National Maritime Climate Action in 5 Sub-Saharan African Countries

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https://www.ucl.ac.uk/bartlett/energy/research/shipping

Decarbonisation of Maritime Sector

Consortium:
University College London
World Bank
Global Maritime Forum Foundation
SADC Centre for Renewable Energy and Energy

INTERNATIONALE KLIMASCHUTZINITIATIVE (IKI)

The decarbonisation of shipping is a key opportunity that can combine climate change mitigation, adaptation policy and economic development.

- 2 years in the making, this a chance to both 'green' the maritime sector in Eastern and Southern African countries, while growing the sectors, all of which are important for the 5 target countries economies.

Overall objective: to reduce greenhouse gas emissions in the maritime sector, both through enabling countries to take further mitigation actions at a national level as well as exploring the adoption of ambitious climate measures at the International Maritime Organisation (IMO).

Target countries: **1. Comoros 2. Kenya 3. Mauritius 4. Namibia 5. Tanzania, United Republic**

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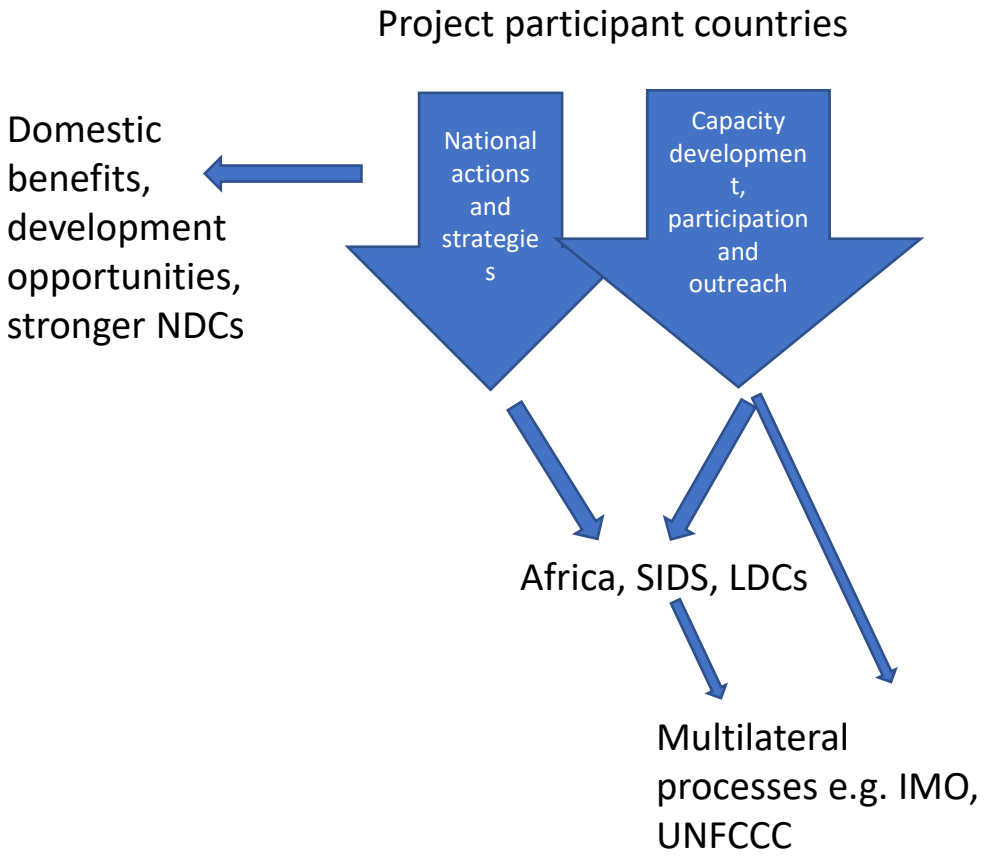
Project Strategy

