



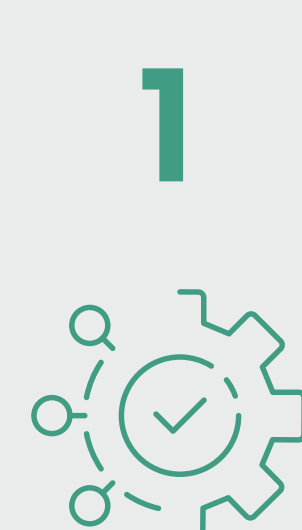
## Graphene Alliance for Sustainable Multifunctional Materials to Tackle Environmental Challenges

GIANCE presents creative solutions to environmental challenges by establishing a comprehensive and industry-driven platform. This platform aims to design, develop, and produce the next generation of affordable, eco-friendly, lightweight, and recyclable materials based on graphene and related substances (GRM). These materials include multifunctional composites, coatings, foams, and membranes (GRM-bM) with enhanced properties, such as thermal, mechanical, and chemical features.

These innovations also improve functionalities like wear resistance, corrosion resistance, chemical and fire resistance, hardness, impact resistance, high-temperature resistance, and structural health monitoring. Additionally, GIANCE focuses on enabling hydrogen storage. The project strives to advance manufacturing processes, enhance synthesis and stability, and minimize environmental impact.

The GRM-bM and manufacturing capabilities developed by GIANCE will foster strong connections with end-users, enabling the qualification and development of commercial propositions to high Technology Readiness Levels (TRLs). GIANCE aims to demonstrate and validate the effectiveness of GRM-enabled products through 11 use cases, influencing future technologies across various sectors, including automotive, aerospace, energy (hydrogen economy), and water treatment.

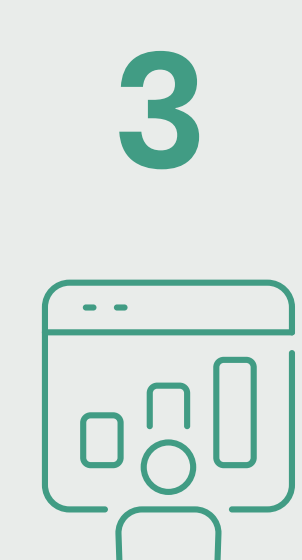
### OBJECTIVES



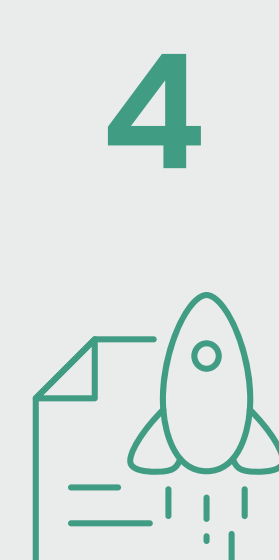
**1** Develop and Validate Highly Innovative and Sustainable Materials for New Scalable Use Cases (UCs)



**2** Develop and Optimize Sustainable Manufacturing Technologies



**3** Implement Life-Cycle Assessment (LCA), Life-Cycle Cost (LCC), and End-of-Life (EOL) Strategies



**4** Accelerate Innovation and Contribute to the Governance and Coordination of the Graphene Flagship (GF) Initiative

### IMPACTS

- Develops revolutionary Materials Solutions
- Elevates EU Leadership and drives Circular Economy
- Significant Weight Reduction and Energy Efficiency in transport sector
- Optimizes manufacturing processes for resource efficiency
- Achieves up to 30% improvement in environmental performance.
- Accelerates adoption of innovative materials

eurecat

STELLANTIS

BOEING

FORTH

Consiglio Nazionale delle Ricerche

FORVIA  
Taurecia

Fraunhofer

DAWN

BOMATERIALS2

IRIS

Cranfield

Graphene Flagship

CTAG

TNO innovation for life

HYDROSOLID

Graphenea

LENNTECH

Graphene Flagship

Graphene Flagship

bax

PNO INNOVATION

Northumbria University NEWCASTLE

UNIVERSAL MATTER

### CONTACT

**COORDINATOR**  
Ana Villacampa  
Programme Manager – Eurecat

 [www.giance-project.eu](http://www.giance-project.eu)  
 [info@giance-project.eu](mailto:info@giance-project.eu)  
 [#giance-project](https://www.linkedin.com/company/giance-project)