LNG - LOOKING AHEAD

AMERICAN ASSOCIATION OF PORT AUTHORITIES

PHIL MORRELL
VP MARINE OPERATIONS, COMMERCIAL
TOTE SERVICES

Building the best, by land, air and sea.

SALTCHUK

Our values: safety, reliability and commitment | **Family owned and managed** | **$2.8 billion in annual revenues** | **More than 7,500 employees** | **Investment Grade credit rating** | **90% of earnings reinvested**

MARINE RESOURCES — FOSS	Largest coastal and harbor service company in the United States	Revenues $435M	Over 150 tugs and barges	2 Shipyards	International towing operations	Hawaii inter-island common carrier
TRUCKING — INTERSTATE	National full truckload operation	Revenues $300M	1,500 Tractors	5,600 Trailers	18 Terminals	
PETROLEUM DISTRIBUTION — NorthStar Petroleum	Independent petroleum marketer and distributor in Alaska & Hawaii	Revenues $800M	Over 20 million gallons of fuel storage capacity			
AIR CARGO — Northern Aviation Services	Largest all-cargo air carrier in Alaska & Hawaii	Revenues $165M	100-150 weekly scheduled flights	Ad-hoc 737 charter service in N.America		
DOMESTIC SHIPPING & LOGISTICS — TOTE	Leading domestic logistics & marine transportation provider	Revenues $700M	5 Vessels; 4 Sailings per week	Heavy Haul Trucking	170,000 square feet of warehouse	325 Tractors
INTERNATIONAL SHIPPING & LOGISTICS — Tropical Shipping	Cargo transportation to the Bahamas & The Caribbean	Revenues $500M	14 vessels	Ports from Canada to South Florida	Cargo insurance, consolidation and logistics	Fixed day sailings, fastest transit times

updated 8.15.14

TOTE

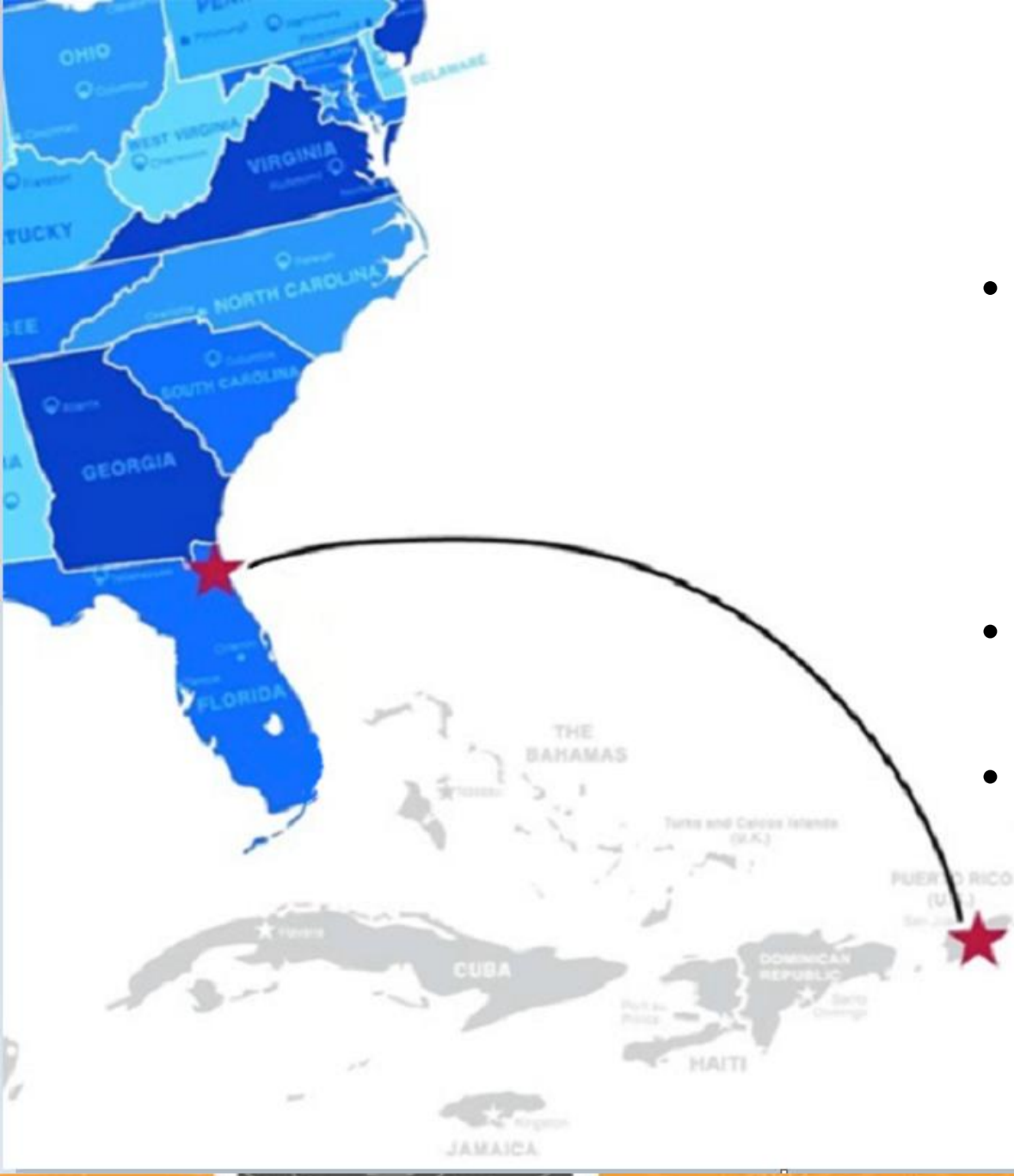
- High-speed, high-quality liner service in US Domestic Trade
  - Washington to Alaska
  - Florida to Puerto Rico
- Logistics based operations in Alaska, Hawaii, and Puerto Rico
  - Terminals in Anchorage, Fairbanks, Kenai, Kodiak, Prudhoe Bay and Seward, as well as Tacoma, WA, Houston, TX, Blaine, MN, and Edmonton, AB
  - Jacksonville and other Southeast locations
- Full technical management and partial management/crewing services

