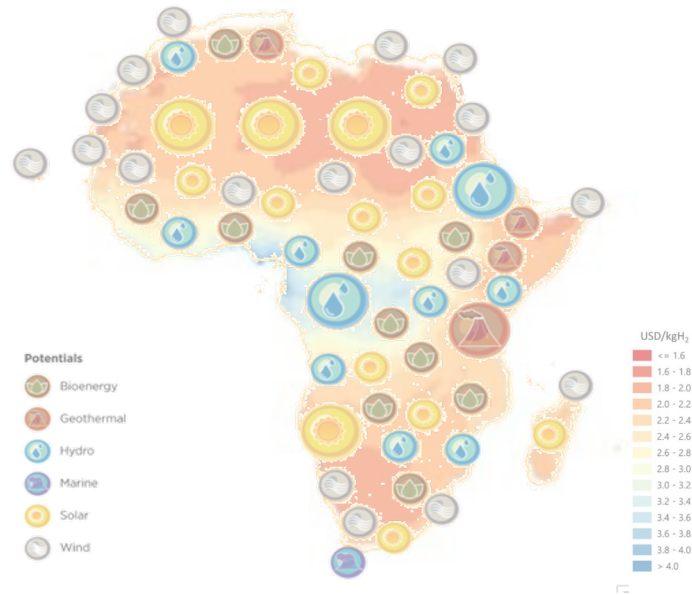


Green Corridors - Africa

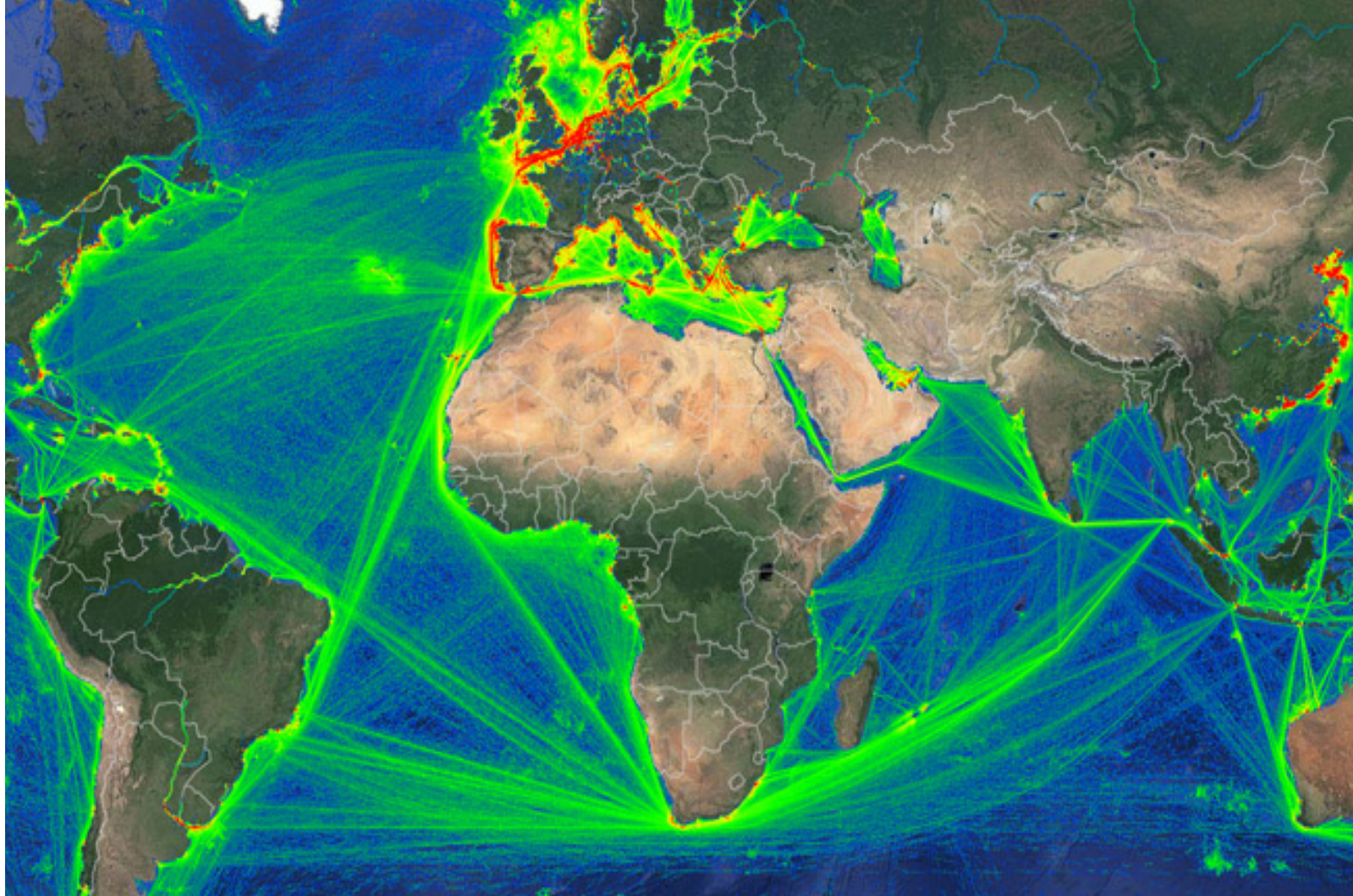
Accra February 2023

