

## RENEWABLE ENERGIES CHAIR

### RESEARCH SCHOLARSHIP FOR BACHELOUR DEGREE – 3 VACANCIES

2 of August of 2024

A call for tenders is open for 3 Scholarships for Bachelour Degree within the scope of the project NGS – New Generation Storage, Ref. C644936001-00000045, funded by the Portuguese Recovery and Resilience Plan program, trough the European Union – NextGenerationEU (2022-C05i0101-02), under the following conditions:

**Scientific area:** Engineering sciences and technologies

#### Admission requirements:

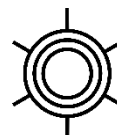
Scholarship 1	<ul style="list-style-type: none"> <li>• Bachelour degree in Energy Engineering, or equivalent to the scientific area indicated. This is a mandatory requirement.</li> <li>• Familiar with photovoltaic solar energy systems and electrochemical energy storage systems, with knowledge of different technologies and their applications. Experience in simulating solar photovoltaic systems and tariff systems for public electricity grids.</li> <li>• Preferably with knowledge of the integration and impact of solar power plants on the territory and dual land use methodologies, e.g. agrivoltaic.</li> <li>• Good command of English and portuguese, these will be the working languages.</li> <li>• Good command of programming languages and experience in using simulation software for photovoltaic solar energy.</li> </ul>
Scholarship 2	<ul style="list-style-type: none"> <li>• Bachelor's degree in Electrical Engineering, Renewable Energy Engineering, Mechanical Engineering, Materials Engineering, Environmental Engineering, Computer Science, or related fields. This is a mandatory requirement.</li> <li>• Preferably enrolled in a Master's program in the indicated scientific areas.</li> <li>• Familiarity with photovoltaic technology, including the design, operation, and maintenance of photovoltaic solar power plants.</li> <li>• Knowledge of inspection methods for photovoltaic systems, such as thermography, visual analysis, and other non-invasive methods.</li> <li>• Understanding of diagnostic techniques and failure identification in photovoltaic modules and systems.</li> <li>• Experience with data analysis and modeling tools such as MATLAB, Python, R, or specific renewable energy software.</li> <li>• Knowledge of image processing and analysis of sensor data.</li> <li>• Good command of English and Portuguese, as these will be the working languages.</li> </ul>

Scholarship 3	<ul style="list-style-type: none"> <li>• Bachelour degree in Renewable Energies Engineering, or equivalent to the scientific area indicated. This is a compulsory condition.</li> <li>• Preferably enrolled in a Master's degree in the referred scientific areas.</li> <li>• Familiar with photovoltaic solar energy systems and electrochemical electricity storage systems, with knowledge of different technologies and their applications.</li> <li>• Preferably with knowledge of the integration of photovoltaic and battery systems in the Portuguese legal context.</li> <li>• Good command of English and Portuguese, these will be the working languages.</li> <li>• Good command of programming languages and experience in using simulation and test software for renewable energies and/or photovoltaic solar energy (e.g. LabView, PVSyst, PVGIS, etc.).</li> </ul>
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As set forth FCT Research Scholarship Regulation No. 950/2019 of December 16, 2019, article 3 and 6, candidates for “BI” (Research Grants) must comply as a rule condition for the award of the scholarship, the effective inclusion in study cycles leading to the attribution of academic degrees or in courses not leading to an academic degree. Courses that do not confer an academic degree correspond to the courses provided for in subparagraph e) of paragraph 3 of article 4 of Decree-Law No. 74/2006 of 24 March and must be developed in a higher education institution in association with at least one R&D unit, including a course plan in one or several research areas of the unit.