TOTE Maritime TOTE Shipholdings TOTE Services TOTE Logistics

Alaska

- Totem Ocean Trailer Express has been serving Alaska since 1982
- Twice-weekly service to Anchorage
- Transports 30% of all cargo to Alaska
- Orca vessels, delivered in 2003, were built for Alaska
- Currently the most environmentally friendly ships in the trade

Puerto Rico

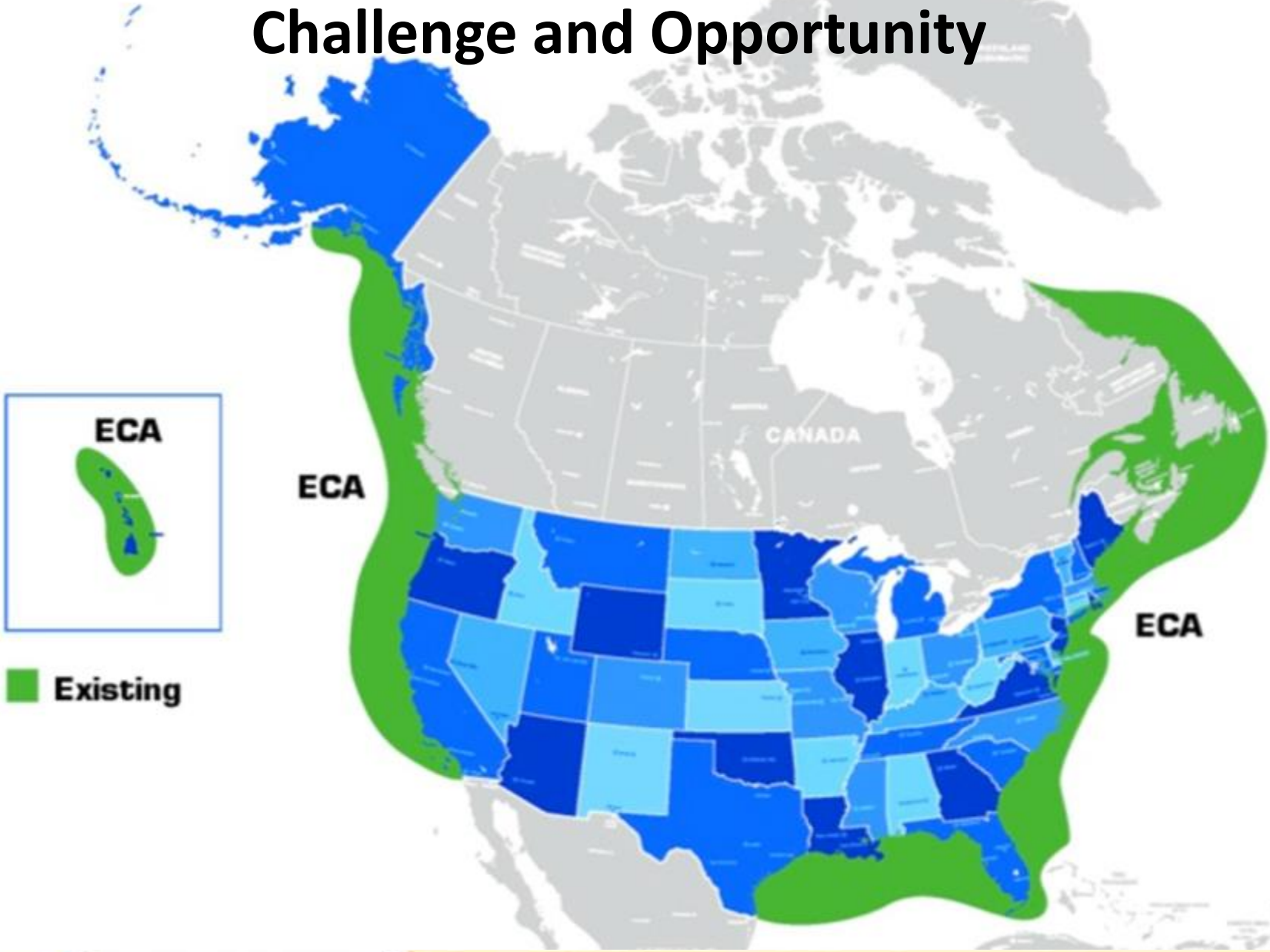


- Sea Star Line offers twice-weekly service between Jacksonville and San Juan, PR and select Caribbean destinations
- Transport 23% of all cargo to Puerto Rico
- Ro/Ro, Ro/Con, break bulk and bulk liquid capabilities

TOTE Logistics

Acquisition in May 2013 significantly increased cargo consolidation, warehousing, trucking and other logistics capabilities

North American Emission Control Area (ECA) Challenge and Opportunity



Possible Solutions

- **Do nothing:** Cost of 1% compliant IFO 380 is significantly higher with further increases expected in 2015 and beyond
- **Install exhaust gas cleaning system:** Scrubbers use existing fuel with added costs
- **Convert to Natural Gas:** Meet all current and future emissions requirements, cleanest of all options

LNG – A Clean & Safe Fuel

- Conversion to natural gas will reduce ship emissions well below even the world's most stringent air quality standards that are outlined in the North American Emissions Control Areas
- LNG will virtually eliminate Particulate Matter (PM) and dramatically reduce Sulfur Dioxide (SOx) Nitrous Oxide (NOx) and Carbon Dioxide (CO2).
- No other viable fuel source provides the same levels of environmental safety