Tanja Dalgaard - Chief Strategy & Operations Officer

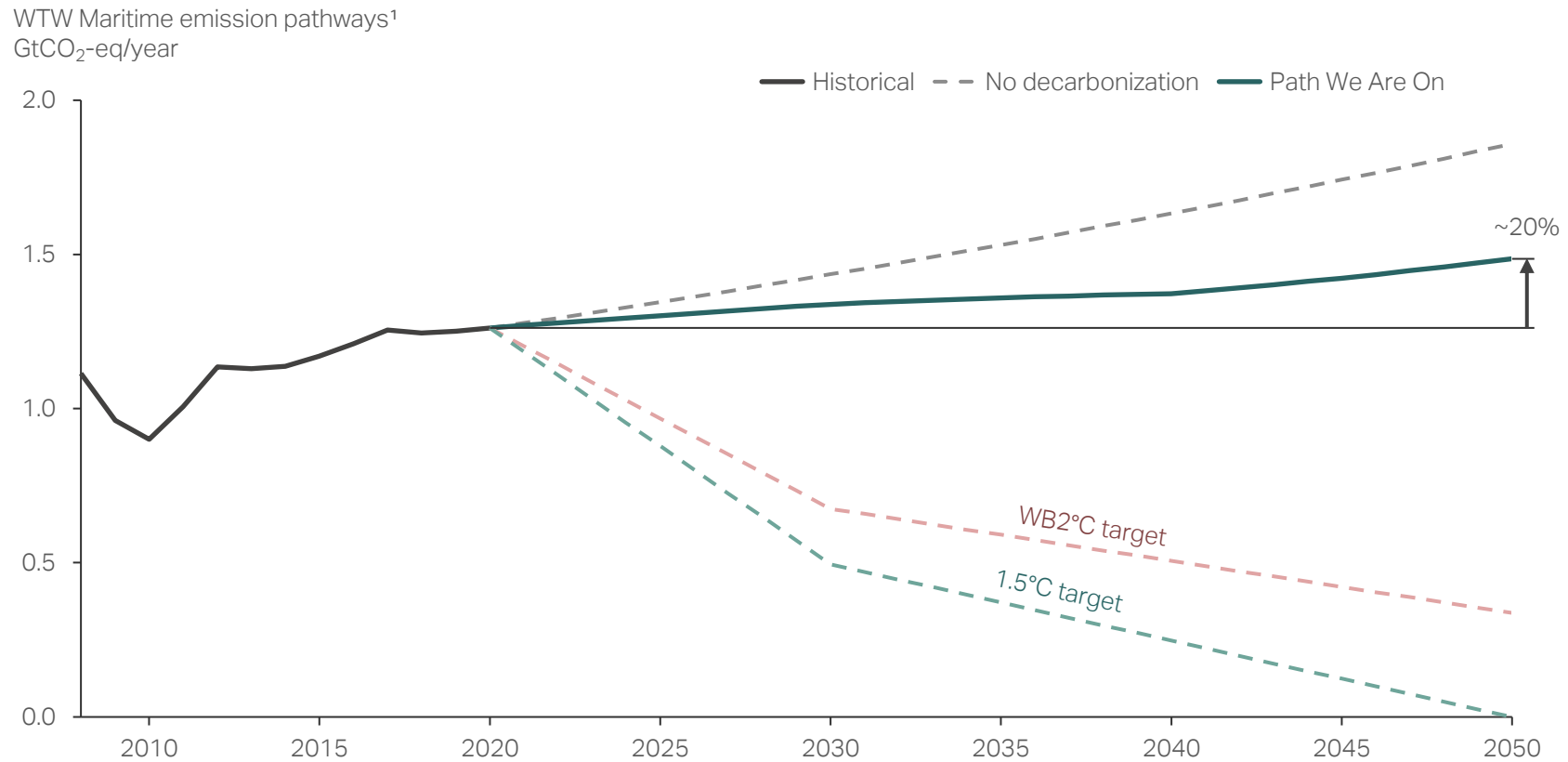


IPCC is stressing that we urgently need to decarbonize.