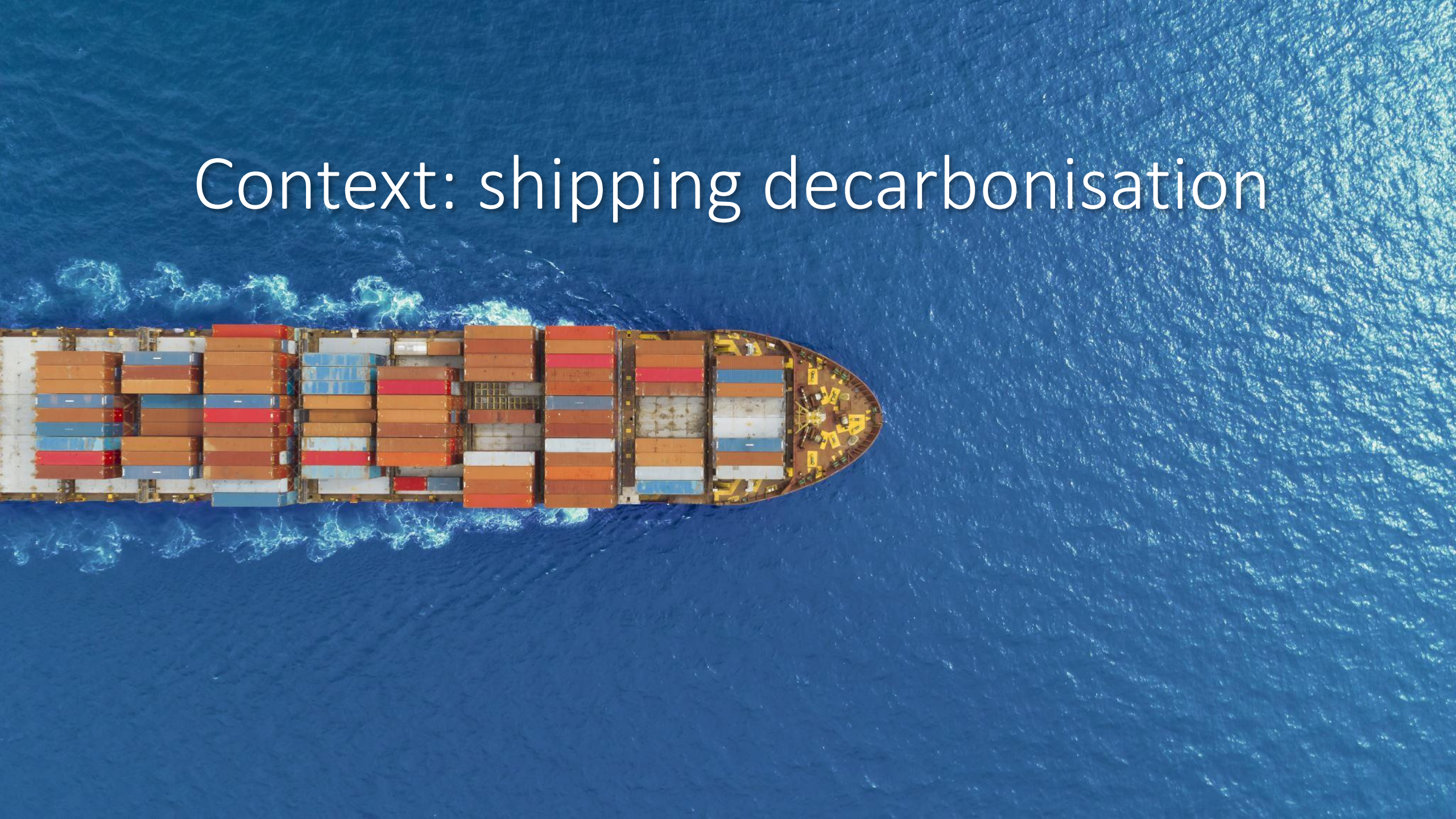


The objectives of this project will be achieved by enhancing in-country capacity and supporting the development of national strategies that are tailored to the individual circumstances of each of the five countries and integrate both the domestic/national and international components of a maritime decarbonisation transition.

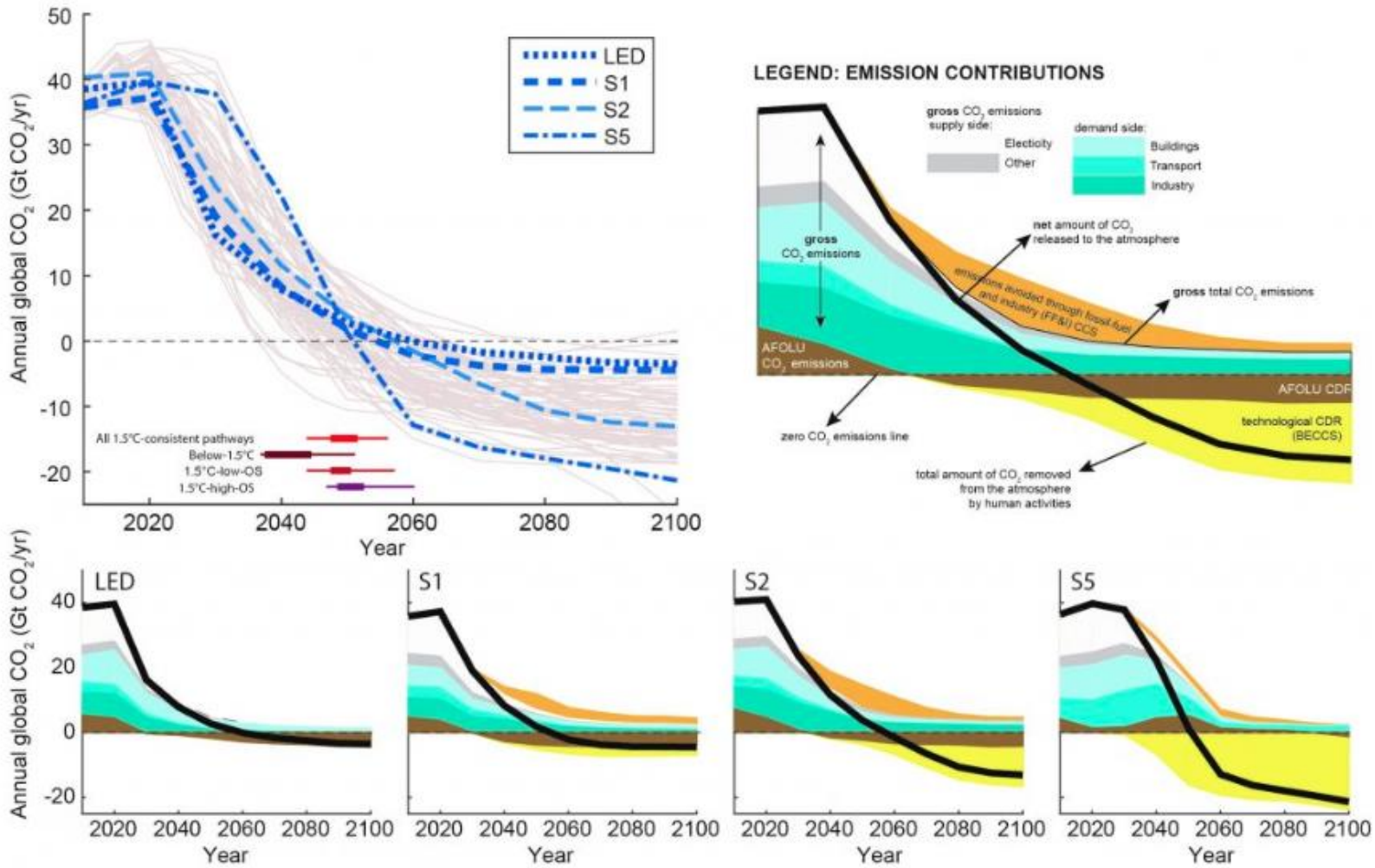
To realise the outcome, we have designed six work packages:

1. **Establishing a National Low-Carbon Shipping Committee**
2. **Assessing the countries' maritime sector and emissions**
3. **Developing NAPs**
4. **Implementing NAPs**
5. **Including domestic shipping in countries' NDCs**
6. **Supporting active and ambitious participation of the countries at the IMO.**

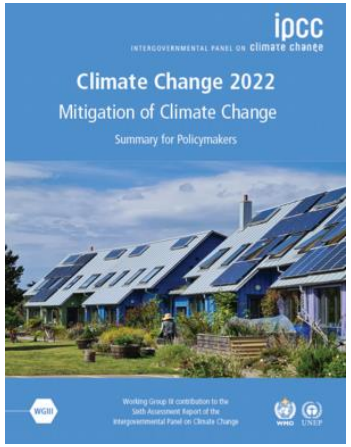
Context: shipping decarbonisation



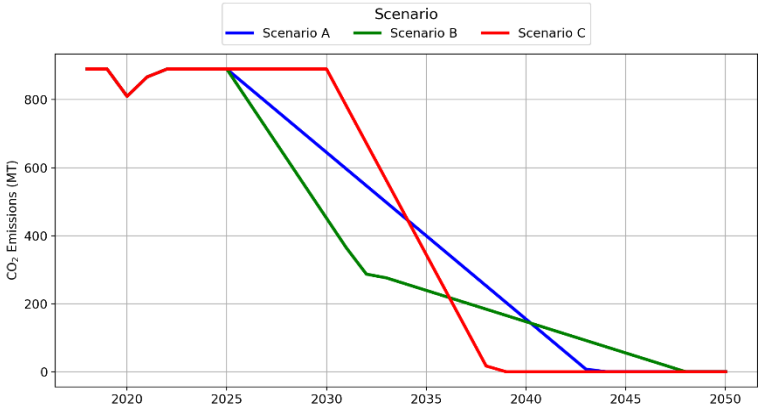
IPCC: Halving emissions by 2030



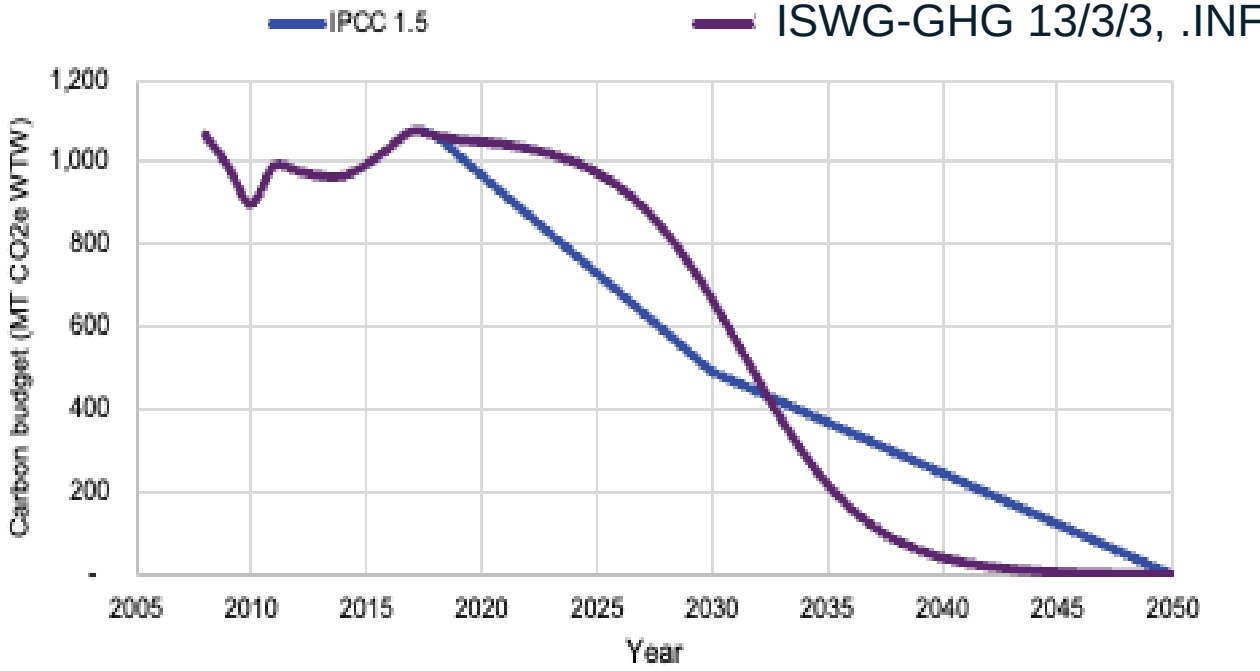
IPCC AR6 defines budgets for avoiding exceeding 1.5, SBTi – aligning shipping for rapid reductions in GHG emissions