#### Work plan:

Scholarship 1	<p>The work plan envisaged for the scholarship is related to the activities of the NGS project in the area of the development and technological demonstration of dual land use systems in photovoltaic solar power stations with energy storage (batteries):</p> <ul style="list-style-type: none"> <li>• Analysing the legal framework for agrivoltaic applications, legal framework for land occupation for battery systems.</li> <li>• Definition of technical specifications and testing methodology in experimental agrivoltaic pilots.</li> <li>• Support in the design, implementation, commissioning and testing of pilot structures in these areas.</li> <li>• Technical support in the R&amp;D tasks included in the project.</li> <li>• Support in analysing the technical-scientific results of these pilots, calculating indicators and results metrics.</li> <li>• Support in the development of optimisation of the characteristics of this technology, with a view to enabling its integration into the Portuguese market.</li> <li>• Analysing and producing technical documentation relating to this area, to be developed as part of the project. Support in producing project reports and publishing scientific results.</li> <li>• Support for the project's dissemination and knowledge transfer activities.</li> </ul>
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	<ul style="list-style-type: none"> <li>• Support for ongoing R&amp;D tasks at the Renewable Energies Chair.</li> </ul>
Scholarship 2	<p>The planned work for the scholarship is related to the activities of the NGS project with a focus on the development of low-cost inspection methods for photovoltaic solar power plants. The main objective is to create efficient and accessible techniques for monitoring and maintaining photovoltaic systems, ensuring their optimal operation and prolonging the lifespan of the components:</p> <ul style="list-style-type: none"> <li>• Analysis of current inspection methods for photovoltaic solar power plants.</li> <li>• Development and testing of low-cost inspection methods using accessible technologies.</li> <li>• Evaluation of the effectiveness and accuracy of the new methods developed.</li> <li>• Creation of recommendations for the practical implementation of inspection methods in solar power plants.</li> <li>• Technical support for R&amp;D tasks included in the project.</li> <li>• Support in the analysis of the technical-scientific results of pilot projects, calculating key performance indicators and result metrics.</li> <li>• Analysis and production of technical documentation related to this area, to be developed within the scope of the project. Support in the preparation of project reports and publication of scientific results.</li> <li>• Support for the project's dissemination and knowledge transfer activities.</li> <li>• Support for ongoing R&amp;D activities at the Renewable Energies Chair.</li> </ul>
Scholarship 3	<p>The work plan envisaged for the scholarship is related to the activities of the NGS project in the area of the development and testing of hybrid battery systems:</p> <ul style="list-style-type: none"> <li>• Analysis of the legal framework for battery energy storage applications.</li> <li>• Definition of typical technical specifications and testing methodology for battery applications in hybrid configurations, integrated in large PV power plants.</li> <li>• Support in the design, implementation, commissioning and testing of pilot structures in order to test several use-cases.</li> <li>• Technical support in the R&amp;D tasks included in the project.</li> <li>• Support in analysing the technical-scientific results of these pilots, calculating Key Performance Indicators and results metrics.</li> <li>• Support in the development of optimisation of the characteristics of this technology, with a view to enabling its evolution into the market.</li> <li>• Analysing and producing technical documentation relating to this area, to be developed as part of the project. Support in producing project reports and publishing scientific results.</li> <li>• Support for the project's dissemination and knowledge transfer activities.</li> <li>• Support for ongoing R&amp;D tasks at the Renewable Energies Chair.</li> </ul>

**Applicable legislation and regulations:** The granting of the Research Scholarship will be carried out upon the signing of a contract between the University of Évora and the scholarship holder, according to the version in **Annex I**, pursuant to the Research Scholarship Statute (Law No. 40/2004 of August 18 and Decree-Law No. 123/2019 of August 28) and in accordance with the legislation and Regulation of Research Grants of the Foundation for Science and Technology, IP in force, regulation nº950/2019 of December 16, 2019: <https://files.diariodarepublica.pt/2s/2019/12/241000000/0009100105.pdf> and other applicable rules.

**Place of work:** The work will be developed at the Renewables Energies Chair of the University of Évora, under the general coordination of the Administrator of the University of Évora and the scientific guidance of the Doctor Luis Fialho and Doctor Ana Foles, who must draw up an opinion on the final activity report of the scholarship (**Annex II**), according to the draft in **Annex III**.

**Duration of the scholarship(s):** The scholarship will have a duration of 12 months, starting on September of 2024. The scholarship contract may be renewed to up to the end of the financing of the NGS project budget allocation.

