

Energy Demand and Freight Systems

MAP Forum



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Port Authority Overview

- Since 1921, the Port Authority has moved the region forward by managing and maintaining vital trade and transportation links in the following key business areas:
 - Aviation
 - Tunnels, Bridges & Terminals
 - PATH
 - Port
 - World Trade Center



Port Authority – Port Facilities

- Landlord port model
- Largest port on East Coast
- 2nd largest in the nation (2022)
- 3,000 acres of waterfront property
- Multi-purpose port: containers, auto, cruise, bulk (dry & liquid)
- Port-wide intermodal rail network





Freight Movement in the Region

Freight Movement - Regional

The Port of New York & New Jersey is the largest container port on the U.S. East Coast and second largest in the nation. Worldwide, it is the 23rd largest.

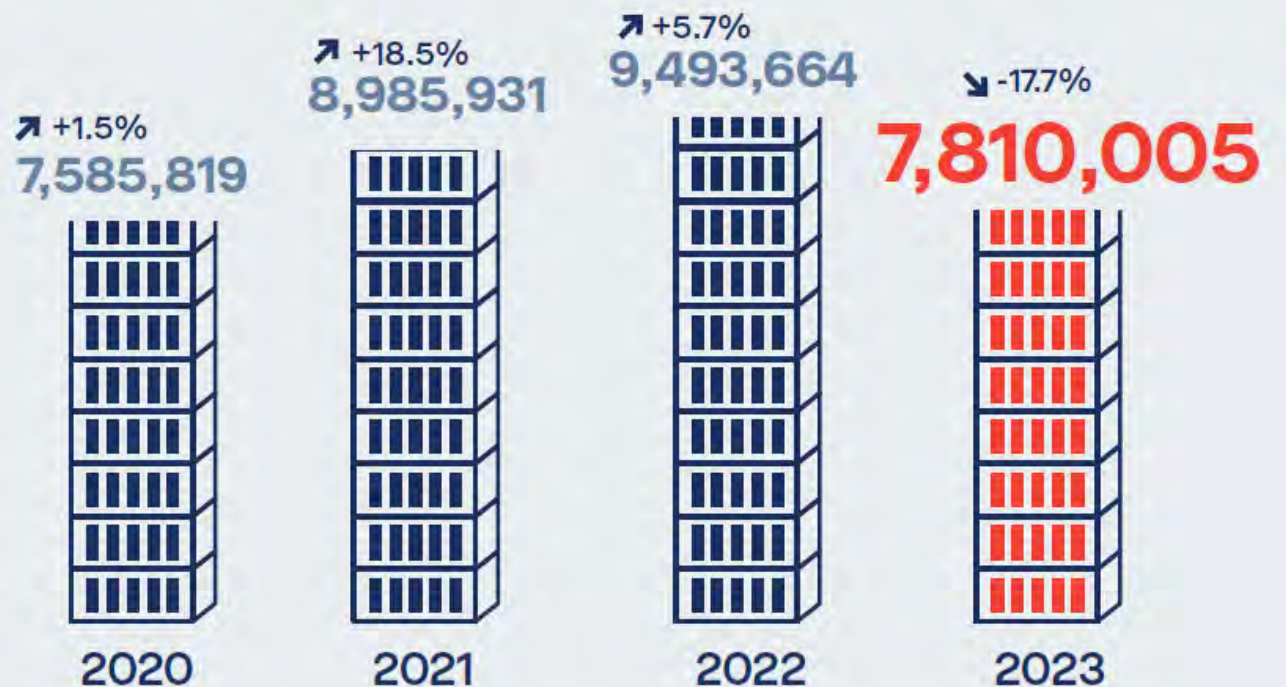
Market Share

(2023, Loaded Import TEUs)

