

Port of Los Angeles – Port of Shanghai Green Shipping Corridor Partnership Implementation Plan Outline



Need and Ambition



Worldwide Need for **Action**



Why Create a Green Shipping Corridor



Scope of the Green Shipping Corridor



Port of Shanghai



POLA-POLB



Worldwide Need for **Action**



Climate Change is a worldwide phenomenon that demands urgency, seriousness and collective action.



Addressing carbon emissions from shipping and port activities is necessary to meet global climate goals and address local community impacts.



Port of Los Angeles- Port of Shanghai Green Shipping Corridor is responding to this challenge, by bringing together relevant stakeholders to reduce carbon emissions on one of the world's busiest cargo routes.



Why Create a Green Shipping Corridor



Realize actual carbon emissions reductions for shipping and port-related activities between Port of Shanghai and the ports of Los Angeles and Long Beach.



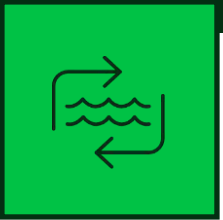
Showcase cutting edge goods movement technologies, decarbonization applications, and best management practices.



Serve as a model for decarbonizing the movement of goods over large-scale supply chains of all kinds.



Catalyze technological, economic and policy efforts to progressively decarbonize shipping and port-related activities.



Scope of the Green Shipping Corridor

The participants of this Green Shipping Corridor strive to reduce carbon emissions from shipping and port activities and to address local community impacts:

The incoming gate of the departure terminal including ship loading activities;



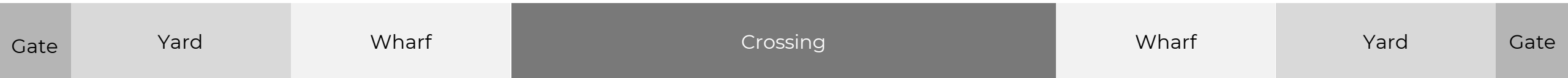
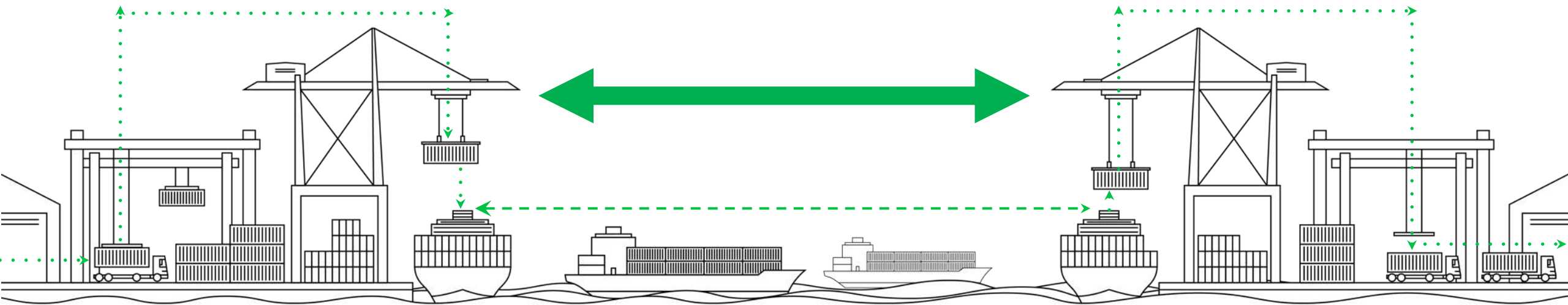
Transit along the shipping route to the arrival terminal;

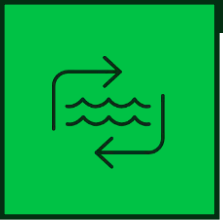


Unloading of the ship and movement to the outgoing gate of the arrival terminal.

Port of Shanghai

Ports of Los Angeles/Long Beach





Scope of the Green Shipping Corridor (cont.)



Who is involved



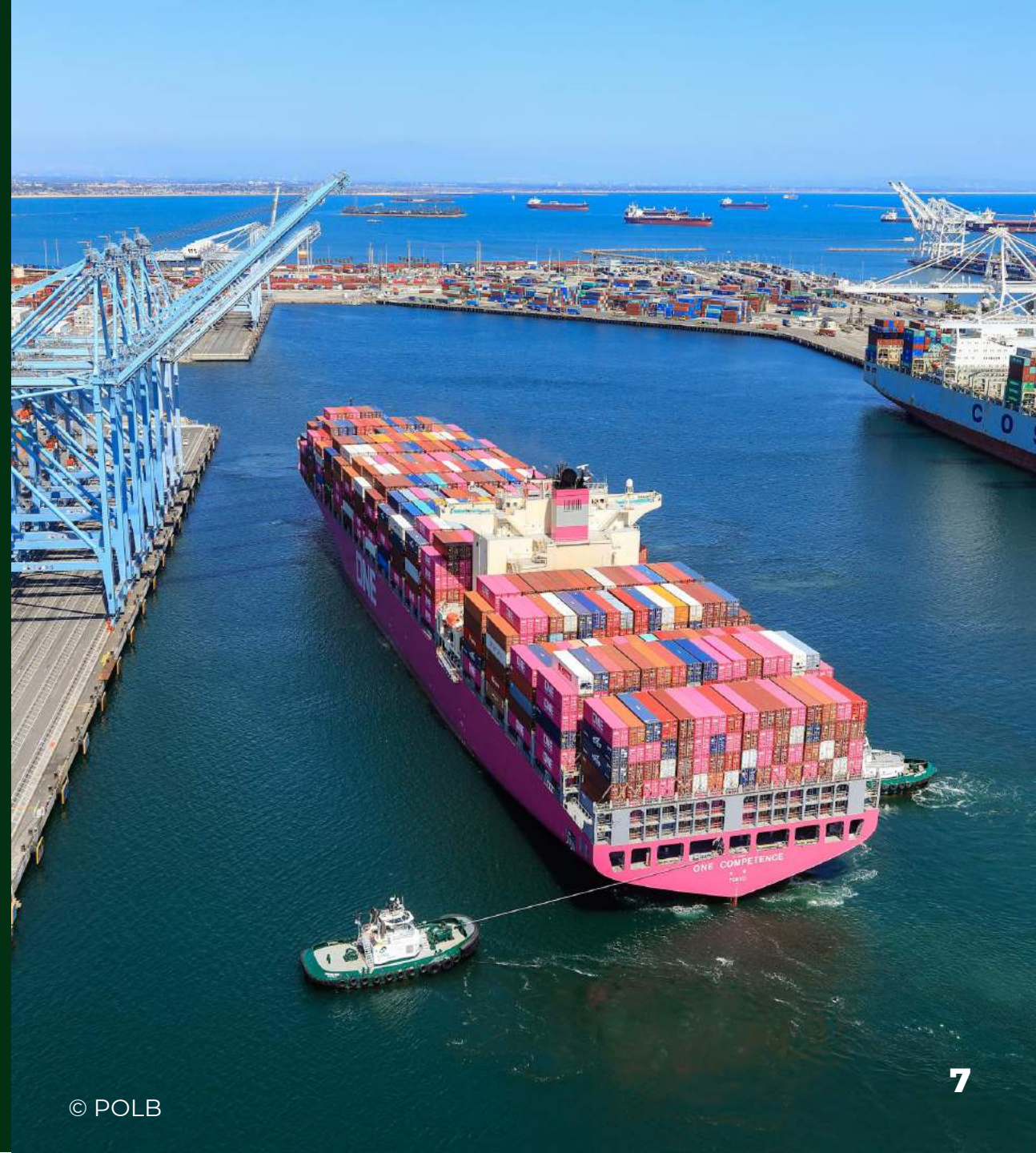
Partners



Voluntary Collaboration



How Do We Work Together





Partners

Project Leadership



Core Partners





Voluntary **Collaboration**



Collaboration and action by our partners –

including key maritime stakeholders for this critical trade route and others worldwide
- acknowledges the critical importance of climate change.



Ports, Carriers, Cargo Owners

working together voluntarily allows them to encourage each other, share best practices, and combine resources.



Incorporate worldwide sustainability planning and action, within the emission reduction framework established by

IMO, fully considering the legal and political environment of relevant countries, and including coordination with relevant international stakeholders.

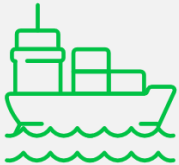


How Do We Work Together?

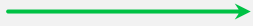
Provide Input to Implementation Plan and Identify Achievable Interim and Long-term Goals



Ports & Terminals



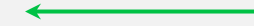
Carriers



Cargo Owners

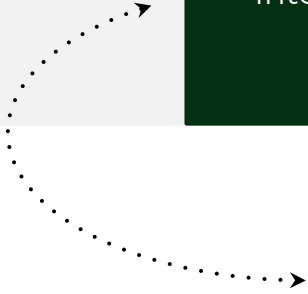


Knowledge Partners

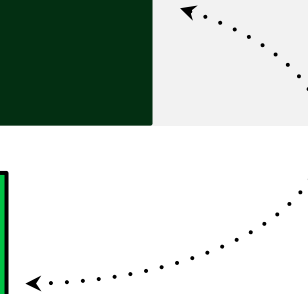


Combined Partnership Group

- Define Green Shipping Corridor Goals
- Lead Stakeholder Engagement
- Consider Addition of new Partners
- Develop and approve Implementation Plan
- Ongoing Corridor Program Administration and Development
- International Collaboration and Knowledge Exchange



External Stakeholders
Dialog with Partners to identify challenges, opportunities, and constraints for implementation



Implementation



Key Definitions



Goals





Key Definitions

Green Shipping Corridor (GSC) - A shipping route between two major port hubs on which to deploy new technologies, and measure and support the reduction of carbon emissions of shipping and port activities through public and private actions and policies.

Well to Wake (WTW) Lifecycle Emissions - Includes emissions related to every stage in the lifecycle of a fuel — from its production until it is used to fuel a ship

Carbon Emissions - Carbon dioxide equivalent (CO₂-eq) emissions is a metric measure used to compare emissions from various greenhouse gases (GHGs) and other substances based on their global warming potential (GWP). Equivalent emissions are calculated following guidance from United Nations Intergovernmental Panel on Climate Change (UN IPCC) and International Maritime Organization (IMO).



Key Definitions (cont.)

Emission Baseline - emission intensity statistics to reflect carbon emission level of this shipping route during the Baseline Year of 2019.

Reduced Lifecycle Carbon Emission Ship - A ship having lower WTW CO₂e emissions compared to **Emission Baseline**.

Zero Lifecycle Carbon Emission Ship - A ship having zero WTW CO₂e emissions.



Goals



Carrier Partners

Work together to phase in reduced lifecycle carbon (CO₂e) emission shipping through the 2020s, including:

Develop and improve technical and operational efficiency for all participating shipping lines using this corridor.

- Evaluate and implement operational and technical optimization strategies to reduce carbon emissions of ships and fleets.
- Continue to enhance the ratio of deployment and usage of shore-based power facilities for ships.

By 2025, begin deploying reduced or zero lifecycle carbon emission capable ships in the corridor.

Use Reduced or Zero Lifecycle Carbon Emission Ships when feasible, with increasing utilization of Zero Lifecycle Carbon Emission Ships over time.

By 2030, it is envisioned that qualified and willing shipping lines will work together to demonstrate the feasibility of deploying the world's first Zero Lifecycle Carbon Emission Container Ship(s).



Goals (cont.)



Port Partners

- Facilitate and support investment in and development of clean marine fueling infrastructure and supply by relevant stakeholders in order to support future deployments of reduced or zero lifecycle carbon emission ships by or before 2025.
- Continue to reduce carbon emissions from terminal operations.
- Work to align current incentive programs to support the deployment of reduced or zero lifecycle carbon emission ships in this corridor.
- Provide reliable equipment and facilitate service for the usage of shore-based power for at-berth ships.



Cargo Owner Partners

- Contract with carriers to use zero lifecycle carbon emission shipping services, with increasing percentages over time.
- Support policy measures that will enable reduced and zero lifecycle carbon emission solutions to become cost competitive.



All Partners

- Establish and communicate tangible carbon (CO₂e) emission reduction goals.
- Review and establish new or adjusted goals over time.
- Develop metrics to track decarbonization progress.
- Report on progress and identify steps for further improvement.
- Support the transition to Reduced and Zero Lifecycle Carbon Emission capable ships in the corridor.
- Support demonstrating the feasibility of deploying the world's first Zero Lifecycle Carbon Emission Container Ship(s).

