

# IMO Compliance and Reefer Container Fleeting Requirements





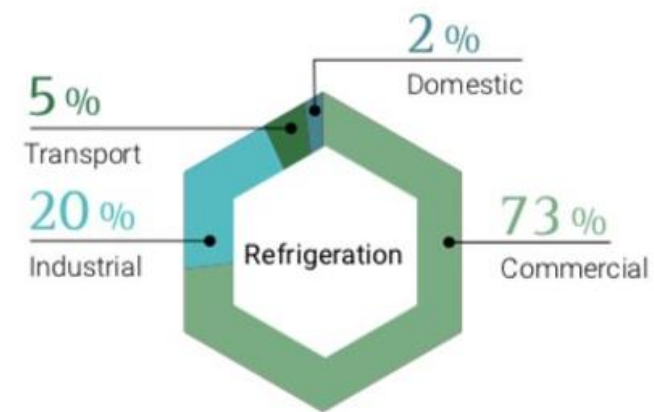
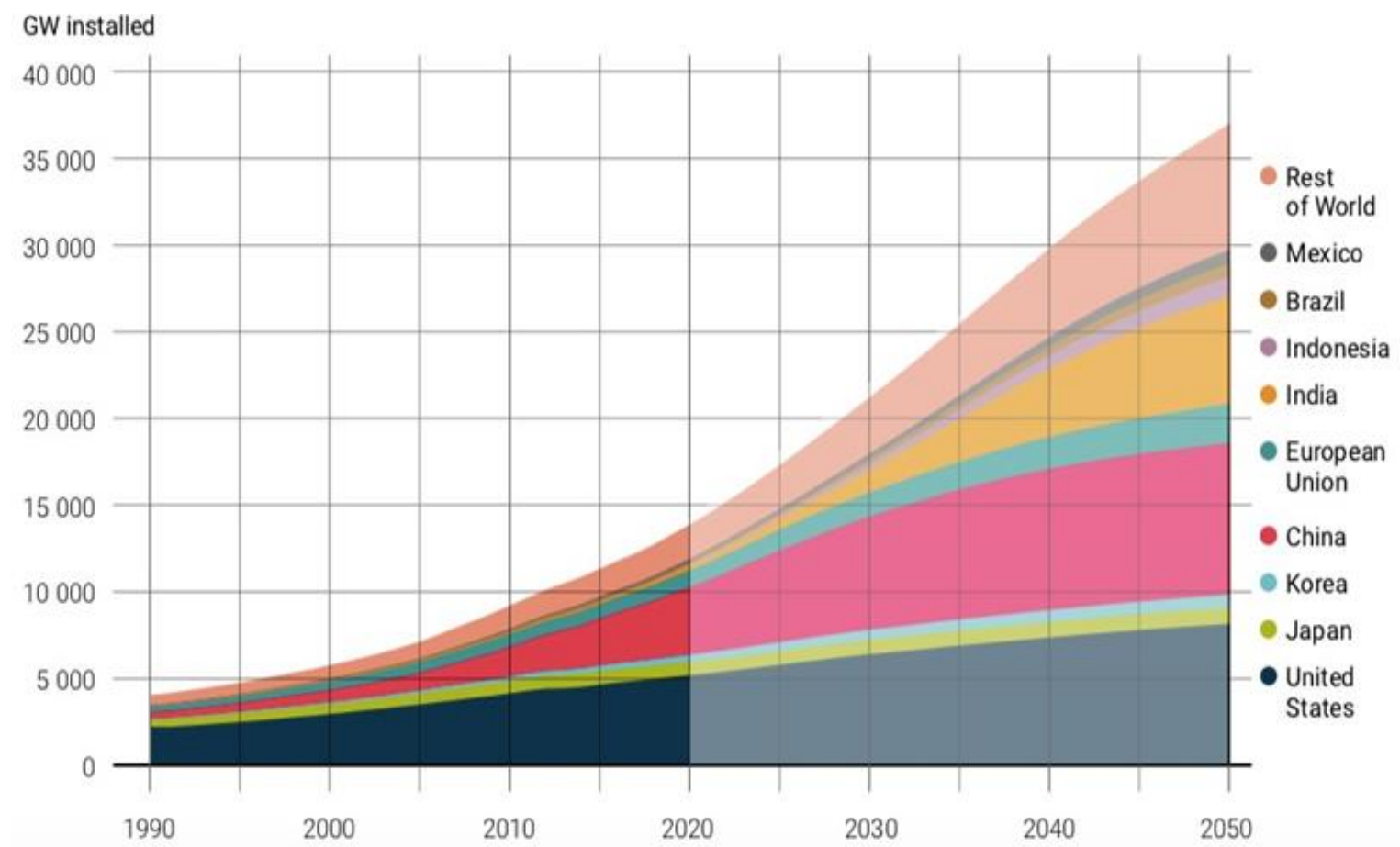
# Climate Change is Real – The Need to Address GHG/CO<sub>2</sub> Emissions is Now!





