

# Environmental policy and strategy

**2020-2050**



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## We need to act now

More than 80% of the world's trade is carried by sea, and this is the most energy efficient way to move goods and raw materials around the world. Still, the shipping industry is a large contributor to the world's emissions of greenhouse gases. In a time where the world is facing major climate challenges, the industry needs to act now.

Klaveness Combination Carriers aim to be a driver in the transition towards low carbon shipping through improving the efficiency of our own fleet and operations, applying new technical solutions and fuels and through close co-operations with customers, suppliers and other shipowners.

This report shows how we intend to go from words to action.

## Future Bound

Klaveness Combination Carriers has decarbonization as a center piece of our strategy. Through technical and commercial innovations we have developed a fleet of Combination Carriers, the world's most carbon efficient deep-sea transportation system available today. These vessels emit up to 40% less greenhouse gases than standard dry bulk and tanker vessels for the same transport work.

Klaveness Combination Carriers was established as a vehicle within Torvald Klaveness, to own and further develop the combination carrier business. Since 2014 we have contracted 11 new combination carriers with delivery in the period 2016-2021 with a total investment of above 0.5 billion USD.

Within 2022 these new combination carriers are targeted to reduce total CO<sub>2</sub> emissions by around 150,000 mt p,a. (equal to emissions from around 37,000 cars) by replacing far less efficient standard tanker and dry bulk vessels in KCC's trading pattern.

We aim to be a progressive voice in the deep-sea bulk shipping industry, contributing to driving the transition to low carbon shipping. We are committed to continuously focus on perfecting our combination carrier concept through identifying, testing and applying new technology and solutions.

We will test out, promote and use new fuels and new fuel saving technologies to work towards achieving carbon neutrality in our operations within 2030. A central part of our work will also be to develop a "Zero-Emission Combination Carrier" and to contract such a vessel within 2030.

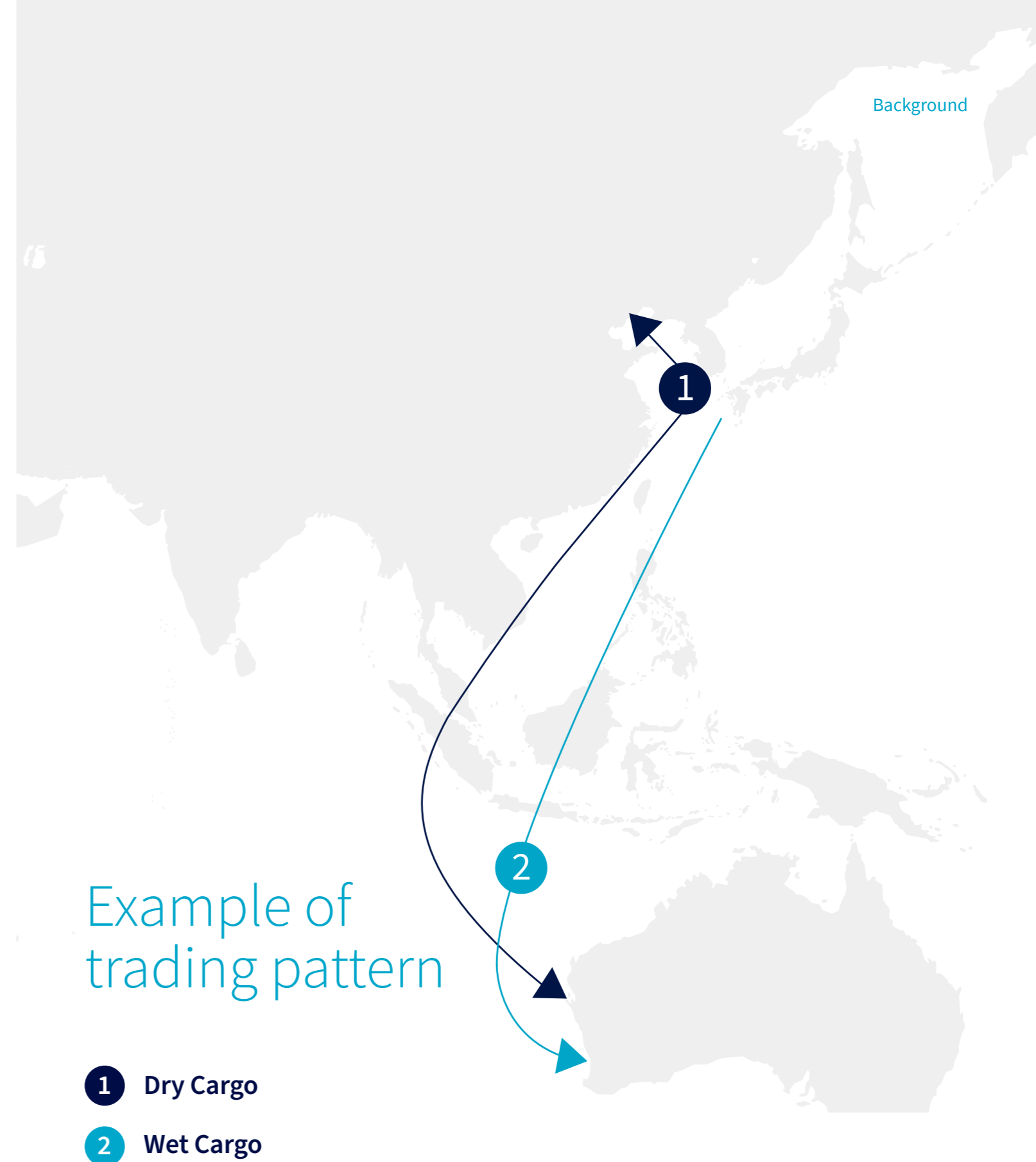
This following document describes our environmental policy and an environmental strategy for 2020-2022 specifying our ambitious targets, as well as a roadmap for our decarbonization plans for the period 2023-2030 and our long term targets towards 2050.