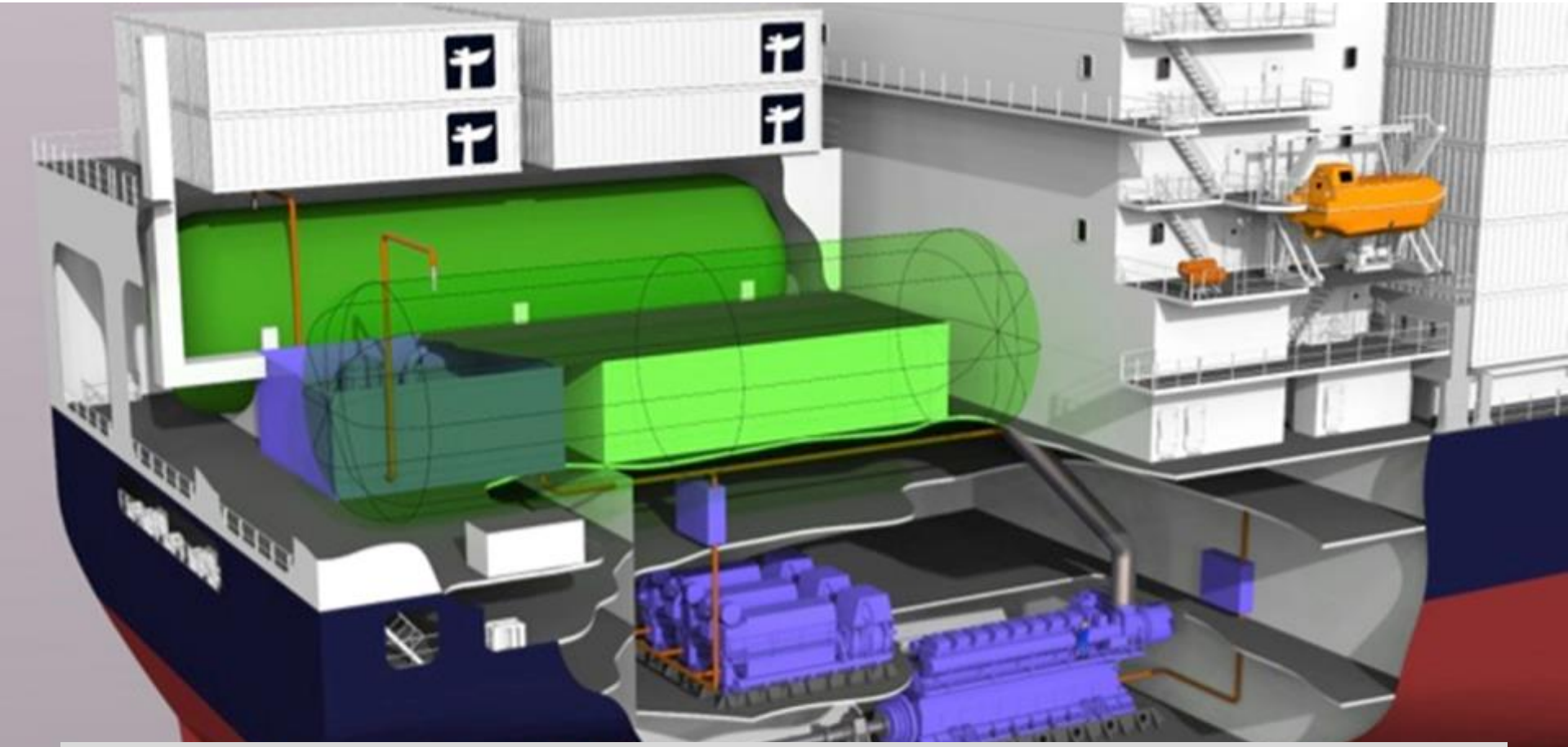
MARLIN Class

- First Steel Cutting on February 24, 2014
- Keel July and November 2014
- Engine mounted for Hull 495
- Launch on schedule April and August 2015

New LNG Ships – *MARLIN Class*

- 3100 TEU
- First LNG container ships in the world
- Dual fuel capable MAN engine