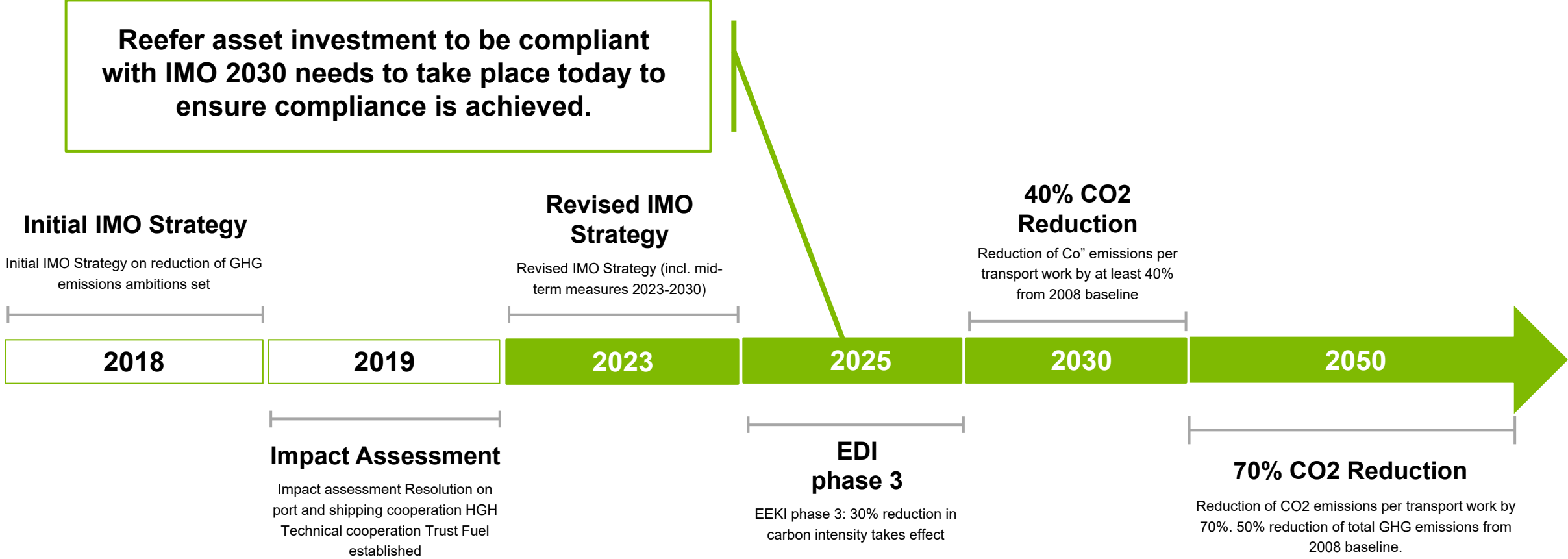
# Refrigeration Efficiency - Significant Opportunity for CO2 Reduction

By 2060, global energy consumption for refrigeration including cold transport, will overtake that consumed for heating. Refrigerated container transport will be the primary mode for perishable.



