

# MISSION INNOVATION – ZERO EMISSION SHIPPING

## Mission Statement from Norway

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**Together with Denmark and the US, Norway will take part in the leadership of the Zero Emission Shipping Mission as co-lead. This document reflects the Norwegian position, starting point and commitment when undertaking this task.**

### Management

By entering the Zero Emission Shipping Mission, Norway will be actively involved in the three pillars 1) ships, 2) ports and infrastructure and 3) maritime fuels; and with a special emphasis on fuel production and jointly lead pillar 3 together with the US. Norway will allocate the resources necessary to take upon this task. Furthermore, Norway will chair the Steering Committee for the third term in accordance with the planned sequence of rotation (Year 3 2023-2024) with a senior representative.

### **A Zero Emission Maritime Sector is a central part of the Norwegian policy to meet the climate ambitions**

The government's goal is for Norway to become a low-carbon society by 2050. This is reflected in the Climate Act, where the goal is specified as a reduction of greenhouse gas emissions by 90 to 95 percent compared with 1990. Norway shall have an ambitious national policy for the development of low- and zero-emission solutions with global potential.

Norway will

- reduce greenhouse gas emissions from domestic shipping and fishing with 50% by 2030,
- stimulate zero- and low-emission solutions in all vessel categories
- stimulate further green growth and competitiveness in the Norwegian maritime industry, and facilitate increased exports of low- and zero-emission technology in the maritime sector

This domestic policy forms the basis for international and deepsea shipping. In order to achieve the global goals, it is important that some countries take the lead, both to show the possibilities and to develop technology with global potential. Norway will take on such a role.

The government will introduce low- and zero-emission criteria in new public tenders for ferry connections during 2023 where appropriate, and in new tenders for high-speed passenger vessels during 2025. During 2022 there will be approximately 70 electrical ferries operating along the Norwegian coast. The world's first liquid hydrogen-powered ferry will be in operation for the Norwegian Public Road Administration in 2022. In addition, the government will consider climate

requirements in public procurement of, among other things, maritime transport services aiming for introduction from 2023. The Norwegian Parliament has set zero-emission zones for cruise ships in the World Heritage Fjords entering into force from 2026. These measures will stimulate demand and industrialization of zero-emission technologies.

The government also has ambitions for new industries and supply chains based on renewable energy resources. Central to this is the Hydrogen Roadmap that entails plans for the development of a network of geographically dispersed and demand-based hydrogen hubs to supply hydrogen-powered vessels. Furthermore, the roadmap will pave the way for hydrogen vessels to become competitive and safe alternatives for shipping in Norwegian waters and short sea shipping areas.

This provides a solid policy basis for Norway's participation in Zero Emission Shipping Mission.

### **Research and development**

In Norway expenses for maritime research and development in 2017 amounted to 220 MEUR. This accounted for 3.3 percent of the total operating expenses for research and development in Norway the same year. It is almost doubled since 2009. A significant part of this was allocated for green shipping. In addition, the authorities have through the Research Council of Norway, funded research and development relating to hydrogen, fuel cells and water electrolysis worth around NOK 55 MEURO between 2009 and 2019. All together this has led to a strengthening of the research community and maritime industry, and thus built a platform for entering the transition into zero-emission shipping. Collaboration is needed to reach the goals (UN SDG #17). The Norwegian government stimulates cluster collaboration through the Norwegian Innovation Cluster program as an important tool for innovation and development. The cluster program supports world-leading innovation clusters developing energy-efficient low and zero-emission maritime solutions. The cluster program also encourages cluster-to-cluster cooperation across national borders.

### **A harmonized regulation reflecting new technologies and solutions**

Norway is committed to resolve technical and operational barriers, and provide for the needed safety provisions for new and innovative zero emission solutions for shipping.

Norway will continue to be active in the IMO in order to influence aims, strategy and development of regulations for low and zero emission shipping. With a well-functioning coastal fleet where new green, and sometimes autonomous, technologies are used; and an active participation towards the IMO, the EU and key countries, Norway will be in a unique position to set innovative direction and contribute to the development of international safety rules and regulations.

Norway will drive national regulatory development that takes place in close cooperation with the industry, which in turn can become inspiration to international rules and thereby give the maritime industry a competitive advantage.

Maritime hydrogen can potentially be a game changer at sea. However, no hydrogen specific, prescriptive requirements are available. The applicable part of IMO's IGF Code requires that an

“Alternative design” approach is followed. The “Alternative Design” approval process is very time consuming and demanding, and requires that an extensive and very expensive technology qualification process is carried out. This is a serious barrier for a market penetration of hydrogen ships. To bring costs down Norway will show leadership in the development of maritime, hydrogen-specific safety rules.

Norway will stay in the forefront on autonomous and remotely operated vessels and continue to drive research and development and testing in dedicated test areas thereby provide important operational experience to the ongoing rule development missionally and internationally.

### **Norway – a global partner for development of Zero Emission Shipping**

Norway is committed to execute continued leadership to support the International Maritime Organization in meeting the vision to phase out greenhouse gas emissions from international shipping as a matter of urgency, as soon as possible in this century.

Norway is a global partner for supporting climate actions in developing countries. This includes development and deployment of Zero Emission Shipping through The IMO-Norway GreenVoyage2050 Project. It also includes supporting events such as The IMO-UNEP-Norway Zero- and Low-Emission Innovation Forum.

Research and innovation within the Norwegian maritime industry has supplied innovative and industrial solutions to the global market through history and is now ready to supply innovative and effective zero emission solutions to the global market.