

## CALL FOR GRANT APPLICATIONS

(AE2026-0304)

INESC TEC is now accepting grant applications to award 1 Research Grant (BI) 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:** COMPUTER SCIENCE,ENGINEERING,MATHEMATICS

**Scientific subarea:** Computer engineering,Electrical engineering,Applied mathematics,Informatics

**Area of Work:** Energy Systems – Electrical Grid Operation

**Grant duration:** 8 months, starting on 2026-12-01, with the possibility of being renewed until the end of the project.

**Scientific advisor:** Gil Silva Sampaio

**Workplace:** INESC TEC, Porto, Portugal

**Maintenance stipend:** € 1090.98 or 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:

- Deepen scientific and technical knowledge in the field of advanced operation and management of electrical power grids, with a particular focus on Distribution Management System (DMS/ADMS) functionalities.
- Study the fundamentals and methods associated with advanced DMS/ADMS modules, including topology processing, power flow, state estimation, contingency analysis, voltage and reactive power control, and optimal power flow.
- Contribute to the functional and technological development of existing DMS/ADMS modules by adapting them to new requirements, improving algorithms, and integrating new functionalities.
- Develop applied research skills through the implementation, testing, and validation of computational methods for electrical power systems, as well as through the critical analysis of the results obtained.

### 3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

- Review and analyse the architecture, interfaces, and operation of the existing DMS/ADMS modules, as well as the corresponding algorithms and data models.
- Study the methods used in the different modules, such as topology processing, power flow, state estimation,



contingency analysis, voltage and reactive power control, and optimal power flow.

- Support the corrective maintenance of software modules, including problem reproduction and identification, root cause analysis, implementation of fixes, and regression testing.
- Contribute to the evolutionary maintenance of the modules by implementing new functionalities, adapting them to new requirements, and improving existing functionalities according to the needs identified within the project.
- Develop and improve algorithms in C/C++, with a focus on computational efficiency, memory usage, numerical robustness, modularity, and code maintainability.
- Develop testing mechanisms and test cases for the functional and numerical validation of algorithms, including comparison with reference results and evaluation under different grid operating conditions.
- Document the changes made and the results obtained, and contribute to the preparation of technical documentation associated with the development and maintenance of the modules.

#### 4. REQUIRED PROFILE:

##### Admission requirements:

Bachelor's or Master's degree in Electrical and Computer Engineering, Informatics, Computer Science, Applied Mathematics, or related fields.

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 electrical power systems, particularly the analysis and operation of electrical grids.
- Knowledge of power system analysis methods, such as power flow, state estimation, contingency analysis, short-circuit analysis, and optimal power flow.
- Experience in software debugging, maintenance, and development, including memory analysis, data structures, performance optimization, and numerical robustness.
- Experience with development tools such as Git, build systems, debuggers, and automated testing.
- Fluency in English (written and spoken).

##### Minimum requirements:

- Advanced knowledge of C or C++.
- Basic knowledge of electrical grid analysis.
- Knowledge of data structures, algorithms, and numerical methods.

#### 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, 20%), Experience (EX, 20%) 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 (80%) and EI (20%).

#### 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: Ricardo Jorge Bessa

Full member: Filipe Joel Soares

Full member: Alexandre Lucas

Substitute member: Manuel Matos

**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 2026-10-08 to 2026-11-08

**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](http://www.inesctec.pt/bolsas)