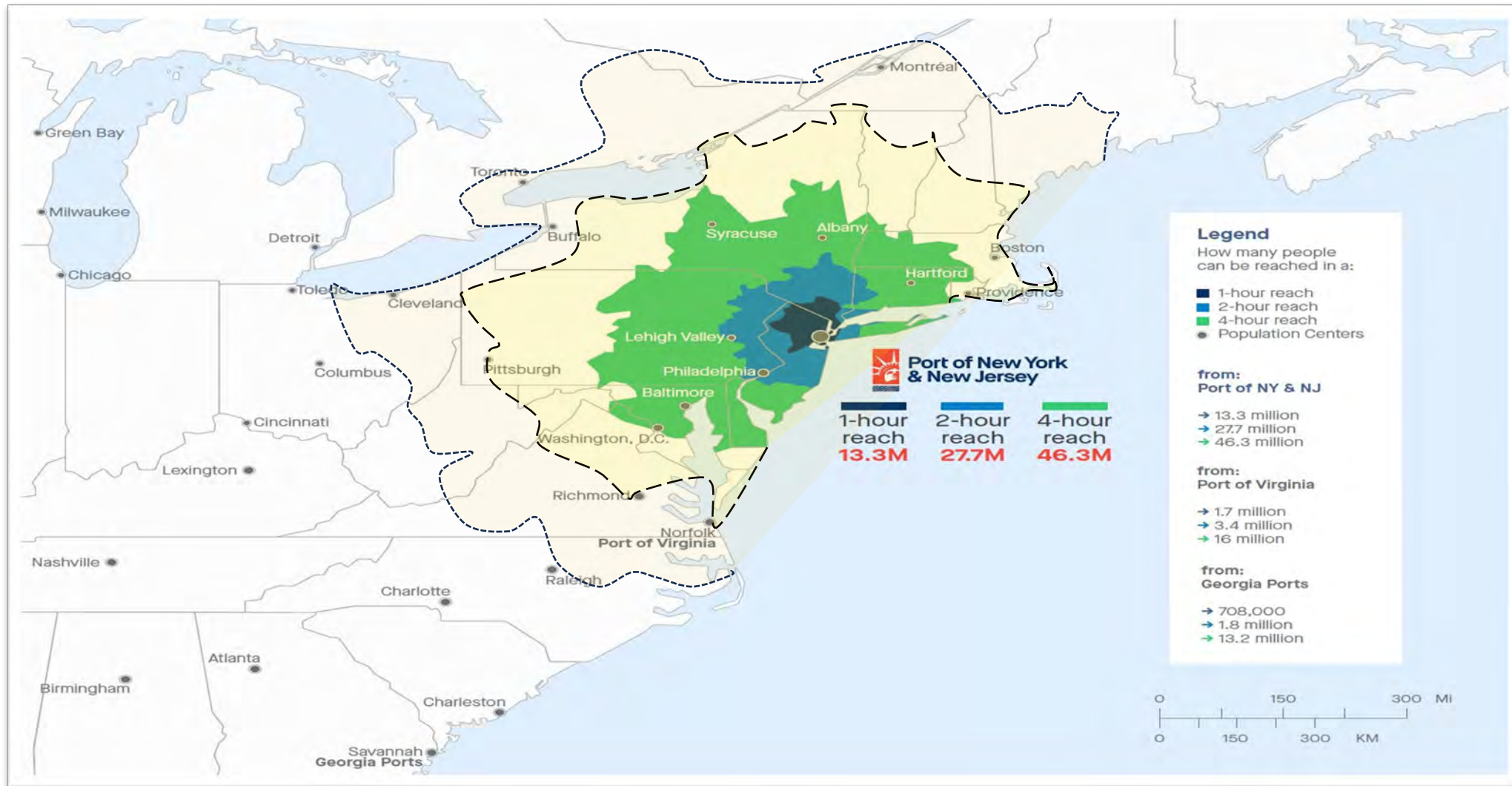


Cargo Volumes

(by TEU Volume)



Freight Movement - Regional



Freight Movement - Rail

- Four on-dock ExpressRail facilities serving all six marine terminals
- Two Class I railroads, CSX and Norfolk Southern
- 1.5 million annual lift capacity with over 50 destinations
- 706,774 rail lifts in 2022





