

Evaluation of shipbuilding innovation aid

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The sea has become an increasingly critical domain of the society from the perspectives of the economy, security, and green transition. At the same time, the shipbuilding industry faces various pressures, such as intensifying global competition, sustainability requirements, new technologies' adaptability, rising costs, profitability and challenges in workforce availability. Shipbuilding innovation aid supports shipyards and its ecosystem companies to navigate these challenges, nurturing renewal and improving their competitiveness within the ever-evolving maritime industry.

Cutting-edge shipbuilding is essential for securing continuity and renewal capability in competencies and technologies, as well as improving competitiveness internationally

Finland is dependent on a competitive marine sector

Finland relies heavily on its maritime sector, with 90% of goods exports and 80% of goods imports of goods being transported by sea. This crucial network encompasses various sectors, including shipbuilding, naval engineering, port operations, ship owners and operators, technology providers, a large number of SMEs in various sectors, and research institutes and universities.

The international maritime industry faces numerous drivers for change such as increased global competition, geopolitical uncertainties, and a growing focus on sustainability and safety. To remain competitive, Finnish shipbuilding companies must invest in innovation, expertise, and specialisation in advanced technologies and special vessels.

Recognising the strategic importance of the maritime industry, many countries provide support to their shipbuilding sectors. WTO, OECD and EU have accomplished measures in order to manage the support and form guidelines for a level playing field. In Finland, these guidelines are followed carefully. Finland also provides various financing instruments for this sector. One instrument is called the shipbuilding innovation aid, a state funding aimed at assisting shipbuilding companies in developing and incorporating innovative solutions into their shipbuilding projects. It covers experimental development, innovative ship projects, ship repair, and the construction of floating and mobile offshore structures.

The administration of this aid program falls under Business Finland and adheres to the EU General Block Exemption Regulation (GBER). From 2017 to 2022, four companies received funding for 12 projects, amounting to 88 million euros.

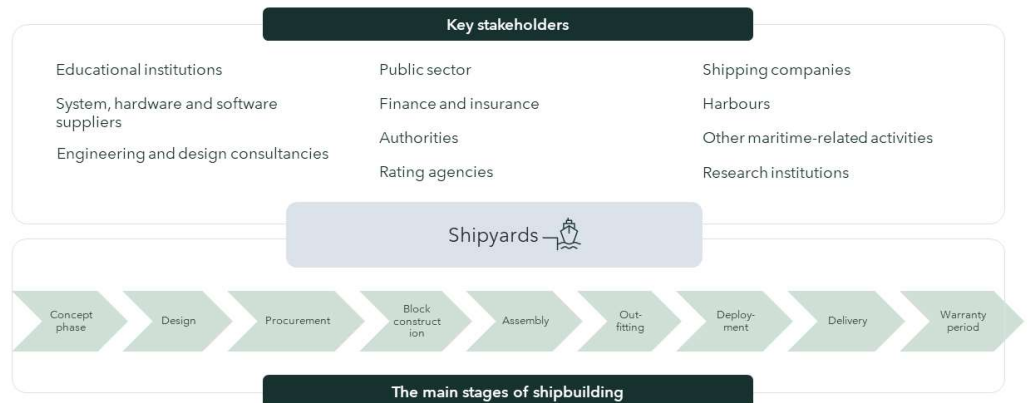
Innovation aid has spurred innovation through multiple channels

Innovation aid has supported Finnish shipbuilding companies to effectively navigate risks, foster innovations,

The shipyards that repair and build vessels are significant players in the maritime industry's value chain. Shipyards are vital to the entire ecosystem, facilitating both direct research, technological development and trade between companies and, indirectly, through subcontracting chains and partnerships. Ecosystems centered around shipyards foster new innovations in the industry, addressing the challenges and opportunities presented by the

and strengthened competitiveness

evolving operating environment. The importance of shipyards is underscored by their role as technology and system integrators and demonstrators of new solutions. Due to established trade practices, shipyards bear high economic and technological risks, including those associated with equipment and subsystem functions.



The innovation aid has been instrumental in guiding shipbuilding companies towards innovative solutions within their projects, achieving diverse impacts. These funded projects varied in scale and innovative content, addressing for example energy use of the vessels and new production methods. All the funded projects met the funding requirements, although in some cases showcasing that the innovation met or exceeded EU state-of-the-art was more difficult. For example, evaluating whether new energy solutions would have materialised independently due to global competitiveness, posed challenges.

Business Finland was considered the right organisation to administer the funding instrument

The innovation aid served a vital role in risk management, empowering companies to navigate the implementation of novel solutions and technologies with greater confidence. While some beneficiaries viewed the aid as a primary catalyst for risk-taking, others considered it a significant factor, albeit not the sole driver, influencing ship order finalisations. Additionally, several beneficiaries attested to the innovation aid's role in fostering innovative thinking and positioning their companies as innovative leaders in the market.