# IMO Container Shipping Framework

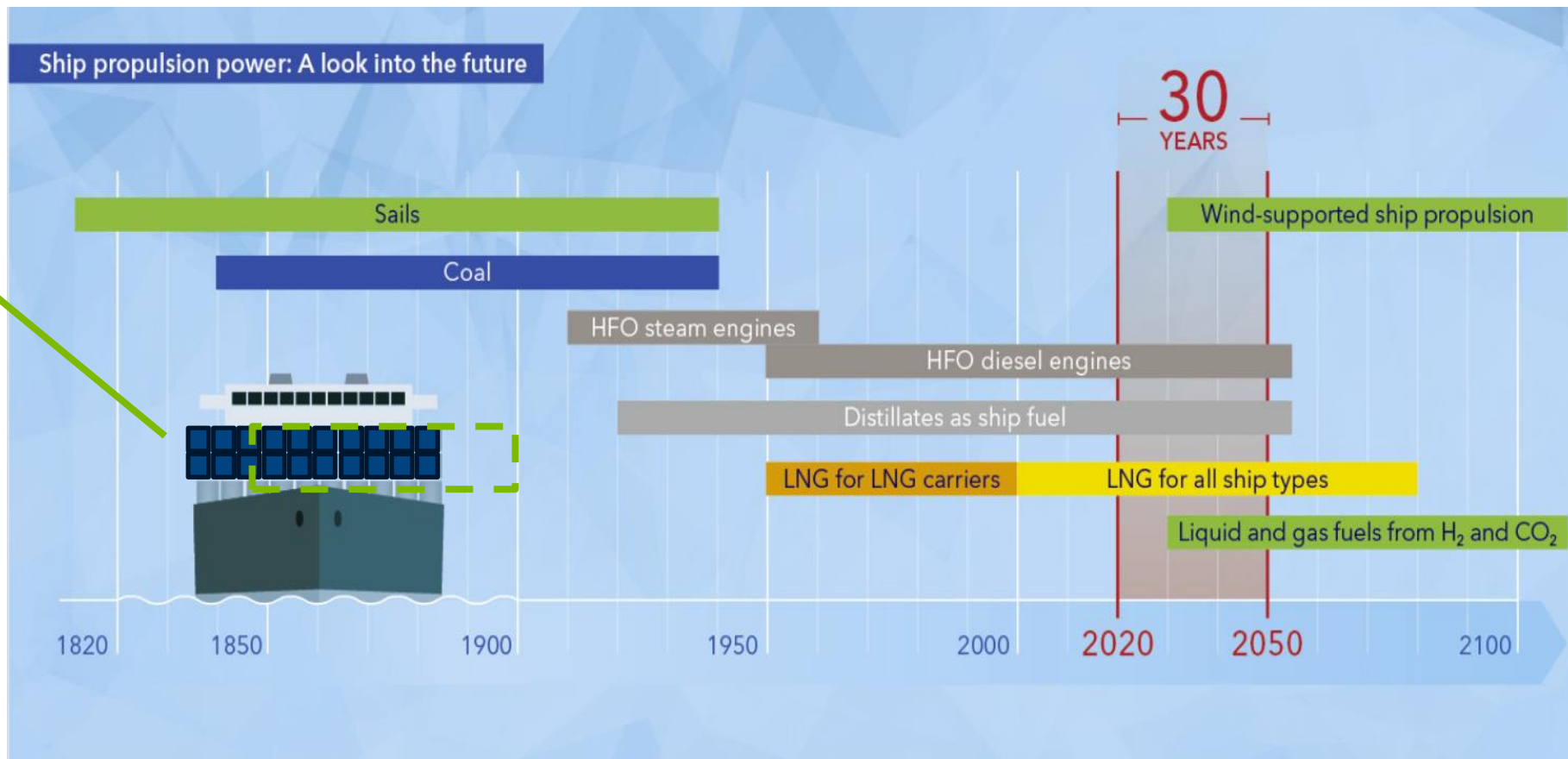
## IMO Timeline to Reduce GHG Emissions



# IMO Container Shipping Framework

On a 15,000 TEU vessel equipped with 2,024 reefer plugs, refrigeration can account for up to 25% of the vessel's total energy consumption dedicated to electricity generation