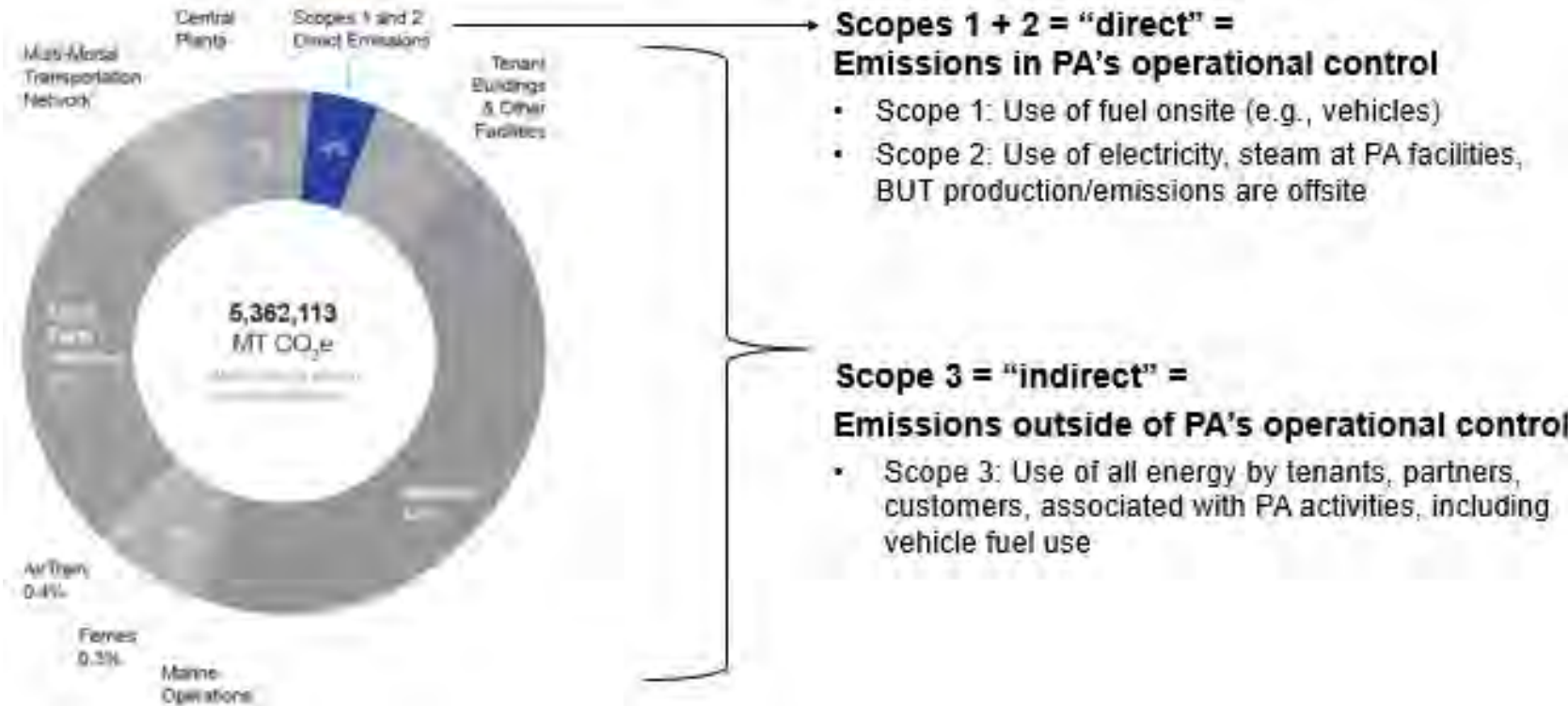
Freight and Energy



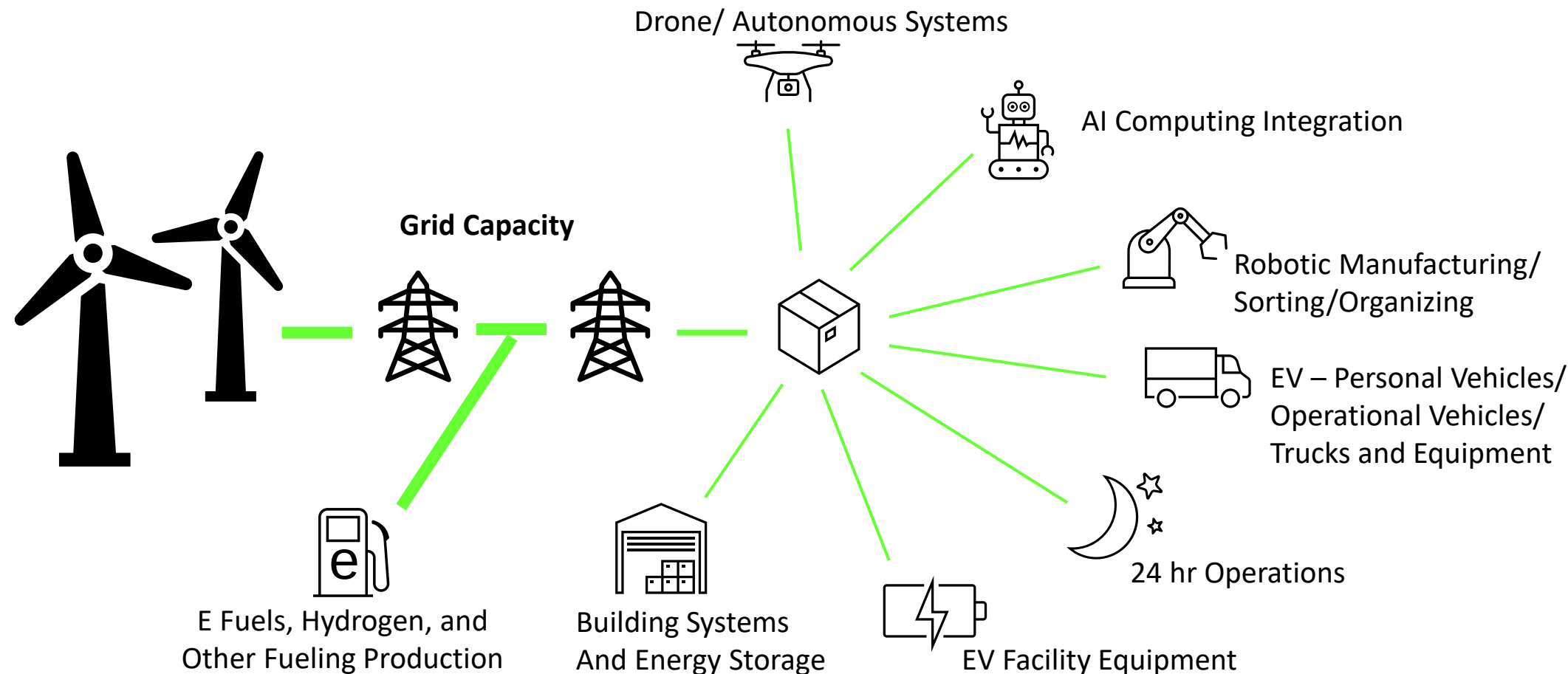
Port Authority's Net Zero Roadmap

- In 2021, Port Authority embraced Biden Administration's GHG reduction target of Net Zero by 2050, first U.S. transportation agency to do so
 - 50% agency-wide direct emissions reduction by 2030, cutting 137,000 tons annual GHG emissions
- The Net Zero Roadmap, released in September 2023, identifies areas where we can act and where we can influence