**Amount of monthly maintenance allowance:** The amount of the scholarship corresponds to €990,98, according to the table of scholarships awarded directly by FCT, I.P. in Portugal (<https://www.fct.pt/financiamento/programas-de-financiamento/bolsas/>), payments being made monthly, by check or bank transfer.

**Selection methods:** The selection methods to be used will be the following:

**Academic Qualifications: 50%**

Classification: 50%

Adequacy: 50%

**Curriculum Analysis: 50%**

Scientific Activity: 50%

Experience in requested topics: 50%

**Composition of the Selection Jury:**

President – Dr. Luís Fialho (Principal Researcher - Renewable Energies Chair)

1<sup>st</sup> Member – Dr. Ana Foles (Researcher - Renewable Energies Chair)

2<sup>nd</sup> Member – Dr. José Silva (Auxiliary Researcher – Renewable Energies Chair)

1<sup>st</sup> Substitute – Dr. Afonso Cavaco (Auxiliary Researcher - Renewable Energies Chair)

2<sup>nd</sup> Substitute – Dr. Diogo Canavarro (Auxiliary Researcher - Renewable Energies Chair)

**Advertising/notification of results:** The final results of the evaluation will be publicized, through a list sorted by final grade posted in a visible and public place at the University of Évora (Renewable Energies Chair, Polo da Mitra), and the selected candidate will be notified by email. To ensure the right of prior hearing of interested parties, the Final Classification project will be announced by any written means to all interested parties.

After communicating the provisional list of the results of the evaluation, candidates have a

period of 10 working days to express their opinion in a preliminary hearing of interested parties. Based on the final ranking list, a reserve selection list will be drawn up, to be used for the possible recruitment of new scholarship holders within the scope of this project, up to the duration of the scholarship, which may be used in the eventuality of the first ranked candidate withdrawing, failing to present the mandatory documentation, or in the event of the scholarship holder canceling their scholarship early. In the eventuality that none of the candidates demonstrates the profile required to carry out the work plan, the jury reserves the right not to award the scholarship.

**Application deadline and submission of applications:** The tender is open from 02 of August to 30 of August of 2024 and the results of the selection will be published by 6 of September of 2024.

Applications must be formalized, obligatorily, by sending an application letter with the following documents: ***Curriculum Vitae, certificate of academic qualifications and other supporting documents considered relevant.***

For the purposes of application, the evidence may be replaced by a declaration of honor signed by the candidate, but the failure to demonstrate that evidence, in the contracting phase, possession of the required degree on the deadline for application or the non-presentation of proof of enrollment in the study cycle or non-degree course, for scholarships with this component, imply the cancellation of the candidate's application.

Academic degrees obtained in foreign countries require registration by a Portuguese Institution in accordance with Decree-Law no. 66/2018, of August 16 and Ordinance No. 33/2019, of January 25th.

The presentation of the certificate is mandatory for the signing of the contract. More information can be obtained at: <https://www.dges.gov.pt/pt/pagina/recognition?plid=374>

Applications must be sent by email to:

**Doctor Luis Fialho**

Renewable Energies Chair of the University of Évora

email: [catedraer@uevora.pt](mailto:catedraer@uevora.pt)

ANNEX I

MINUTE SCHOLARSHIP CONTRACT

Between,

**FIRST PARTY:** The \_\_\_\_\_ (name of organisation), com sede em \_\_\_\_\_ with registered office at \_\_\_\_\_ (address of registered office of organisation), with tax number \_\_\_\_\_, represented in this act by \_\_\_\_\_ (name of representative of organisation), in the capacity of \_\_\_\_\_ (Director/President) of the contracting/financing organisation, hereinafter referred to as the "First Party", and

**SECOND PARTY:** \_\_\_\_\_ (name of grantee), holder of ID card/passport no. \_\_\_\_\_ (ID card/passport no.) and taxpayer no. \_\_\_\_\_ (taxpayer no.), resident at \_\_\_\_\_ (address of grantee), hereinafter referred to as the "Second Party".

whereas,

The application requirements for the award of the scholarship under the call \_\_\_\_\_ (call identification / call notice reference) have been met, the process of evaluating the candidates and publicising the results has been completed and the required documentation has been received.