## A more sustainable alternative

Our combination carriers are the world's most carbon efficient deep-sea shipping solution available today. There are no comparable technical or commercial solutions that can reach similar low levels of carbon intensity for deep-sea shipping.

- Our new CABU Mark II and CLEANBU vessels emit up to 40% less CO<sub>2</sub> per transported tonne-mile (carbon intensity) compared to standard dry bulk and tanker vessels in our trades.
- Current battery and hybrid solutions cannot effectively be used in deep-sea shipping with long sailing distances. For deep-sea vessels with stable electricity needs, there are no spare engine capacity in any operating mode to charge batteries. Hence, potential for CO<sub>2</sub> emission reductions by installing current battery solutions is close to zero.
- LNG fueled newbuilds or retrofits are technically viable. But there is currently no or limited supply of LNG in most of our trading areas around the globe. Estimated CO<sub>2</sub> emission reductions by burning LNG is also relatively limited, estimated to around 15% on a "well to wake" basis.

1 Study performed for SEA\LNG and SGMF by the company Thinkstep in 2019.



**Note:** For the same round voyage, a standard tanker and dry bulk vessels would typically ballast for 10-20 days, while a combination carrier for around 4 days.

# Environmental policy

Our environmental policy rests on six pillars describing our main philosophy, approach and commitments.

