JUNIOR RESEARCHER

Position: Junior researcher in energy system analysis (3 positions)
Offer date: CIIAE web
Project: CIIAE – Ref. IJ-SISTEMAS (HIDRÓGENO Y POWER-TO-X)
Department: Hydrogen and Power-to-X
Estimated starting date: 2023

Workplace:	University of Extremadura. Cáceres campus
Tasks to be develped:	Providing decision support is key to speed up the transition to net zero energy systems. In energy system analysis, simulation models are created to find the best pathway to decarbonise our society, considering important constraints, from a interdisciplinary point of view. Energy system analysis should also be open, in order to the quality of science, on the basis of more transparency, reproducibility and traceability The selected candidate is expected to perform the following tasks: — Creating open-source energy system models at various spatial and temporal scales, e.g., Iberian Peninsula and energy communities. — Creating an open-source energy system model of the Iberian Peninsula with interconnections to France, North of Africa, and overseas — Providing recommendations to decision makers based on modelling results — Collaborations with experimental researchers from CIIAE and beyond — Successful Collaboration with universities, research institutes and companies at national and international level. — Writing publication as first author and co-author (e.g., 1.5 paper p.a. in high-ranked journals) — Project management and project administration (internal and external), also towards the department and CIIAE — Writing research proposals and contributing towards acquisition of competitive funding, both private and/or public — Becoming gradually more independent, in order to conduct, manage and lead an independent project Challenges: There is a large number of available technologies, actors, e.g., households and industry, as well as intrinsic uncertainty which makes energy system models complex. Plenty of data are also generated, making the assessment of the important results to provide policy recommendations challenging

Duration of the contract and salary:	Temporary Contract Initial duration: September 2025, with the possibility of extension	Gross Salary + S.S. Fees Gross Salary Range: 35 000 € - 38 000 €
Academic background required:	A PhD in engineering, computer science, mathematics, physics, economics or related numerate disciplines	
Other education:		

Job requirements (have to be fulfilled):	Professional experience:	
	Specific techniques (analytical, software, calculations, prototyping, etc.)	- Excellent analytical skills and experience in theoretical and applied modelling - Experience in energy system modelling and optimisation - Knowledge of energy system engineering and techno-economic assessment - Statistical skills, for example statistical tests and regression - Programming experience (any language, but work may be mostly be in Python and Matlab). - Knowledge of energy technologies including renewables, energy storage, hydrogen, flexibility technologies and power-to-X
	Participation and/or collaboration in R&D&I/business projects	Proven participation on at least 1 R&D projects
	Languages	Excellent oral and written skills in English
	Cross-cutting competences	- Commitment to open science in terms of research methods, data and publications - Ability to work in a diverse and flexible academic environment in a team-oriented, but independent way - Experience on collaborating with other colleagues from the same department and beyond
	Willingness to travel and stay abroad	The candidate is expected to travel, both nationally and internationally, in the context of projects and conferences
	Publications: scientific articles (in journals indexed in Web of Science and/or Scopus), theses (PhD and/or Master's), presentations at conferences, reports, technical reports, technical guides, etc.	Strong track-record of publications as first author and co-author as the candidate is expected to publish in top journals in the field. At least 3 publications in Scopus indexed journals. Alternatively, a monograph thesis may also be considered, as well as conference publications

To be evaluated (adds points to the final evaluation):

- Proven experience with agent-based modelling (ABM) .
- Knowledge of power flow analysis .
- Experience with statistical learning models and machine learning.
- GIS modelling.
- Knowledge of Spanish and/or Portuguese.
- Experience with industrial collaborations and/or previous experience working on industry .
- Motivation letter (maximum 2 pages) included in the application.
- Evaluation provided by 2 references via telephone conversation. The contact details of the references (e-mail and telephone) are provided by the candidates in their application.

Selection process details:

Technical test: NO

Language (English): yes **(will be evaluated during the interview)**

Job interview: yes

Interested candidates:

Please, send all the documents requested by the terms and conditions of the call for the proposal, with the deadline being 15 calendar days from the day following the publication in the CIIAE web indicating the following reference: **Ref. IJ-SISTEMAS (HIDRÓGENO Y POWER-TO-X)**

FUNDECYT-PCTEX (Edificio Parque Científico Tecnológico), Avda. de la Investigación, s/n, Edificio PCTEX, Campus de la Universidad de Extremadura – 06006 Badajoz (España)

Email: ciiae.personal@fundecyt-pctex.es Phone number: +34 924 014 594

www.fundecyt-pctex.es

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