CATALYSING INCLUSIVE INNOVATION FOR GREEN SHIPPING

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IMO-Norway-UNEP Innovation Forum 2022

MPA
SINGAPORE

Amidst the 3Ds, Singapore believes that innovation is a gamechanger

Digitalisation

Increasing pace of digitalisation & automation. Opportunities to improve efficiency of navigation and maritime safety & security

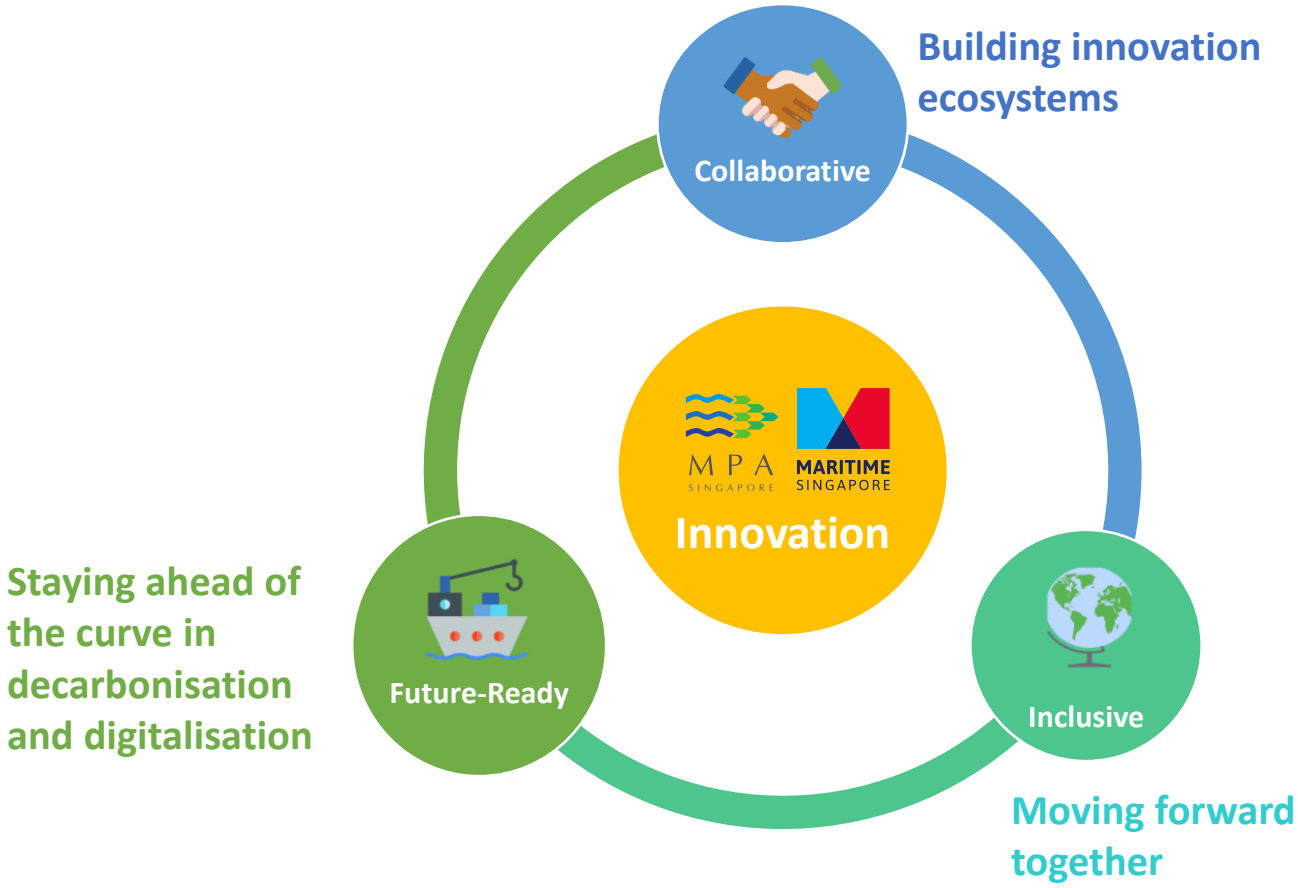
Decarbonisation

Increasing global pressure on businesses to decarbonise. Prevention and control of marine pollution from ships.