Port Authority Emissions



Growth of Energy Demand in Freight



Zero Emissions Freight System Network

2019 U.S. GHG EMISSIONS

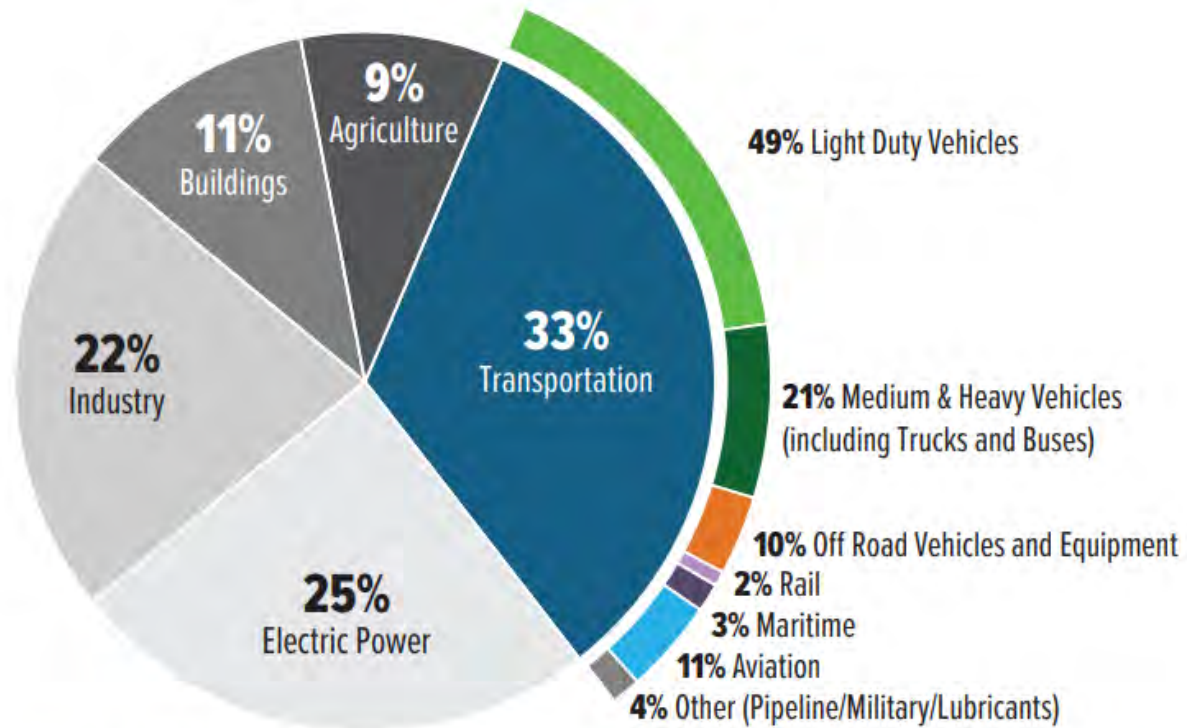


Figure 2. Total 2019 U.S. GHG emissions with transportation and mobile sources breakdown. Data derived from the EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks [REF. 8](#). This Blueprint uses 2019 as a baseline since impacts due to COVID-19 complicate the use of later data.

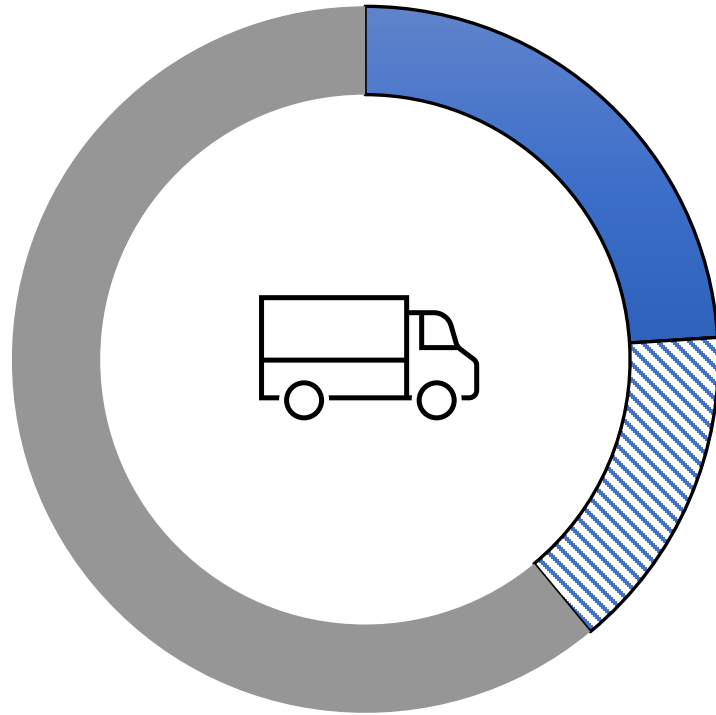
Zero Emissions Freight System Network



Average pounds of GHG emissions per passenger mile or freight ton-mile using for existing fossil fuel technologies.