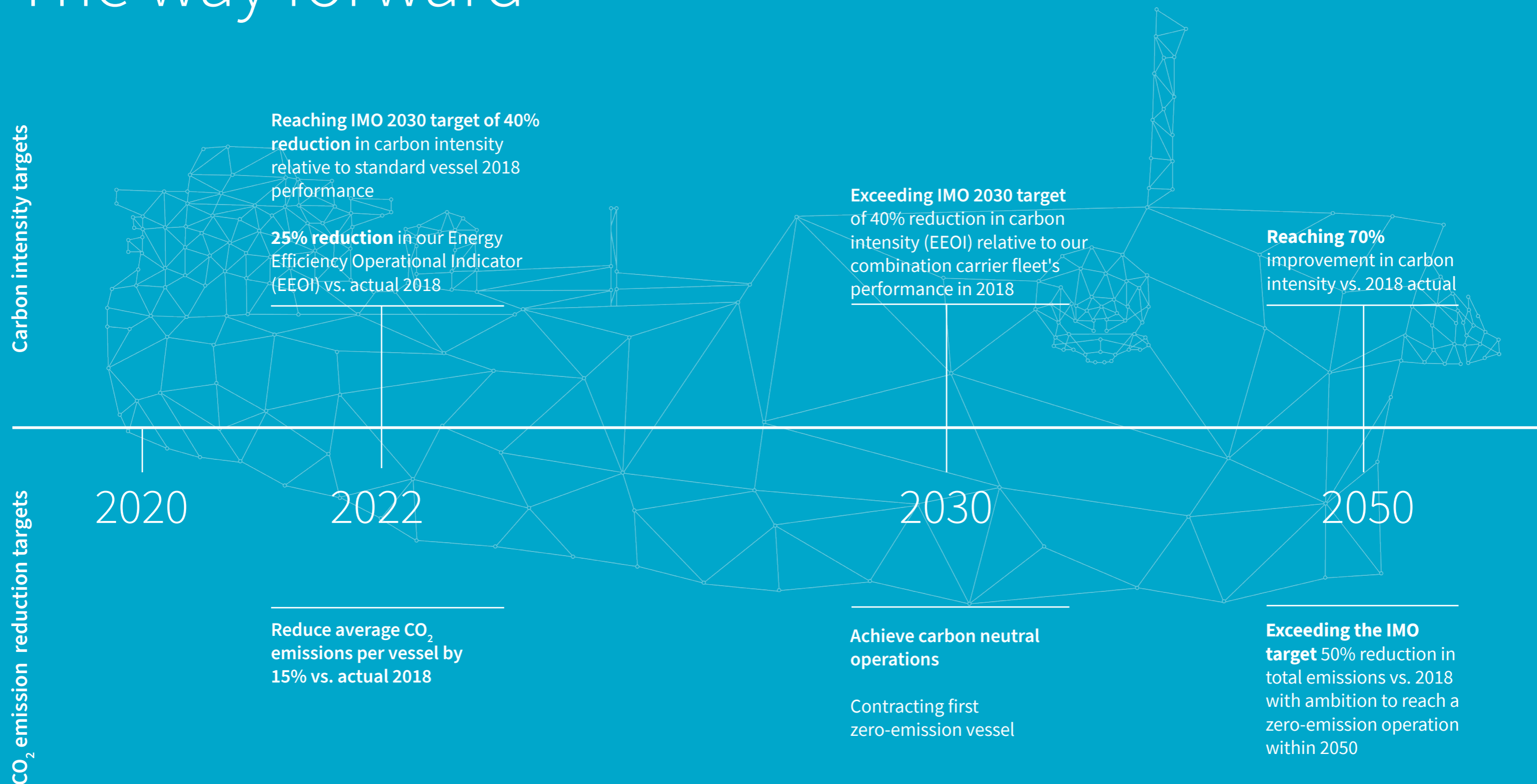
- 1 Reaching or exceeding IMO's 2030 and 2050 ambitions. Targeting a carbon neutral operation within 2030, and work towards reaching a zero-emission operation within 2050
- 2 Going beyond compliance of environmental regulations
- 3 Promoting new regulations and solutions through active participation in Norwegian and international shipping clusters
- 4 Total life cycle approach to environmental solutions
- 5 Co-operate closely with customers to reduce local and global emissions
- 6 Transparent reporting of environmental performance and strategic targets, and independent third party audit of environmental KPIs

# Environmental strategy 2020-2022

The targets in the environmental strategy are within these six areas:

- 1 Reach the IMO 2030 target of a 40% reduction in carbon intensity per transported tonne-mile within 2022 relative to standard vessels' performance in KCC's trading pattern in 2018
- 2 Reducing average absolute fuel consumption and CO<sub>2</sub> emissions per vessel by a minimum of 15% within 2022
- 3 Testing, promoting and start using new fuels with low carbon footprint including sustainable bio-fuels
- 4 Reaching a 50% reduction in waste and residues from the fleet by 2022
- 5 Developing a zero-emission combination carrier. Complete within 2020 a case study to conceptualize a potential future zero-emission vessel including identifying/ selecting the most promising available technology and fuels
- 6 Co-operating and empowering customers to improve their environmental performance

# The way forward



# Environmental policy

The environmental policy consists of six pillars describing our overall ambitions, our main philosophy, approach and commitments