Upcoming Partnership Activities



Future Partnership Organization



Protocol/Metrics for Decarbonization Tracking



Fuels, Equipment & Infrastructure





Future Partnership Organization

Initial expression to the world of the existence of this effort



Website



MOU



Other organizational structure

As the **Partnership moves from planning to implementation**, consideration will need to be given to how the Partnership organizes itself going forward.

It is **expected** that an organization will be needed to provide:

- Oversight for corridor implementation and operation.
- Coordination for communication and reporting.
- Supporting resources.
- Website development and maintenance.





Protocol/Metrics for Decarbonization Tracking

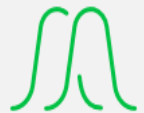


The Partnership will track progress of the GSC .



A Partnership working group will be established to consider how to utilize a number of tools to track progress including:

- Annual emissions inventories (IMO, Los Angeles and Long Beach Ports, SMTC, SIPG, etc.).
- New or modified inventories as necessary, including operational performance potentially measured in both total emissions & intensity basis.
- Deployment metrics including IMO metrics like EEDI, EEXI, & CII.



Details of monitoring & reporting to be developed over the course of 2023-2024.



Fuels, Equipment, & Infrastructure

Ongoing Partnership activities include:



Fuel Demand/Supply Analysis

- Scope of Work to be determined by Partners.



Zero Carbon Emissions Equipment Deployment

- Ports and terminals will work to support reduced and zero lifecycle carbon emission shipping operations.



Infrastructure Development

- Timeline and need.
- Ports prioritize permitting and environmental review.



Fuels, Equipment, & Infrastructure (cont.)

Ongoing Partnership activities include:



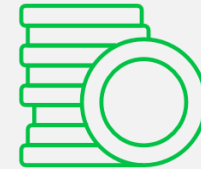
Technology Advancement

- Partnership review/support of potential goal advancing technologies.



Green Shipping Policy Advocacy

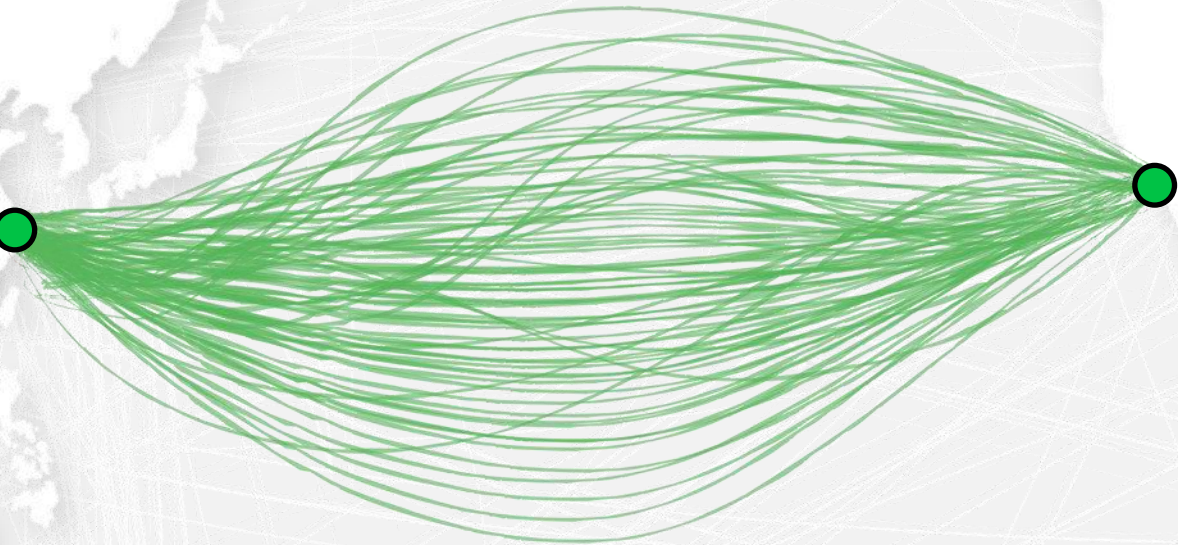
Coordination with international organizations and governments in the development of policy to encourage green shipping.



Investment Opportunities

- Advance and enable investment opportunities for infrastructure and technologies.
- Coordination with multilateral financing institutions and private sector investors.

Port of Shanghai



Port of Los Angeles