This scholarship contract is entered into in good faith and mutually accepted, under the terms of the Research Fellow Statute, and is governed by the following clauses:

**FIRST CLAUSE**

The First Party undertakes to award the Second Party a grant \_\_\_\_\_ (type of grant and reference of the call for tenders), within the scope of the project \_\_\_\_\_ (type of project) / R&D unit with the reference \_\_\_\_\_ (reference of the project or unit) and with the title \_\_\_\_\_ (title),

*(Reference should be made to the sources of funding for the project/unit).*

- with 100% OE funding - Mention of funding: financed by the Foundation for Science and Technology, I.P./MCTES through national funds (PIDDAC)
- With FEDER co-financing - Mention of funding:

*Financed by the European Regional Development Fund (ERDF) of the European Union, through (indicate which Operational Programme it finances) Portugal 2030 or other programmes that may succeed it) starting at \_\_\_\_\_ (date of start of the scholarship), for a period of \_\_\_\_\_ months, possibly renewable (as defined in the call for proposals).*

**SECOND CLAUSE**

In the alternative, the FCT Research Grant Regulations apply, of which the Second Party declares that it is aware.

**THIRD CLAUSE**

The Second Party undertakes to carry out the attached work plan, the content of which he/she declares that he/she has taken full cognisance of and accepts unreservedly, from the above-mentioned start date and on an exclusive dedication basis, under the terms of article 5th of the Research Fellow Statute.

#### FOURTH CLAUSE

The Second Party will carry out the work at \_\_\_\_\_ (*name of the host institution as defined in Article 3(g) of the FCT Research Grant Regulations*), which acts as the host institution, with \_\_\_\_\_ (*name of the supervisor and affiliation institution*) as the scientific supervisor.

#### FIFTH CLAUSE

1. The monthly maintenance allowance awarded is \_\_\_\_\_ (€...,00).
2. The Second Grantor also benefits from personal accident insurance for the duration of the grant, the conditions of which he/she declares to have read and accepted without reservation.
3. The following scholarship components are also added \_\_\_\_\_ (*specify the applicable components in the terms set out in the FCT Research Grant Regulations*).

#### SIXTH CLAUSE

The First Party may cancel the grant and the Second Party may be obliged to refund all or part of the sums received in the following cases:

- a) a) Serious and repeated failure to comply with the Second Party's obligations under the Research Grant Holder Statute and the FCT Research Grant Regulations, for reasons attributable to the Second Party;
- b) b) A negative evaluation of the Second Grantor's performance by the supervisor or the host organisation under the terms of the FCT Research Grant Regulations;
- c) c) False declarations by the Second Granting Party on matters relevant to the award and renewal of the grant or to the assessment of its development.

#### SEVENTH CLAUSE

Without prejudice to the provisions of the previous clause, this contract shall terminate automatically:

- a) Upon completion of the activity plan;
- b) End of the period for which the scholarship is awarded;
- c) Repeated non-compliance by one of the parties;
- d) Revocation by mutual agreement;
- e) Establishment of a legal employment relationship with the host organisation.

#### EIGHTH CLAUSE

1. The rights and duties of the parties are those resulting from the provisions of the Research Fellow Statute.
2. The Second Party declares that he/she has read the Research Fellow Statute and the applicable Regulation(s) and undertakes to comply with their provisions.

#### NINTH CLAUSE

It is agreed between the parties, that in case of need and to settle all questions arising from this contract, the District Court of \_\_\_\_\_ (*name of the District*) shall have jurisdiction, expressly waiving any other.



#### TENTH CLAUSE

Any changes to be made to the contract in the course of its performance shall be the subject of priorwritten agreement.

#### ELEVENTH CLAUSE

This contract shall take effect on the date it is signed by both parties.

The grant awarded under the terms of the FIRST CLAUSE of this contract may be renewed for additional periods of (...) months, up to a maximum of (...) months, under the terms of article 15 of the FCT Scholarship Regulations.

