

**OCEAN
SHIPPING
CONSULTANTS**

a company of



Global and regional container trends and developments

Mauritius Maritime Week 2025

22nd January 2025



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Introduction

Royal HaskoningDHV is an independent international engineering and project management consultancy. Ocean Shipping Consultants (OSC) is the maritime economics and financial consultancy arm of the company.

- ❑ Originally founded in 1881
- ❑ Over 140 years of experience
- ❑ Turnover €600m
- ❑ Deliver services in the fields of:
 - aviation,
 - buildings,
 - energy,
 - industry,
 - infrastructure,
 - maritime,
 - mining,
 - transport,
 - urban / rural development,
 - water.



6,000 Staff



140 Countries

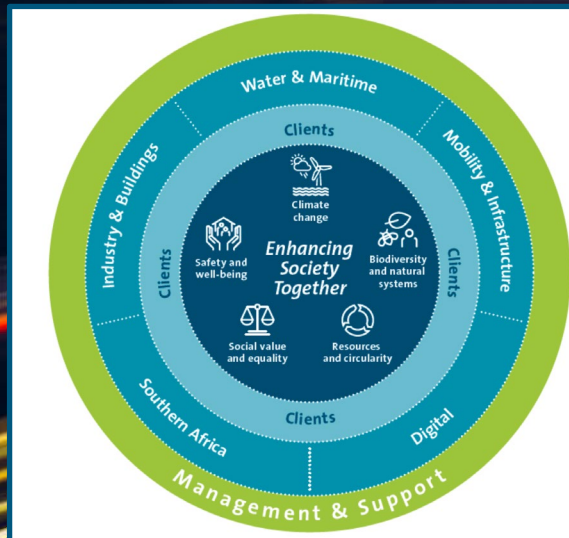
- ❑ Ocean Shipping Consultants (OSC) is the maritime economics and financial consultancy arm of the company and is a leading brand in the maritime sector with over 35 years' experience.



Over 200 clients
International Finance Institutions, infrastructure funds, banks, port authorities, governments, shipping lines and terminal operators



Over 350 projects
in nearly **100 countries** successfully completed since 2011



Introduction

Examples of recent projects in the region



Mauritius Alternative Fuels Potential 2023

RHDHV was commissioned by the Mauritius Port Authority to carry out an update of the port Master Plan for Port Louis. As part of this project, a dedicated section focused on alternative fuels.

An in-depth analysis was conducted into the potential for establishing a low-carbon shipping industry at Port Louis. Their study explored various available options and examined the most likely scenarios that could unfold in the future.

The report outlined the outlook for alternative bunker fuels and presented options available to the aviation sector in Mauritius for transitioning to alternative fuels. The report further addressed the infrastructure changes necessary to support the adoption of alternative fuels.



OPS feasibility Study for Cruise Ships 2022

Royal HaskoningDHV was retained by the IO Commission to prepare a Feasibility Study and elaboration of a Plan for the setup of an Onshore Power Supply System for Berthing Vessels at Port Louis Harbour, Mauritius.

This study has the objective to study the technical feasibility, financial viability and environmental benefits of using shore sourced power on cruise ships moored at the Christian Decotter cruise terminal on the Les Salines reclamation, Port Louis. The grid connection would provide cruise vessels with the necessary energy to power on board facilities such as air conditioning, hospitality facilities and cargo handling machinery needed for both crew.



Durban CT2 Bid Support 2022

After the two-step qualification stage of Request for Information, our client was one of the 10 respondents shortlisted for the Request for Proposal, to bid for the concession for two terminals (Durban CT 2 & Ngqura CT). The scope of engagement for RHDHV was to provide support for their bid for the concession of Durban CT2.

Our report included an analysis of port market, revenues, CAPEX, and OPEX implications, to serve as input for the client in its bid preparation process. It covered a review of the terminal's business plan followed by independent volume and tariff forecasts. RHDHV views were compared to the BP and recommendations provided.