Where are we? Situational assessment for shipping



The path we are on leads to increased GHG emissions



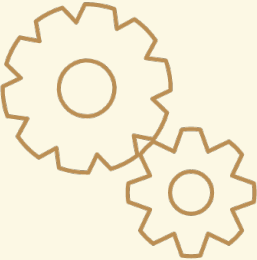
Accelerated progress is needed in four areas during the next decade to make the 2050 target

A level playing field with global regulation



Alternative fuels available at scale.

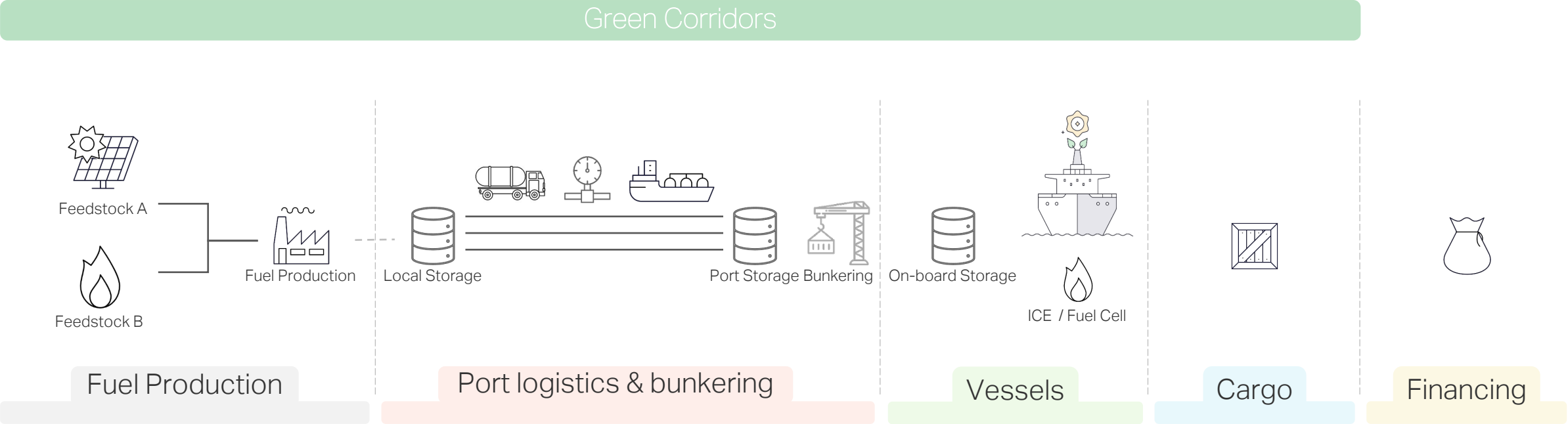
Energy efficiency support across the value chain