Reefer transport energy demand will be a significant factor in IMO compliance

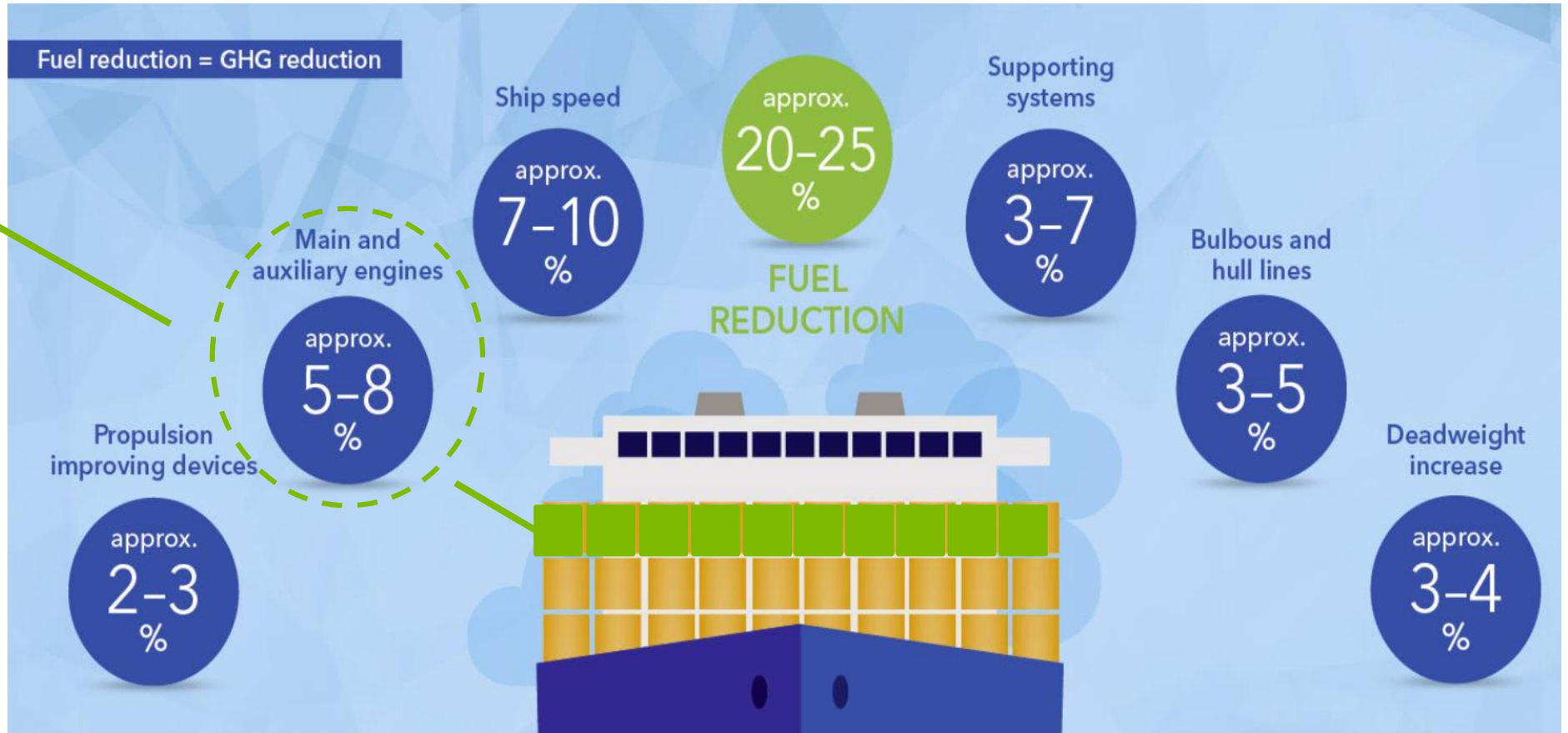


# IMO Container Shipping Framework –

*Refrigeration Transport Efficiency is a Big Piece of the Solution*

Main and auxiliary power demand from refrigerated container plugs is significant and can equal up to 25% of shipboard energy consumption

Reefer transport energy demand from auxiliary and main plant will be a significant factor in IMO compliance