- Changes in Land-Use Planning and Transportation Systems Design
- Transportation Demand Management (TDM)
- Supply Chain Management and Freight Efficiency
- **Create opportunities for modal shifts**

Fuel Impacts on Freight

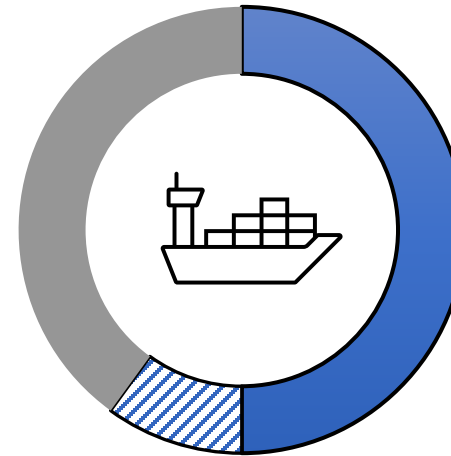


24-39%

Of the total operating cost of a truck is fuel
*depending on class and load type

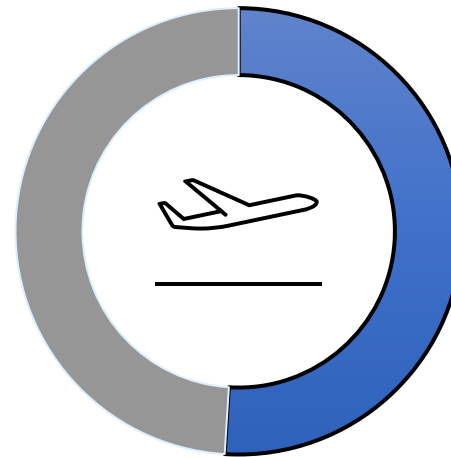
Sources: [The Real Cost of Trucking](#)
- [Per Mile Operating Cost of a Commercial Truck](#)
([thetruckersreport.com](#)) , [Breakeven Costs of Operating a Commercial Truck](#)
- [JBF Consulting | Supply Chain Technology Consulting Firm](#) ([jbf-consulting.com](#)), ATRI

- Fuel is one of the top costs for freight operation
- Fuel is also one of the most unpredictable cost for shipping



50-60%

Of the total operating cost of a vessel is fuel
*depending on vessel type
[morethanshipping.com](#)



51%

Average of the total operating costs expected to be dedicated to fuel for aircraft operations
*depending on aircraft type
Source: US DOT 41 – 2006 via [THE WORLD BANK GROUP](#)