## Pillar 1

### Exceeding IMO's 2030 and 2050 ambitions. Targeting a carbon neutral operation within 2030

#### We are committed to:

- Exceeding the IMO 2030 target of a 40% reduction in carbon intensity both relative to the performance of standard vessels in the combination trade, and in absolute terms in our operations.
- Exceeding the IMO 2050 target of reducing average absolute annual emissions per vessel by a minimum of 50% and the carbon intensity in both relative and absolute terms by 70%, and work towards reaching a zero-emission operation within 2050.
- Reaching carbon neutral operations by 2030. Success will be dependent on amongst others availability of fuels with low carbon footprint, and may include buying carbon offset points for part of our operation.

#### This is how we plan to do it

- Continuously identifying, promoting and testing new technology and solutions to improve energy efficiency of the fleet and be an early mover in applying such solutions on existing fleet and newbuildings.
- Explore any possibility to improve further the efficiency of our operations and the combination trade.
- Test new fuel types with low carbon footprint including sustainable bio-fuels on our current and future fleet, promoting supply of such fuels in our trading patterns and be an early mover in using such fuels.
- Start developing a zero-emission combination concept and contract such a vessel within 2030.



## Pillar 2

### Going beyond compliance with environmental regulations

All combination carriers shall fully comply with all environmental rules and regulations, and will go beyond compliance where real environmental effects can be achieved.

- We commit to making recycling of our vessels in full compliance with the Hong Kong convention and the guidelines provided by the Norwegian Shipowners Association.
- The CLEANBU vessels are some of the first vessels being Tier III compliant. We will actively use the CLEANBUs' SCR (Selective Catalytic Reduction) system reducing NOx emissions by 76% outside the required areas in US waters. Within 2022, KCC shall use the SCR in minimum 50% of all CLEANBU port calls.
- KCC will go beyond the requirements in IMO's ballast water convention and all vessels shall use the installed BWTP in all ports irrespective of requirements. The entire fleet will have BWTP installed within 2020.



## Pillar 3

### Promoting new regulations and solutions through active participation in shipping clusters

Klaveness Combination Carriers and the parent company Torvald Klaveness are committed to taking an active part in Norwegian and International shipping cluster, to promote stricter regulations with targets to improve the environmental footprint of the industry, and incentivize the development of low carbon shipping. This includes membership and active participation in amongst others:

- Getting to zero 2030 coalition: Coalition committing to getting commercially viable deep sea zero-emission vessels powered by zero-emission fuels into operation by 2030 – maritime shipping's moon-shot ambition.
- Smart Maritime “the Norwegian Centre for improved energy efficiency and reduced harmful emissions from the maritime sector.”
- Verde project (Verification of Decarbonation) aims to help the shipping industry overcome some of the main barriers for faster uptake of GHG reduction technologies.
- Climate Change Mitigation In the Maritime Sector (CLIMMS) project to identify pathways for the transformation of the international shipping sector towards the IMO goal of halving emissions by 2050, en route to the 2°C target.