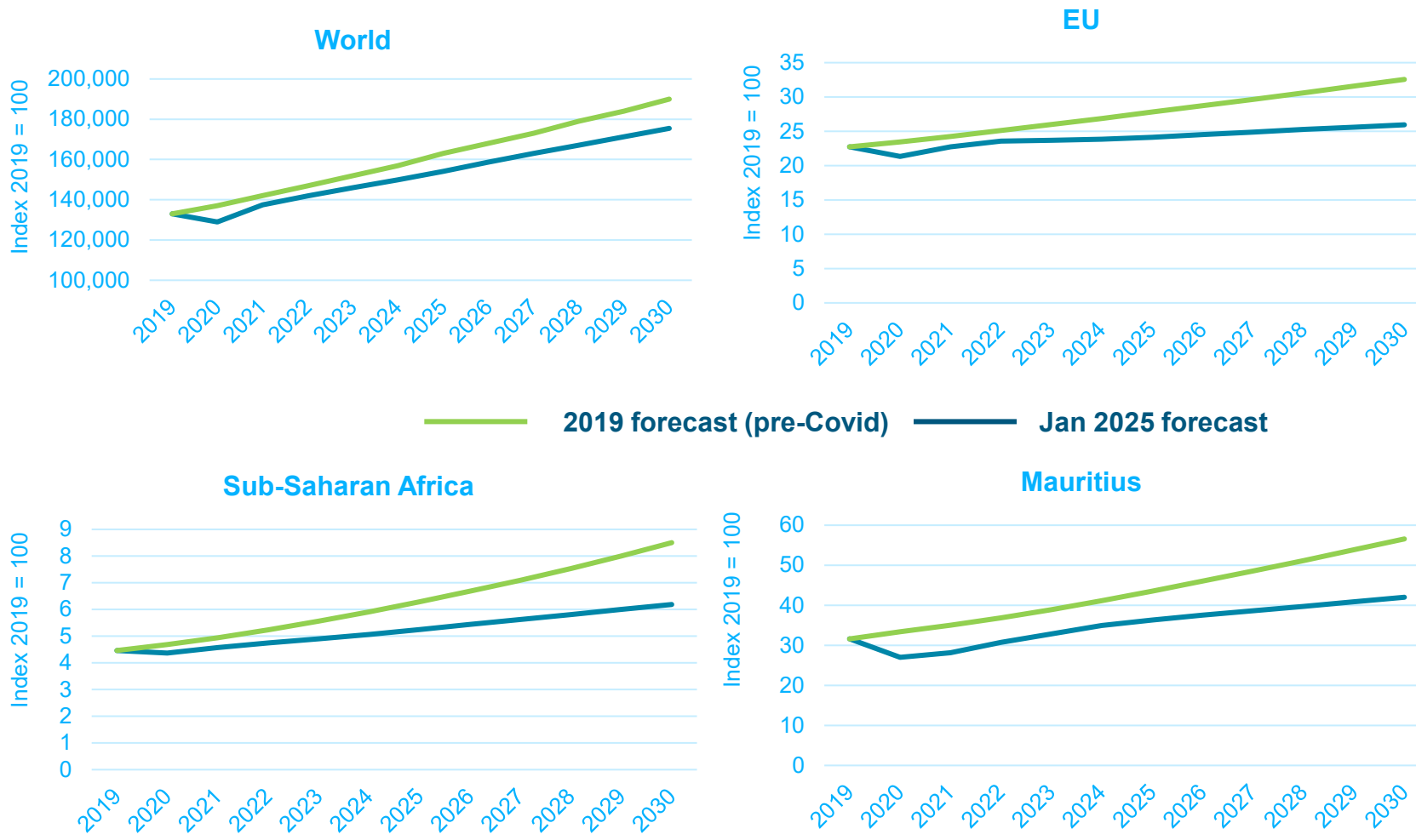
Toamasina masterplan update 2021

Société de Gestion du Port Autonome de Toamasina (SPAT) would like to update the masterplan of the port of Toamasina, which RHDHV carried out in 2011. It was proposed to first carry out a full market study covering all cargo handled and passengers, to better define the priorities for the new masterplan.

he produced market analysis and forecasts provided SPAT with an independent review of the container, bulk and passenger cargo market and potential of Toamasina, allowing them to proceed with a defined set of priorities for the new masterplan.

