



Fellow	Host Institution No.1: TU Wien	Country: Austria
	Host Institution No.2: Empresarios Agrupados Internacional	Country: Spain
DC4	Supervisor: Prof. Markus Haider Co-supervisor: Soledad Lopez Postiglione	WP No: 1
Title: sCO ₂ -based pumped thermal energy storage (Carnot batteries)		
Research Objectives: (1) develop innovative system integration concepts for large-scale energy storage systems relying on sCO ₂ power cycles. (2) assess energy storage concepts which could be built around sCO ₂ power cycles aiming at providing support to larger shares of variable renewable energies. (3) assess the impact on accelerating the transition towards a future, carbon-neutral energy system. (4) identify the critical challenges for the implementation.		
Mobility rules (eligibility of applicants): more information here <ul style="list-style-type: none">• Researchers funded by Doctoral Networks should comply with the mobility rules: in general, they must not have resided or carried out their main activity (work, studies, etc.) in the country of the recruiting organisation for more than 12 months in the 36 months immediately before their recruitment date¹.• In addition, they:<ul style="list-style-type: none">○ must not have a doctoral degree at the date of their recruitment.○ can be of any nationality.		
Applicant - specifications: in addition to the general specifications (eligibility criteria) listed above, the applicant must feature the following requirements: <ul style="list-style-type: none">• Earned degree:<ul style="list-style-type: none">○ MSc in Mechanical Engineering (or related area, like Process Engineering). Preference will be given to candidates with a major in energy or related areas• Background (mandatory):<ul style="list-style-type: none">○ Thermodynamics and Power plant engineering (design and analysis)○ Simulation of thermal systems.○ Matlab/Python programming.• Additional background that will be valued in the selection process:<ul style="list-style-type: none">○ Optimisation techniques in engineering systems○ Turbomachinery and heat exchanger design and analysis○ Matlab Simulink, Epsilon Plus, Apros• English language:<ul style="list-style-type: none">○ A certified C1 level of English is required		

¹ This rule applies to the first contract only (TU Wien, Austria)



**Scheme:**

- M1-M24: the applicant is employed by TU Wien, Austria.
- M19-M24: the applicant is seconded to ETN, Brussels, Belgium
- M25-M36: the applicant is employed by EAI, Spain, without undergoing another selection process.

Locations (place of work):

- M1-M24: the applicant will be employed by TU Wien, Institute of Energy Systems and Thermodynamics:
Getreidemarkt 9, 1060 Wien, Austria
- M19-M24: the applicant will be seconded to ETN, European Turbine Network:
Chau. de Charleroi 146/148, 1060 Brussels, Belgium
- M25-M36: the applicant will be employed by Empresarios Agrupados Internacional:
Empresarios Agrupados Internacional
C/ de Magallanes, 3, 28015 Madrid
Google Maps: [link](#)

Planned secondments: DC4 is expected to carry out the following secondment:

- ETN, European Turbine Network (Brussels, Belgium): focus on future energy storage requirements

How to apply: submit application package (see below) to Prof. Markus Haider markus.haider@tuwien.ac.at before May 31st 2023, 17:00 h CET.

The Application Package is comprised of:

- CV Europass (<https://europa.eu/europass/en/create-europass-cv>)
- Letter of motivation
- *Analysis of the challenges faced by the energy sector to accomplish Carbon Neutrality by 2050, and the associated needs for technology development* (max 3 pages)
- Short video (less than 2min): *why I should be selected for the position*. The candidates should address some of the following questions:
 - D1: Why did you decide to apply for a position in ISOP?
 - D2: What do you expect/want to gain from an MSCA programme?
 - D3: How do you think you can add value to an MSCA programme?
 - D4: Summarise your strengths and weaknesses.
 - D5: Describe a time when you had to deliver a challenging project. What was your role and what was the outcome?
 - D6: Where do you see yourself in 10 years?
 - D7: Why should you be selected for the position?
- The application package must not exceed 15 Mb

Contract:

- Start date (estimate): September 2023

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- Type: full-time exclusive
- Annual gross salary:
 - TU Wien: € 42,820.40
 - Empresarios Agrupados Internacional: € 34,087.73
- An additional (family) allowance is available for candidates who have family obligations (applied from and until this condition applies)

Equal Opportunity Employers:

TU Wien and Empresarios Agrupados Internacional are Equal Opportunity Employers. We believe that no one should be discriminated against because of their differences, such as age, disability, ethnicity, gender, gender identity and expression, religion or sexual orientation. All employment decisions shall be made without regard to age, race, creed, colour, religion, sex, national origin, ancestry, disability status, sexual orientation, gender identity or expression, genetic information, marital status, citizenship status or any other basis as protected by European, Austrian and Spanish laws.

