

# Open Innovation Challenges

**DO YOU HAVE THE  
SOLUTION?**

## **Innovation Challenge**

Systems engineering of the future

### **Overview and Challenge**

**Challenge 1:** Alternative (and more sustainable) methods of producing synthetic graphite anodes.

Synthetic graphite is one of the constituent raw materials of lithium battery anodes (typically 50/50 blending of natural and synthetic graphite). Its production process, called graphitization, presents a high electricity consumption, besides using as raw materials petroleum and coal derivatives.

- High CO<sub>2</sub> footprint associated with the graphitisation process
- Production is concentrated in China, where there is a low incorporation of renewable energy in the energy mix.

**Challenge 2:** Solutions for harnessing sodium sulfate.

The production of lithium hydroxide monohydrate from spodumene concentrate and the production of cathode precursors involve the production of high volumes of sodium sulfate. The solution found for the disposal of these by-products is often to sell them to the cellulose industry. Considering that the cellulose industry has a limited need for sodium sulfate, it is intended to find alternative solutions for utilization of sodium sulfate, thus avoiding its disposal in landfill.

- Production of high volumes of sodium sulfate as a by-product, which the pulp industry cannot absorb;
- Avoiding landfilling of sodium sulfate by promoting its use for other purposes.

We aim to accelerate progress toward a sustainable future through collaboration, creativity, and innovation. By bringing together a diverse community of experts from different backgrounds and disciplines, we can pool our knowledge, expertise, and resources to make a significant impact.

## Eligibility

Academic researchers from all disciplines are eligible to participate in this challenge.

## Evaluation Criteria

### Technology Innovation (30%)

Is it a reuse / improvement of an existing technology? Is it an inventive and innovative (new) technology? Is the technology relevant and scalable for the targeted use case?

### Fit with the Industry sector (30%)

Is the technology fitting with Galp industrial context?  
Can the technology be implemented easily or would it require significant investment?

### Technology development Roadmap (20%)

Is the technology development roadmap realistic? How long are the development projections?  
Can the project deliver value on time?

### Quality of the Team (20%)

Is the team complimentary? Does it lack skills? Is it solid?  
Does it have technical and business skills, experience? Do they have trustful advisors?

## Prize

The winning solution will receive 5 000 euros.

## Submission Deadline

The submission deadline is 19th March.

If you're interested in participating in this challenge submit your proposal to ANI. We look forward to collaborating with you!

Um projeto:



Com apoio:



Cofinanciado por:

