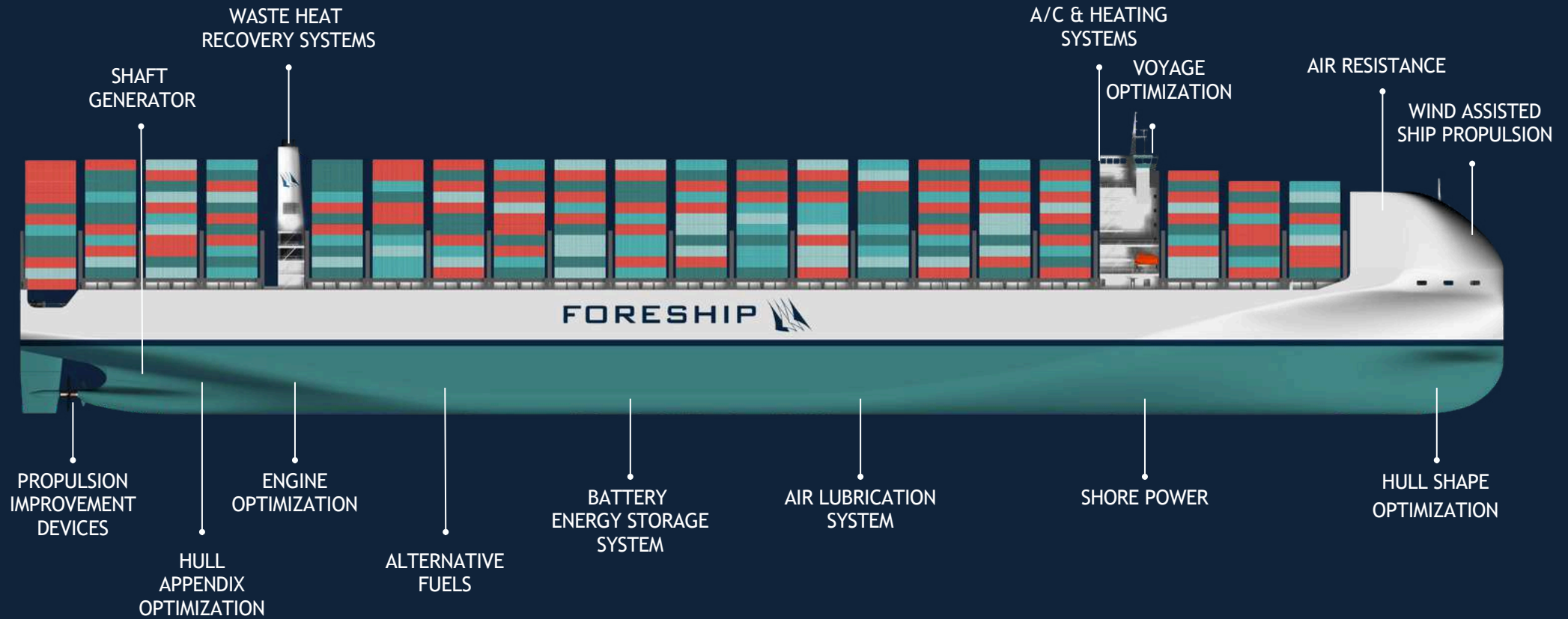


Roadmap to Net-Zero GHG



HULL AND PROPULSION
~8% SAVINGS

+

MACHINERY & AUXILIARY
~5% SAVINGS

+

ENGINE OPTIMIZATION
~2% SAVINGS

+

VOYAGE OPTIMIZATION
~3% SAVINGS

+

ALTERNATIVE ENERGY SOURCES
~5% SAVINGS

HULL FORM OPTIMIZATION FOR CORRECT SPEED AND CONDITIONS

- Air Lubrication System
- Hull & Propeller Cleaning
- Hull Shape Optimization
- Hull Retrofit
- Propulsion Improvement Devices
- Rudder Autopilot
- Propeller Refitting

MAXIMIZED ENERGY UTILIZATION ONBOARD

- A/C & Heating Systems
- Shaft Generator
- Shaft Motor
- VFDs for Pumps & Fans
- Lighting Systems Optimization
- Waste Heat Recovery Systems
- Thermal Energy Storage Systems

CONDITION BASED ADJUSTEMENTS FOR OPERATIONAL REQUIREMENTS

- Engine Derating
- Engine Tuning
- Load Optimization

DYNAMIC OPTIMIZATION OF THE VOYAGE TO INCREASE EFFICIENCY

- Speed Management
- Trim & Draft Optimization
- Weather Routing

ALTERNATIVE ENERGY SOURCES TO REDUCE GHG EMISSIONS

- Battery Energy Storage Systems
- Alternative Fuels Conversion
- Fuel Cells Technology
- Shore Power Design & Integration
- Wind Assisted Ship Propulsion