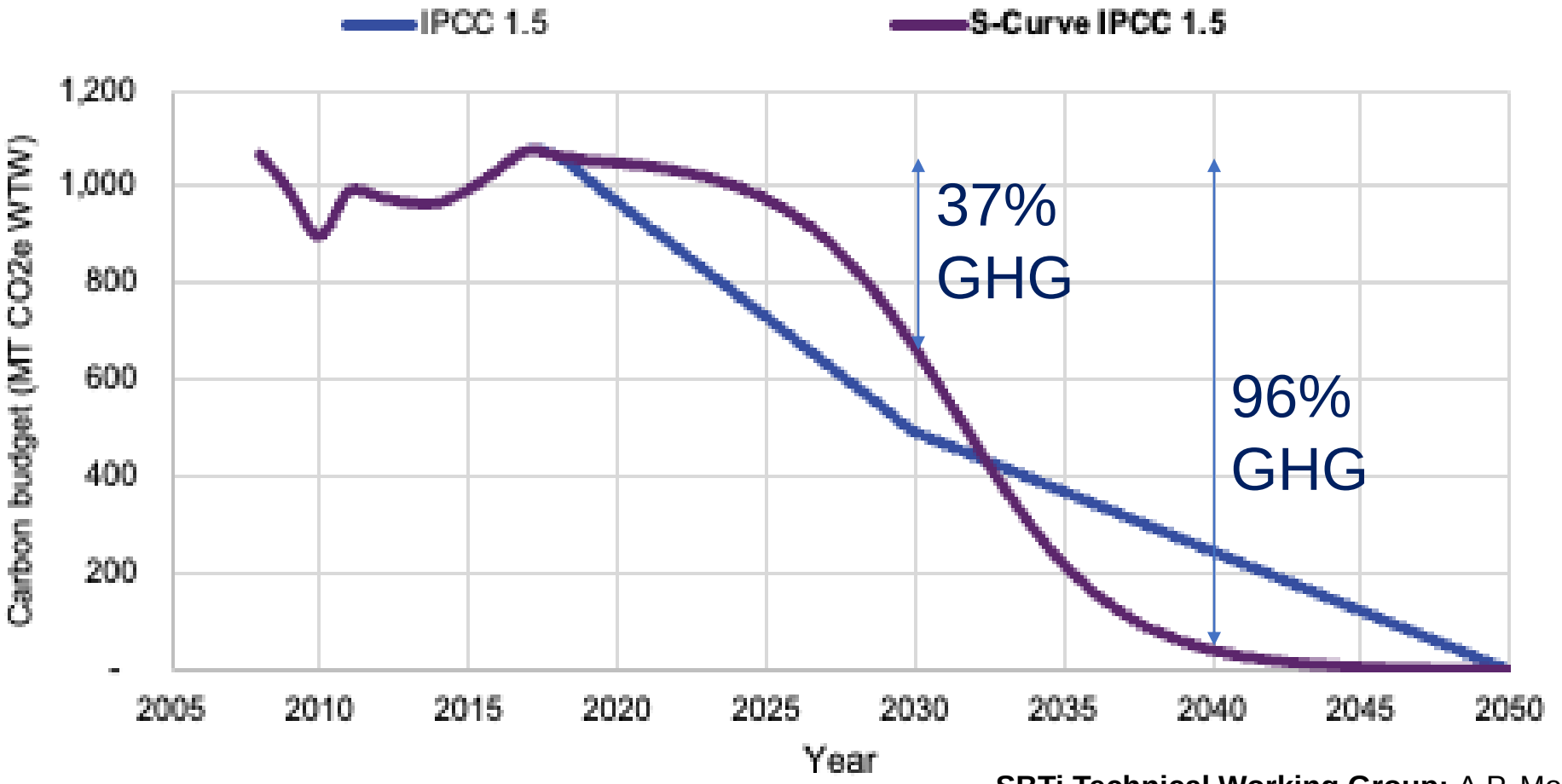
MEPC 79/INF.29 and INF.30



SBTi



Softer 2030 = harder 2040



SBTi Technical Working Group: A.P. Moller-Maersk, Clean Cargo Working Group, CMA-CGM, Deutsche Post DHL Group (DPDHL), DFDS, Environmental Defense Fund (EDF), Louis Dreyfus Armateurs, Mitsui O.S.K. Lines, Royal Caribbean Cruises, Sustainable Shipping Initiative, United Parcel Service (UPS), Wallenius Wilhelmsen, We Mean Business (WMB).

Domestic shipping and fishing, will likely take a different pathway and move to efficiency, wind assistance and electrification

*with equal importance

The Africa Advantage

- Over the coming years, Africa will develop its energy infrastructure.
- However, fossil fuel-based energies are not compatible to limiting global warming to 1.5°C as set out in the Paris Agreement – but many countries are still reliant on coal and gas.
- This is an extraordinary opportunity for countries to leapfrog dependence on fossil fuels straight to renewables.
- We already see this happening: Kenya - renewable energy currently accounts for 73% of installed power generation capacity while 90% of electricity in use is from green sources: geothermal, wind, solar, hydro-electric installation.
- This projects wants to see these renewable sources used in the Maritime/Shipping sector.

- The importance of the maritime shipping industry in Africa cannot be understated, in particular, Both domestic economy and intercontinental trade.
  - International: EU, US, China and new markets will open up (expansion of economic possibilities)
  - Domestic: smaller scale shipping, fishing vessels, sustainable local industry
- The African continent has a huge advantage with its abundant natural energy resources: wind, water, solar
- Renewable technologies have become more efficient and cost-effective – We see enormous potential for Africa's shipping industry to benefit from these renewable energies (wind and solar).