Global Economic Outlook

The global, EU, Sub-Saharan Africa and Mauritius economies will not recover to their pre-Covid pandemic levels in the near future.



Region	Difference in 2030
World	-7.7%
EU	-20.3%
Sub-Saharan Africa	-27.2%
Mauritius	-26.5%

Source; Oxford Economics

Events of recent years has led to profound changes in how we live and do business, impacting on the global supply change.

1) COVID-19 pandemic

- Labour shortages affecting the global supply chain as the port systems in entire regions shut down for weeks at a time.
- Ships 'bunching' with long delays to enter ports and of course causing a knock-on effect of capacity shortages elsewhere.
- As supply chains failed, importers had to resort to alternative markets.
- This presented risks for some and of course opportunities for others.

3) Israel-Palestine conflict

- Increased instability in the middle east could lead to unpredictability in oil prices
- Attacks on ships in the Red Sea are already significantly impacting on global trade and have led to increase in consumer prices

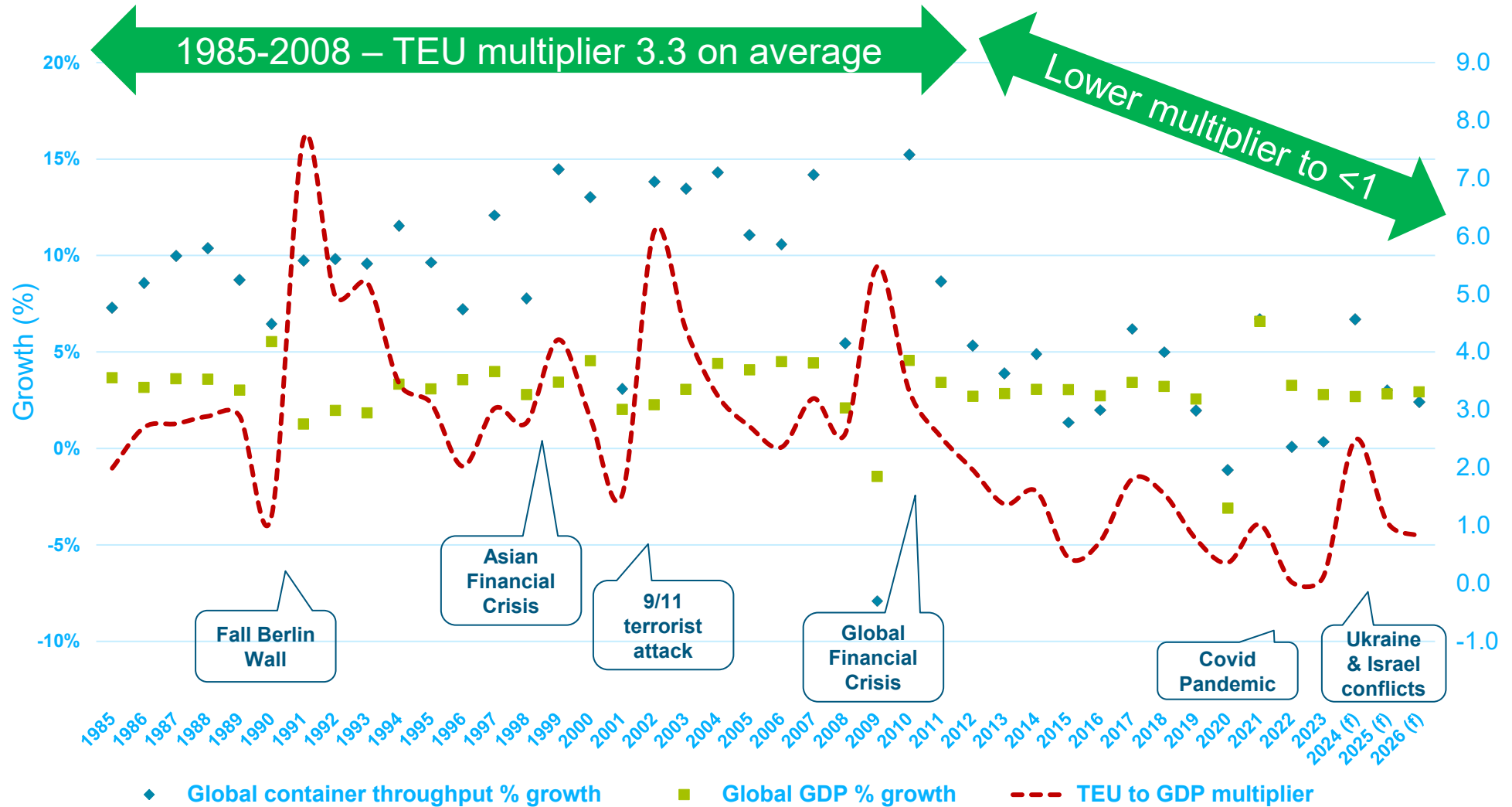
2) Ukraine war

- Sanctions were imposed on Russia and grain exports from the Ukraine ceased.
- Alternative options were sought, driving global prices up and impacting disproportionately on poorer countries who are priced out of the market.
- The oil price increased dramatically benefiting many economies and incentivising project investment in this region.
- Now it is beginning to slowly fall again causing some caution in respect of realising these projects.

4) The world is now experiencing

- Extended period of instability and uncertainty
- staggering inflation
- unions are striking for higher pay
- exchange rates are changing rapidly.

The declines in the container volume growth is putting pressure on Shipping Lines and Terminal Operators and means lower TEU demand than in past years.

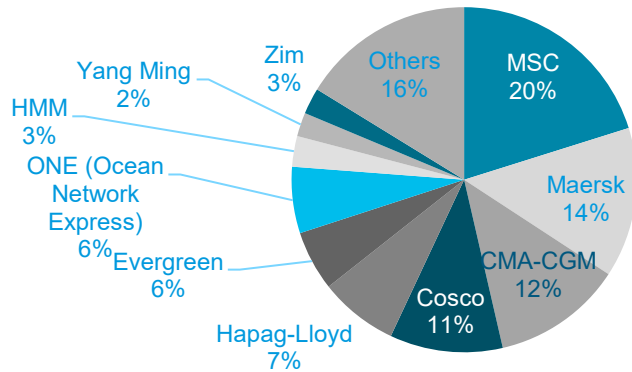


Source: OSC / Clarkson

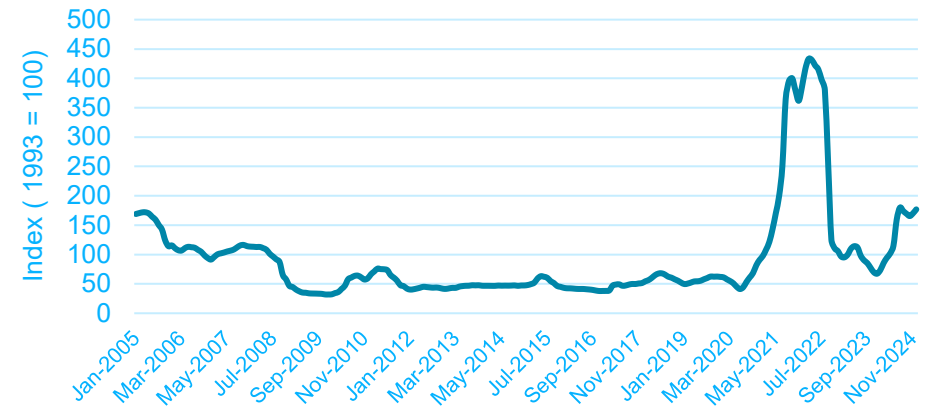
Container Shipping & Ports Sector

Key container shipping trends.

