



Clarksons

# Commercial Impact of Emission Regulations



Presentation to IMSF Copenhagen 19-21 May 2014  
By Colin Cridland, Managing Director Analyst Team



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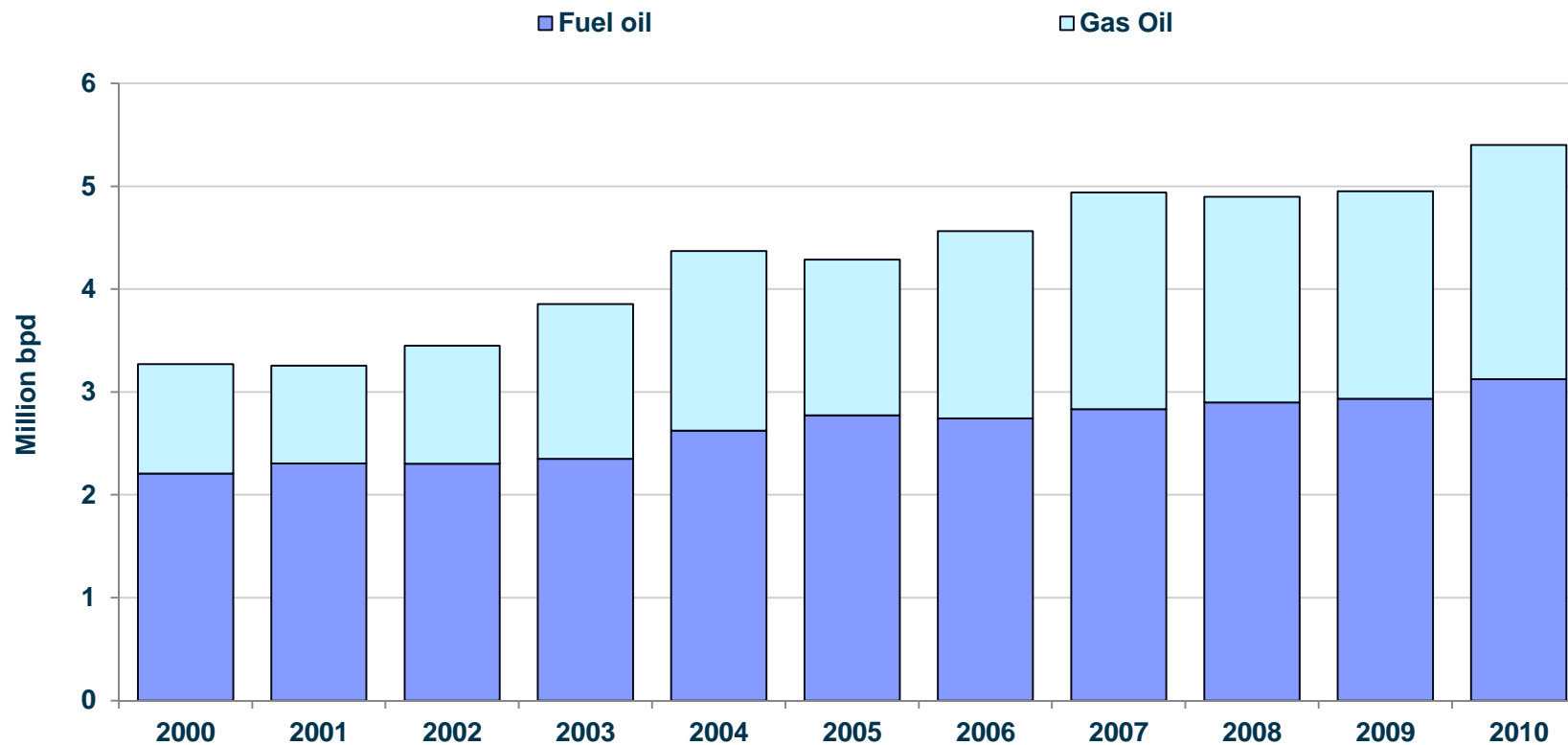