Partner Countries

Comoros

- poor transport connectivity, high transport costs
- Opportunity to implement measures to increase energy efficiency and reduce fuel consumption
- expressed interest in wind propulsion solutions
- SIDS, LDC → importance at IMO

Kenya

- Member of High-Level Plan for a Sustainable Ocean Economy, leading development of Blue Economy
- IMO Council Member, hosts MTCC, leadership in UNFCCC
- large green hydrogen production potential
- Mombasa: important intl port

Mauritius

- aims to become global bunkering hub
- Excess renewable energy resources
- Could leapfrog fossil fuel infrastructure development and become hydrogen-based bunkering hub
- SIDS → importance at IMO

Namibia

- Member of High-Level Plan for a Sustainable Ocean Economy
- considered a frontrunner for becoming green hydrogen champion (large potential for cheap green hydrogen production)
- Hosts SACREEE, one of the consortium members

Tanzania

- large green hydrogen production potential
- Dar es Salaam: important intl port
- Identified as one of the countries in Africa for the 1st large-scale hydrogen projects and basis for expansion into Africa
- SIDS, LDC → importance at IMO

Leadership Potential

All five countries have the potential to become leaders in modernising and decarbonising the maritime industry, not just on the Continent, but globally.

This project will learn from and support these initiatives – there is a need for technical and financial investment in these areas

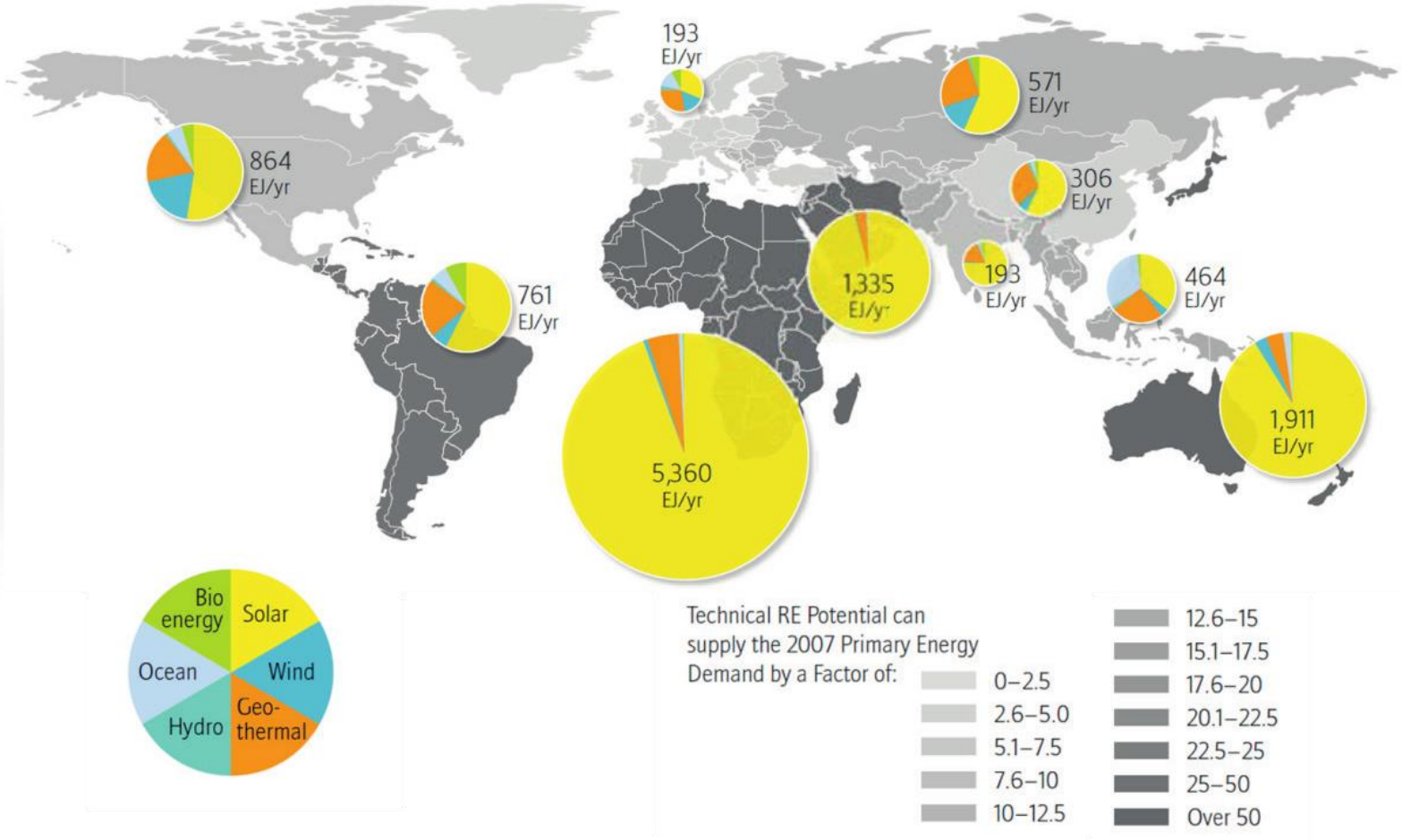
The desired outcome is for these 5 countries to become leaders in decarbonisation the maritime sector

- Kenya and Namibia are already both members of the High-Level Plan for a Sustainable Ocean Economy
- Namibia, Kenya and Tanzania have large green hydrogen production potential
- Comoros has an interest in wind propulsion solutions
- Mauritius aims to become a global bunkering hub. With the use of renewable energy resources, it is in the position to bypass the development of fossil fuels bunkering infrastructure and instead invest in developing green hydrogen-based bunker fuel production and bunkering facilities.

Moreover, there are significant, sustainable, socio-economic development opportunities related to maritime decarbonisation.