[ONLY FOR RESEARCH SCHOLARSHIPS, otherwise withdraw]: The award of the academic degree (or diploma) during the term of this contract shall not affect its effects, and the grant referred to in thepreceding paragraph may be renewed at a later date, provided that it is aimed at carrying out activities that are indispensable for the completion of the project (...).

The concrete definition of the activities referred to in the previous paragraph is the responsibility ofthe First Party, after hearing the Second Party and the Scientific Advisor, and they must be includedin the agreement to be signed, as provided for in the previous clause.

\_\_\_\_\_, \_\_\_\_\_ of \_\_\_\_\_

**The First Party**

**The Second Party**

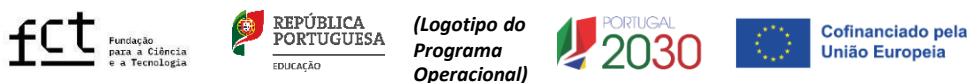
(Signature and stamp of the organisation)

(Signature of the grant holder or his/her proxy)

#### With 100% OE funding



#### Or with FEDER co-financing:





ANNEX II  
FINAL REPORT FORM (Fellowships)

Referência da bolsa (Grant Reference)	
Organização (Organisation)	

DETALHES DO BOLSEIRO / FELLOWSHIP DETAILS

Título (Title)	
Nome próprio (Forename)	
Apelido (Surname)	
Organização (Organisation)	
Departamento ou Centro (Department or Centre)	
Supervisor (Supervisor)	

DETALHES DO PROJETO / PROJECT DETAILS

Título da Bolsa (Grant Title)				
Referência da bolsa (Fellowship reference)				
Período da bolsa (Period of Review)	Data de Início: (Start Date):		Data do Termo:	



UNIVERSIDADE DE ÉVORA



CÁTEDRA ENERGIAS  
RENOVÁVEIS

## OBJETIVOS / OBJECTIVES

Objetivos originais como constam na proposta (Original objectives as presented in the proposal)

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Estes objetivos permaneceram válidos durante o período da bolsa, ou (These ☐  
objectives remained valid throughout the Fellowship (*tick box*), or

Estes objetivos foram modificados (explique ☐  
como/ porque no seu relatório)

(These objectives were changed) (*tick box*).

(If so please explain how/why in your report)

Novos objetivos (New objectives)

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Sumário dos resultados do projeto: descreva em termos simples o seu trabalho de forma a que possaser  
divulgado perante uma audiência genérica  
(Summary of project outcomes: In simple terms describe your work in such a way that it could be  
publicised to a general audience.)

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Endereço de página com mais detalhes, se desejar: (Web address with further details if you wish)

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#### RESULTADOS DA BOLSA / OUTCOMES OF THE FELLOWSHIP

Os principais benefícios das bolsas concedidas pela Universidade de Évora incluem: (Major benefits of Évora University Fellowships include:

- i) os impactos potenciais sobre as carreiras dos bolseiros e  
(the potential to impact positively on the careers of individual Fellows and)
- ii) os resultados da investigação  
(the research results)

#### RELATÓRIO DAS ACTIVIDADES DESENVOLVIDAS / REPORT ON WORK UNDERTAKEN

Utilize o número de páginas necessário (please continue on additional pages as required)

Participação em conferências científicas, no país e no estrangeiro (nome, local e data) (Scientific Conference attendances – name, location and date)

## RESULTADOS DA INVESTIGAÇÃO (RESEARCH RESULTS)

### Publicações/ Publications

(1) Enuncie quantos resultados da investigação resultaram principalmente da investigação financiada através desta bolsa e indique o tipo (revista, conferência, livro, patente, software, outro).