# Today's Emission Control Areas (ECAs)





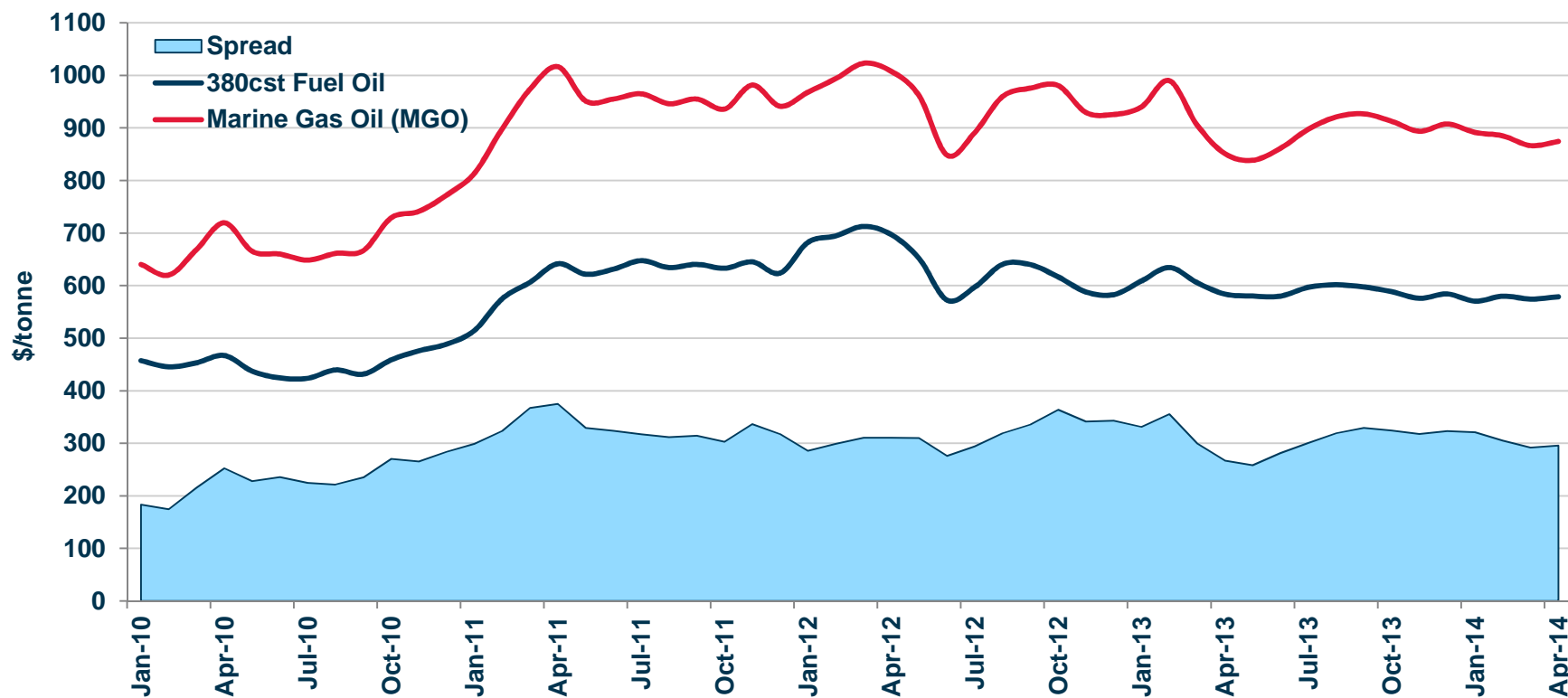
# Marine Bunker Consumption



Data source: EIA



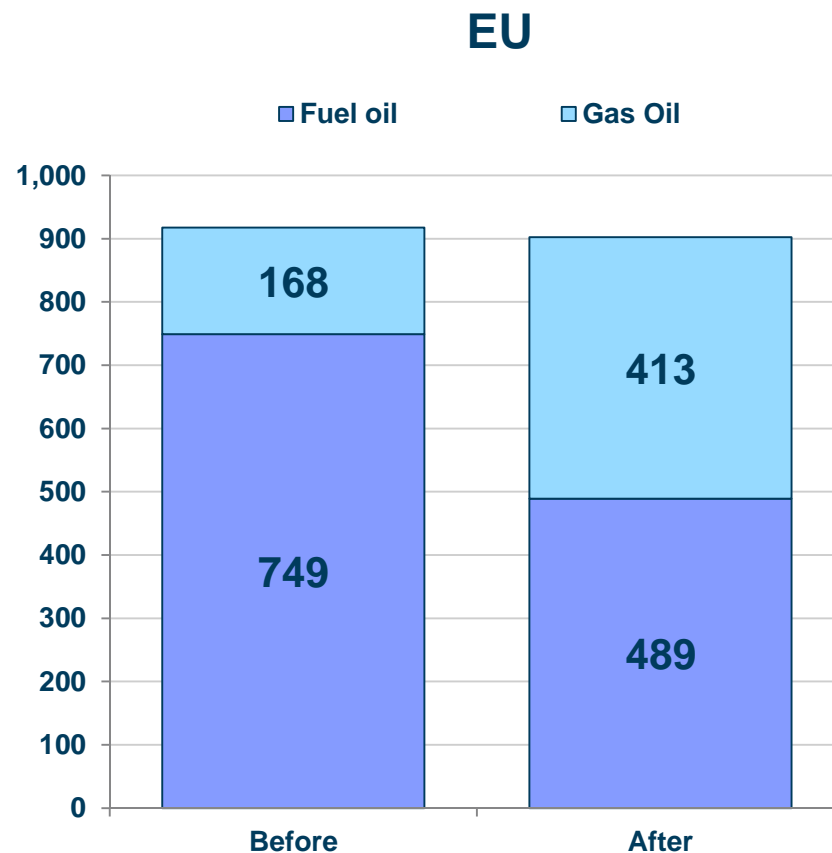
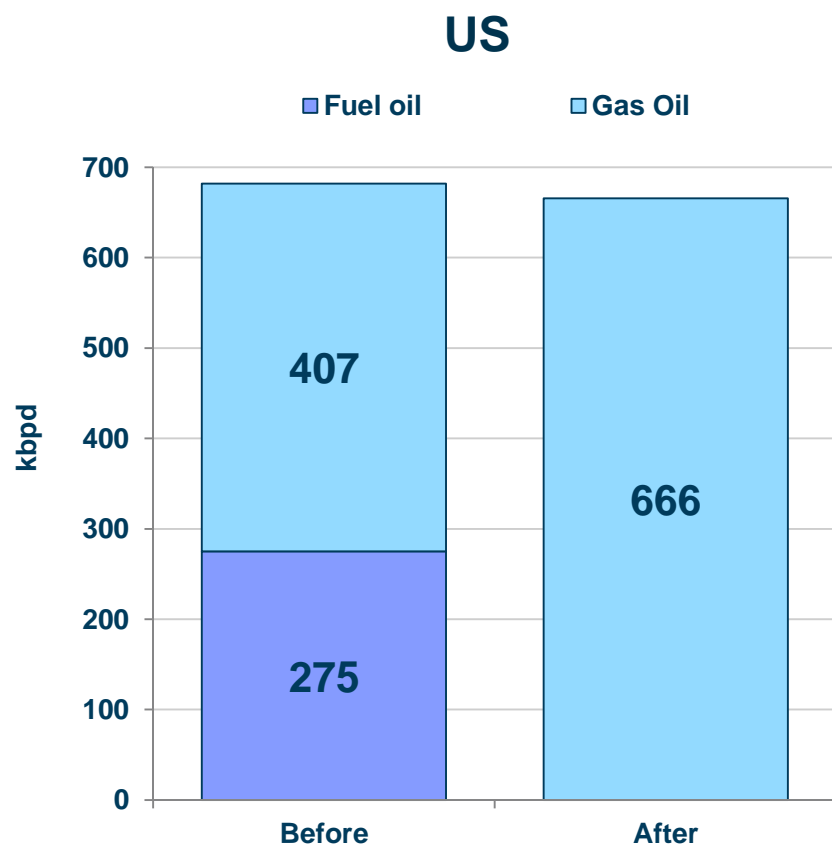
# Bunker Prices (Rotterdam)



