



DECARBONIZING SHIPPING

Getting to Zero Coalition

ACCELERATING THE DEVELOPMENT AND DEPLOYMENT OF ZERO EMISSION VESSELS BY 2030

Based on input received during and after a leadership workshop on 3 April, the following is a revised overview of the decarbonization work being conducted in collaboration with the Friends of Ocean Action and the World Economic Forum. For more information, please contact Randall Krantz: rkr@globalmaritimeforum.org

The Challenge

Shipping made a breakthrough on climate change last year, when governments at the UN's International Maritime Organization (IMO) agreed on an ambitious plan - to at least halve the sector's greenhouse gas emissions by 2050. The IMO initial strategy targeting a minimum of 50% decarbonization by 2050 is good, but it's already not enough, and the latest Intergovernmental Panel on Climate Change (IPCC) science means that the industry must aim for full decarbonization by 2050. This will clearly require not just significant improvements in the energy efficiency of ships and engines, but a switch to low and eventually zero carbon energy sources. To do this, a deeper understanding of zero-emission fuels is required by the industry, and the availability of zero net carbon fuels has been identified as a key risk to decarbonization of shipping.

The Opportunity

Whether the industry is to achieve 50% or a more ambitious 100% decarbonization by 2050, the first steps are the same: there is a need to push innovation and research from the drawing board into the water to enable demonstration projects operating at scale as soon as possible. This initiative supports the view that making deep-sea zero emissions vessels (ZEVs) a commercially viable and scalable reality by 2030 is an important step on the way to the IMO ambitions and full decarbonization. Scalable ZEV demonstrations by 2030 will pave the way for an efficient rollout of decarbonization solutions to enable a rapid shift away from the use of fossil fuels through the 2030s and 2040s.

Zero Emissions Vessels 2030 Roadmap

Availability of zero net carbon fuels has been identified as a key risk to achieving decarbonization of shipping. There is an opportunity to accelerate shipping decarbonization by reframing the alternative fuels conversation among fuel suppliers, ports, shipowners, charterers, policy makers and other key stakeholders. While existing analyses have contributed substantially to exploring the "what", i.e. the basket of options in terms of fuels, propulsion technologies and other solutions for the industry, little has been done to map out the "how" to get to widespread adoption of zero net carbon marine fuels and technologies.

The creation of an industry roadmap will engage stakeholders from across incumbent and new fuels value chains to identify the technologies, investments and timelines for decarbonization of fuels and associated infrastructure. In practical terms, this project will align stakeholders around what is needed to get the first zero-emissions vessels on the water by 2030. Coordination between the Global Maritime Forum champions, the mobility and oil & gas communities of the World Economic Forum, and the Friends of Ocean Action will bring stakeholders together to explore the timescales, milestones and enablers of implementation of new fuels and technologies for the first ZEVs to be operating in deep water by 2030.

Areas of exploration will include:

- Exploration of enablers and accelerators of zero net carbon solutions - fuels, technologies, and full supply chains;
- The investments that need to be in place to finance and de-risk the development and deployment of these technologies, including financial sector actors to make supply-side solutions investable;
- The policies, geopolitics, and enabling environment that can be accelerated at a local, national and regional level.

Delivery of the “Roadmap” will be through a leadership community supporting the acceleration of commercial ZEVs by 2030. This will include two parts: a leadership group that can lead by example, learn from pre-competitive collaboration, and inspire companies and governments to be more ambitious; and public commitments made at major events such as the UN Secretary General’s Climate Action Summit in New York (September 23), the Global Maritime Forum’s Annual Summit in Singapore (October 30-31), the World Economic Forum Annual Meeting in Davos (January 21-24), etc.

Outputs

The primary deliverable will be a Roadmap that outlines concrete actions, milestones, and targeted recommendations on how to achieve ZEVs and fuel supply at scale by 2030. Specific ambitions will include the following:

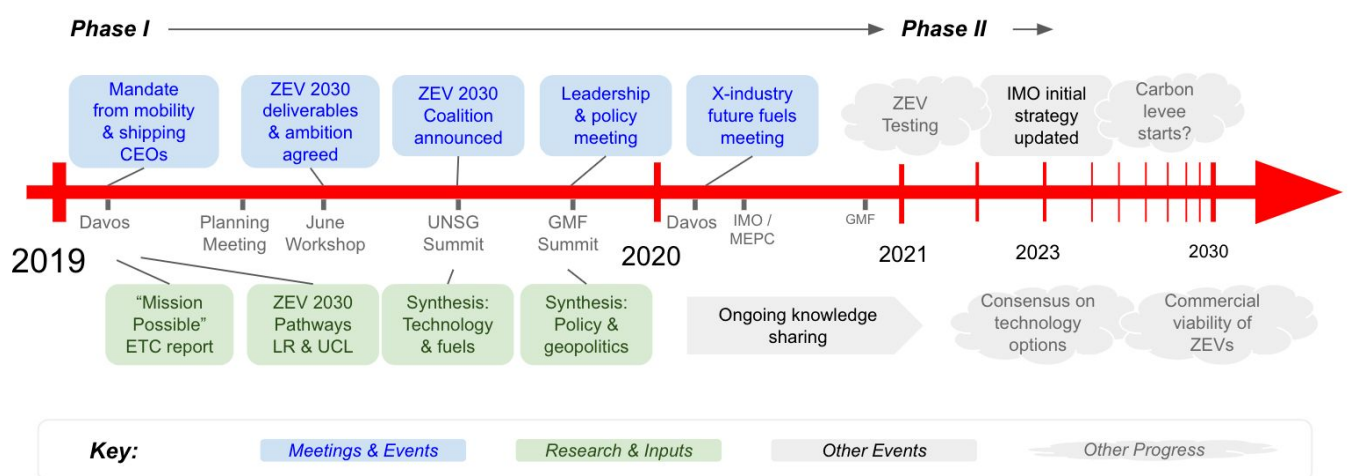
1. **Feasibility of commercially viable ZEVs by 2030:** Understanding of technical, commercial, and geopolitical viability of different fuel and technology options appropriate to deep sea shipping.
 - a. Sector-wide alignment on availability of ZEV fuels, including continuation of the fuel pathways work conducted by Lloyd’s Register and UCL¹;
 - b. Shipping design and propulsion systems to be ready for ZEV fuels and associated timelines for the delivery of technology innovation;
 - c. Shipping supply chain infrastructure focused on the role of ports and how to leverage their role to incentivise the transition to net-zero carbon emissions;
2. **De-risking of bold action:** Currently the high cost of this leadership is punitive to those that wish to be both innovative and bold. The ZEV 2030 Coalition provides the platform to activate short- to medium-term mechanisms to de-risk such actions.
 - a. Demand-side financial mechanisms;
 - b. Supply-side financial mechanisms;
 - c. Institutional (IMO, World Bank) innovations;
3. **Creation of an enabling environment:** Informal influence and contribution to political processes and policymaking (local, regional and national, as well as IMO).
 - a. Exploration of policies and incentives that can act as leverage points to prove feasibility and facilitate the arrival of broader policies by the IMO;
 - b. Study of incentives and mechanisms such as feed-in tariffs that have worked for other industries;
4. **Catalysing partnerships to deliver full-scale demonstrations:** Bringing stakeholders together to catalyse demonstrations across industries, along value chains, including knowledge sharing and associated case studies, and pre-competitive lessons from the wide range of existing pilots to inform what is possible and what is not;

¹ <https://www.lr.org/en/insights/global-marine-trends-2030/zero-emission-vessels-transition-pathways/>

Timeline

While there is a need to focus on some upcoming opportunities and associated deliverables to get the ZEV 2030 off the ground, this is intended to be a multi-year initiative that will run through 2023 in two Phases.

- I. In 2019-2020 we will be building the coalition, informing partners with updates from experts on technologies, economics, financing, and policies, while ensuring that we are engaging the right representation from across value chains, industries, and geographies.
- II. Over 2021-2023 we will work with partners to build critical mass on a few technology solutions and their supply chains, and work to build the partnerships and policies that will enable the testing, demonstration and eventually scaling of these solutions.



Stakeholders

It will be necessary to take a systems view in order to ensure that all the different parts of the future value chain are ready. To this end, the ZEV coalition will include the most ambitious stakeholders from across a range of industries, sectors, think tanks, and governments.

- Oil & gas incumbents
- Electrical utilities
- Renewable energy technology suppliers
- Infrastructure companies
- Port authorities
- Ship builders
- Engine manufacturers
- Shipowners
- Charterers
- Relevant NGOs and think tanks
- Local and regional governments

This concept lays the foundations for an action plan that will engage stakeholders from across the maritime, fuels, and infrastructure value chains committed to making the vision of decarbonized shipping a reality by focusing on getting ZEVs into operation at scale by 2030.



Annex: Draft Ambition Statement

It will be important to define what supporters of ZEV 2030 are committing to. Because of the diversity of stakeholders involved, this cannot be a strict commitment to owning or operating ZEVs, but rather a commitment to support a broader coalition of stakeholders that will work together to make this happen. At a first meeting in April, it was generally agreed that the coalition would be defined by a set of principles:

1. Supporters are signatories of the Call to Action², committed to shipping decarbonization in line with the most ambitious IMO Strategy and the latest IPCC climate science;
2. Supporters agree that making deep sea ZEVs a scalable reality by 2030 is an important step on the way to the IMO ambitions and full decarbonization;
3. The coalition is inclusive, engaging with the leading companies, think-tanks, NGOs, ports, and local governments across every element of the full value chain;
4. The coalition is technology-neutral, and will focus on defining the solutions that are most likely to be technologically and economically feasible at scale;
5. Success will result in enabling multiple demonstrations of full-scale ZEVs operating along deep sea trade routes, supported by the necessary technologies and infrastructure for scalable net-zero emissions fuels across production, distribution, storage, and bunkering;
6. ZEV 2030 demonstrations will pave the way for an efficient rollout of decarbonization solutions to enable a rapid shift away from the use of fossil fuels through the 2030s and 2040s, as required by the IMO's Initial Strategy.

² <https://www.globalmaritimeforum.org/content/2018/11/Call-to-action-in-support-of-decarbonization.pdf>