Zero Emissions Freight System Network

NATIONAL BLUEPRINT FOR TRANSPORTATION DECARBONIZATION

Opportunities for Modal Shifts



Intermodal Rail



Intermodal Barge



Bulk Materials Barge



Trailer on Barge

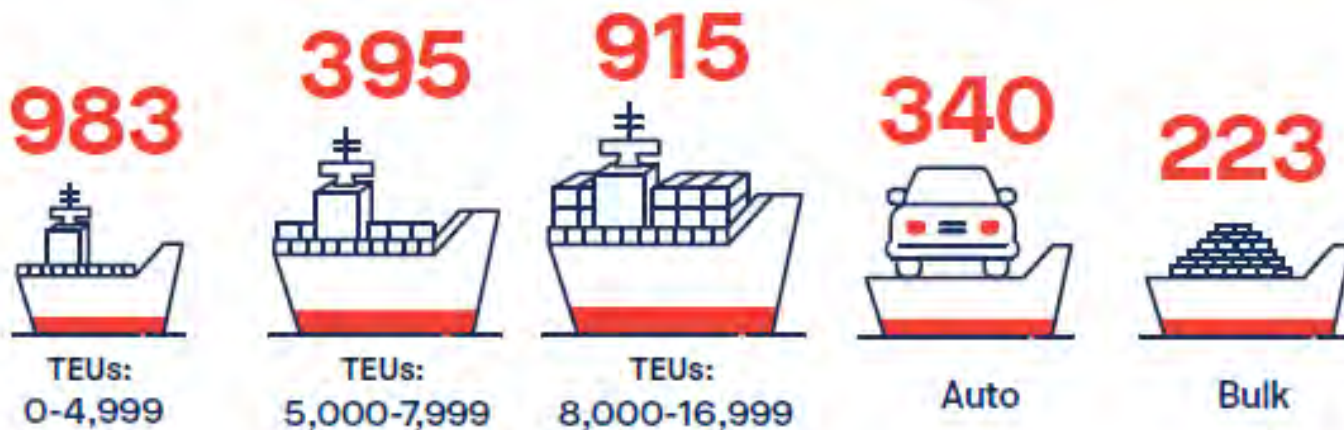


Trailer on Rail

Zero Emissions Focus: Maritime Shipping

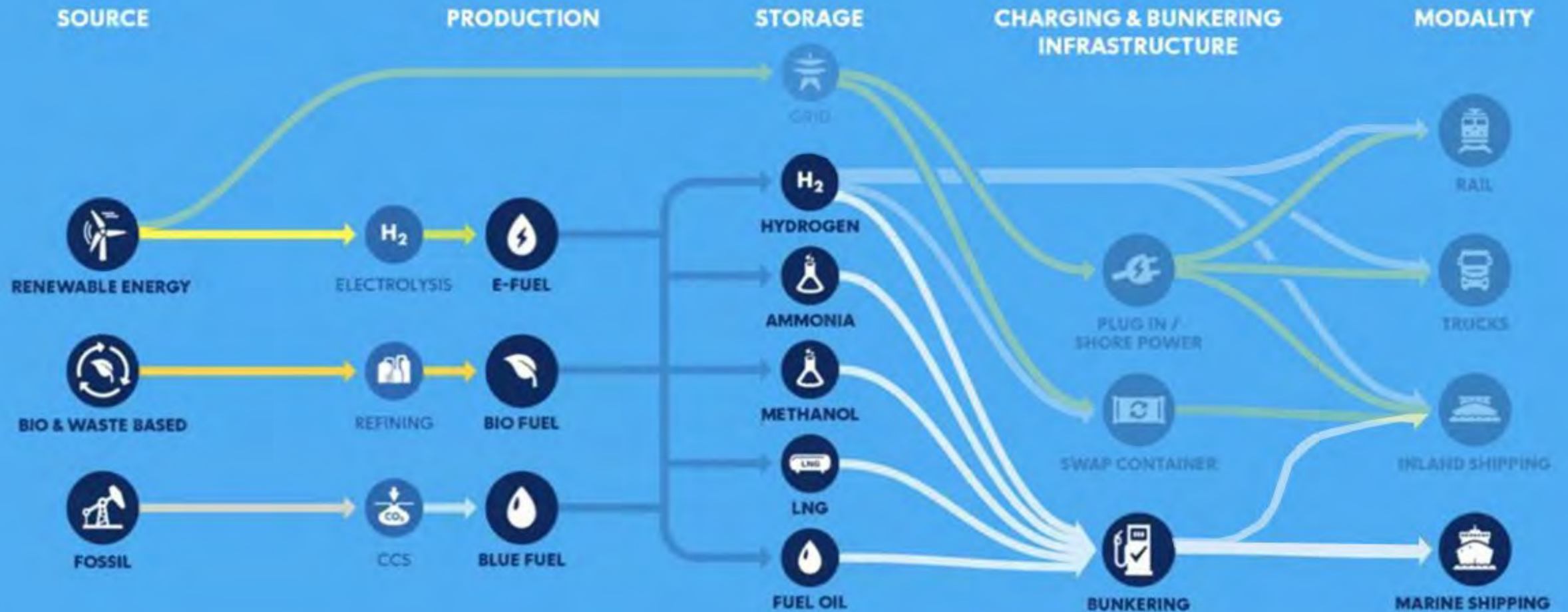
Port of NYNJ Vessel Calls

(2023, TEUs)



- Global shipping accounts for a small percentage of global emissions
- Ships transit times can span anywhere from a few days to over 30 days between ports
- Refueling is incredibly important function of a port and typically occurs at the same time as a vessel is unloaded/loaded
- Other vessels including, cruise, harbor craft, and offshore wind vessels need fuel sources.