- Bunker in Jacksonville
- First delivery 4th QTR 2015, second 1st QTR 2016

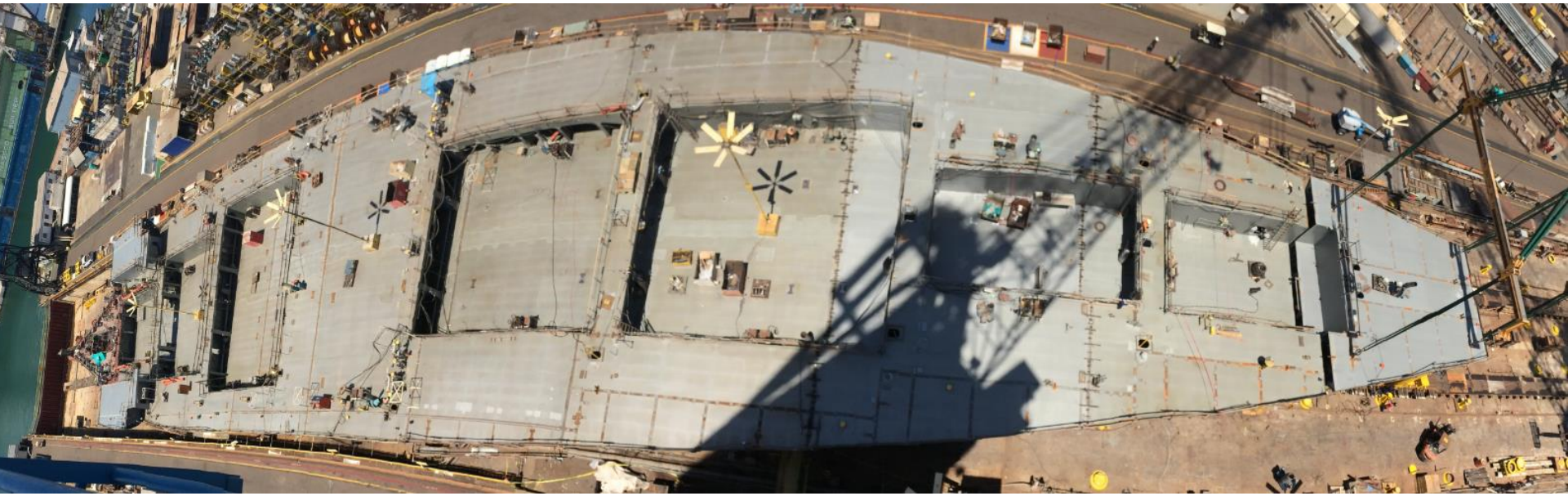
MARLIN Class



- Slow speed engine fueled by LNG
- Dual fuel capable
- Two 900 cubic meter LNG tanks
- MAN ME-GI Direct drive
- Main and Auxiliary Engines manufactured by Doosan