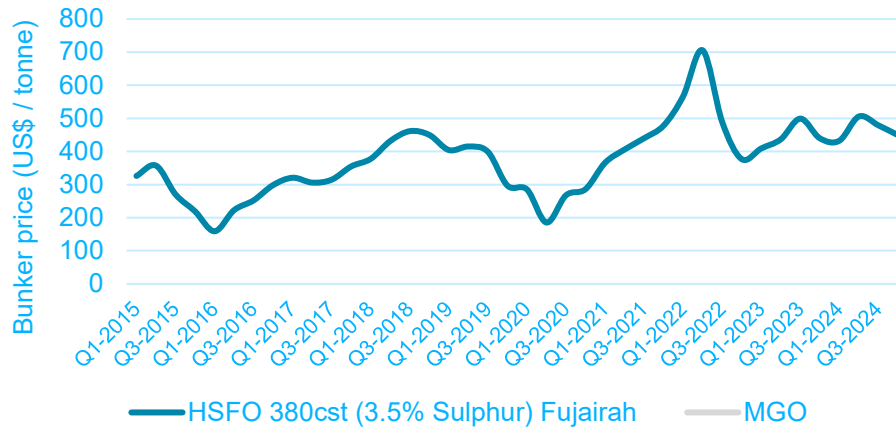
Containership fleet size per main operator



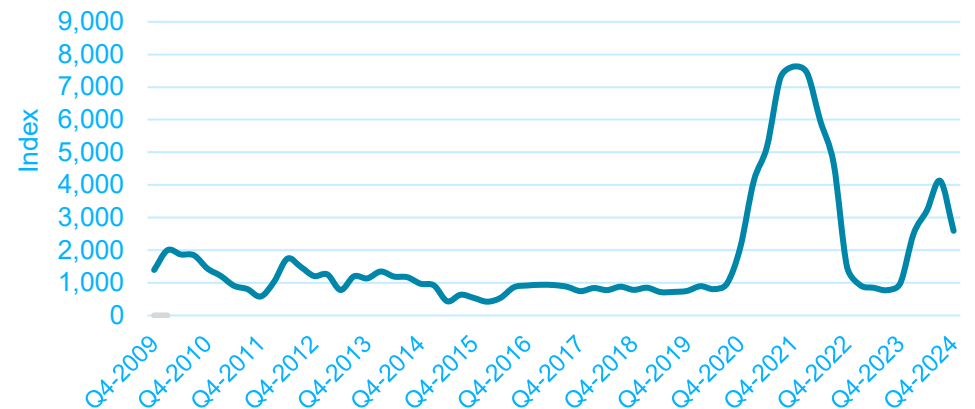
Average containership timecharter rate index (1993 = 100)



Bunker price trends – HSFO and MGO Fujairah (US\$ / tonne)



China-Europe Container Freight Rate Index



Source: OSC / Clarkson

Container Shipping & Ports Sector

Ports are typically categorized into transshipment hubs, deep-sea gateway and feeder ports. The analysis covered in this chapter includes the main regional transshipment hubs and gateway ports.



Transshipment hubs

- Requirements: Deep-water cranes able to serve the largest vessels; berth and cranes with immediate access; mother vessels with high productivity; minimal deviation from main shipping routes; high proportion of gateway cargo; and good geographical location for weekly shuttle feeder services to and from key feeder ports. The existence of a hinterland market for origin/destination cargo alongside the transshipment business is an added attraction.
- Within the transshipment market, the nature of competition varies. Hub and spoke transshipment relies on the proximity of the hub to spoke ports, usually being able to make a round trip with a feeder vessel in a week. This effectively means that each hub has an “extended hinterland”, which it is competitively placed to serve.



Deep-sea gateway ports

- Handling origin/destination cargo
- Requirements: Proximity to centres of population and industry is critical; good hinterland connectivity by road and rail; deep water and equipment for large ships; and minimal deviation from the main shipping routes.
- A number of the larger gateway ports are handling small amounts of transshipment volumes as a consequence of the marginal costs of transshipping at a port which the shipping line already calls at.



