational constraints, and planning;

- Develop research skills through the application of advanced modelling and simulation methods;

Implement and validate the developed methods using realistic power system models;

- Apply the scientific method and develop a critical attitude towards the obtained results.

3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

The increasing integration of distributed energy resources (DER) into power systems introduces significant challenges in assessing Hosting Capacity and quantifying network flexibility, particularly at the transmission–distribution interface. In this context, the proposed work aims to develop probabilistic and data-driven methodologies to efficiently and accurately evaluate the impact of DER penetration on system operation. The main activities to be carried out include:

- Conduct a state-of-the-art review on Hosting Capacity assessment methodologies, probabilistic simulation, and machine learning applied to power systems;

- Develop probabilistic scenarios considering renewable generation, load, storage, and component failures;

Implement a simulation engine based on Multi-Level Monte Carlo (MLMC) for hosting capacity assessment;

- Develop and integrate Physics-Informed Machine Learning (PIML) models to improve computational efficiency while preserving physical consistency;

- Evaluate system performance indicators, including energy not served, overloads, and curtailment;

- Validate the developed methods using realistic transmission network models and benchmark distribution systems;

- Prepare technical reports and contribute to scientific publications.

4. REQUIRED PROFILE:

Admission requirements:

The awarding of the fellowship is dependent on the applicants' enrolment in study cycle or non-award courses of Higher Education Institutions.

Preference factors:
- Knowledge of power systems and renewable energy integration;

- Experience in modelling and simulation of power systems;

- Knowledge of probabilistic or stochastic methods;

- Programming skills (Python, MATLAB or similar);

- Previous experience in scientific research activities;

Minimum requirements:
- Basic knowledge of power systems;
- Basic knowledge of optimization and/or probabilistic methods;
- Programming skills (Python, MATLAB or equivalent);
- Fluency in English (written and spoken);

5. EVALUATION OF APPLICATIONS AND SELECTION PROCESS:

Selection criteria and corresponding valuation: the first phase comprises the Academic Evaluation (AC), based on the criteria referred to in Article 12 of the **Regulations for Grants of INESC TEC**, while the second phase comprehends the Individual Interview (EI). All factors are evaluated on a scale of 0 to 100, taking into account the applicants' merit, suitability and conformity with the preference factors.
The weight of the AC factors are as follows: Academic Qualifications (FA, 50%), Scientific Publications (PC, 10%), Experience (EX, 30%) and Motivation Letter (CM, 10%).

Candidates who score less than 50 points in the AC average will be considered excluded on absolute merit. The top five candidates approved on absolute merit will be qualified for the individual interview. The Final Grade (CF) is obtained by the weighted average of AC (90%) and EI (10%).

DISABILITY INCENTIVE

Candidates who present a degree of disability equal to or greater than 90% will benefit from an incentive (20) in the score of the CV Assessment.
Candidates who present a degree of disability equal to or greater than 60% and less than 90% will also benefit from an incentive (10) in the score of the CV Assessment.
Said score may, in these cases, exceed 100 points.
Candidates must demonstrate the degree of disability during the application, namely through the submission of the Multi-Purpose Medical Certificate of Disability, issued in accordance with Decree-Law no. 202/96, of October 23 currently in effect.
Candidates must declare, in the application form, the type of disability used throughout the selection process, in order to proceed with the required adaptations.

The Selection Jury is composed of the following members:

President of the Jury: Ignacio Gil
Full member: Bernardo Silva
Full member: Tiago André Soares
Substitute member: Ricardo Jorge Bessa

Release of results and prior hearing: the results of the selection process, as well as the terms and procedures for prior hearing, will be released to the applicants by email, under the terms referred to in Article 13 of the Regulations for Studentships and Fellowships of INESC TEC.

6. FORMALISATION OF APPLICATIONS:

Application Documents:

1. Motivation letter;
2. Curriculum Vitae (must include the list of previous fellowships, their type, beginning and end dates, funding entities and host institutions);
3. Certificate or diploma degree;
4. Proof of enrollment in a degree awarding study cycle or in a non degree awarding Higher Education program.
    - The proof of enrollment may be presented just during the grant hiring stage.
5. Signed declaration stating the infringement of the grant holder's duties (article 14, no. 4)
6. Documental evidence to support the country of residence, residence permit or other legally equivalent document, in cases where the applicant is a foreigner or non-resident in Portugal - valid until the beginning of the grant.
7. Other supporting documents relevant to the final assessment.

Failure to deliver the required documents within the 90-day period after the date of the notice of the conditional awarding of the grant implies its cancellation.

Application period: From 2026-05-07 to 2026-06-21

Submission of applications: the application will be formalised by submitting the form available in the *Work With Us* section of INESC TEC website.

7. BINDING LEGISLATION AND REGULATION

The hiring process shall comply with the current legislation regarding the Research Grant Holder Statute, approved by Law no. 40/2004 of August 18, in its current wording, as well as by the **Regulations for Grants of INESC TEC** and for **FCT Grants Regulation in force**.

For more information, please check the **Regulations for Grants of INESC TEC** and relevant annexes at www.inesctec.pt/bolsas