Bow Thruster

Dual Fuel Diesel Generators (DFDG)



Fisheye view of Hull 495 on Way 4

LNG Tank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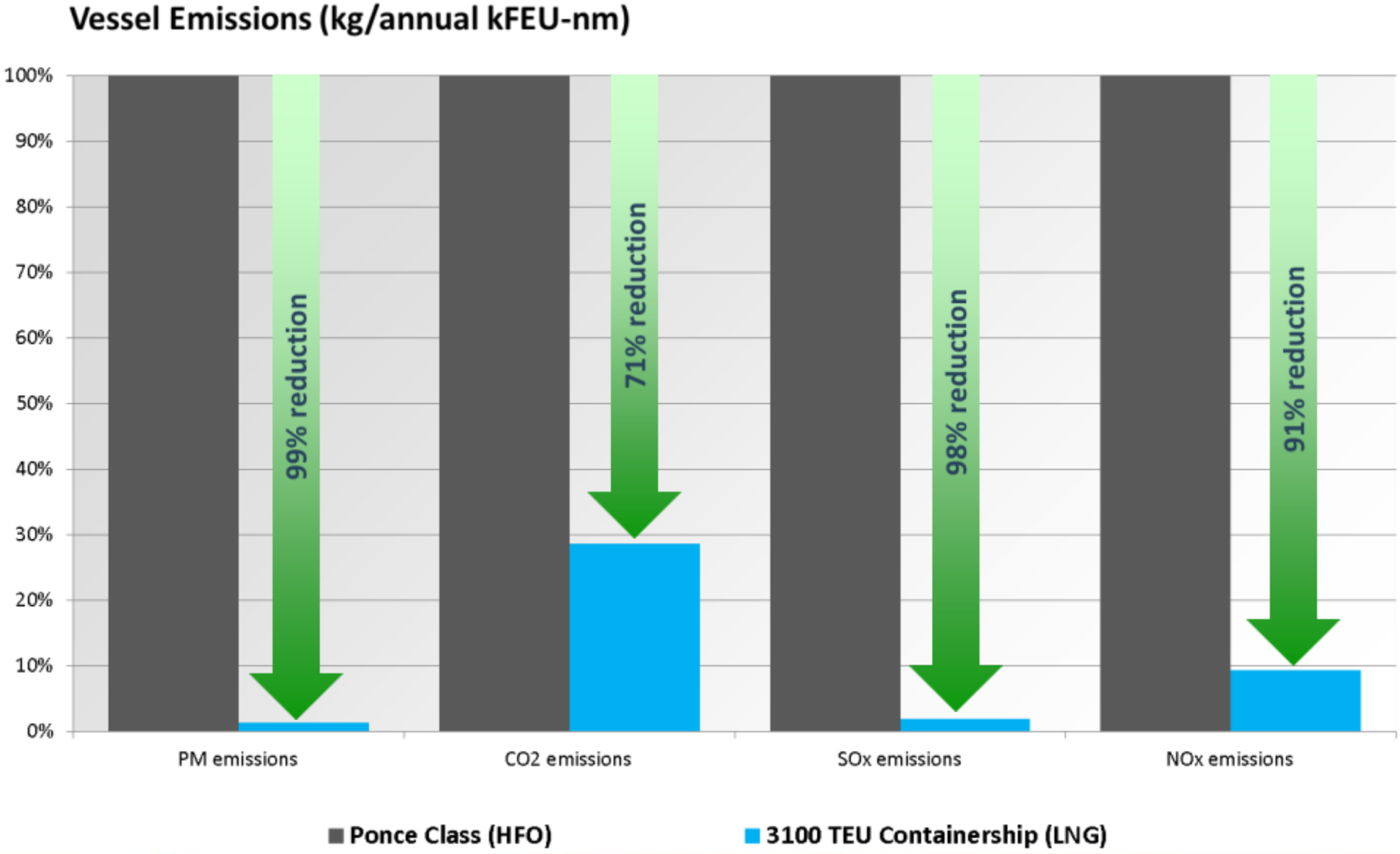
Emissions Comparison: *Ponce* versus *Marlin*