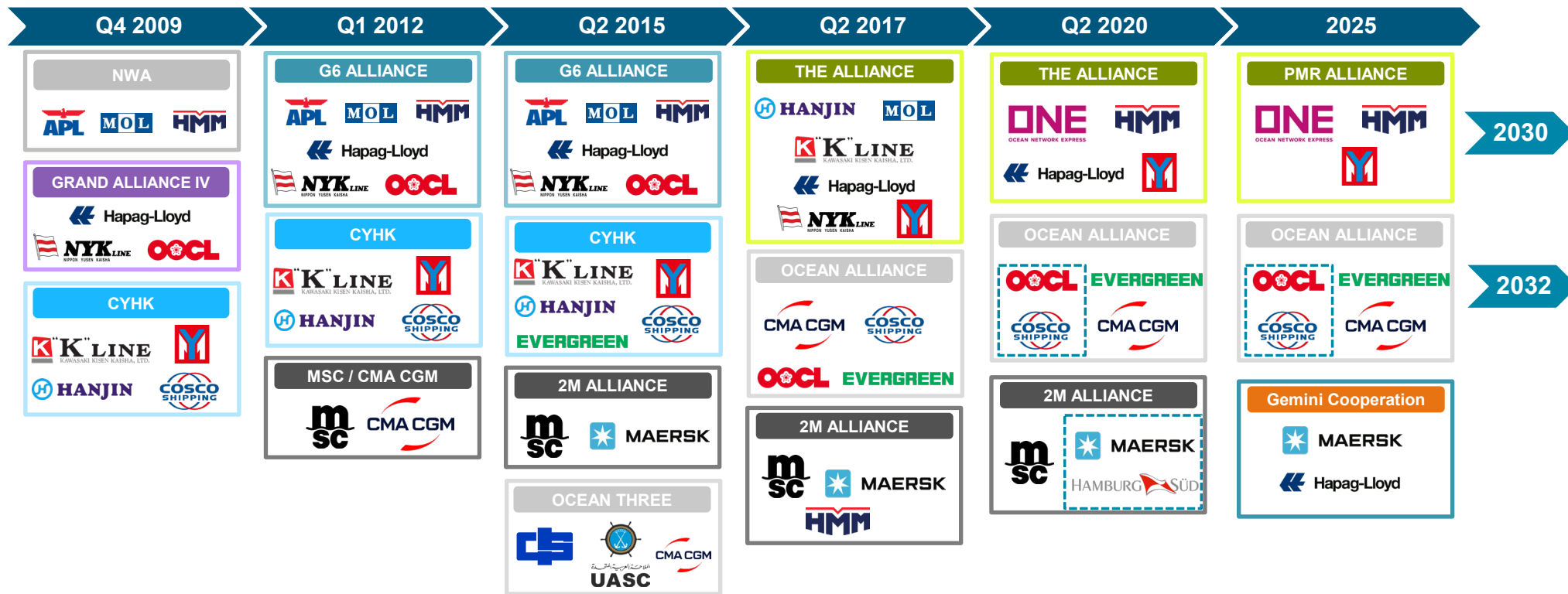
Feeder ports

- Handling origin/destination cargo
- Tend to have less stringent requirements on water depth, and in some cases have more basic handling facilities. While proximity to centres of population and industry is important, these ports tend to serve either a smaller cargo market, or are remotely located
- These ports see their traffic handled in smaller feeder vessels linking to transshipment hubs, or intra-regional traders linking with other short-sea ports.

Source: Ocean Shipping Consultants

Container Shipping Sector

The shipping industry has consolidated through alliances and M&A to improve vessel utilization and sea freight rates and enable liners to effectively operate larger vessels, bundling routes to offer a wider global network. Since 2015 all main carriers have been part of an alliance. Maersk and Hapag-Lloyd are forming the Gemini Cooperation in 2025. The OCEAN and PMR Alliance run until 2032 and 2030.