Data source: Clarksons



# Marine Bunkers Switch

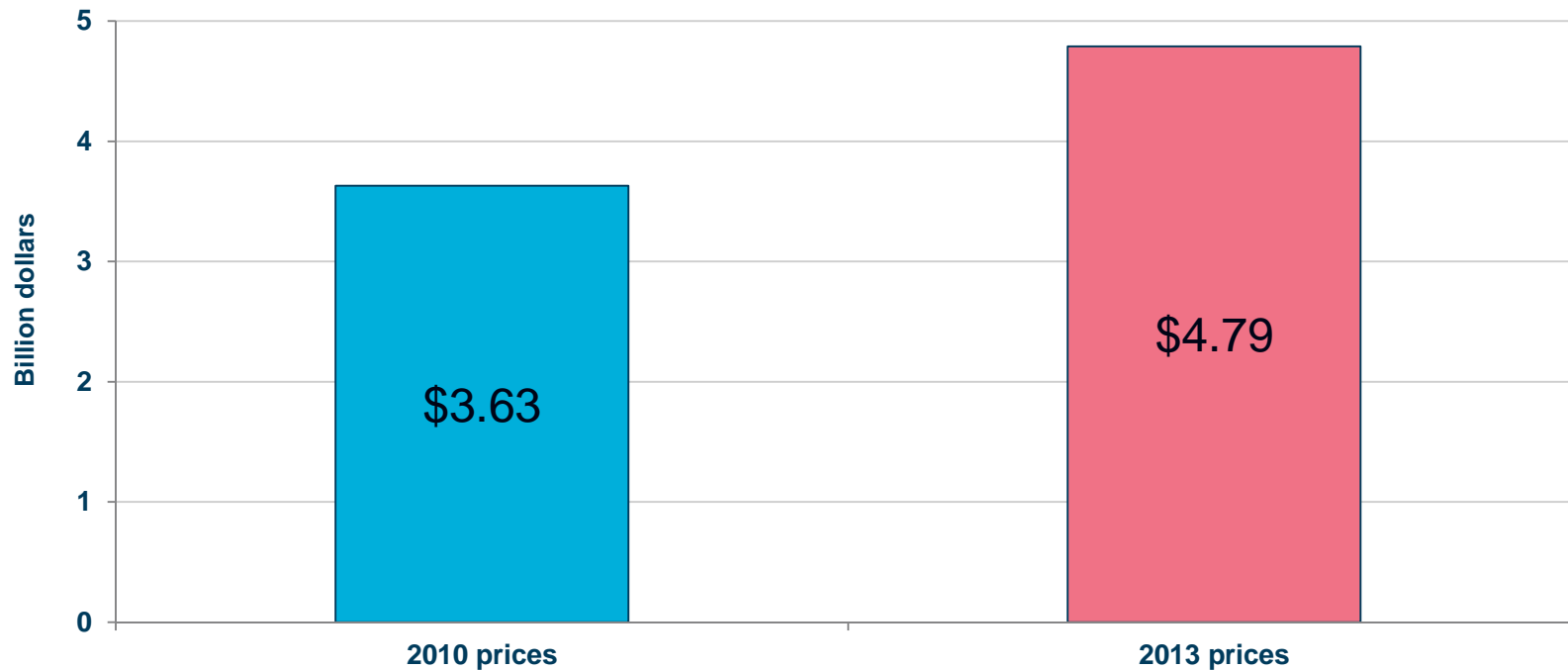


Data source: EIA



# Estimated Minimum Cost of Fuel Switch\*

\* Excludes any increase in bunker demand and price distortion effects

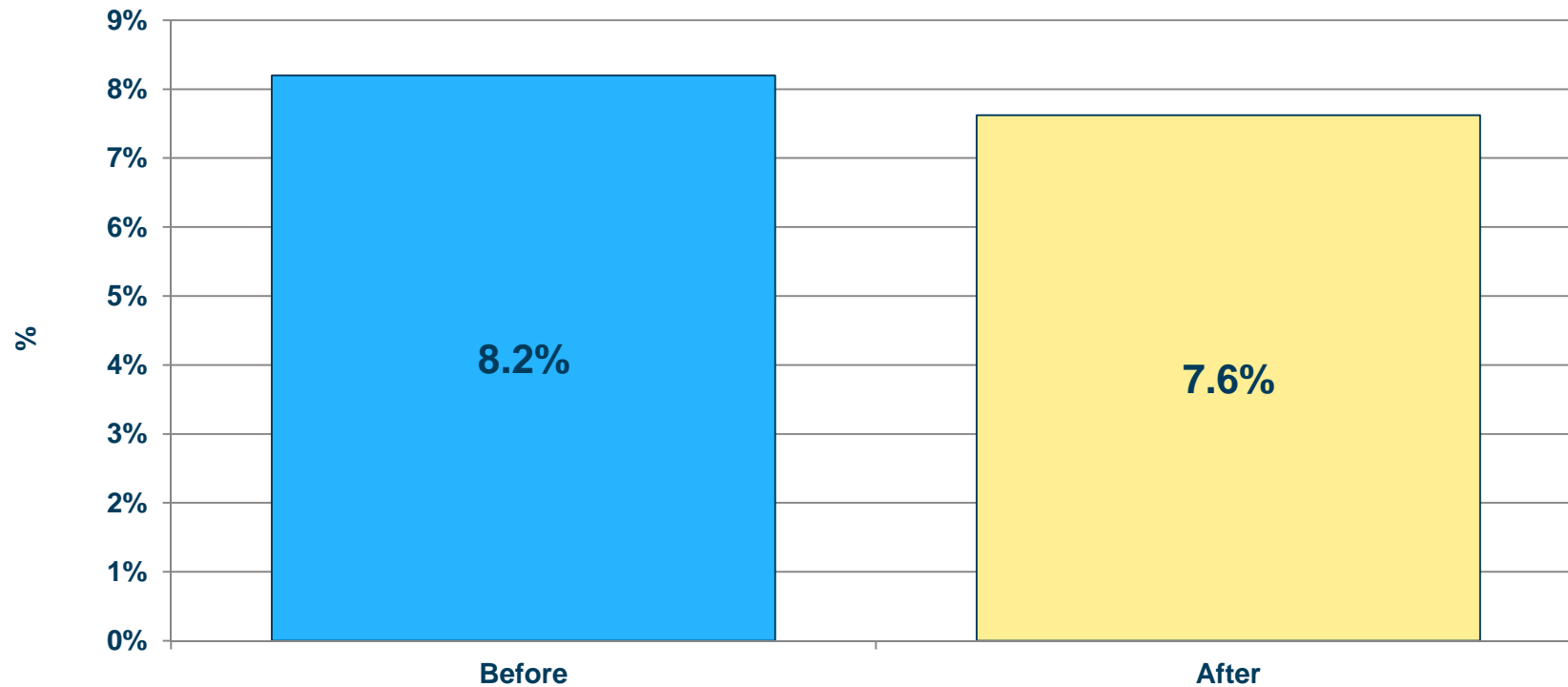


Data source: EIA/Clarksons



# Shipping Share in World SOx Emissions

World SOx Emissions = 86.3 million tonnes in 2010



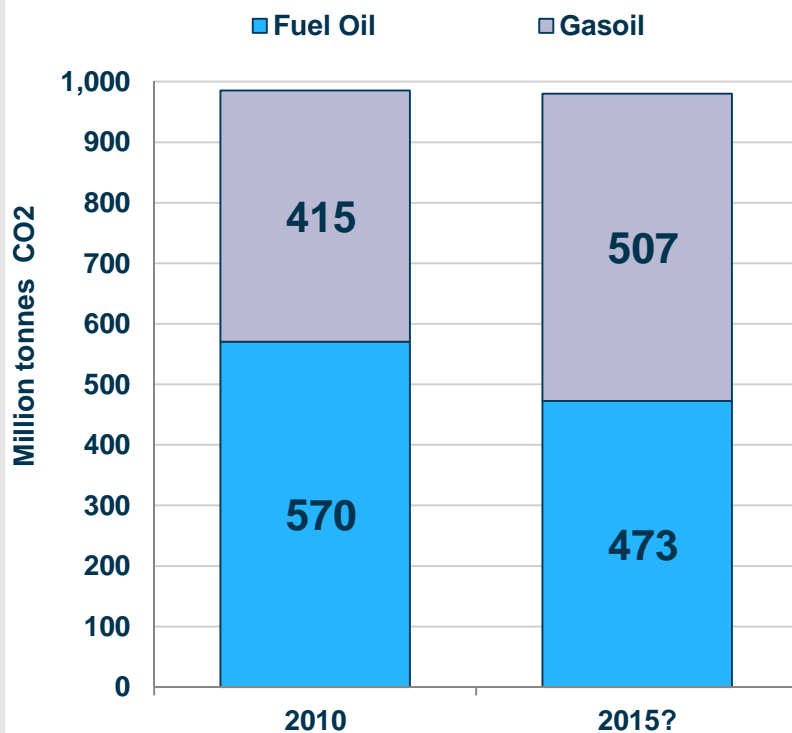
Data source: EIA/DECC/EC





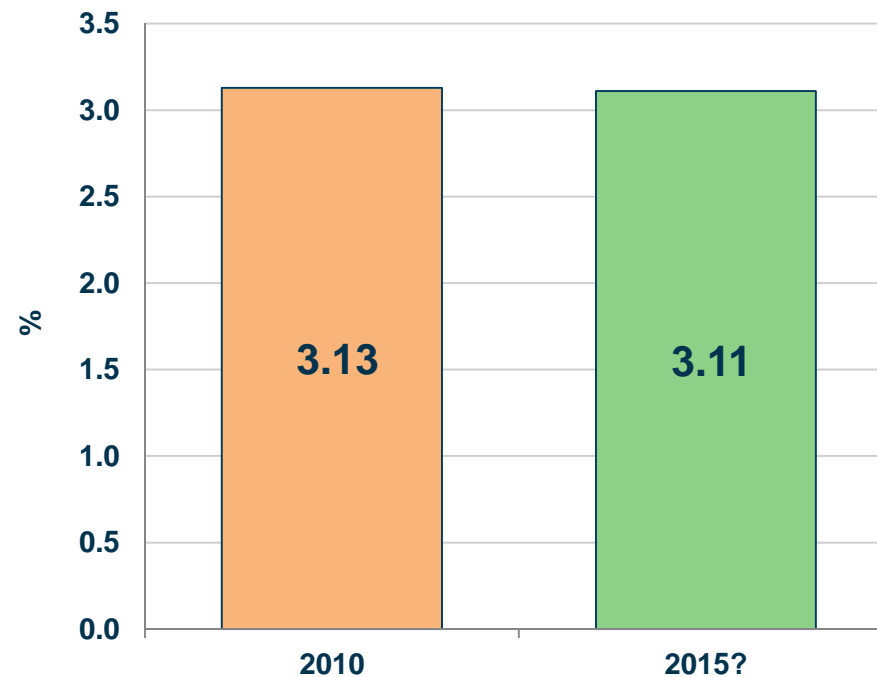