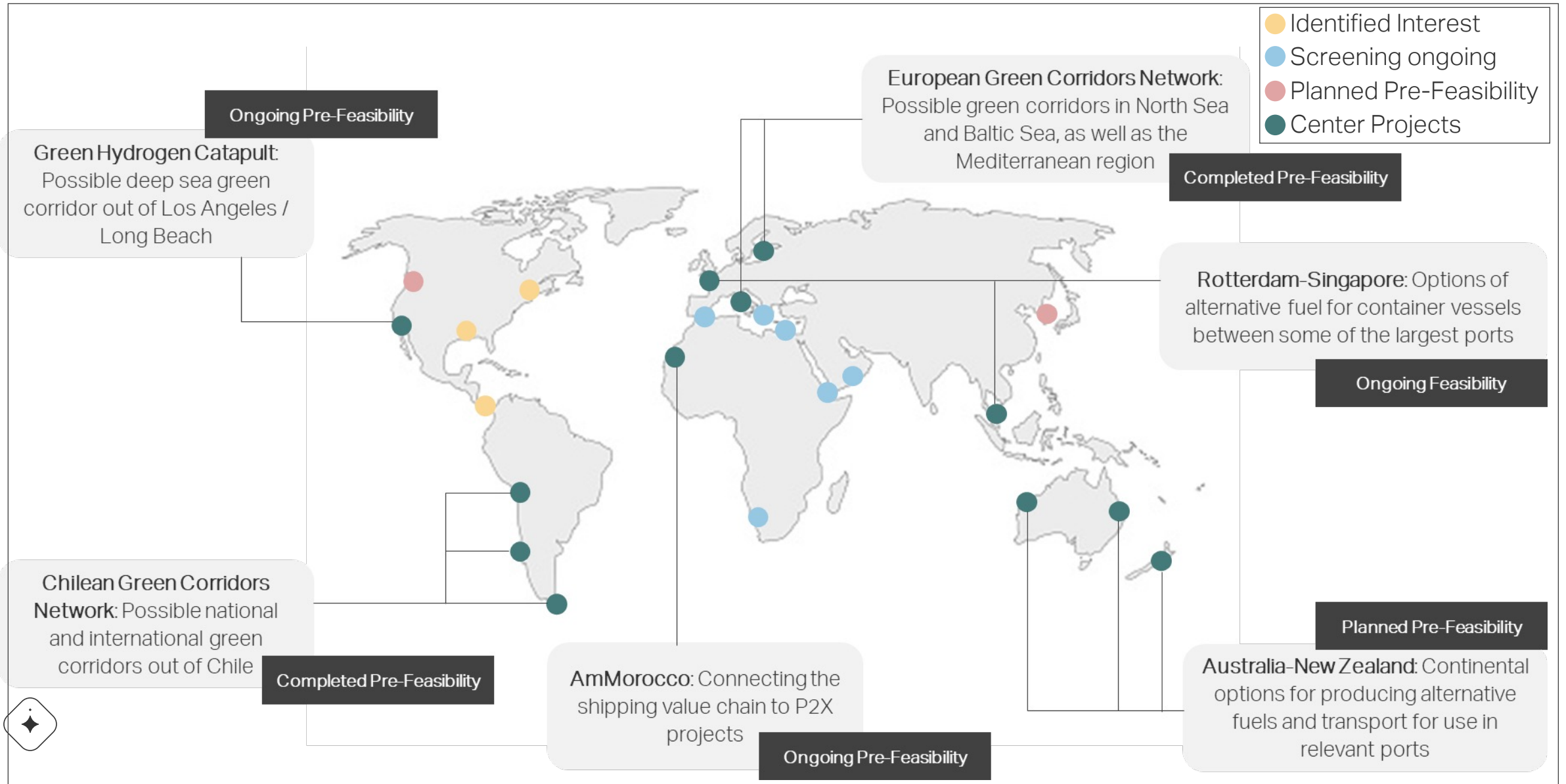
Support to first movers.



First movers: Green corridors activate the full value chain – it is key for success to manage multiple risks



Green corridors - ongoing green corridor projects in various phases

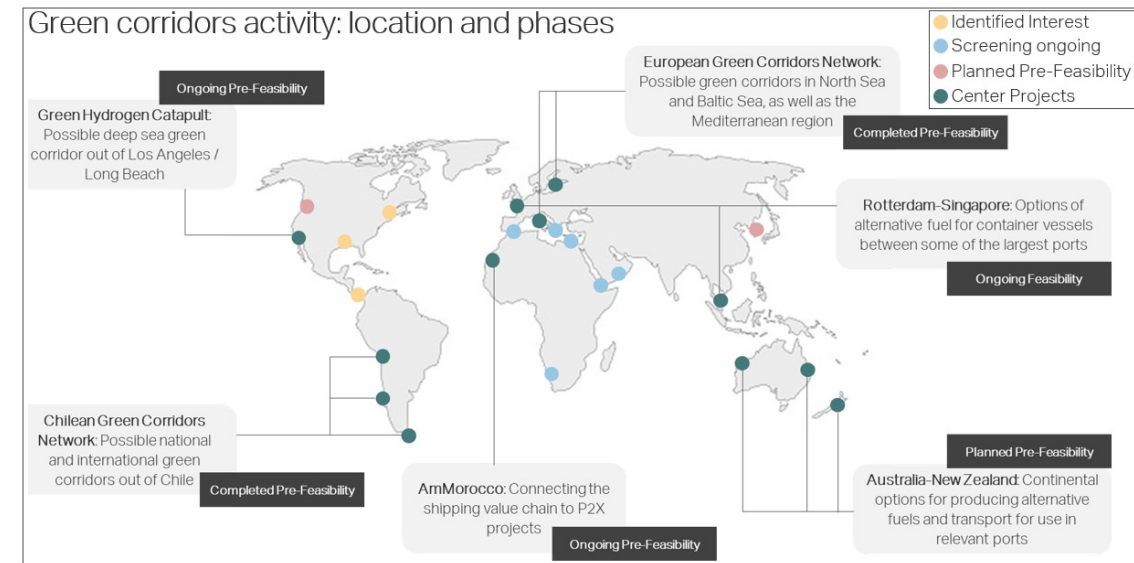


Green Corridors in African countries

Standing on the shoulders of previous studies

The MMM Center has conducted and are conducting Green Corridor studies related to several fundamental challenges in the maritime industry