Disruption

Supply chain disruptions, rise in new business models, shifts in global supply chain

Together with our partners,
Singapore catalyses collaborative, future-ready and inclusive innovation



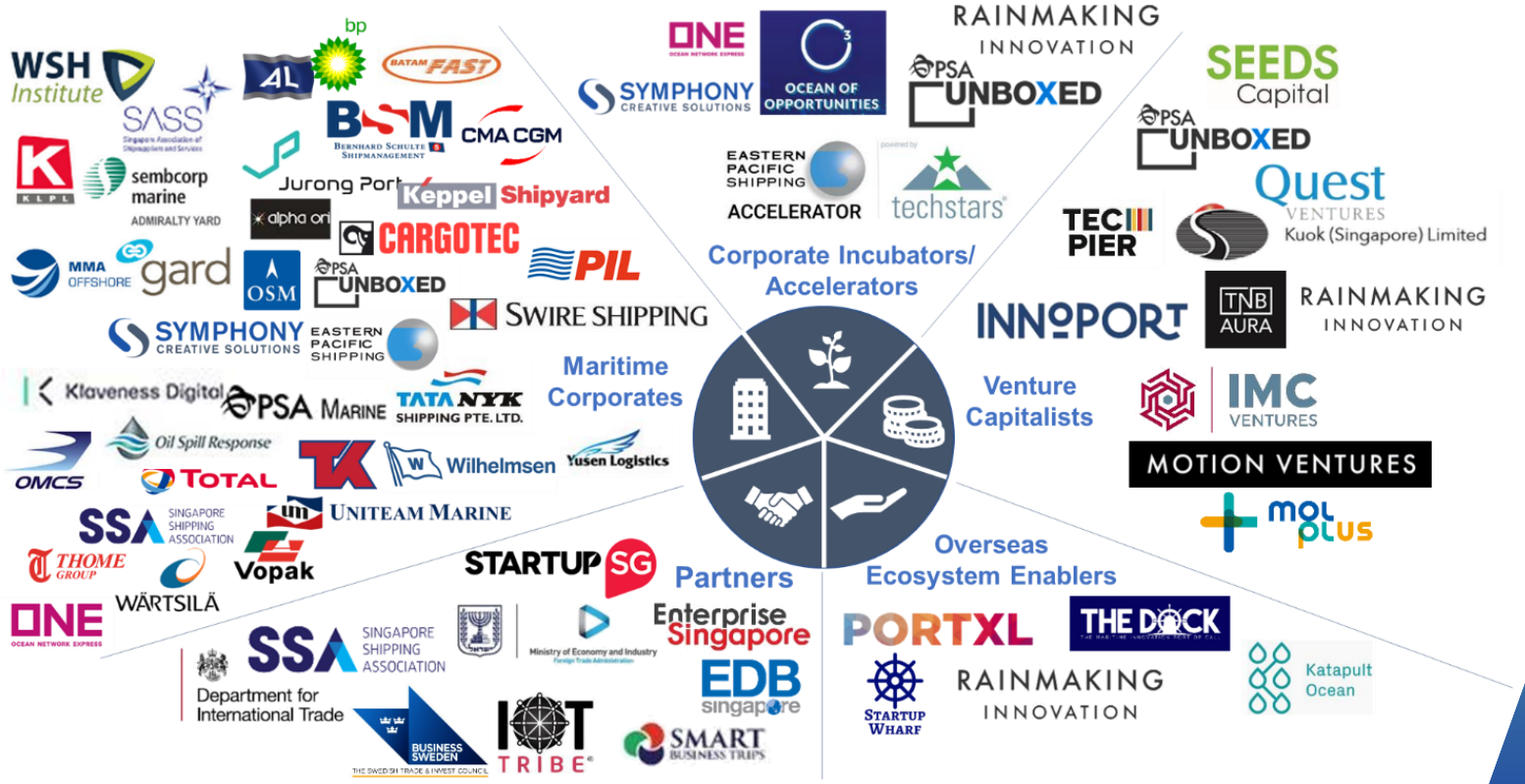
Collaborative Innovation

Building innovation ecosystems

Bringing together Demand and Supply

PIER71™: Port Innovation Ecosystem Re-imagined @ BLOCK71

- **~ 80** start-ups accelerated
- **50** received grant funding
- **17** solutions deployed in maritime sector



Building innovation ecosystems

Bringing together Stakeholders across the Value chain

Global Centre for Maritime Decarbonisation (GCMD)

- Programme office for tech development, test-bed and trials
- Joint Industry Projects (JIPs)
- Knowledge Sharing

Founders/strategic partners

BHP · Wilhelmsen · DNV · Eastern Pacific Shipping · MPA Singapore · ONE Ocean Network Express · sembcorp marine · Hapag-Lloyd · bp

Coalition partners

SSA Singapore Shipping Association · IBIA · ashurst · International Chamber of Shipping · IWSA International Workship Association

Impact partners

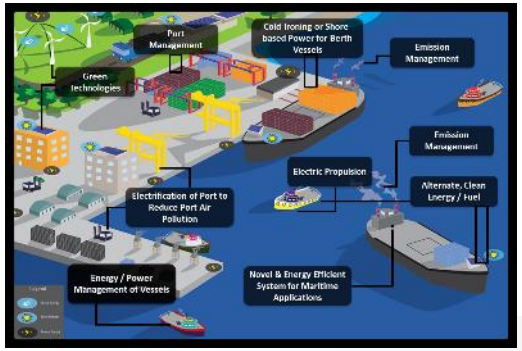
BCG · the human energy company (Chevron)

Knowledge partners

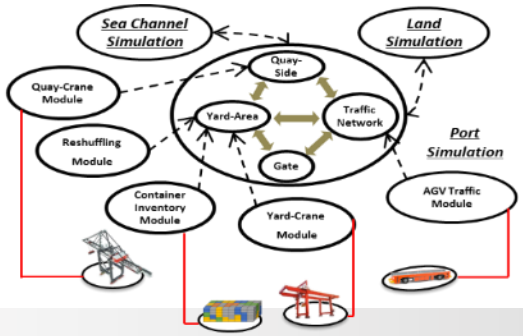
Global Maritime Forum · Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping · KPLER

Singapore Maritime Institute – Centres of Excellence (COE)

COE in Maritime Energy and Sustainable Development (MESD) – NTU

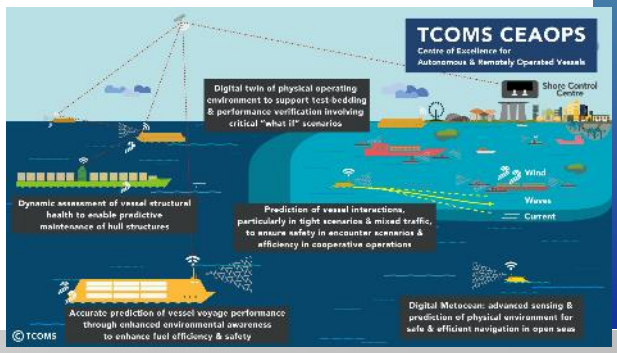


COE in Modelling and Simulation for Next Generation Port (C4NGP) – NUS



COE for Maritime Safety (CEMS) – Singapore Polytechnic

COE for Autonomous & Remotely Operated Vessels (CEAOPS) – TCOMS



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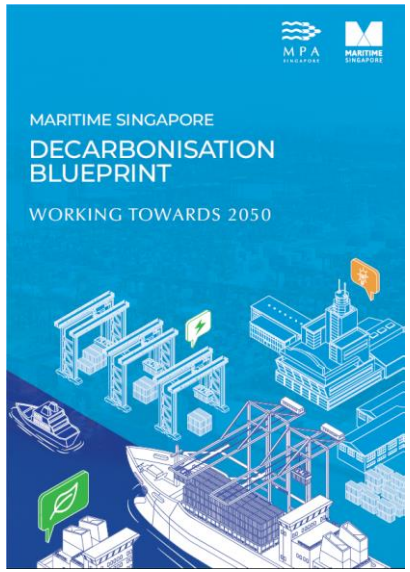
Future-Ready Innovation

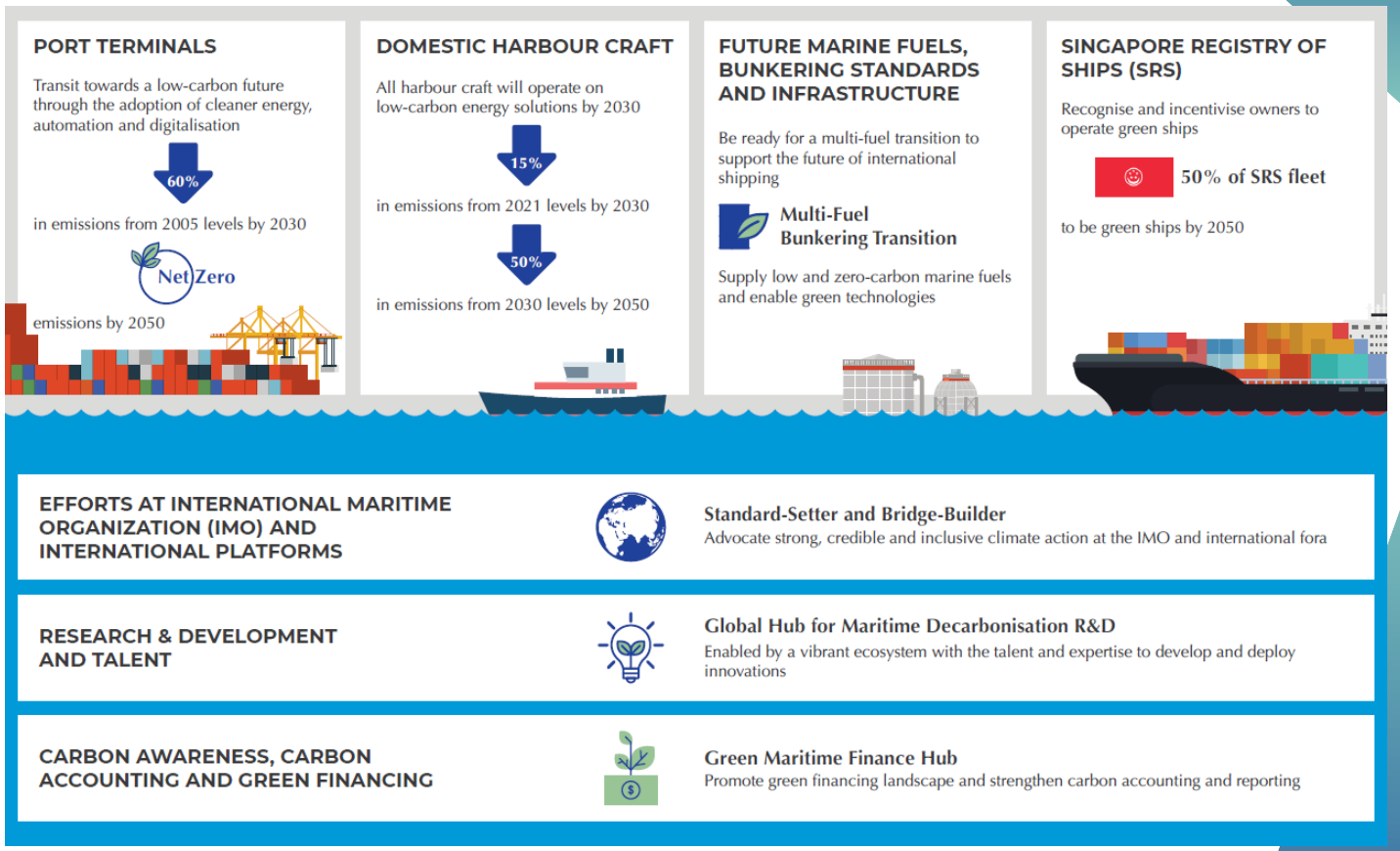
Staying ahead of the curve

Charting ambitious, long-term strategies through the Maritime Singapore Decarbonisation Blueprint

Key Objectives:



- Outline Singapore's strategic vision for maritime decarbonisation
- Catalyse cross-sector collaboration amongst value-chain partners, locally and overseas
- Support and encourage the development, uptake, and commercialisation of new green technologies



The Blueprint was co-created following a series of public and industry consultations with over 50 organisations

"We should adopt a mature technology at this moment to kick start the decarbonization process of the harbour crafts, and in transition in phases to future technologies when these technologies are ready." - ***BH GLOBAL CORPORATION LTD***

"As the world's fifth largest ship registry, Singapore can greatly influence the trajectory of zero-emission ship registration." - ***PACIFIC ENVIRONMENT***

"There is not one silver bullet technology for decarbonisation. The mix of technologies should include both currently (or soon) viable solutions, such as sustainable biofuels, and future technologies, such as hydrogen." - ***GOODFUELS***

Staying ahead of the curve

Leveraging digitalisation for energy efficiency and productivity

DigitalPORT@SG™

- A one-stop portal for maritime regulatory submissions, providing port stakeholders with real-time information to better coordinate, plan and allocate resources
- Enhances efficiency of port operations and minimises ships' idling time which cuts GHG emissions from ships

digitalCEANS

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Foster global systems interoperability across the maritime transport chain through **O**pen/**C**ommon **E**xchange **A**nd **N**etwork **S**tandardisation

- **Enhance Port Efficiencies**
- **Expand Digital Connectivity**
- **Create Business Opportunities & Catalyse Ecosystem Development**

Where We are Today

- Established MoU with strategic partners
- Developing Port Clearance API standards
- Developing technical standards referencing IMO's FAL compendium (non-technical)

Inclusive Innovation

Moving Forward Together

Global information-sharing and stakeholder collaboration through NextGEN

NEXT GEN | Towards Green and Efficient Navigation

A joint initiative by:

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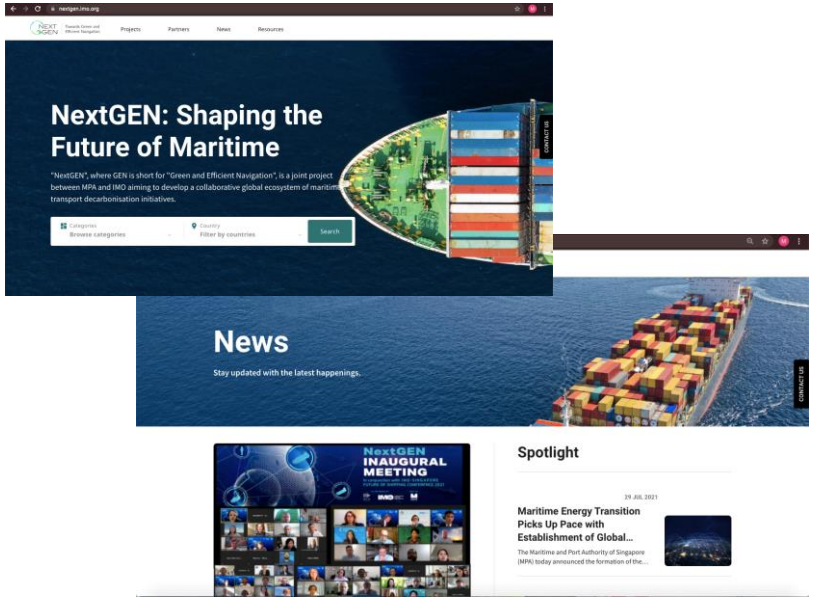
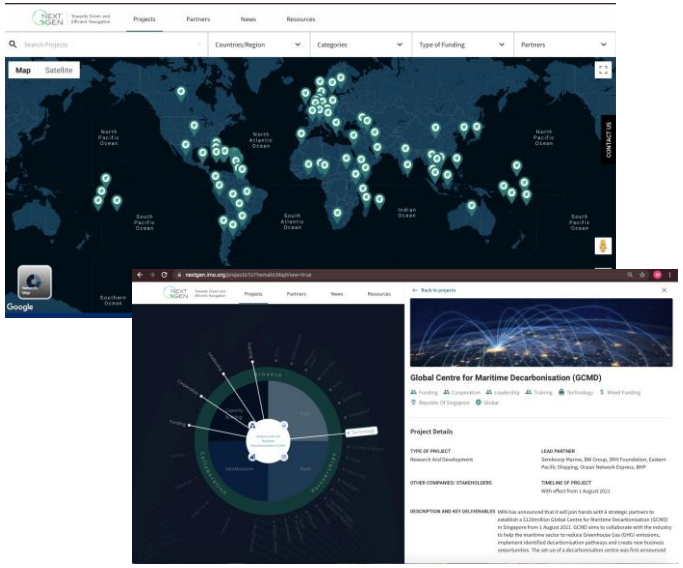
IMO INTERNATIONAL MARITIME ORGANIZATION

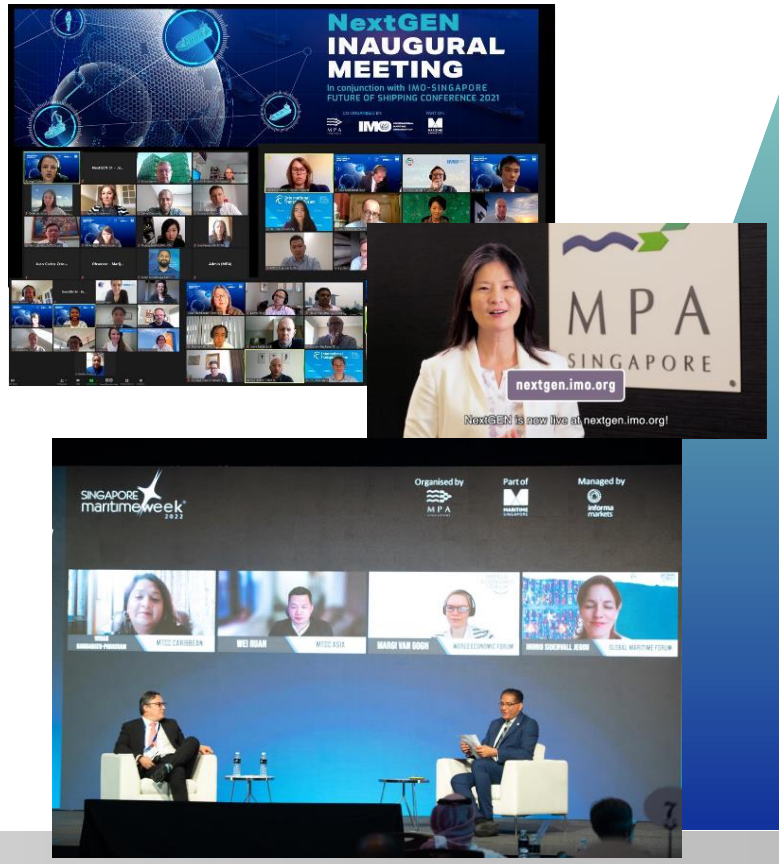
Tools and events to expand cooperation and info-sharing between stakeholders