# CO<sub>2</sub> Emissions from Marine Bunkers

### Switching from Fuel Oil to Gasoil



Data source: EIA

### Shipping Share in World CO<sub>2</sub> Emissions





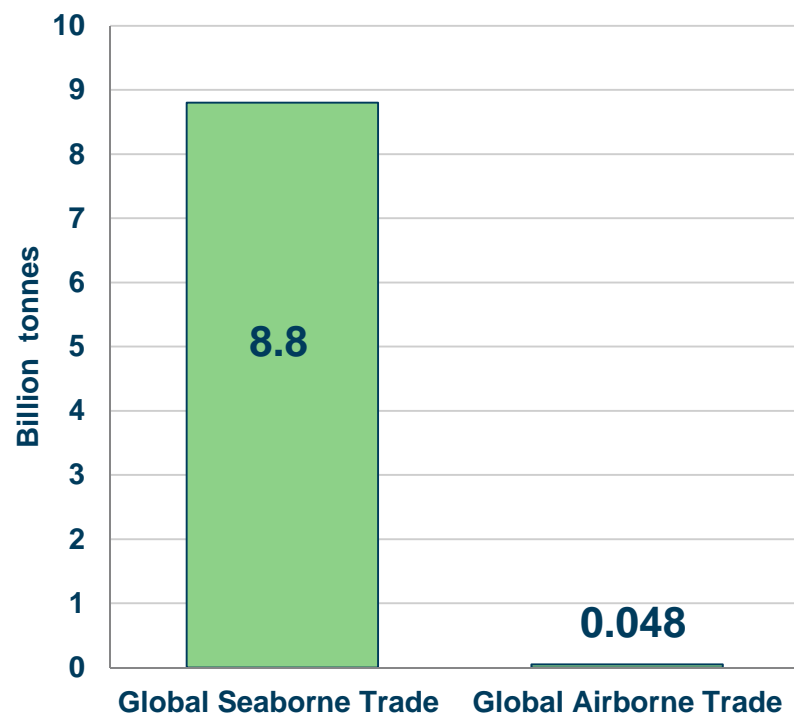
## Emissions Health Warning!

- **Particulates in Diesel much higher than Fuel Oil**
- **Diesel requires more energy and thus pollution to manufacture**
- **Increased imports of MGO into EU will require steep rise in bunker consumption (+0.5 million tonnes)**
- **MGO refined product not waste product as RFO**
- **Higher use of MGO will require modifications and increase engine wear**