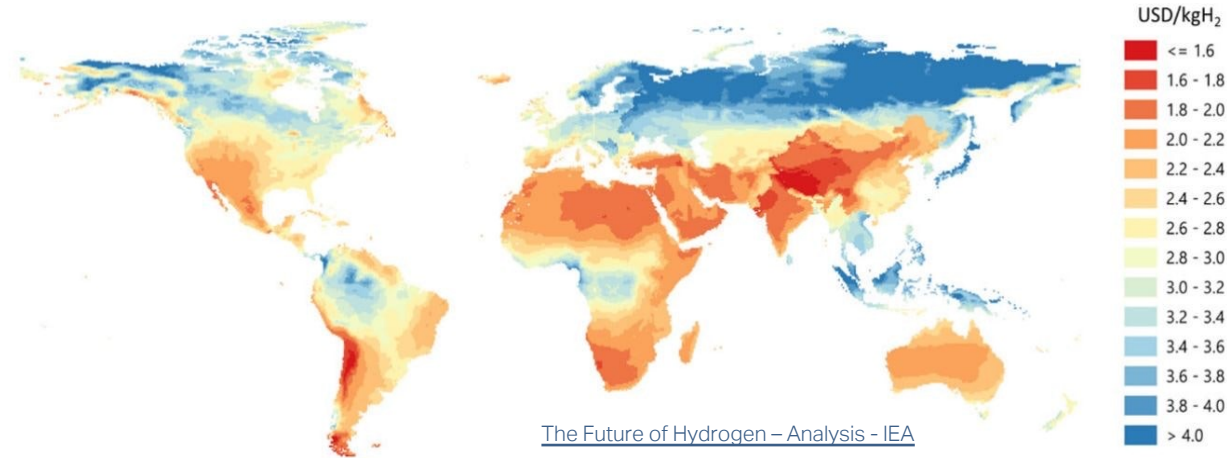
- Access to cheap alternative green fuel
- Chile Pre-Feasibility & Feasibility Studies
- Australia Pre-Feasibility Study
- Global maritime choke points
 - Panama Canal
 - Straits of Denmark



The Chile Case Study

- Chile has been recognized as the cheapest country for production of hydrogen/ammonia in the future (IEA). However, not many shipping routes pass around Chile and the ammonia deployment is not established.

Hydrogen costs from hybrid solar PV and onshore wind systems in the long term



- Chile has therefore decided to be front runner with respect to green corridors, in order to establish/position ammonia as a future viable solution
- This will require financial support and fast approval processes for the first 5-10 projects, after which the commercial usage is believed to drive the market forward