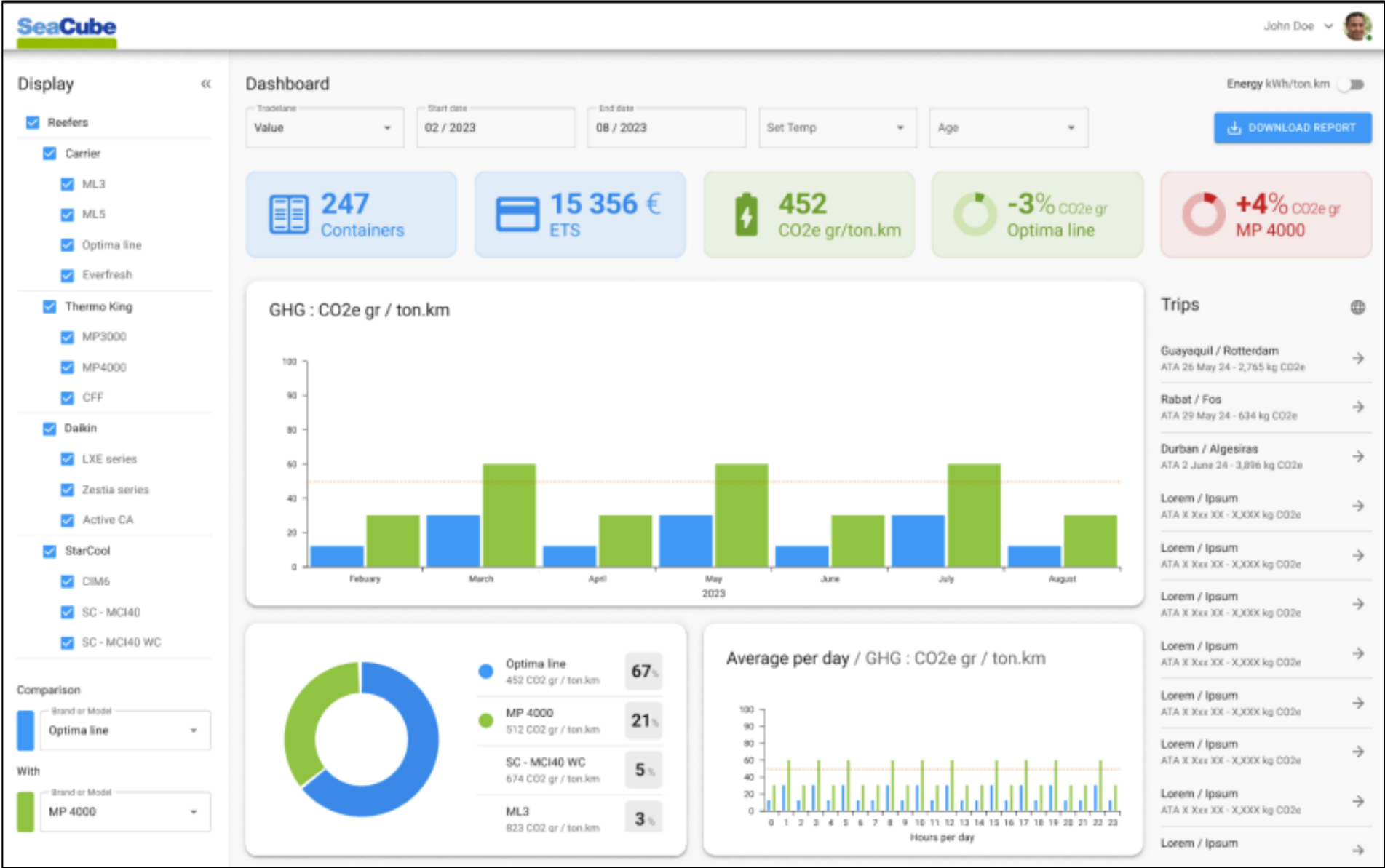
# Reefer Fleet Optimization Program

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## Benefits to the industry:

- ✓ **Understand and identify energy and CO2 wastes**
- ✓ **CO2 reduction validation and monetization**
- ✓ **Innovation solution impacts**
- ✓ **Test and assess customer benefits**
- ✓ **Report and analytics on energy savings & CO2 tracking**