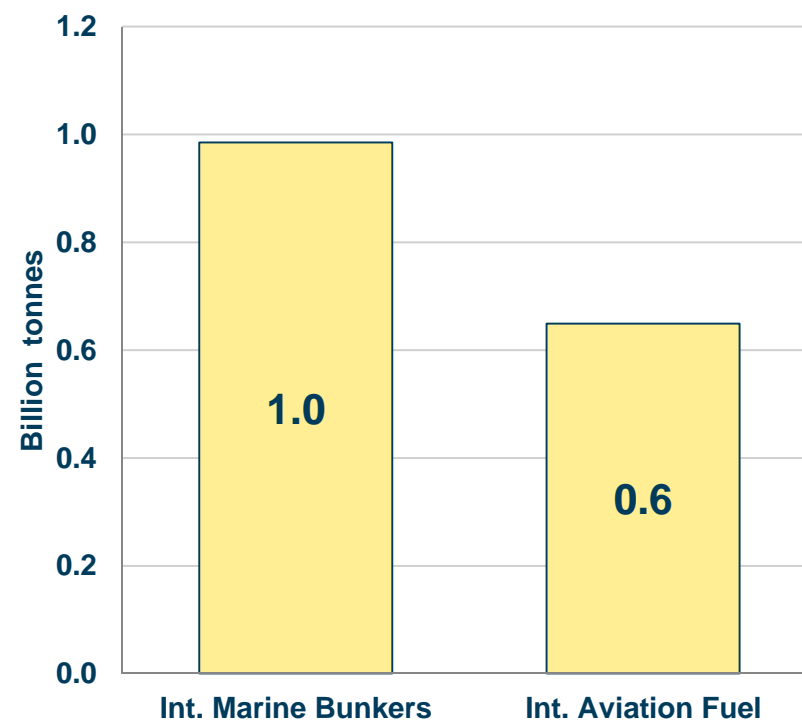
# Trade vs. Emissions

### Global Trade



Data source: IEA/BBC/Clarksons

### CO<sub>2</sub> Emissions

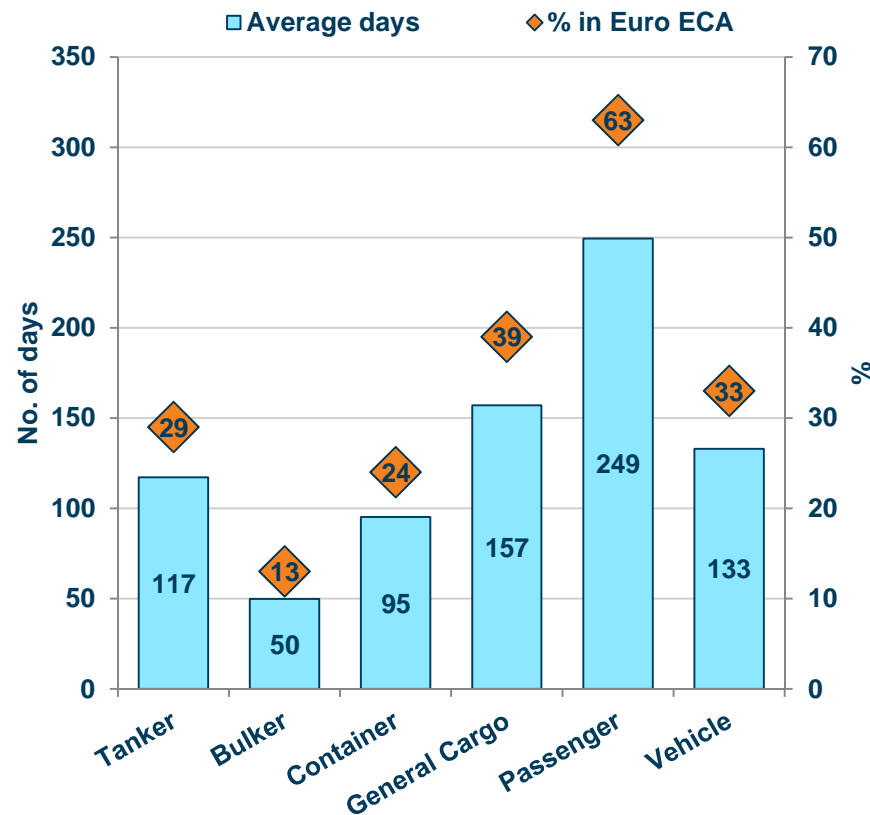
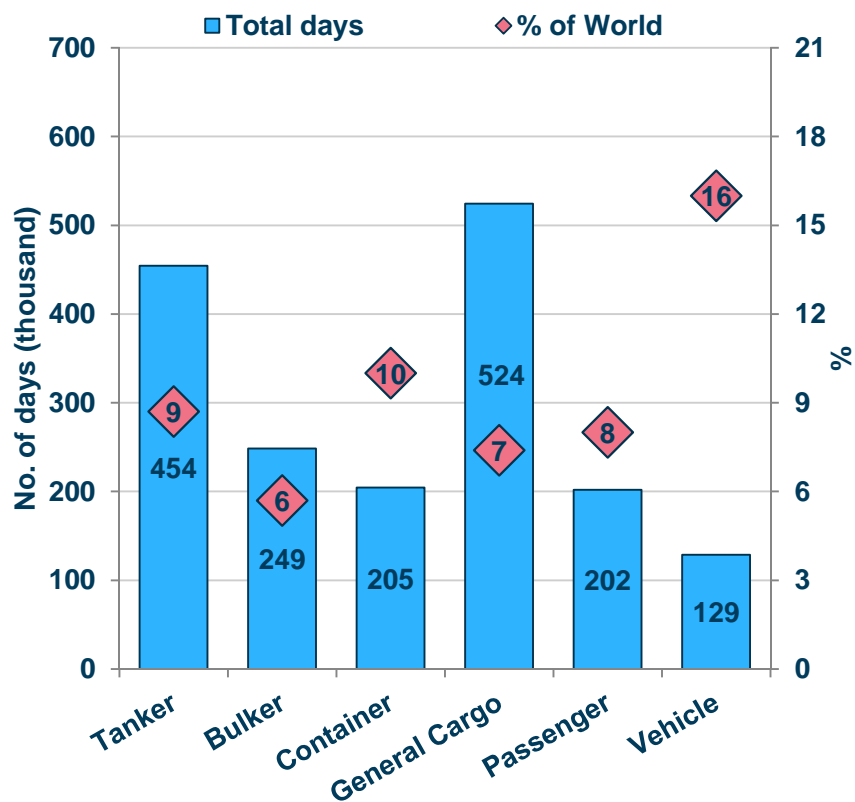