Chilean Green Corridors Network

Corridor selection

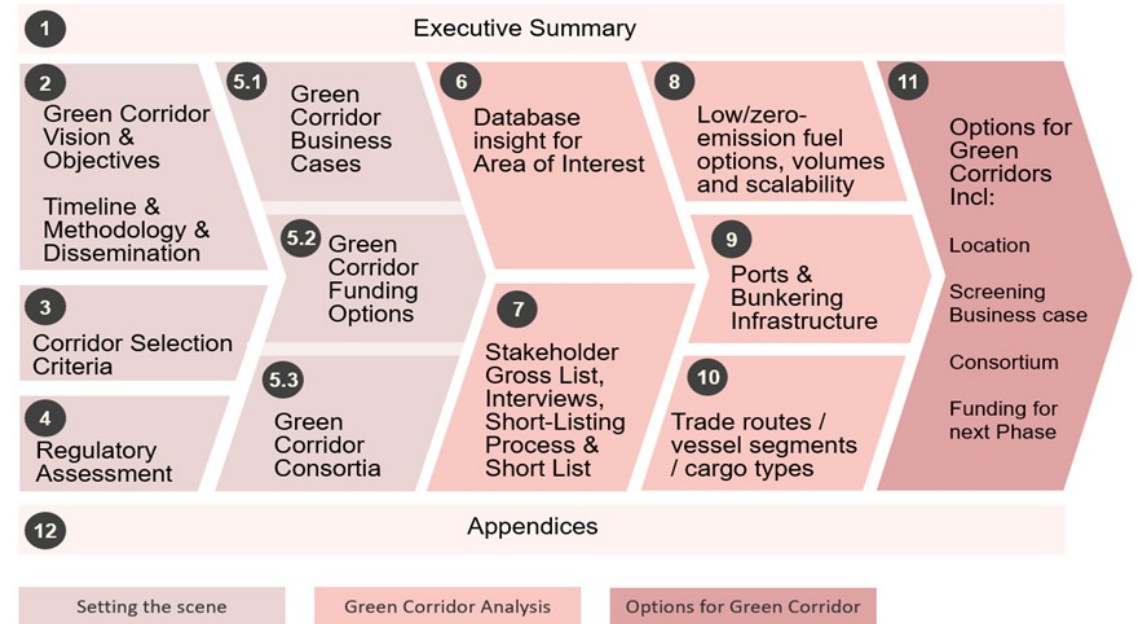
Selecting Green Corridors in Chile

- MMM Center approach allows different criteria to be used for selecting
- Key for Chile that it is a Just Transition



Resulting Green Corridors in Chile

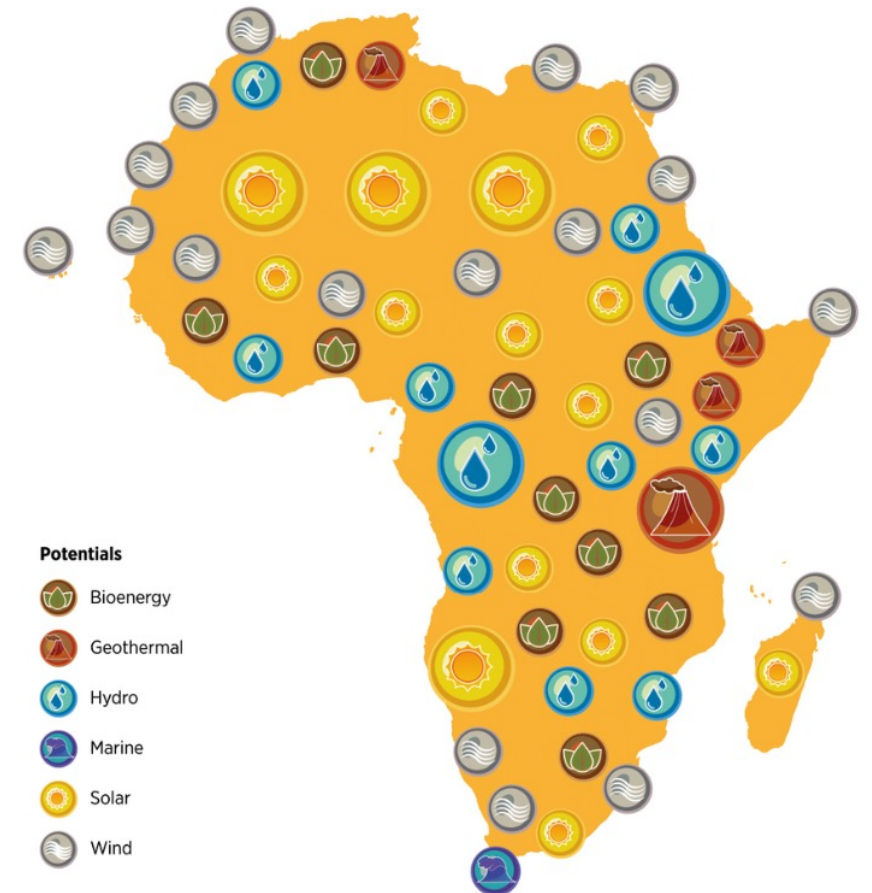
- 17 concrete corridors outlined
- Both Domestic and International



Maritime fuel from the African Continent

- The African continent is blessed with an abundant number of Solar Resources, Wind Resources and Geothermal Resources in some places. These can, if positioned/marketed in the right way, become a source of maritime fuel as well as income to the respective countries
- Countries with more remote location when compared to the global shipping routes, will have a stronger need to position their fuel and kick-start the markets
- Countries close to shipping routes, can tap into the upcoming green shipping infrastructure

Many African countries and regions can move swiftly into the assessments of Green Shipping & Green Corridors