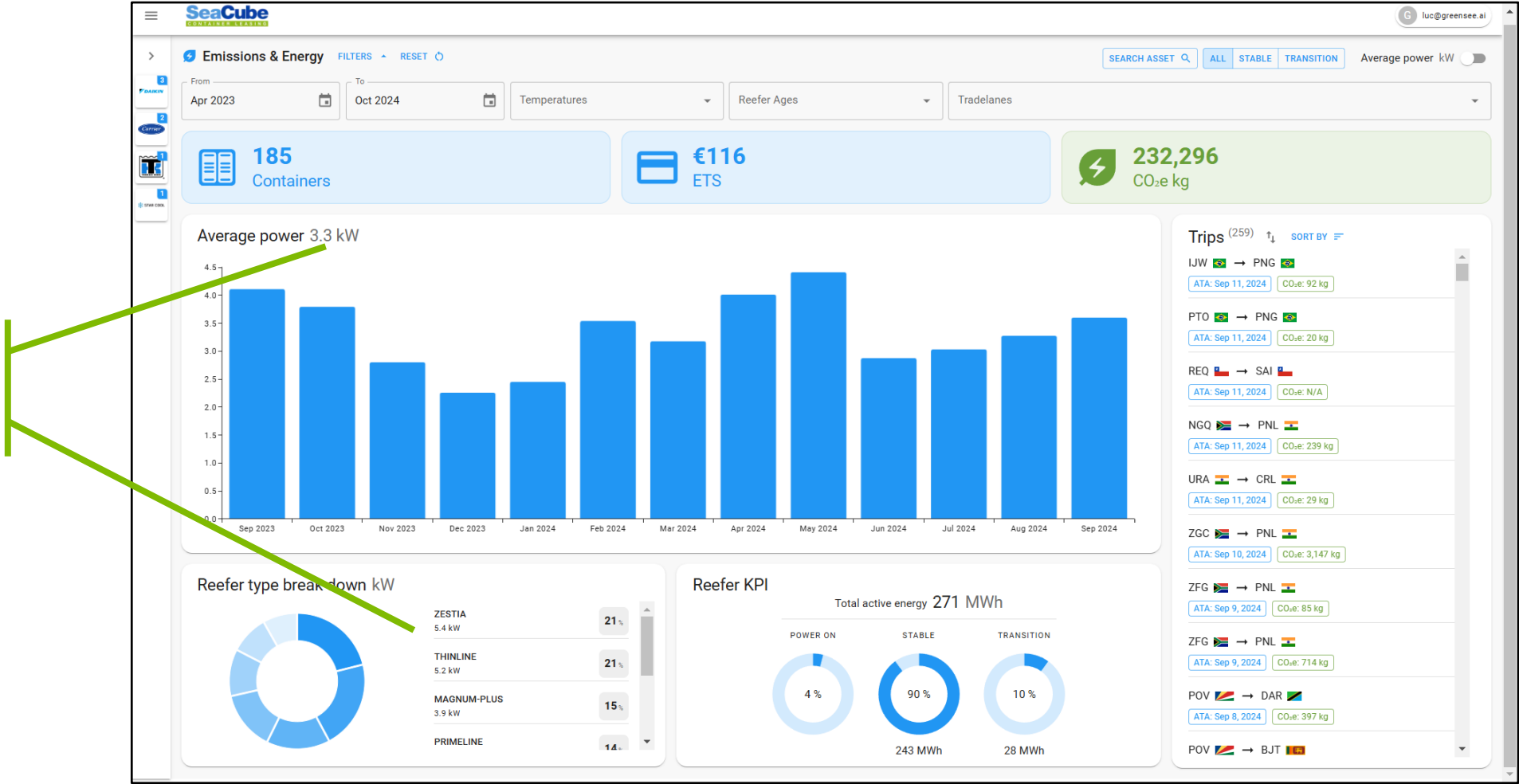
# SeaCube Refrigerated Container IMO and CO2 Dashboard