Dynamic, global, one-stop resource website for maritime decarbonisation



Mapping of maritime decarbonisation universe **across the value chain**; users can search for projects by geography, fuel type or theme

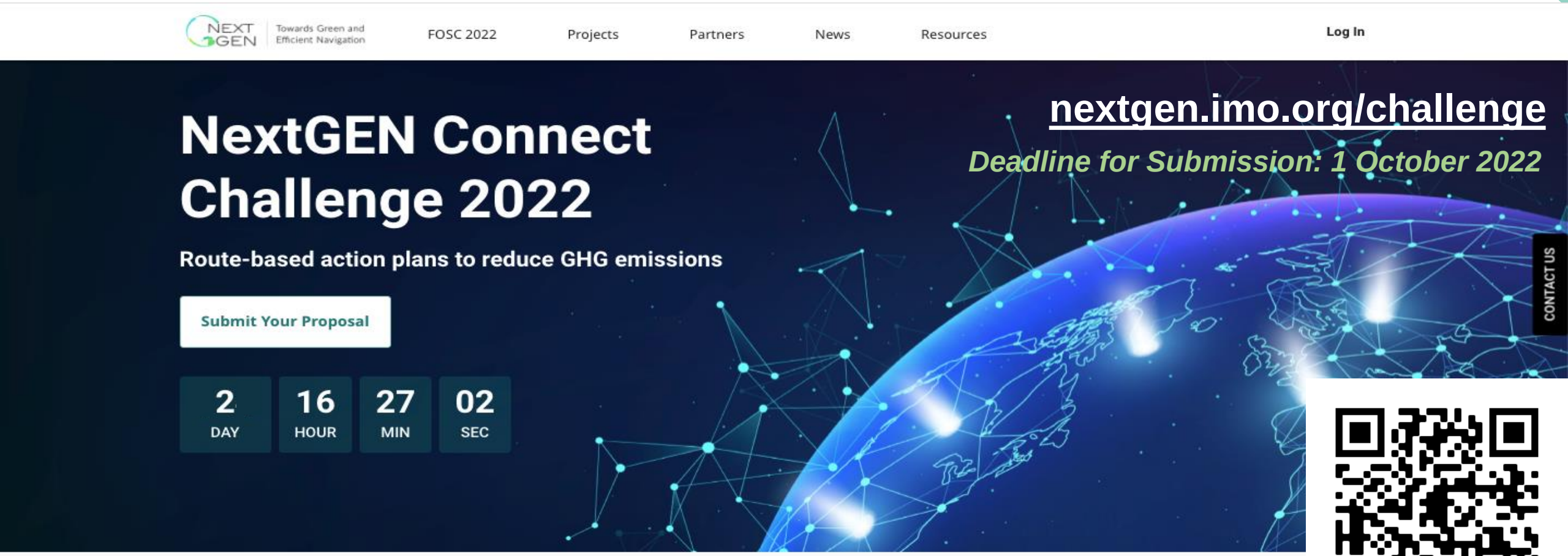




Moving Forward Together

Catalysing inclusive “route-based action plans” for GHG emissions reduction in Asia Pacific

NextGEN Connect invites stakeholders to propose “route-based action plans” to reduce greenhouse gas emissions between points along a shipping route in the Asia-Pacific region. The winning proposal will be implemented on a pilot basis with global partner support.



