



MG-2.2-2016: Development, production and use of high performance and lightweight materials for vessels and equipment





Specific challenge

- New lightweight materials and related construction principles can provide a step change in vessel efficiency, both in terms of energy use and maintenance costs.
- European technology leadership in this field (often held by innovative SMEs whose effective integration in the value chain is essential) needs to be translated into market demand in current and future markets, also beyond the maritime transport sector.
- The specific challenges are
 - to research the functional characteristics of new lightweight and high performance materials for waterborne usages (vessels and components);
 - to develop the most appropriate design, construction and production principles for small, medium sized and large vessels and for components (also by learning from applications in other transport modes);
 - and to influence the regulatory environment in order to eliminate existing barriers and facilitate market take-up in the waterborne sector.



Scope

- In order to meet these challenges, proposals should address all the following aspects:
 - Conception, production and use of advanced composites (including those that are bio-based or using renewable resources) and other high-performance materials, including multi-materials construction and joining / bonding.
 - Comprehensive performance analysis and simulation for new advanced materials and entire constructions (including characteristics such as durability, resistance to corrosion and fouling), full life cycle costs analysis, and technology transfer from other transport applications for lightweight materials where feasible.
 - Assessing risks and enhancing fire resistance properties and thermal and noise insulation qualities.



Expected impact

- Activities will introduce new lightweight and high performance materials in waterborne applications through:
 - demonstration of full feasibility of the use of such advanced materials, including design and production of vessels and components;
 - proving significantly lower maintenance and life cycle costs (at least -30% compared to conventional materials and processes);
 - development of clear performance indicators (especially with regard to economic and environmental impacts) covering the entire life cycle;
 - demonstrators (full scale where feasible) for clearly identified maritime applications.
- Inputs to pertinent regulatory regimes should be developed where applicable and necessary.



Topic data

- Type of action: Innovation Action
- EU contribution between 7 and 9 M€
- Budget (MG 2.2 and MG 2.3): 38 M€
- Deadline 1st Stage: 20/1/2016