Business Finland provides valuable perspectives on global trends of maritime innovation

The division of responsibilities between Business Finland and the Ministry of Economic Affairs and Employment has effectively advanced the objectives of the innovation aid. Business Finland's role as the administrator of innovation support is well-founded for two key reasons. Firstly, the aid naturally aligns with Business Finland's existing portfolio of innovation funding, ensuring a streamlined process of project evaluations and financial management. Secondly, beneficiaries expressed appreciation for the valuable insights provided by Business Finland regarding international market trends within maritime sector. Given the unique nature of this support, it remains fitting for the Ministry of Economic

Direct comparisons of total support amounts of EU peers remain challenging due to

variations in support mechanisms

Affairs and Employment to collaborate with other government stakeholders in coordinating the grant effectively.

Finland has distributed a reasonable amount of support when compared to Germany

One perspective considered in this evaluation was the comparison of shipbuilding innovation aid in Finland with similar support mechanisms in selected EU benchmark countries. The benchmark countries chosen for this evaluation were the Netherlands, Italy, Poland, France, and Germany.

Some benchmark countries had similar support instruments to Finland's shipbuilding innovation aid. For instance, Germany's "Innovativer Schiffbau sichert wettbewerbsfähige Arbeitsplätze" program and the funding criteria of the Netherlands' SIS and SDS support programs closely resembled Finland's support mechanism. However, in some benchmark countries, the policy support for shipbuilding was less transparent. It is essential to note that, when examining benchmark countries, the role of state ownership is also considered a form of support. For instance, in France and Italy, state ownership is one of the support mechanisms.

Germany and Finland have allocated a substantial amount of support based on information obtained from the State Aid Transparency Module. However, a straightforward comparison of the total support amounts among different countries is challenging due to variations in support mechanisms, tax solutions, and state ownership structures of the shipbuilding industries.

Funded projects drive shipyard innovation, enhance competitiveness, reduce emissions, and improve production efficiency

Method development is essential for the renewal and competitiveness of shipyards

ALLOCATION OF THE AID	IMPACTS ON THE SHIPBUILDING INDUSTRY
<p>Between 2017 and 2022, the majority of funding for supported projects was directed towards the construction of new vessels. In these projects, the support was aimed at developing innovative solutions, enabling the production of vessel types that incorporate novel approaches.</p> <p>Approximately one-tenth of the allocated funding was directed towards new methods. Examples of this include innovations in assembly and production lines or the reorganisation of collaboration within a project in a novel manner.</p>	<p>Funded projects have created new opportunities for shipyards, providing a platform for developing and experimenting with innovative solutions in collaboration with various project partners and subcontractors.</p> <p>The support has had an encouraging impact particularly in reducing the environmental footprint of vessels through various energy solutions. Method development was deemed particularly crucial in maintaining long-term competitiveness.</p>

Key conclusions of the evaluation

The impact evaluation was conducted using data analysis of background material on the funding instrument and project data, interviews, expert panel, and an international benchmark that included desk study and interviews on selected EU countries. It was carried out by an external evaluator, Gaia Consulting Oy, between February to September of 2023. In summary, the key conclusions are as follows.

- 1) The sea's growing importance for the Finnish economy, society, security, and the green transition underscores the significance of shipbuilding innovation aid. Challenges include global competition, rising costs, and workforce availability, with shipyards assuming economic risks for integrating new processes and technologies.
- 2) Shipbuilding innovation aid has generally achieved its objectives, with funded projects being genuinely innovative but often focused on short-term energy solutions, leaving long-term competitiveness projects less represented.
- 3) Finland ranks second in distributing shipbuilding innovation aid among EU benchmark countries, following Germany, according to state aid transparency data. However, comparing total support amounts among countries is complex due to various support mechanisms and ownership structures.
- 4) Business Finland, with its maritime expertise and financial competence, is a suitable administrator.
- 5) Shipbuilding innovation aid is a vital part of the maritime cluster support in Finland, but alone is insufficient for international competitiveness. Finnish shipyards play a crucial role as technology developers and integrators, impacting the entire value chain. Effective utilization of existing support mechanisms, such as those related to the green transition and public procurement, is essential.

Recommendations

Recommendations for the Ministry of Economic Affairs and Employment

- We recommend that the granting of shipbuilding innovation aid continues within the full amount allowed by the Group Exemption Regulation.
- We recommend that, in line with the proposal of the Sustainable Maritime Industry Development Programme, a cross-government expert group on financing instruments is established to create a systemic overview for the benefit of the entire maritime industry ecosystem.
- We recommend that the ministry and Business Finland actively maintain international relations with responsible officials, especially in key EU countries' ministries and financial institutions.

Recommendations for Business Finland

- We recommend that Business Finland encourages companies to apply for support related to method development innovations to drive long-term competitiveness.
- We recommend that the criteria for support and the assessment of applications place a stronger emphasis on the added value generated for the end-users, operators, and owners of the vessel.

- We recommend that R&D efforts, the Shipbuilding Innovation Aid and other R&D instruments generally, are directed towards the entire lifecycle of the vessel, covering a wide range of themes.
- We recommend that, with the shift in innovation policy from industry-specific programs to mission-driven projects, Business Finland supports shipyards and companies within their ecosystems to leverage more horizontal support aligned with EU strategic priorities.

Recommendations for the industry

- We recommend that companies in the marine industry collaborate closely with Business Finland's experts and shipping companies in the planning phases to discover innovative solutions for ship projects and to enhance long-term competitiveness.
- We recommend that companies engage in active and open dialogue within the entire maritime cluster to explore new opportunities and innovative solutions and to implement joint development projects.

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