NextGEN Connect is organised by

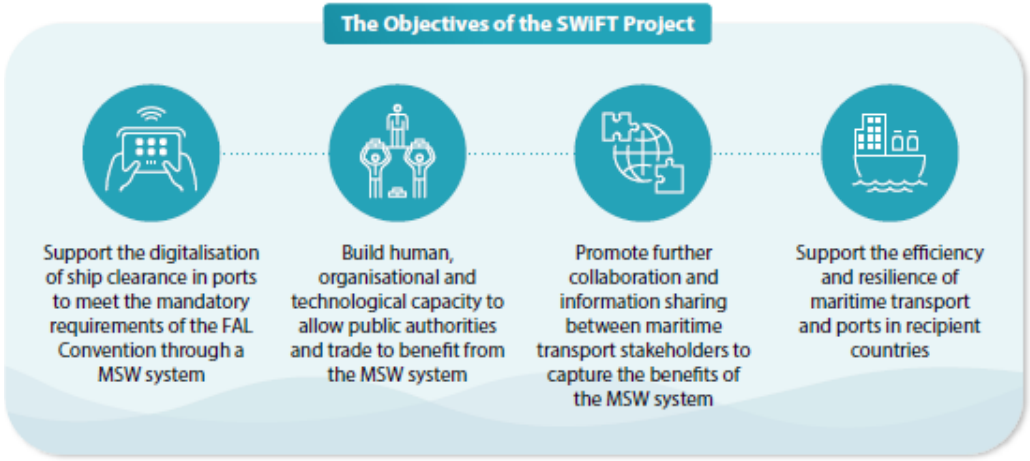
IMO INTERNATIONAL MARITIME ORGANIZATION

NEW TECHNOLOGIES FOR GREENER SHIPPING

MPA

Moving Forward Together

Technical cooperation to facilitate inclusive digital transformation



Source: Port of Lobito, Angola

- Call for expressions of interest in March 2021 to help developing countries build their own Maritime Single Windows (MSWs)
- On 15 Nov 2021, the pilot phase commenced in the Port of Lobito, Angola
- To share our experience from the pilot project, Singapore is looking at developing a resource kit containing learning points and guidance on the implementation of MSW systems.

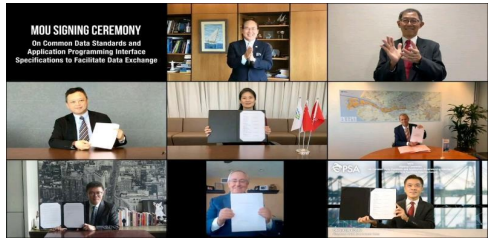
A joint initiative by:

MPA SINGAPORE

IMO INTERNATIONAL MARITIME ORGANIZATION

> **"The willingness and determination of the Republic of Angola to put forward the Port of Lobito as candidate for the IMO–Singapore pilot project to establish an efficient digitalized system for electronic exchange of information in ports for ship clearance, and consequently being selected, is in my humble opinion evidence that the country has (since opening its Permanent Representation to the IMO in London in 2005) been working very hard to make sure that our presence as a coastal State in the global economy is well noted and accounted for.**
>
> **Although aware of the challenges and complexities of implementing the project, Angola is ready to listen to and learn under IMO's and Singapore's wise guidance. We therefore thank the IMO and Singapore for their trust and confidence in our abilities to deliver what the project will demand."**
>
> *— Olivio Jacinto, Deputy General Director for Technical Affairs, Maritime Port Institute of Angola (IMPA)*

Join us in collaborative, future-ready and inclusive innovation



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SINGAPORE BUDGET 2022

Singapore outlines blueprint for maritime decarbonisation

An additional S$300 million to be spent to support strategies and goals to be achieved by 2050

Shipowners will get incentives for green ships, with the goal being 50% of the Singapore-flagged fleet to be green ships by 2050. PHOTO: REUTERS

Collaborative

Future-Ready

Inclusive

MPA SINGAPORE · MARITIME SINGAPORE

Innovation

Building innovation ecosystems

Staying ahead of the curve in decarbonisation and digitalisation

Moving forward together

Global Centre for MARITIME DECARBONISATION

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IMO-Singapore project to establish digital ship clearance system in Port of Lobito, Angola

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