## Pillar 4

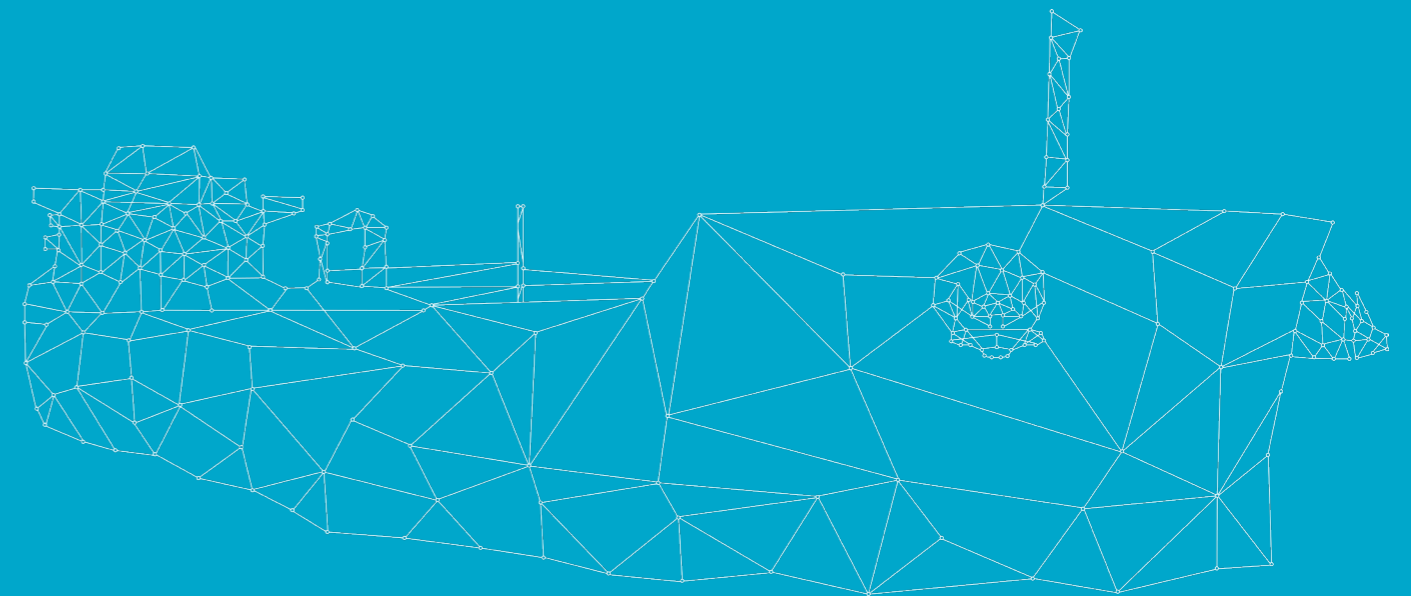
### Total life-cycle approach to environmental solutions

- We are committed to seeking a holistic view when evaluating environmental solutions, seeking solutions that have a real positive environmental effect, and avoid solutions that have isolated environmental benefits.
- We therefore evaluate all environmental initiatives based on their “total life cycle” emissions effects, and test them based on a “well to wake” principle.
- We will be transparent and give the most accurate possible picture of the global environmental effects of our existing and new solutions.

#### This is how we work

Based on our life cycle approach we decided in 2019 that we could not justify installing exhaust gas scrubbers on the combination carrier fleet. It seems likely that open loop scrubbers have negative local environmental effects and scrubber installation reduce the industry’s incentive to move towards cleaner fuels and has neutral or negative energy efficiency effects relative to using low sulphur fuels.

We will be transparent and give the most accurate possible picture of the global environmental effects of our existing and new solutions.





## Pillar 5

### Co-operating closely with customers to reduce local and global emissions

The transition to low carbon deep-sea shipping will imply additional costs and investments and can only be achieved through close co-operation with customers. KCC as an “industrial carrier”, is committed to co-operate closely with its key customers to achieve the targeted reduction in carbon emissions.

- Get attention from customers on reducing the carbon emissions from their seaborne logistics and an acceptance of a joint responsibility to deliver on decarbonization targets.
- Provide a digital tool to track the environmental footprint of their logistics to have a baseline for improvements of environmental performance. We believe that customers will be more inclined to take actions once they start measuring.
- Apply a step-wise approach with customers in reducing emissions by increasing the efficiency of operations, test and apply new fuel types and technical solutions.



## Pillar 6

### Transparent reporting on environmental performance and targets

- Sustainability reporting will be an integral part of our reporting scheme, reporting on specific KPIs that can be tracked over time.
- Quarterly reporting of key KPIs including CO<sub>2</sub> emissions per ton of transported cargo per NM (EEOI), absolute average CO<sub>2</sub> emissions per vessel, ballast in percentage of available days, share of fleet in main combination trades and Health and Safety statistics.
- Annual sustainability report including in-depth reporting of:
  - Operational and environmental KPIs per vessel type
  - Strategic ESG targets and standards
  - Performance on oil company vettings and port state controls
  - Health and safety and percentage retention of crew and personnel
  - Corporate governance KPIs
  - Environmental risks and mitigations
  - Impact reporting on the annual CO<sub>2</sub> emission reduction the fleet
- Third party audit of environmental KPIs and environmental impact calculations.

