

DENMARK'S INITIAL COMMITMENTS TO THE ZERO-EMISSION SHIPPING MISSION

As initiator and co-lead of the Zero-Emission Shipping Mission, Denmark is committed to pave the way for zero-emission shipping. This 2-pager contains the initial resources Denmark will commit to the Mission.

MANAGEMENT

Denmark will be actively involved in the activities of all three pillars under the Mission; the ships pillar, the fuel infrastructure pillar and the fuels pillar. This entails dedicating the appropriate man-power and expertise relevant for these pillars. Furthermore, Denmark will staff the Secretariat with 1-2 people and provide funding for a full-time position as Head of Secretariat. In addition, Denmark will chair the Steering Committee for the first term with a Senior Representative from the Danish Maritime Authority who will also get involved in external meetings when needed, and additional senior representation will be through involvement of the Danish Climate Ambassador.

THE WORLD'S FIRST ENERGY ISLANDS & POWER-TO-X INVESTMENTS

The Danish Parliament has adopted a climate agreement on industry and the energy sector, which includes a number of initiatives relevant to the Mission. Among these initiatives, Denmark will construct two energy islands, which have a total capacity of 5 GW and are scheduled for completion by 2030. The agreement also accelerates the establishment of additionally 1 GW offshore wind. These projects amount to a total of 6 GW offshore wind, or more than three times Denmark's current capacity. In addition to generating electricity for consumption, the energy from the islands will eventually be utilised through "Power-to-X" (PtX) technologies. PtX technologies enables energy producers to convert power from offshore wind turbines to green ammonia, which will be used as marine fuel for vessels and thus help decarbonize the shipping sector. An additional element in the agreement includes a tender to support the establishment of large-scale Power-to-X plants with a total capacity of 100 MW. This is more than five times the capacity of the largest plants found in the world today. All these initiatives related to the production of green fuels through PtX will fit well into the fuel production pillar. It will enable test and demonstration of solutions that in the longer run can be scaled as well as exported to other countries to help pave the way for the production of zero-emission fuels for international shipping.

REGULATORY CHALLENGES

Reaching zero-emission shipping requires an acceleration of innovation. However, innovation in zero-emission fuels and technologies and making them market ready pose a number of new challenges in relation to existing regulation and safety issues. In some cases existing regulation may be updated, whereas in other cases, new regulation must be developed. Denmark is committed to addressing this challenge and will support regulatory measures that enable the technological development. The ambitions is therefore to ensure that new zero-emission solutions can enter the market while at the same time continue to ensure that safety remains a top priority.

RESEARCH AND DEVELOPMENT

During phase one of MI, 25-five Members responsible for greater than 90% of global public investments in clean energy innovation committed to invest and work together. These Members are now investing an additional USD\$5.8 billion annually in research, development and demonstration and Mission Innovation has become a catalyst for strengthened global cooperation on clean energy innovation as part of an urgent and lasting response to climate change. To this end, Denmark commits 2.9 percent of its national BNP to R&D in 2021, whereof a large portion on these are devoted to R&D projects focused on the green transition.



Furthermore, Denmark supports a Horizon Europe initiative labeled [“Zero-emission Waterborne Transport partnership”](#). The Partnership will provide and demonstrate zero-emission solutions for all main ship types and services before 2030, which will enable zero-emission waterborne transport before 2050. Finally, Denmark will actively communicate and share information on funding calls, both national, regional and international, in order to ensure awareness and access to these. [To find an overview of relevant calls, please follow this link.](#)

Related to the Zero-Emission Shipping Mission, Denmark is committed to support various initiatives and funding programs related to the green transition of the maritime industry. As such, Denmark has set aside 700 mio DKK to establish [Green Research and Innovation Partnerships](#), with a pillar focusing explicitly on green fuels for transport and industry. The investments in mission-driven partnerships will accelerate the development of cutting-edge green solutions through strategic and coherent green research ranging all the way from strategic research to commercialization.

On a smaller scale, Denmark has also allocated 20 mio. DKK to the Energy Technology Development and Demonstration program for green maritime technologies, which will fit into the ships pillar of the Mission. Moreover, the Danish Innovation Fund, supported by a consortium of maritime stakeholders from the industry and academia has allocated an additional 33 mio. DKK to [ShippingLab](#), which funds green innovation projects devoted to accelerating the transition and finding innovative new solutions on autonomous and fossil-free shipping. Finally, Denmark has also funded a gap analysis on innovation needs to decarbonize shipping, which will be conducted by Technical University of Denmark and Oxford Research and be ready in August/September. This could be part of the Mission's roadmap, which could potentially be presented at COP26 in November.

STRENGTHENED DANISH CLIMATE DIPLOMACY

Reaching the objectives set out in the Mission requires global efforts. Therefore, Denmark is committed to strengthen its climate diplomacy in order to globally promote climate neutral development pathways, including a focus on the green energy transition across all sectors and in particular international shipping. In connection to this, Denmark has decided to strengthen its capacity in the International Maritime Organization, IMO, through a permanent representative at the Royal Danish Embassy in London. Furthermore, Denmark promotes public-private partnerships such as the P4G partnership with the Getting to Zero Coalition on shipping in Indonesia, South Africa and Mexico. Furthermore, Denmark has also introduced 13 Climate Partnerships with Danish business, including one for the maritime industry. The partnership has an ambition to reach climate neutrality by 2050 and introduce the first zero-emission vessel for commercial operation by 2030. Moreover, Denmark has integrated its climate policies into its many bilateral, government-to-government projects across the globe. For the maritime domain, Denmark is committed to three such cooperation projects with China, Ghana – and soon to come – Kenya. The technical cooperation can be used to influence policy decisions as part of a wider climate diplomacy dialogue and as such promote the targets within the Mission.

Finally, Denmark recognizes that action and transitional activities are not only required on board ships but also on the landside in order to reach the zero-emission targets. Therefore, to facilitate decarbonization on shore, Denmark is engaged in government-to-government collaboration on energy transition with 16 countries including many of the major emitters as well as through a continued dialogue with the green city-network, C40. The latter will enable the Mission to enroll strategically important cities in the newly established ports network, which fits well with the Mission's pillar on port infrastructure.



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