Build the Maritime sector while moving to green energies and modernising technologies

- Many countries have the potential for renewable energy provision, particularly Africa, creating national opportunity for domestic and international fleet decarbonization, and wider development and export potential

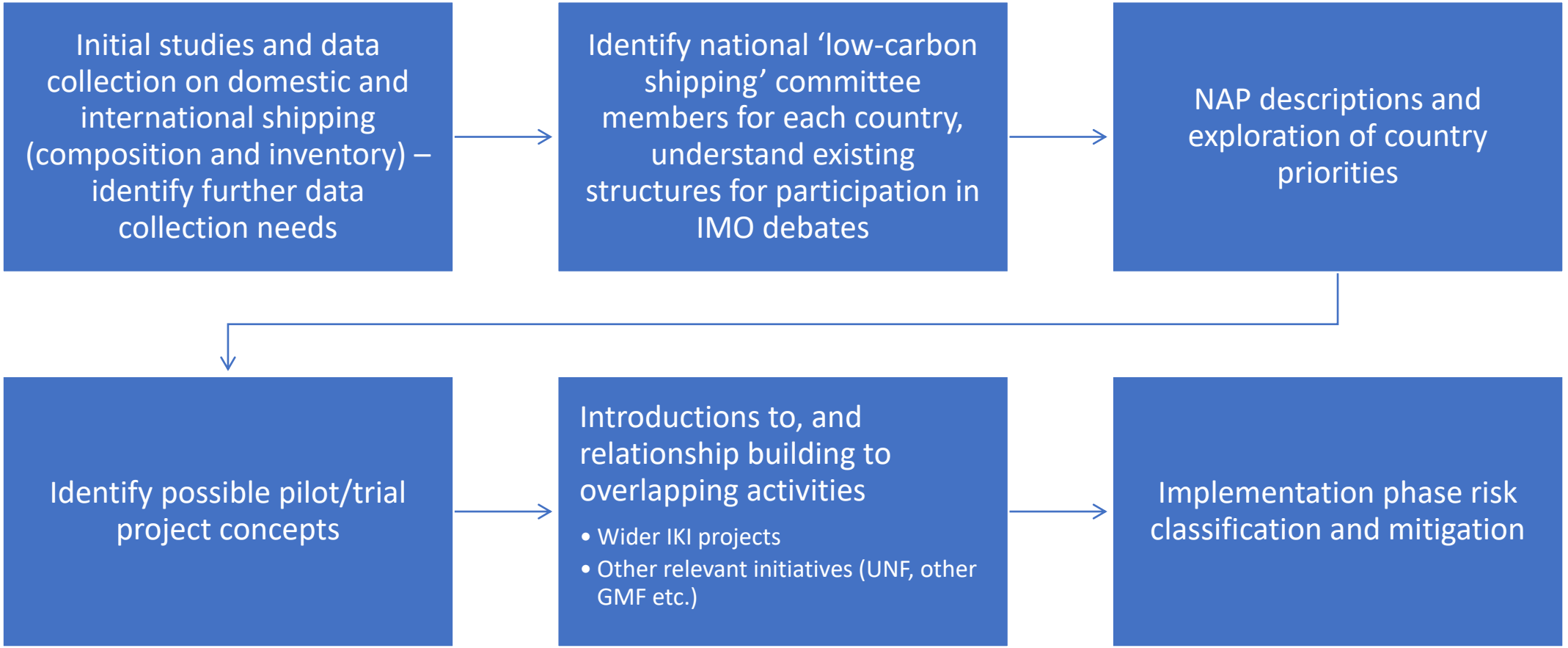


Challenges

Domestic and international shipping's decarbonization will be capital intensive (for land and fleet). Climate finance is likely an important source of capital for some countries

- The reliance on fossil fuels and older technologies/ships.
- They are heavily dependent on the shipping industry to meet their socio-economic needs.
  - Global food security identified Kenya and Tanzania as having high exposure to maritime food supply chokepoints with no alternative routes
  - Comoros imports 70% of its food and suffers from poor transport connectivity
- Some of the highest international maritime transport costs.
- Adaptation/Climate Strategies - adapting to, and managing the impacts of, climate change are key, but do not necessarily address maritime GHGs.
  - Not currently in countries' NDCs or maritime strategies (the focus is on land)
- Policy gap between the current status quo and the possibility of realising transformational mitigation of maritime GHG emissions.
- Under Representation: Historically underrepresented in IMO and UNFCCC – this is changing! But as leaders, a greater voice is required in these global regimes.

Key components of overall work to undertake



COP27 Workshop - Nov 2022

- First time to bring partner countries and consortium together
- Discuss pathways forward
- Look at existing national maritime action plans
- Identify data on maritime emissions in the region (shipping, ports)
- Linking of different ministries for the partner countries (climate, energy, transport etc.)
- Discussion of importance of maritime sectors in the partner countries

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Thank you for attention
Come say hi!

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Where are we?