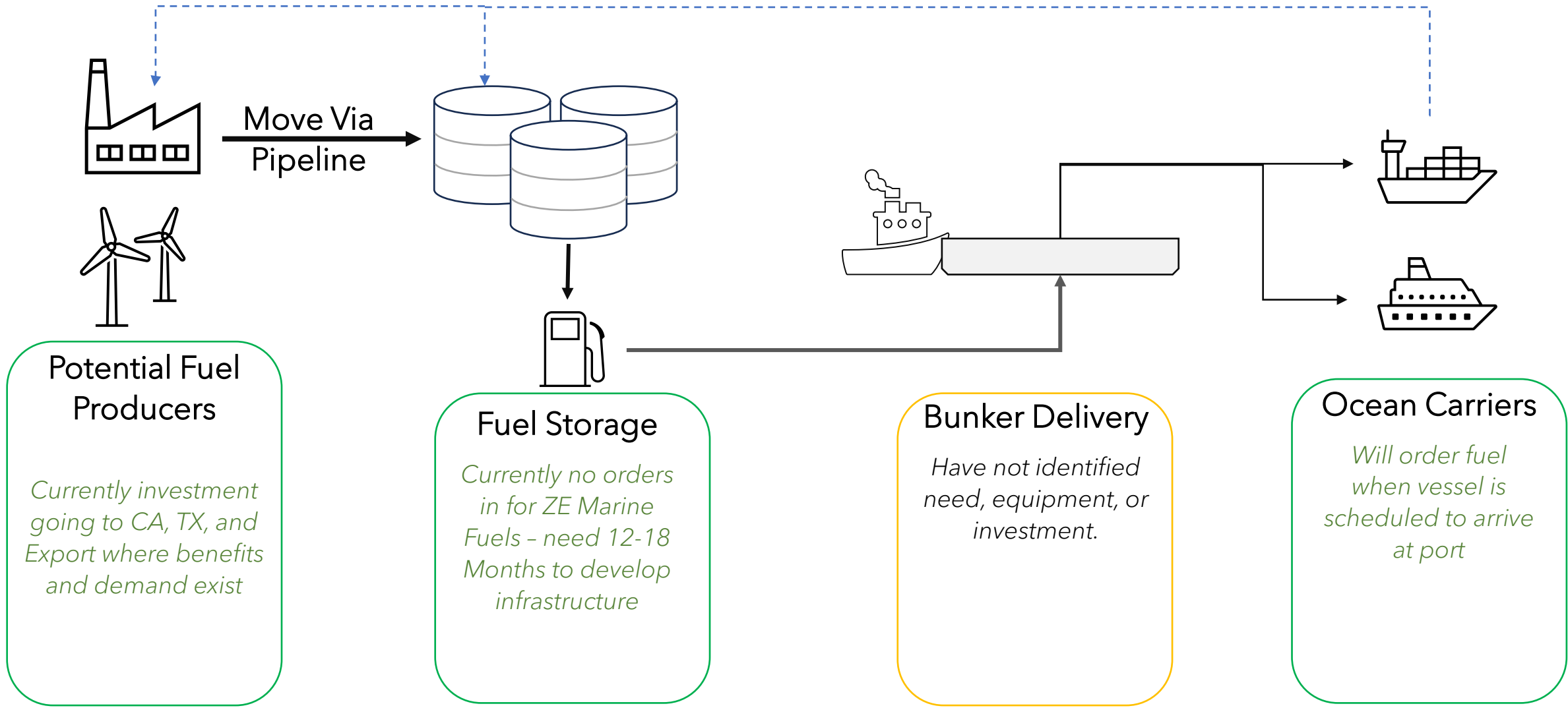
Maritime



Graphic from Port of Rotterdam

Maritime - PoNYNJ

Ocean Carriers Request Blends and Deliveries



Summary of Freight Energy

Large challenges are ahead:

- Increasing demands for electrical infrastructure and supply to support electrification
- Investment in the production and delivery of next generation fuels or vital for freight
- Creation of new, sustainable, and reliable supply chains around the world
- Competitive disadvantage without local production and distribution.
- Lack of Sustainable fuel support from advocacy community

Opportunity Areas

- Significant number companies have or are working towards GHG or EV related goals
- Incentives via legislation, and coordination with utilities, and municipalities
- Forging partnerships and cooperation between private and public sectors.
- Piloting of emerging technological solutions



Questions

Thank You!

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