# Where Are Vessels Trading?



# Vessel Time in Euro ECAs



Data source: Clarksons/Orbcomm/Astrapaging



# VLCCs



Data source: Clarksons/Orbcomm/Astrapaging



# Capesize Bulkers



Data source: Clarksons/Orbcomm/Astrapaging



# Ultra Large Containerships



Data source: Clarksons/Orbcomm/Astrapaging

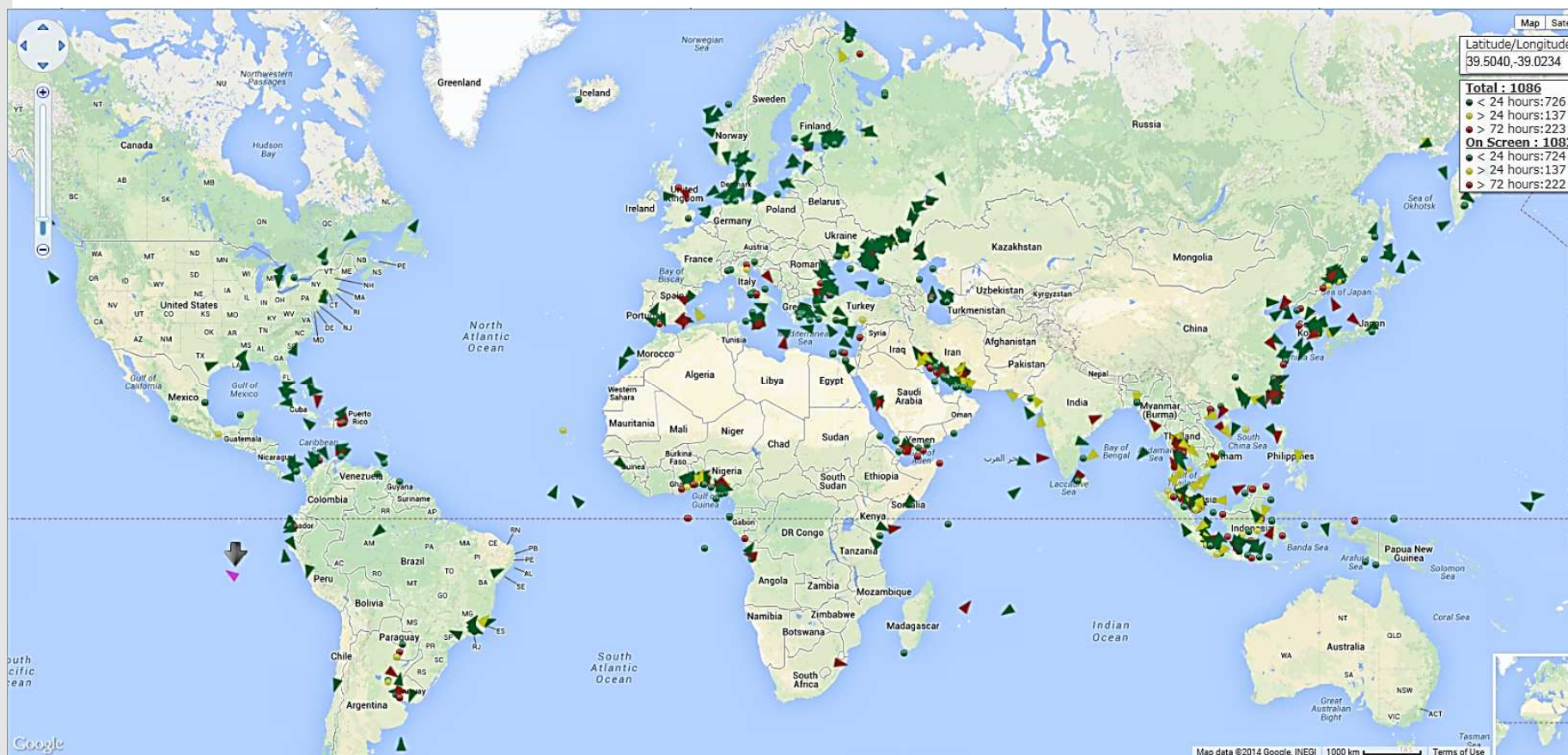