Other Important Vessel Attributes

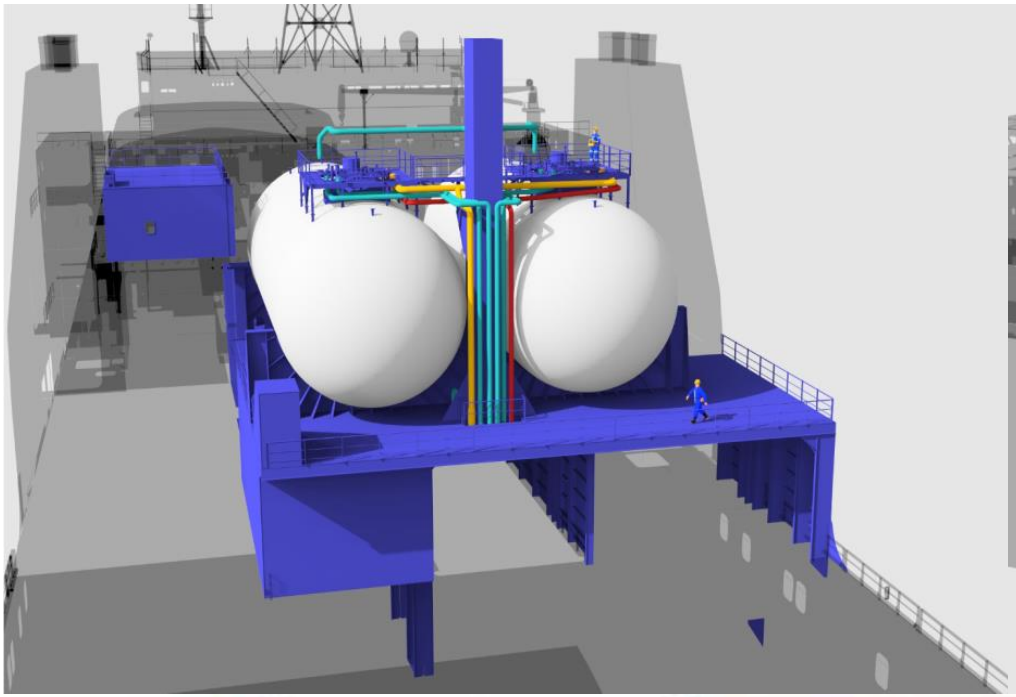
- Marlins will accommodate 5x more 53’ containers than current ships serving Puerto Rico
  - Extension of domestic supply chains
- Increased capacity for refrigerated equipment
  - Multi-temp being tested and evaluated
  - 40’, 45’, 53’ all accommodated
- Specialized container assets will accommodate break bulk, bulk liquids & cars
- Bulk tanks designed to fit 53’ cells below

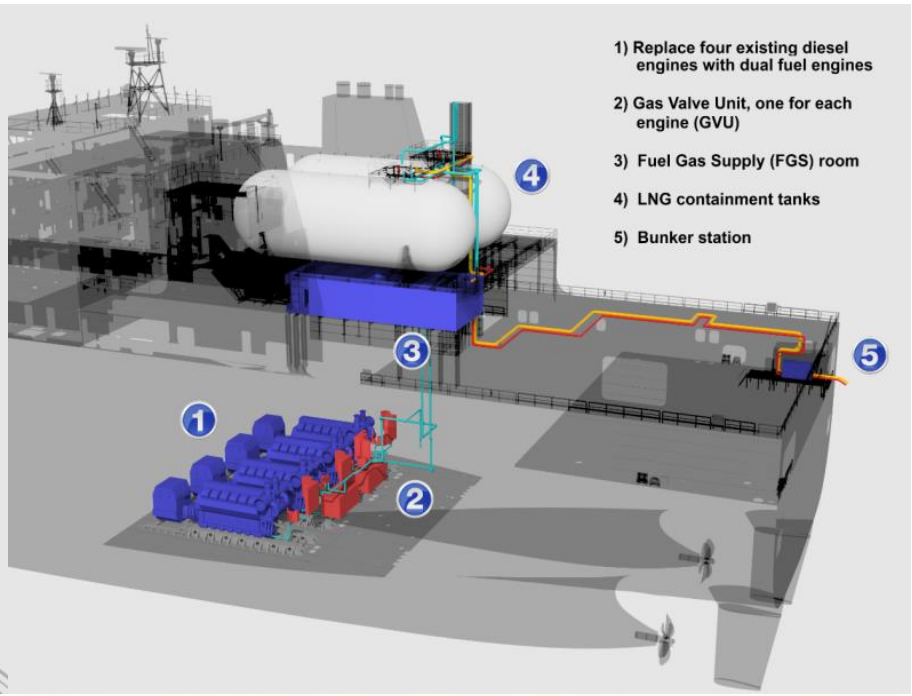
ORCA Re-Engine

- Built for Alaska Trade
- 400,000 gals of LNG needed per week, per ship
- Dual fuel capable Wartsila engines.
- Bunker in Tacoma or Anchorage
- Minimal out of service time during re-engining