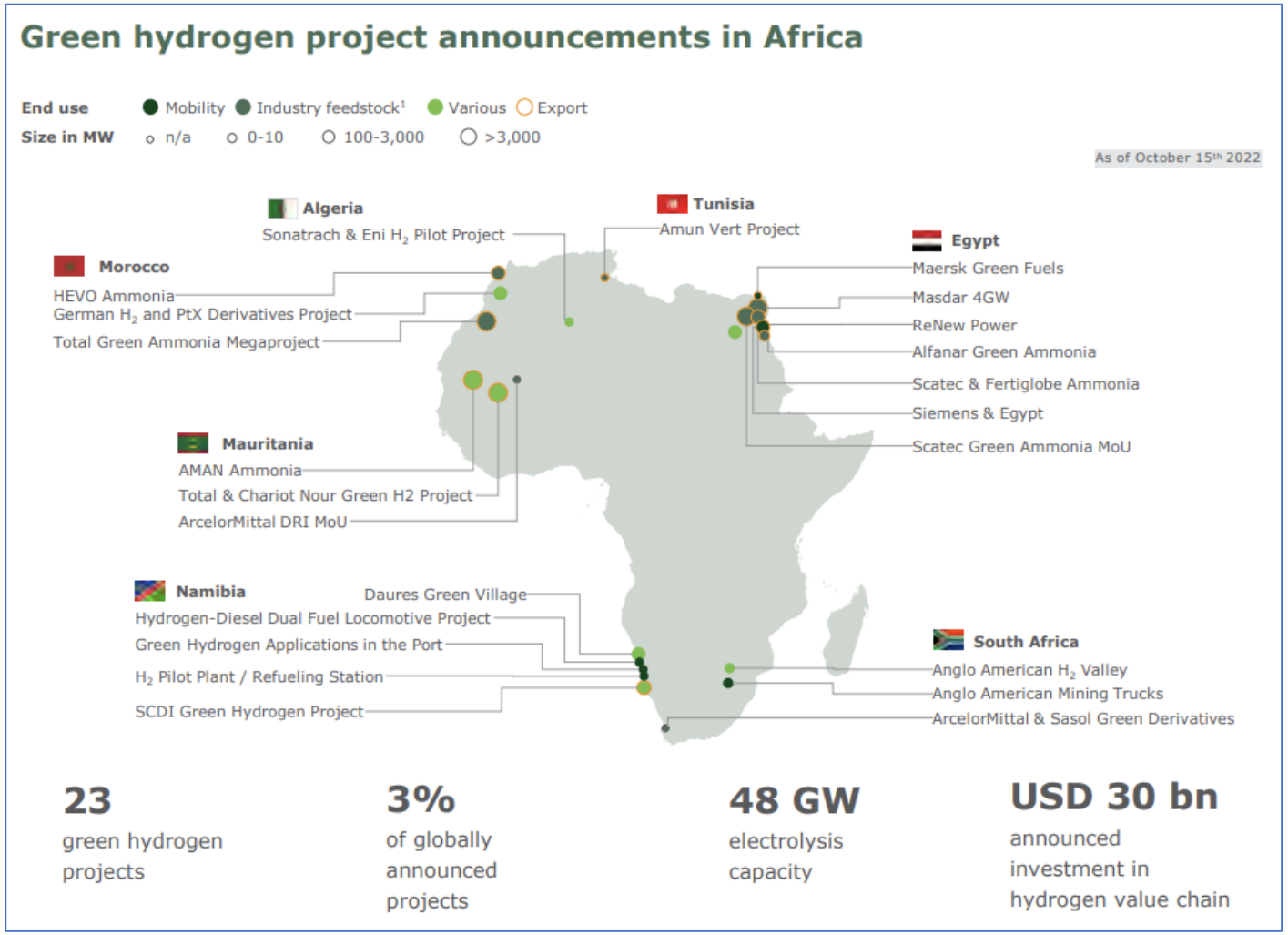
Develop final proposal to match capacity/costs re: budget

Building Project Capacity:

- The importance of ALL partners cannot be underestimated
  - Identify key players in Maritime sector
  - Identify key researchers to work with us and the relevant ministries
  - Develop relation with relevant ministries
  - Focal point and research assistant for different stakeholders
- Building consortium capacity
  - In the consortium team – availability, what is needed in this phase
- Capacity in target countries – Have core team members in each country ready for implementation phase

- Undertaking detailed analysis and quantification of the national/international shipping activity in each of the 5 countries
- IMO & UNFCCC negotiations – identify need for training and capacity in IMO negotiations and the link to climate policy (NDCs)
- Accelerating capacity development and knowledge production in specific areas related to maritime activity
- Potential pilot projects (subject to costs) with partner countries
  - what exists, what is needed, resource availability,

Clarity of IMO demand for clean hydrogen can contribute to equitable transition in many developing countries

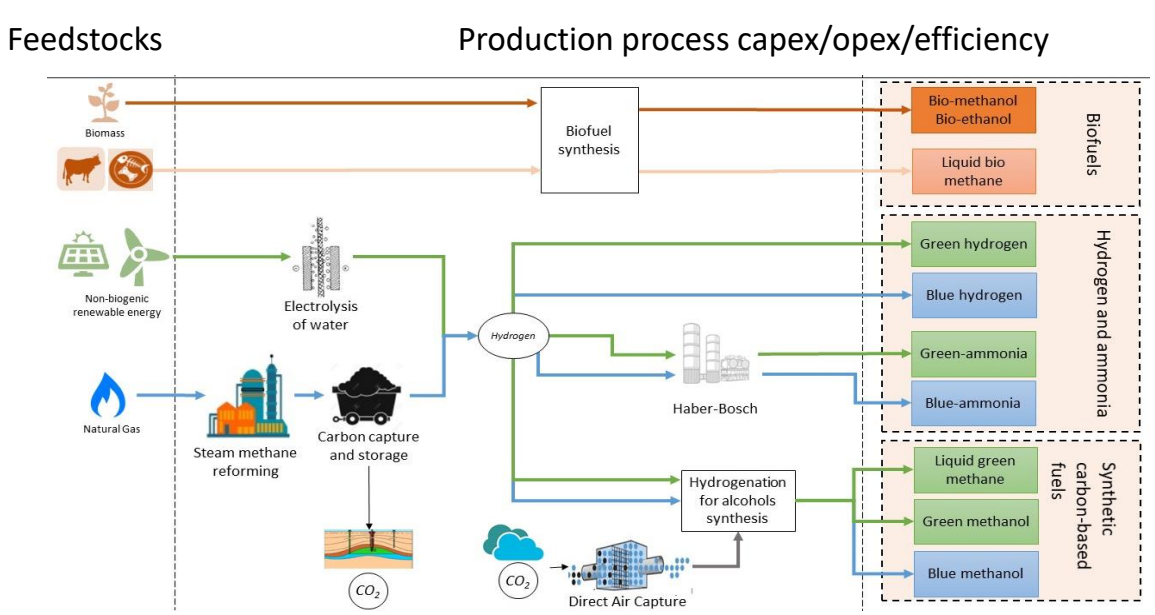


Select announcements of projects:

- **Namibia – Hyphen** intends to produce **300,000 tonnes of green hydrogen** per annum at full development. The **first phase** of the project, expected to come online by **2026** will result in the production of **125,000 tonnes**. The **total investment** of the project is expected to be **$10 Billion**
- **Mauritania – Aman** intends to produce **1.7 million tonnes of green hydrogen** per annum at full development. The total **investment** of the project is **$40 billion**
- **South Africa - Hive** intends to produce **0.78 million tonnes** of **green ammonia** per year, with first-phase production is expected to begin in **2026**.
- **Morocco – Amun** intends to produce **350,000 to 400,000 tonnes** of green hydrogen annually to be converted to green ammonia

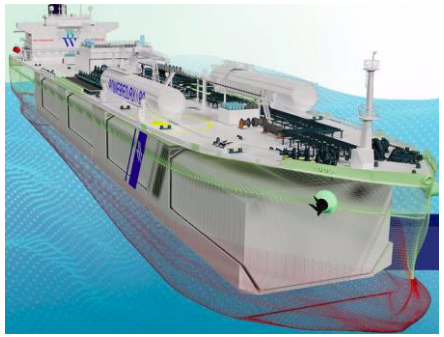
Source: Masdar – Africa's Green Energy Revolution (2022)

Shipping's new fuels will be produced from gas, biomass and renewable energy and require widescale changes to fleet and energy supply chains



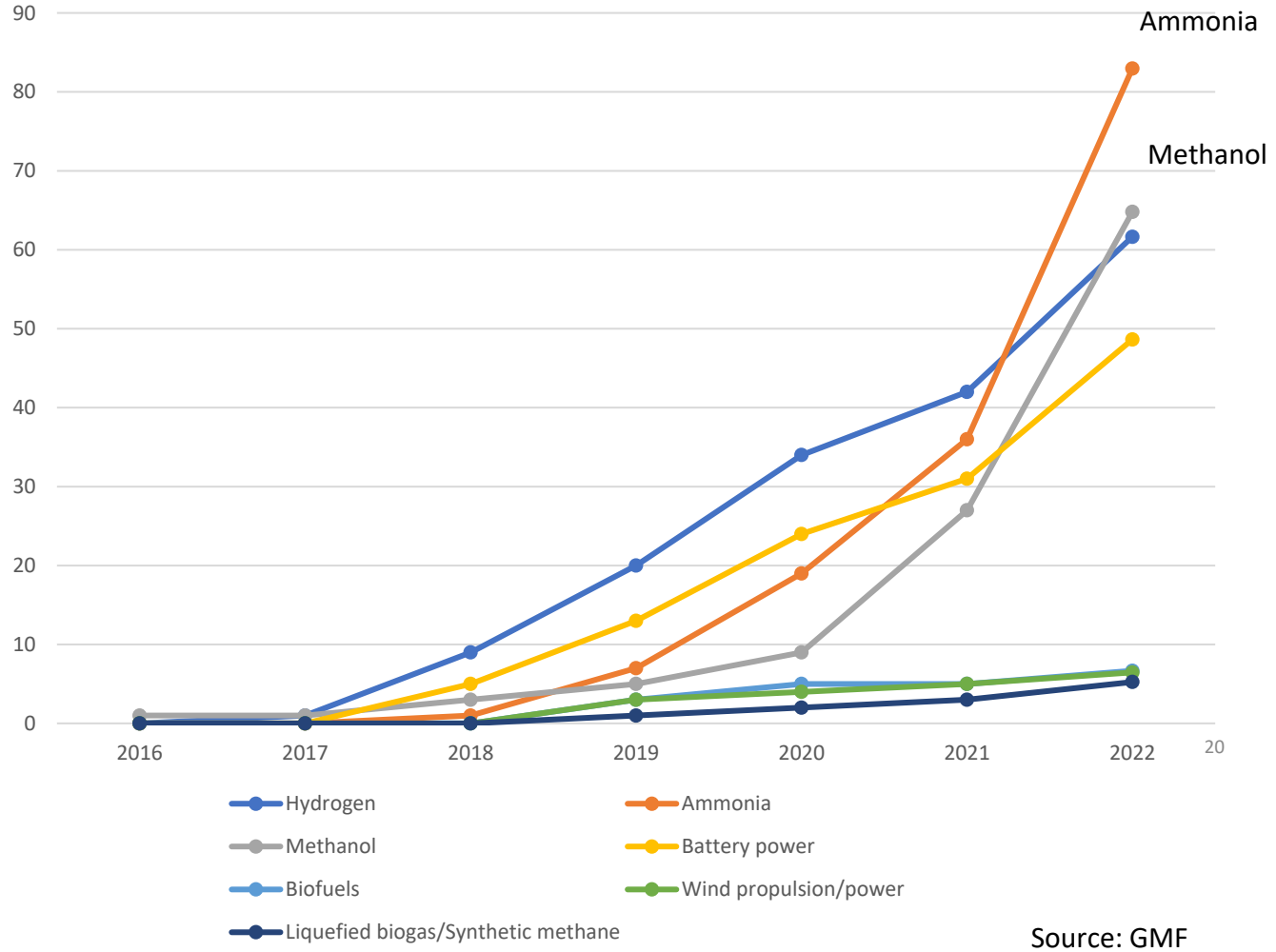
UMAS and World Bank

Machinery and storage, capex, efficiency, size



BW

In 2022/23, announcements of pilots/trials to develop and test new fuels for shipping are growing rapidly – so far mostly in developed world. This project will look to enable similar opportunities in target countries



Source: GMF