# Where Are All the Old Ships?



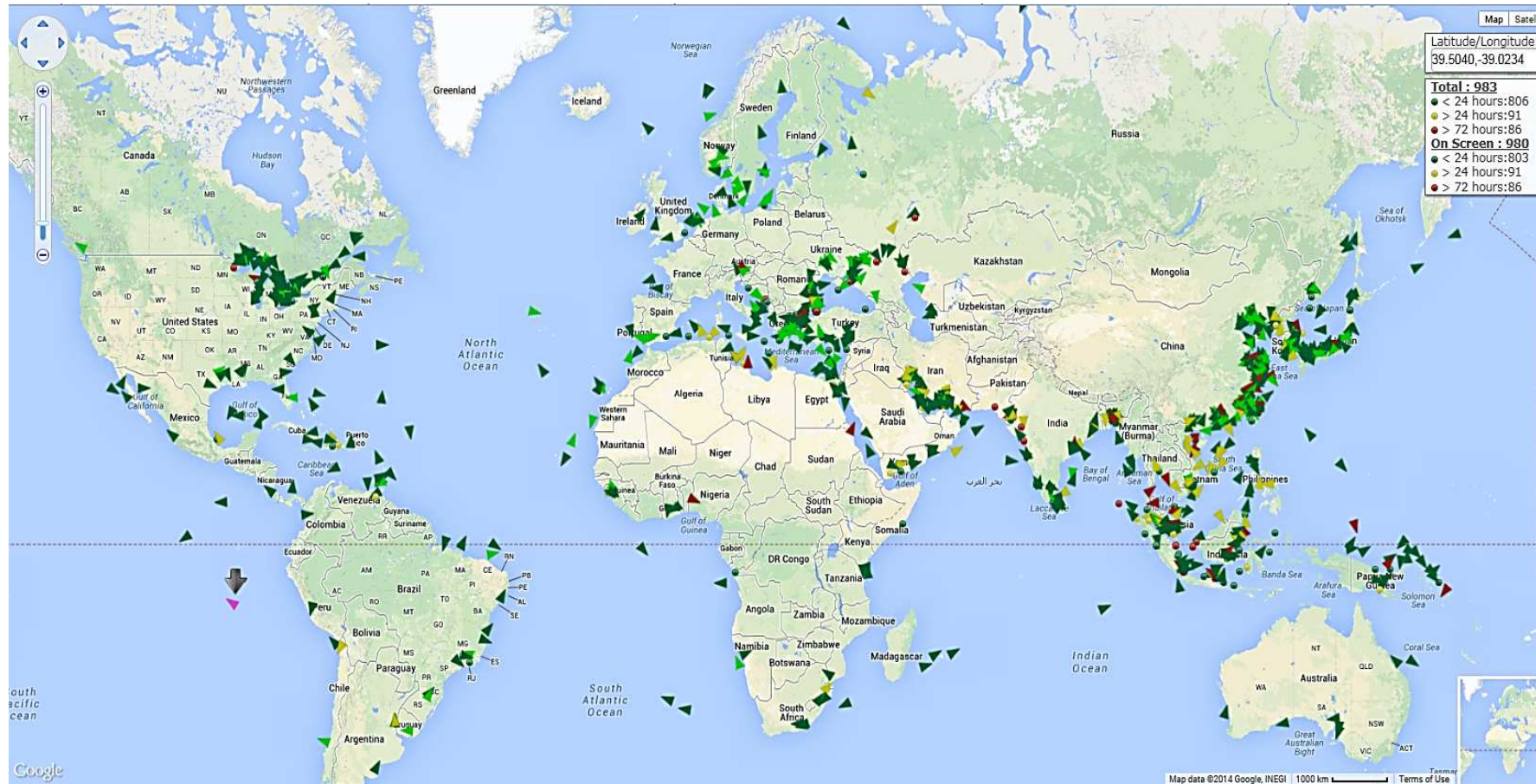
# Tankers Over 25yrs



Data source: Clarksons/Orbcomm/Astrapaging



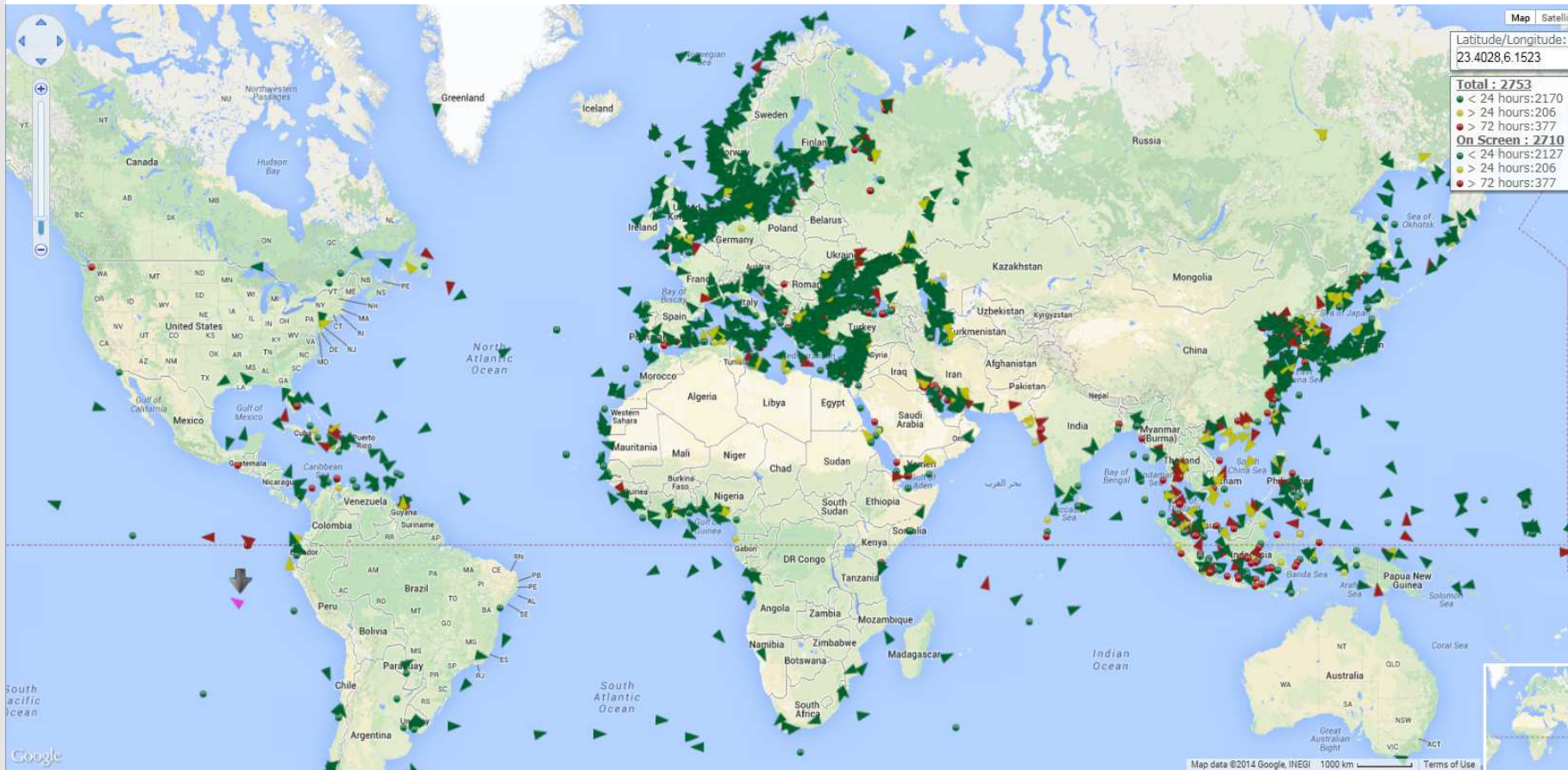
# Bulkers Over 25yrs



Data source: Clarksons/Orbcomm/Astrapaging



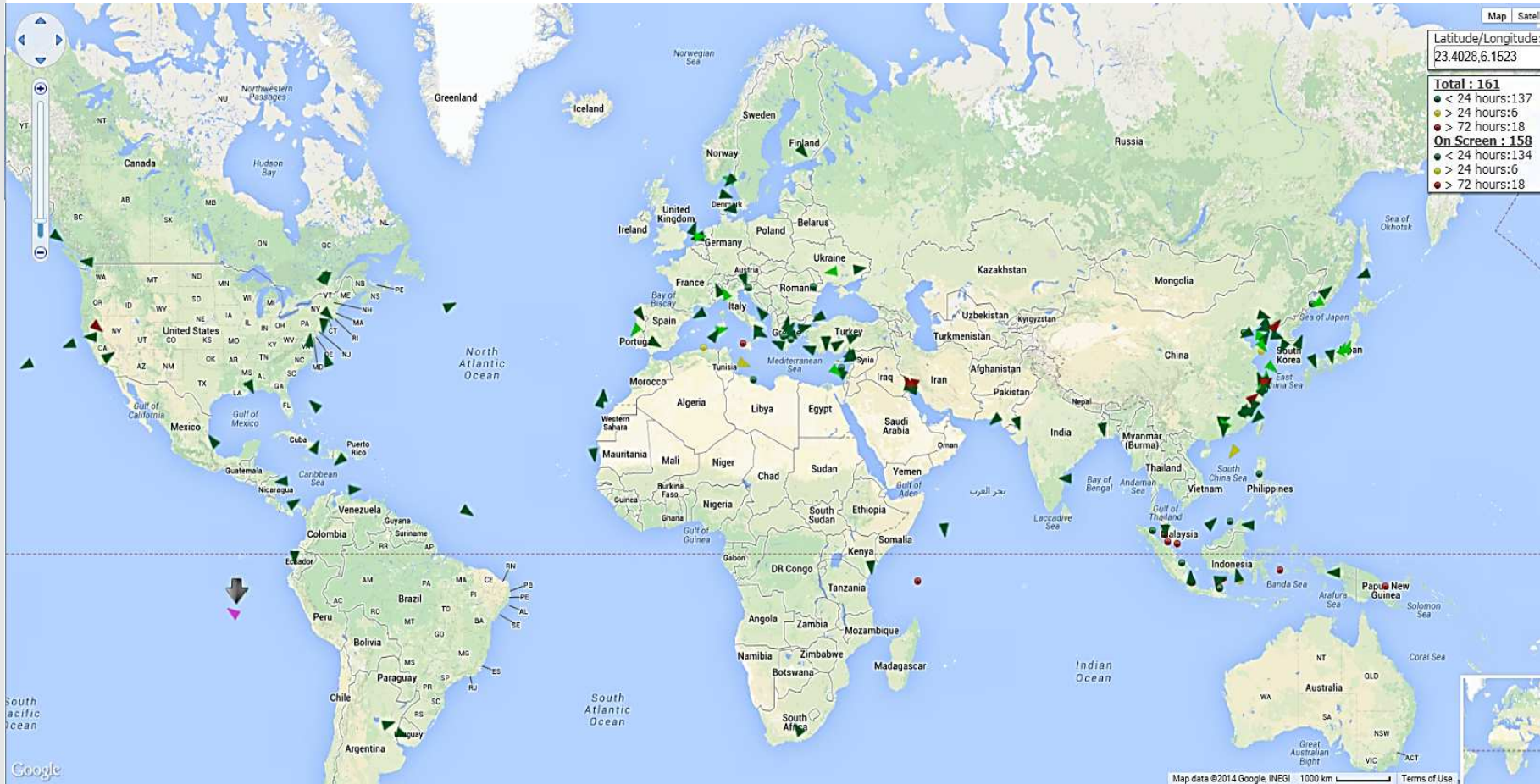
# General Cargo Over 25yrs



Data source: Clarksons/Orbcomm/Astrapaging