ORCA Class

- Wartsila chosen for engine replacement
- NASSCO project design
- Shipyard - TBD later this year as full design packages available. Down selected to 2 yards





LNG Bunkering - Jacksonville

- Pivotal/Wespac chosen as vendor
- Short term supply available from existing peak shavers
- Preliminary long term plant location chosen
- Contracting for bulk bunker barge
  - Design considerations
  - Simultaneous operations
  - Common bunker procedures
- Training and safety considerations

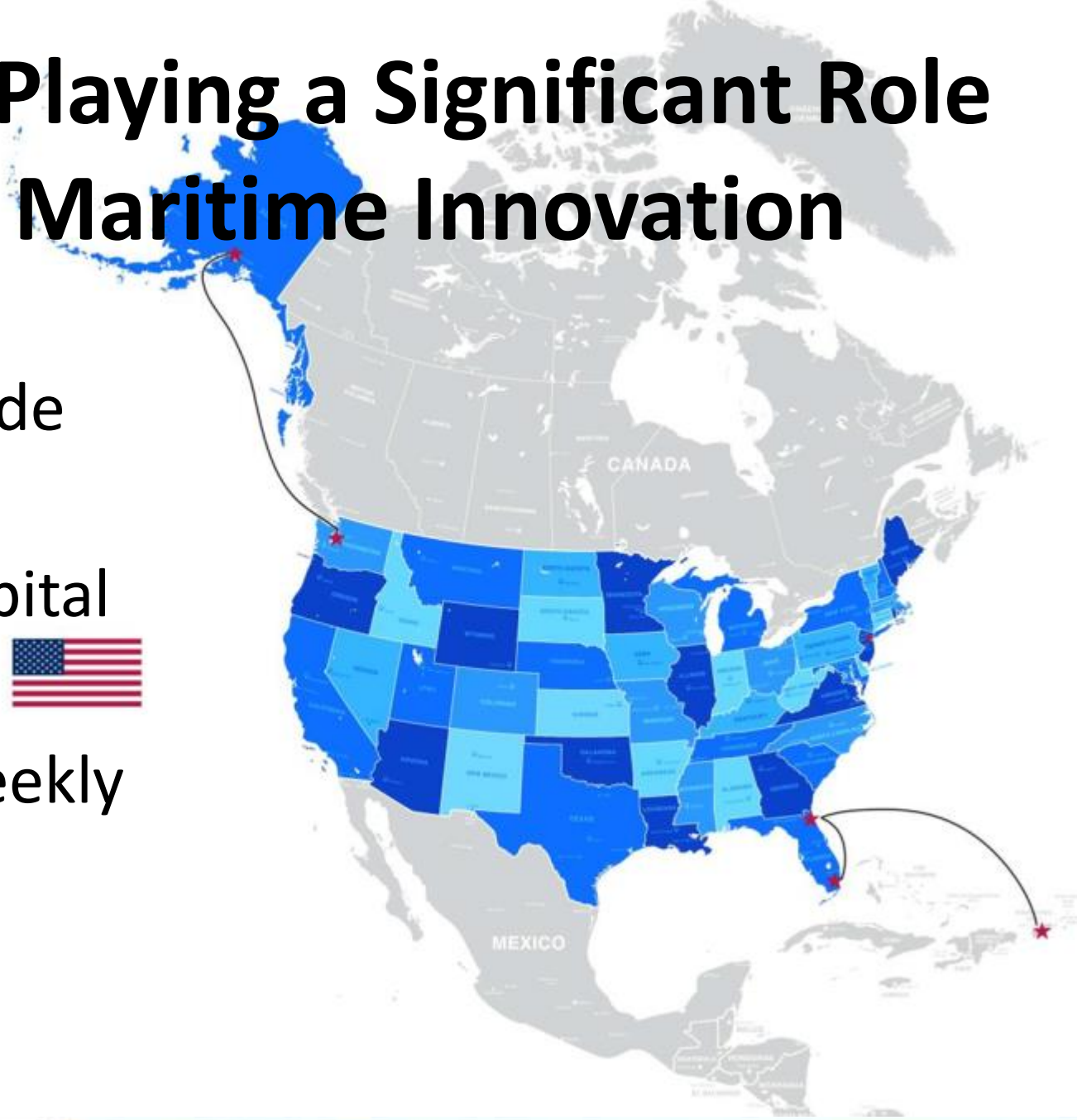
LNG Bunkering - Tacoma

- Working with PSE for long term LNG supply
- Long term plan is to bunker from a cryogenic pipeline connecting to a plant in the Port of Tacoma
- Port of Tacoma has approved lease of necessary land
- Short term supply sourcing LNG from existing peak shavers
- Close cooperation with USCG and others for safety, operations, common policies across all Ports are important considerations for the future