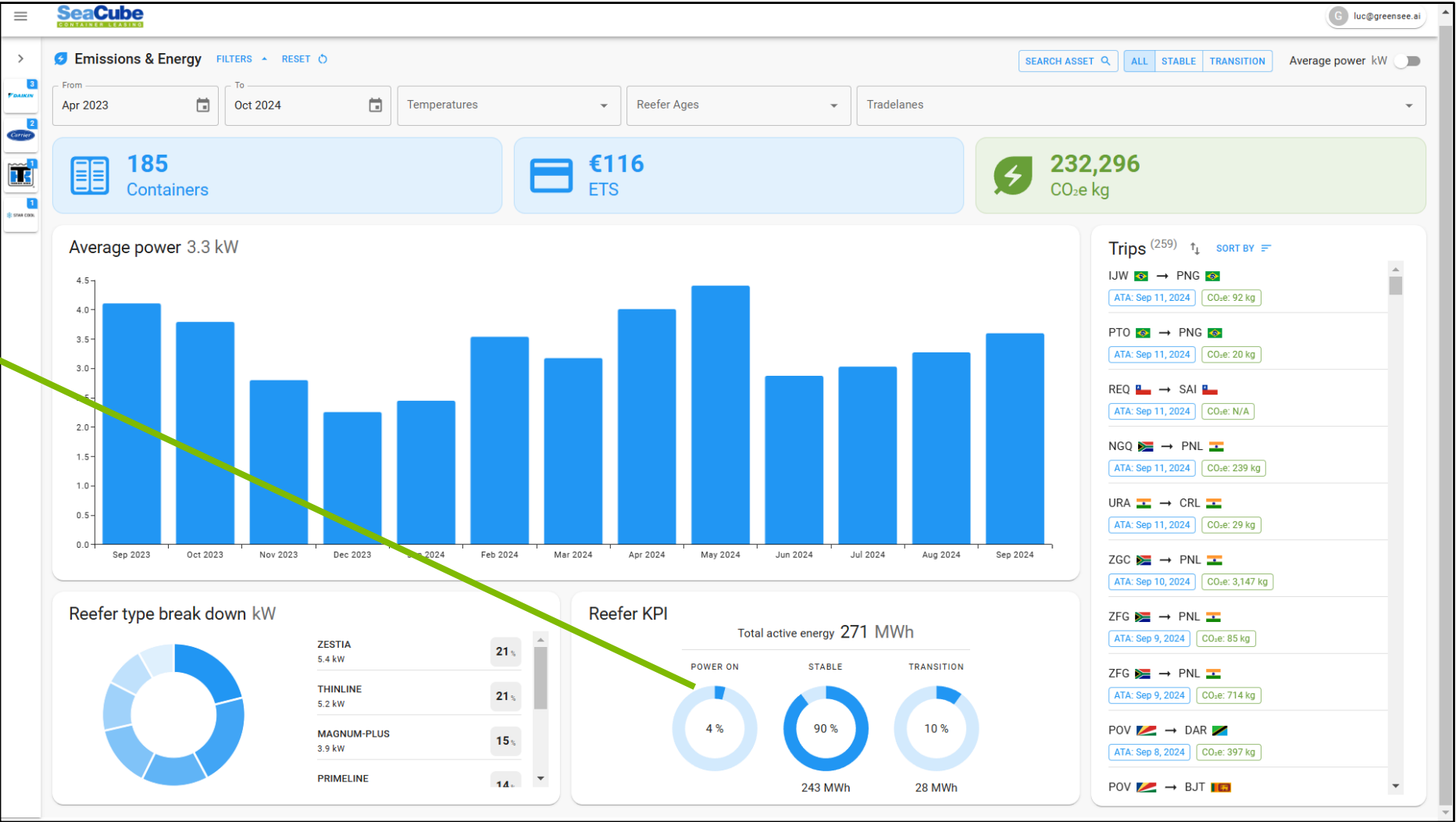


# Pilot Portal – Latest Release Stable / Transition Stats

**Fleet optimization**  
Which asset is the most efficient for each trade-lane?



# Pilot Portal – Latest Release Stable / Transition Stats

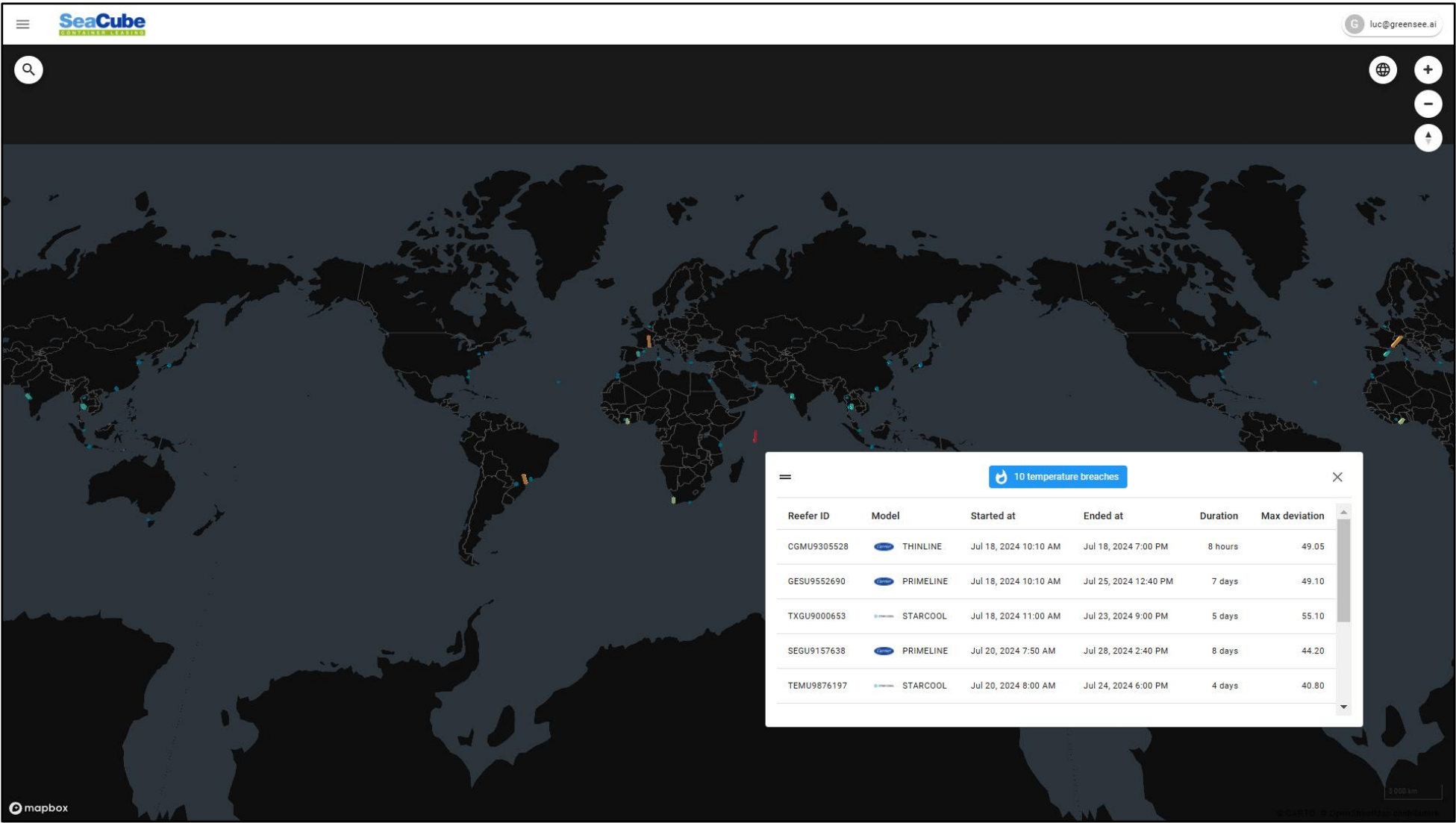


Reefer KPI's  
Stable / transition  
mode energy now  
available



# Pilot Portal – Heatmap to Track Transition Events

An event map showing all “Transition” events (hot loads and temps breaches) are now available on heatmap



# SeaCube's Commitment to ESG and Decarbonization

- ✓ SeaCube is offering comprehensive CO2 reporting for new and existing refrigerated fleets
- ✓ Metrics and dashboards are developed for leveraging CO2 reporting efficiency and for simplified ETS or IMO audit reporting processes
- ✓ SeaCube is exploring asset electrification solutions for both reefer hybrid and genset applications

## SeaCube ESG Services

- 1 Technology applications for IMO and ESG CO2 baseline measurements and reporting
- 2 Efficient reefer products and services
- 3 Future electrification applications including field testing of electric generator sets
- 4 ESG friendly refrigerant solutions
- 5 Low CO2 impact reefer and genset products





# Get in touch!



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