Main Carriers Not Part of an Alliance

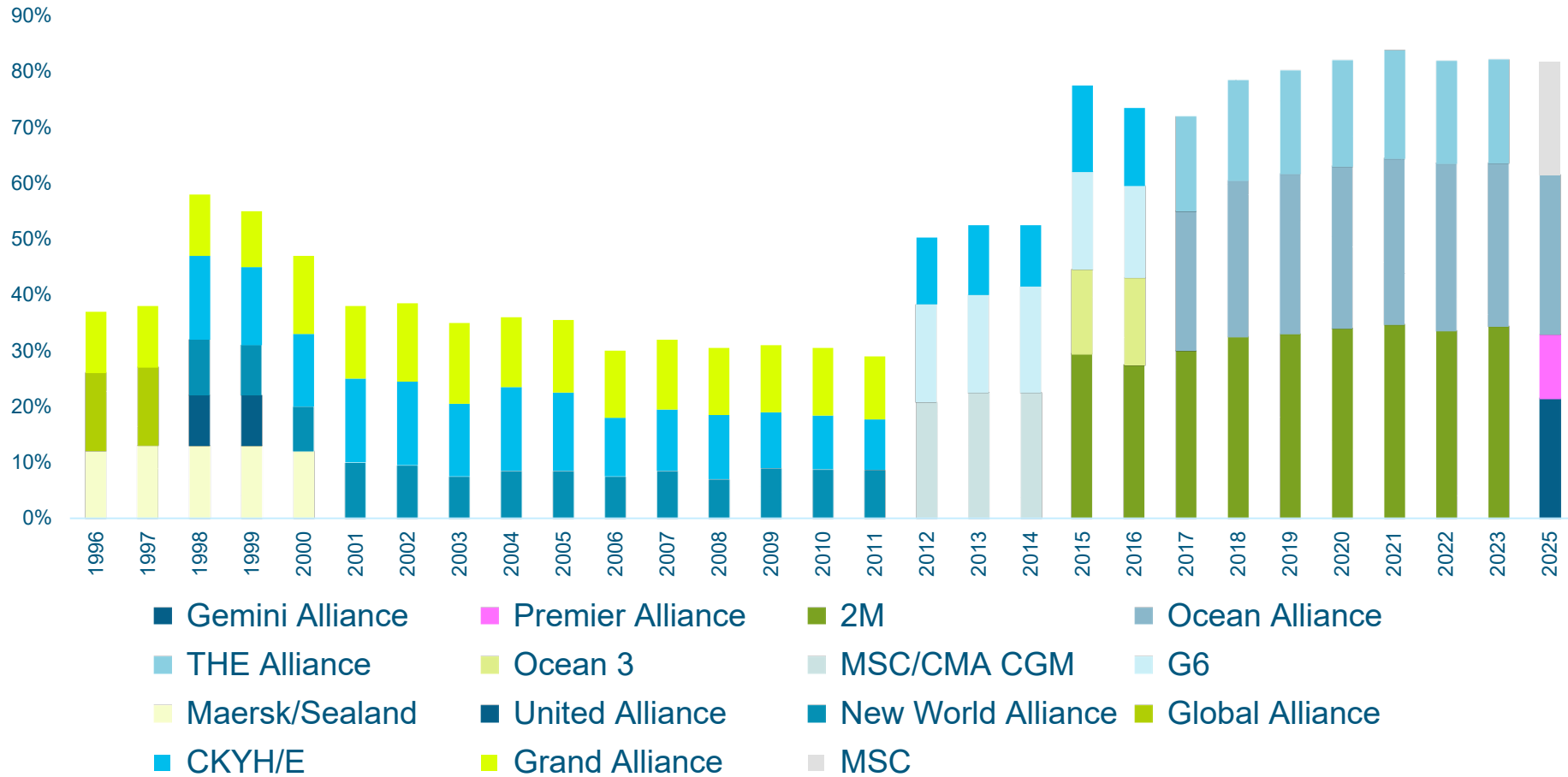


Source: OSC

Container Shipping Sector

The upscaling of alliances in the shipping sector led to a very quick growth of the combined market share of the three largest alliances, from less than 30% in 2011 to over 80% today.