# Environmental action plan

Our plan for 2020-2022 has  
ambitious and specific targets



# 1 Reaching the IMO 2030 target of a 40% reduction in carbon intensity within 2022 relative to standard vessels' performance in 2018

We will improve CO<sub>2</sub> emissions per ton of transported cargo per nautical mile (EEOI) by 25% within 2022 relative to actual reported KCC performance in 2018 through:

- Reaching 90% of on-hire days for the fleet in combination trade within 2022.
- Reducing ballast days on total on-hire days to below 7.5 within 2022.
- Improving absolute fuel consumption of our vessels (see target 2).

# 2 Reduce the average absolute fuel consumption and CO<sub>2</sub> emissions per vessel by a minimum of 15% within 2022

- Continuous evaluation and testing of new technical solutions for improving energy efficiency. Retrofitting new and efficient fuel saving technologies and solutions on the vessels.
- Improving further the operational efficiency of the combination carrier fleet through measures such as better voyage planning and onboard awareness.

# 3 Reduce main type of waste and residues from the fleet by 50% within 2022

- By reducing plastic and food waste.
- Implementing more environmental friendly disposal of sludge from fuel and lubrication oils.
- Further reduce risks of oil spills and oily water.

# 4 Test, promote and apply new fuels with lower carbon footprint – moving towards carbon neutrality

- First testing of environmentally sustainable bio-fuel on one vessel within first half of 2020.
- Support the development of fuels with low carbon footprint and cooperate with suppliers to secure availability of such fuels in relevant bunkering ports.
- Start using sustainable bio fuels when and where supply is available.

# 5 Develop a zero-emission combination carrier concept

- Within 2020 we will complete a case study to conceptualize a potential future zero-emission vessel identifying and selecting the most promising available technology and fuels.
- Partner with equipment suppliers and/or other shipowners to move forward with the most promising concepts.

# 6 Empower customers to improve their environmental performance

- Introduce a digital system for tracking supply chain emissions within 2020.
- Invite and challenge customers to focus on reducing the environmental footprint of their seaborne logistics.
- Partner with at least two customers and implement solutions within 2021.

# Environmental roadmap

Main milestones from 2023-2030



We target to reach a carbon neutral operation within 2030 and to exceed IMO's 2030 target of a 40% reduction in the carbon intensity per transported tonne-mile (vs. actual 2018)

The main milestones in our roadmap is as follows:

- 1 The five CABU Mark I vessels built in the period 2001-2005 shall be phased out and recycled in the period 2023-2030, and at the latest when reaching an age of 25 years.
- 2 Introduce a new generation of combination vessels from 2025 and onwards subject to the new vessel design achieving substantial additional reductions in carbon emissions. Such newbuildings shall incorporate solutions tested out and retrofitted on the CABU and CLEANBU vessels, and shall have at least one significant innovation that reduces carbon emissions by minimum 25% compared to the actual performance of the CLEANBU vessels in 2019.

- 3 Achieve a substantial additional reduction in absolute carbon emissions of existing CABU and CLEANBU vessels in the period 2023-2030, through improvements in energy and operational efficiencies and extensive use of sustainable bio-fuel or other types of new fuels with a low carbon footprint as such fuels become available in our bunkering ports. Such extensive use of low carbon fuels will, however, be dependent upon externalities beyond our control including sufficient infrastructure investments to enable availability as well as close co-operation with main customers.
- 4 It may be necessary to purchase carbon offset points for part of its operation in a transitional phase in order to reach carbon neutral operation within 2030.
- 5 Based on Zero-Emission Vessel study to be completed in 2020, we will partner with equipment suppliers and/or other shipowners to move forward with the most promising concepts. Our ambition is to contract the first zero-emission combination carrier within 2030.



# Beyond 2030

In the longer term, we are committed to exceeding the IMO 2050 targets and are working towards cutting the carbon emissions of its business to zero within 2050.

To reach these ambitions, we will gradually replace our current fleet with zero-emission vessels in the period up to 2050.

# Future Bound

Interested in learning more  
about our journey towards  
a carbon neutral future?

Get in touch with us at  
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or visit us at [www.combinationcarriers.com](http://www.combinationcarriers.com)