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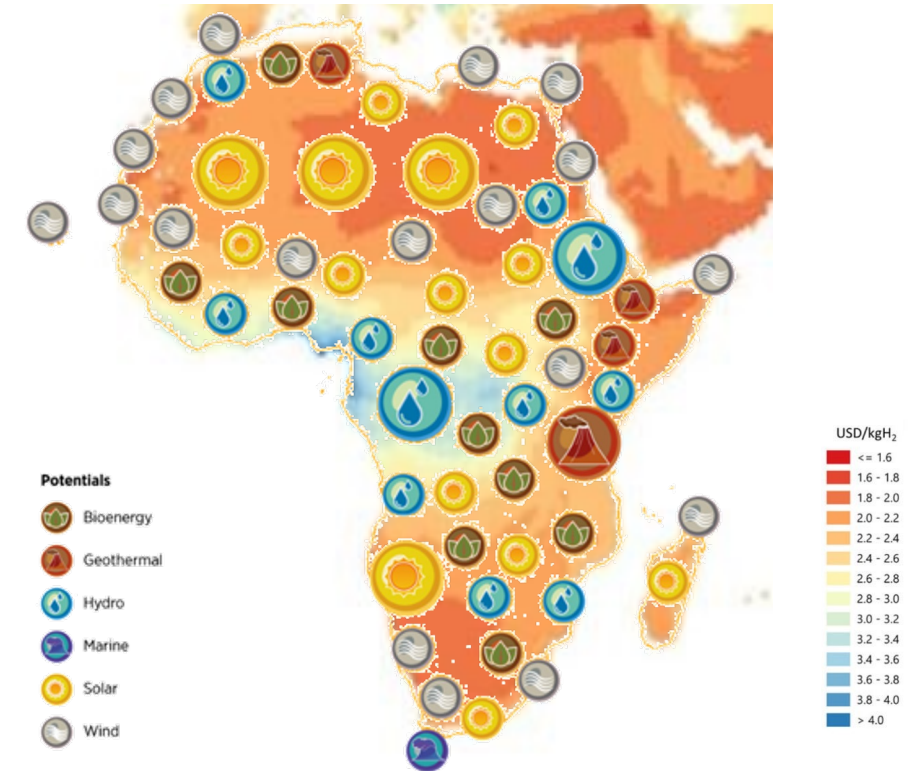
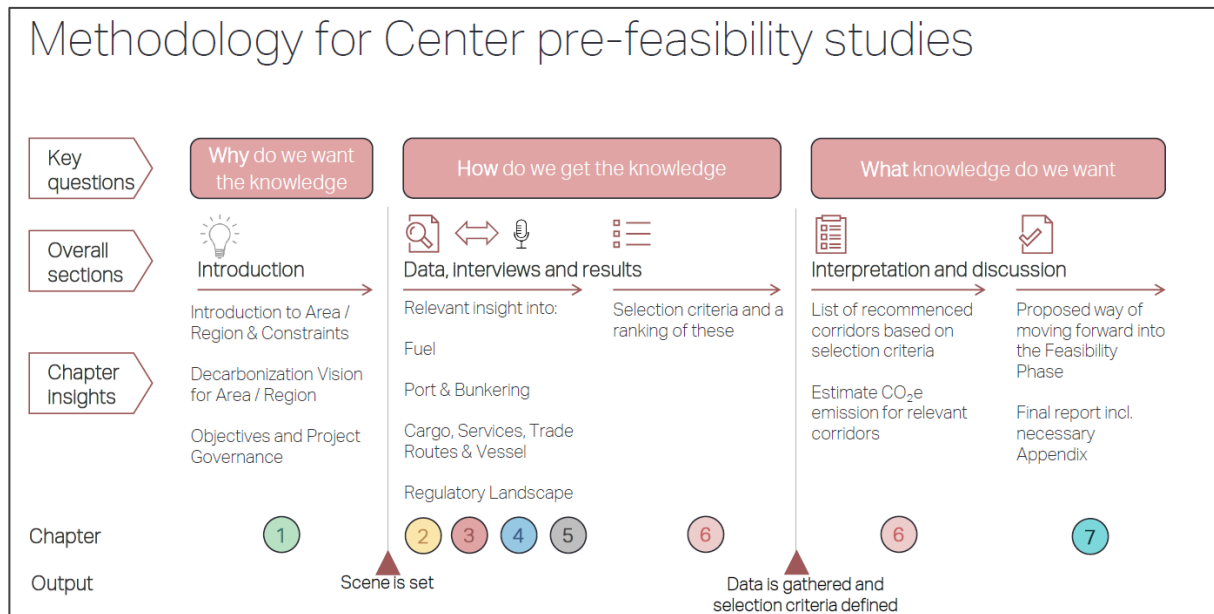