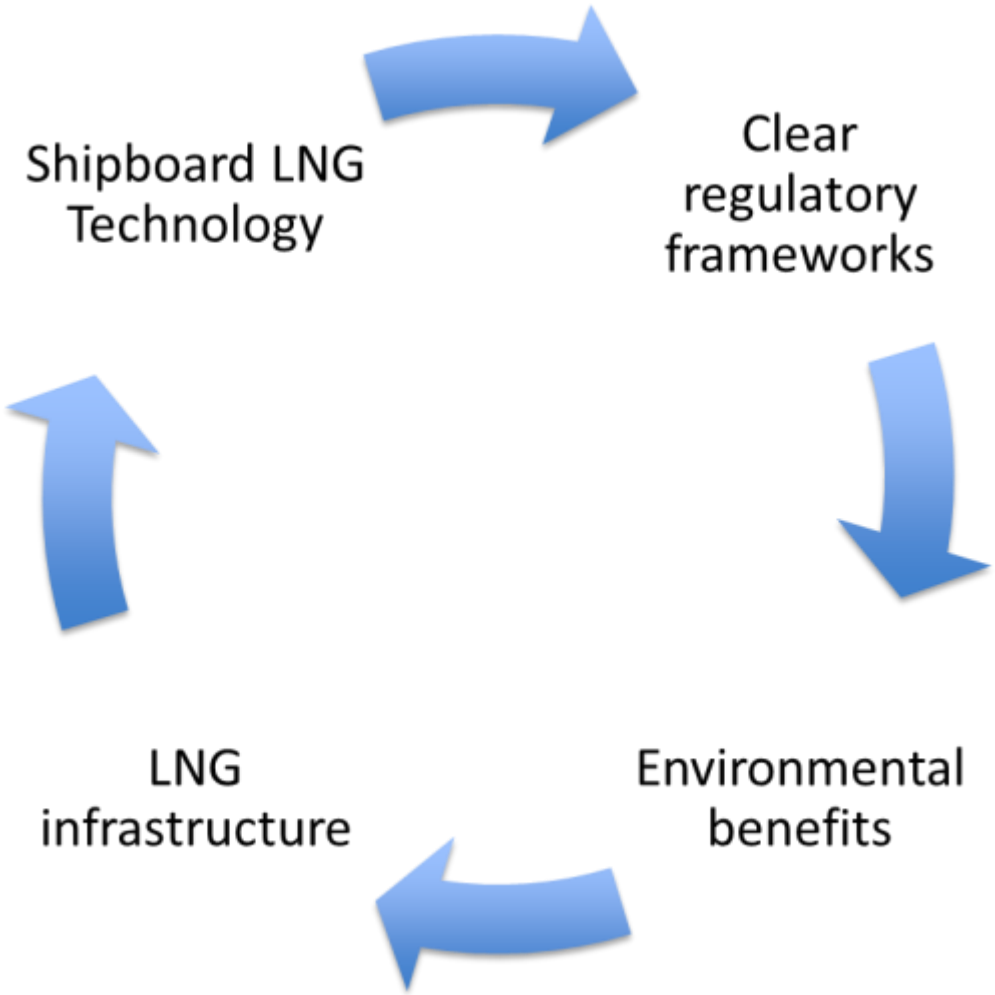
Jones Act Playing a Significant Role in U.S. Maritime Innovation

Advantages

- Dedicated trade lanes
- Long-term capital investments
- Consistent weekly bunkering requirements



Snowball Effect of Adoption



Some Lessons We Are Learning

- Conversion is difficult and complex
- LNG fuel acquisition critical but available
- Every deployment and vessel type has it’s own issues
- Regular itineraries are helpful to insure supply of LNG fuel
- Many misconceptions at all levels that require education and outreach
- Bunkering LNG is very different from loading LNG vessels
- Bunkering LNG is safer than current fuels

Now is the Time

- LNG as a transportation fuel will dramatically increase as road, rail and maritime refine the technology
- Clear window of opportunity to develop LNG supply infrastructure for the maritime industry
- For vessels spending a third of their time or more in the ECA, LNG is a viable alternative to consider
- We predict a boom in the construction of dual fuel, LNG powered vessels as well as LNG as a transportation fuel