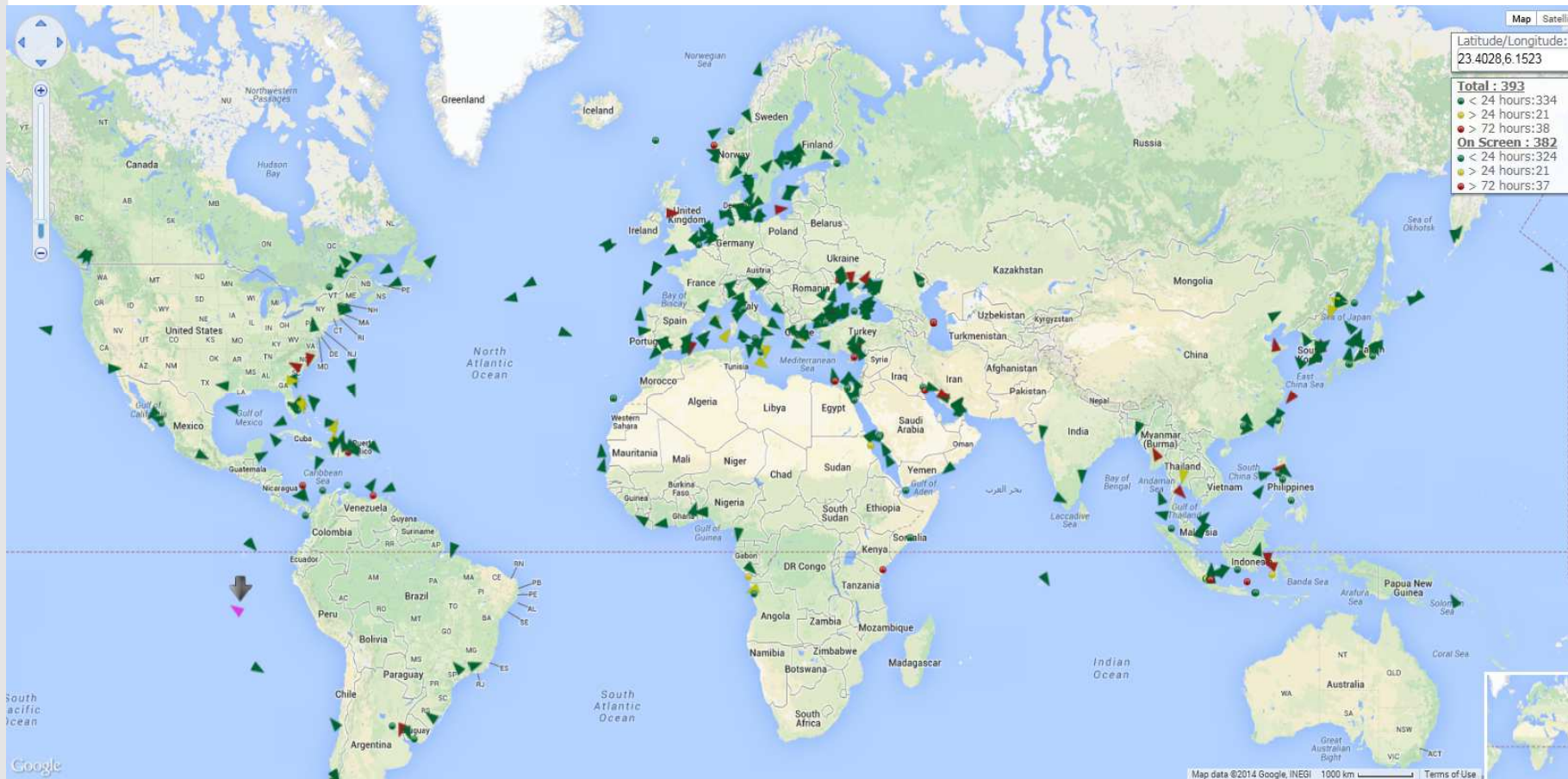
# Containerships Over 25yrs



Data source: Clarksons/Orbcomm/Astrapaging



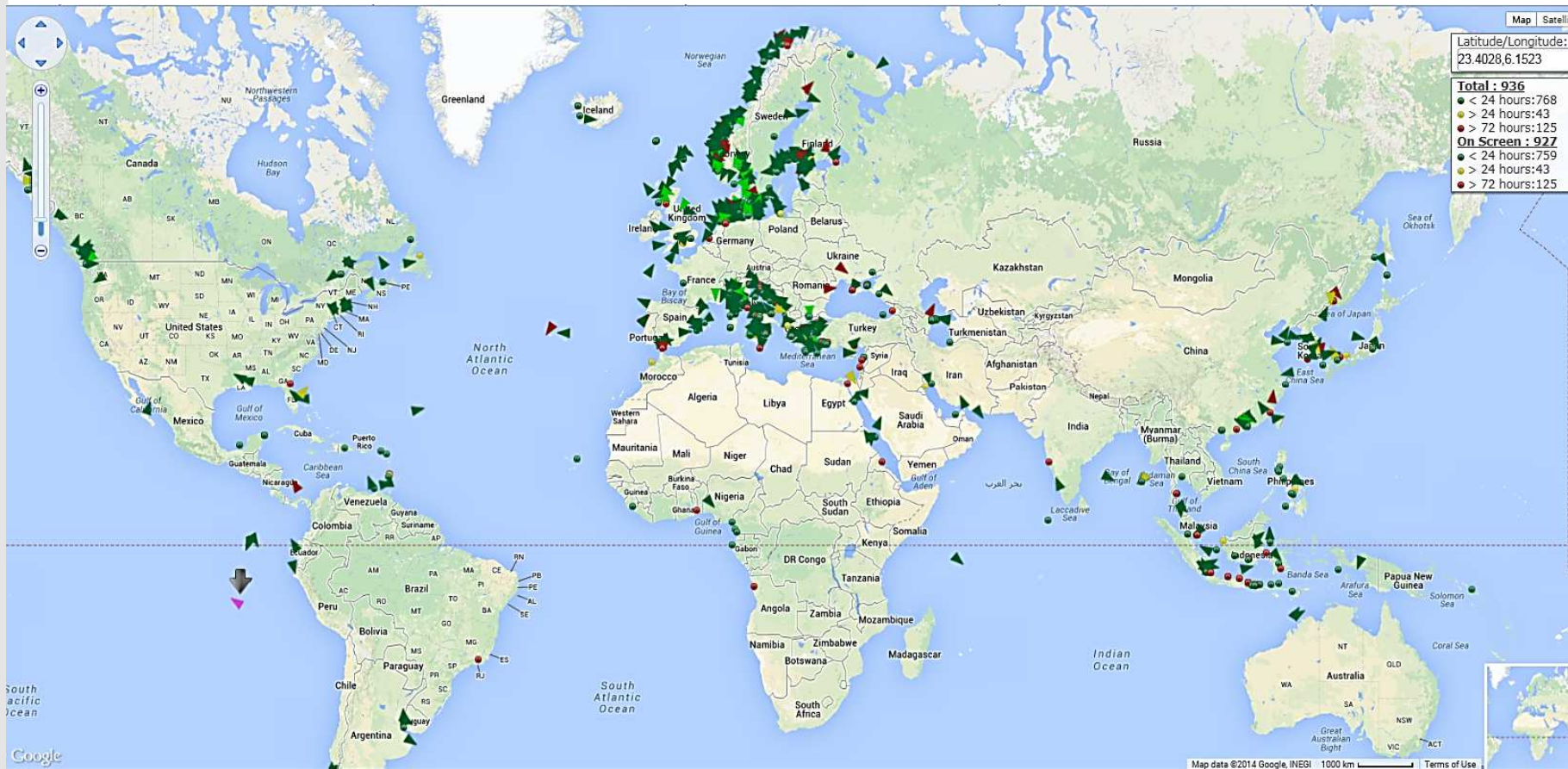
# Vehicle Carriers Over 25yrs



Data source: Clarksons/Orbcomm/Astrapaging



# Passenger Ships Over 25yrs



Data source: Clarksons/Orbcomm/Astrapaging



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**Thank You**