Green Corridors – what need to happen

What need to happen to initiate a Green Corridor project:

Identify 2-4 key areas for further assessment by Green Corridor pre-feasibility Studies, leveraging on the already carried out studies

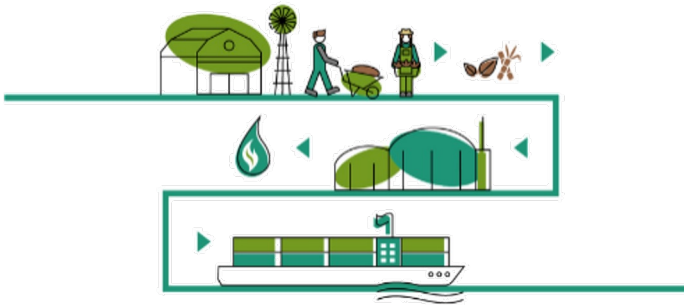
Allocate national/regional teams for the relevant data acquisition and interviews and clear ownership



First-mover initiatives – It is happening

CMA CGM & biomethane

CMA CGM launches the first low-carbon shipping offer by choosing biomethane



NYK and ammonia

NYK: Project to commercialize ammonia-fueled ships set to begin



Maersk and methanol

"Designing the future of our customers' supply chains with carbon-neutral methanol vessels" 15 kTEU container vessels





Questions?

More info:

www.zerocarbonshipping.com

Contact:

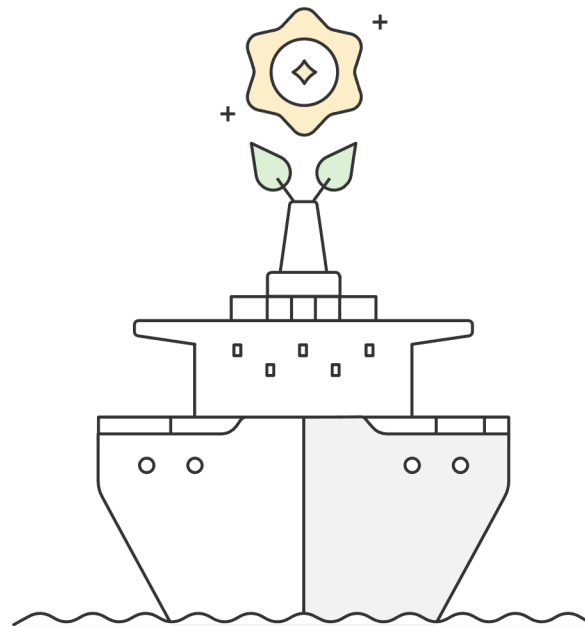
Tanja Dalgaard – Chief Strategy & Operations Officer

Tanja.Dalgaard@zerocarbonshipping.com

The Center is built around a simple but ambitious vision to accelerate collaborative climate action

Our vision is to sustainably decarbonize the maritime industry by 2050

Our mission is to be an independent and significant driver of a sustainable maritime decarbonization



Not-for-profit

Money earned by or donated to the Center is used entirely to finance Center work,

Independent

We are un-biased, solution agnostic and have no vested interest in any technology. We work collaboratively and bring together key players across the value chain.

Science-based

We commit to climate science and use a data driven approach to explore viable decarbonization pathways.

Our Partners share the zero-carbon vision and are committed to climate action.

24 Strategic Partners

13 Knowledge Partners



Activating critical levers across five categories can drive reduction of maritime emissions



1 Policy and regulation

National and regional regulation is of great importance, but we need global regulation. IMO can level the playing field by introducing maritime **CO₂ pricing and tighter energy efficiency regulations**



2 Tech advancements on ship

Existing efficiency technologies are technically mature but not universally adopted. We need better sharing of operational best practices, and **new efficiency solutions**



3 Energy & fuel advancements

Accessibility and availability of alternative fuels will **be largely dependent on scaling** of known, but not yet commercially scaled, technologies



4 Customer demand/pull

End-product-buyers are willing to change purchasing habits to show climate action. The pace of maritime decarbonization will increase if more consumers **demand zero-carbon transportation and are willing to pay a premium**



5 Finance sector mobilization

Green financing is already widely used by other industries and is now gaining momentum in the maritime industry as well. **Lower finance cost** can support and accelerate decarbonization