(Please state how many research results have resulted principally as a result of the research funded through this grant and indicate the type (journal, conference, book, patent, software, other))

	REVISTA (JOURNAL)	ARTIGOS EM CONFERÊNCIAS (CONFERENCE PAPERS)	LIVRO OU TESE (BOOK OR THESIS)	PATENTE (PATENT)	SOFTWARE	OUTRO OTHER
Número total de publicações / Total Number of Publications						
Número de Publicações com arbitragem científica (se diferente do anterior) / Number of Refereed Publications (if different from above)						
Número de Publicações que contêm um coautor estrangeiro / Number of Publications That Contain An International Co-Author						

(2) No caso de Bolseiro de mestrado ou doutoramento, referencie os dados relativos à tese: (In the case of Master or Ph.D. Fellowship, please indicate:)

Título da tese/ Thesis title:

Classificação obtida / Classification:

Universidade e data/ University and date:

- (3) Liste até cinco publicações que resultaram principalmente da investigação financiada através da Bolsa e indique o tipo (revista, ata de conferência, livro, patente, software, outro); se houve coautores estrangeiros ou industriais e se a publicação foi sujeita a arbitragem científica. / Please list up to five significant publications that have resulted principally as a result of the research funded through this grant and indicate the type (journal, conference, book, patent, software, other); whether there was an international or industrial co-author and whether the publication was refereed.

AUTOR(ES) (AUTHOR(S))	TÍTULO (TITLE)	REFERÊNCIA (REFERENCE)				TIPO (TYPE)	Arbitragem? Refereed?	Industrial co-author?	International co-author?
		Revista/Ata de Conf. (Journal/Conference).	ano (year)	Vol./Nº (vol./Nº)	página (page)				
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### Outros resultados da Bolsa / Other Results of the Fellowship

Indique o calendário para potencial exploração (i.e. conseguido, expectável dentro de 3 anos, expectável dentro de 10 anos, não expectável em 10 anos) e inclua números das patentes, datas, nomes e endereços das empresas, etc., de forma apropriada, nas colunas “detalhes” e “referência” / Please indicate the timescale for potential exploitation (e.g. achieved, expected within 3 years, expected within 10 years, none foreseeable in 10 years) and include patent nos., dates, company names and addresses etc. as appropriate, in the ‘details’ and ‘reference’ columns.

	DETALHES (DETAILS)	REFERÊNCIA / REFERENCE	CALENDAR. / TIMESCALE
Licenças ou Patentes/ Licences or Patents			
Empresa de Spin Off/ Spin Off Company			
Consultadoria Direta/ Direct Consultancy			
Cursos de Formação Industrial/ Industrial Training Courses			
Compreensão Pública de Ciência e Engenharia/ Public Understanding of Science and Engineering			
Outro (especifique) / Other (please specify)			

## Contribuições Relacionadas Concedidas/Pendentes

### (Related Support Awarded / Pending)

Indique o nível de apoio à investigação que derivou principalmente como resultado da Bolsa./ Please indicate the level of research support that has arisen principally as a result of the Fellowship.

FONTE DE FINANCIAMENTO (FUNDING SOURCE)	DETALHES (DETAILS)	SUPORTE (€) SUPPORT (€)
Universidade de Évora (desde o início da bolsa) Évora University (from start of Fellowship)		
Outro Organismo Nacional de Investigação /Other National Research Organization		
Outro Organismo Governamental Português / Other Portuguese Government Council		
Empresa / Industrial		
Outra (Other)		
Comissão Europeia / European Commission		
Pendente (Pending)		

### Assinaturas (Signatures):

<b>Bolseiro (Fellow)</b>
Data (Date):



ANNEX III

**MODEL OF THE FINAL EVALUATION REPORT ON THE ACTIVITY OF THE  
SCIENTIFICRESEARCH FELLOW TO BE DRAWN UP BY THE SCIENTIFIC  
SUPERVISOR**

1. Scientific supervisor of the scholarship:
2. Identification of the grant:
3. Project name:
4. Host organisation:
5. Fellow:

5.1. Critical analysis of the activities and work carried out by the grant holder.

[A brief description of the activities carried out by the grant holder, in accordance with the announcement and the activity plan, and a critical appraisal of the objectives and results achieved by the grant holder].

5.2. Final assessment of the work carried out by the grant holder.

[Reasoned overall appraisal of the work carried out by the grant holder, with a final positive or negative balance, addressing their performance, effort and dedication]

Évora, \_\_\_\_\_ of \_\_\_\_\_ 20\_\_\_\_

The Scientific Supervisor of the Scholarship, \_\_\_\_\_ (full name)