Development of the combined market shares of the three largest shipping alliances

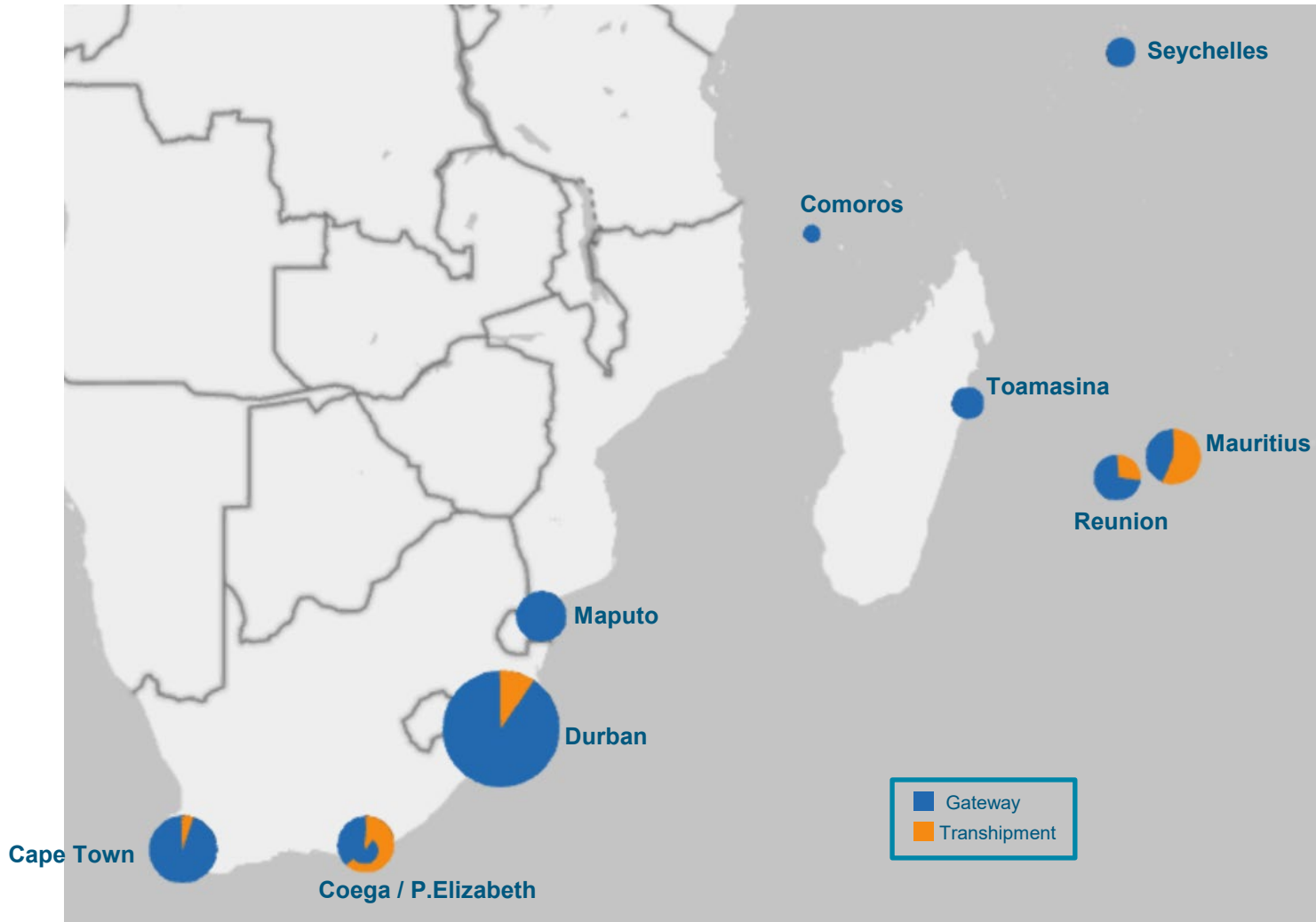


Source: Alphaliner

Container Port Sector

Transshipment volumes are concentrated in Mauritius, Reunion, Coega and Durban. This may soon change with the opening of the new CT in Toamasina, focused on transshipment.

Main regional ports

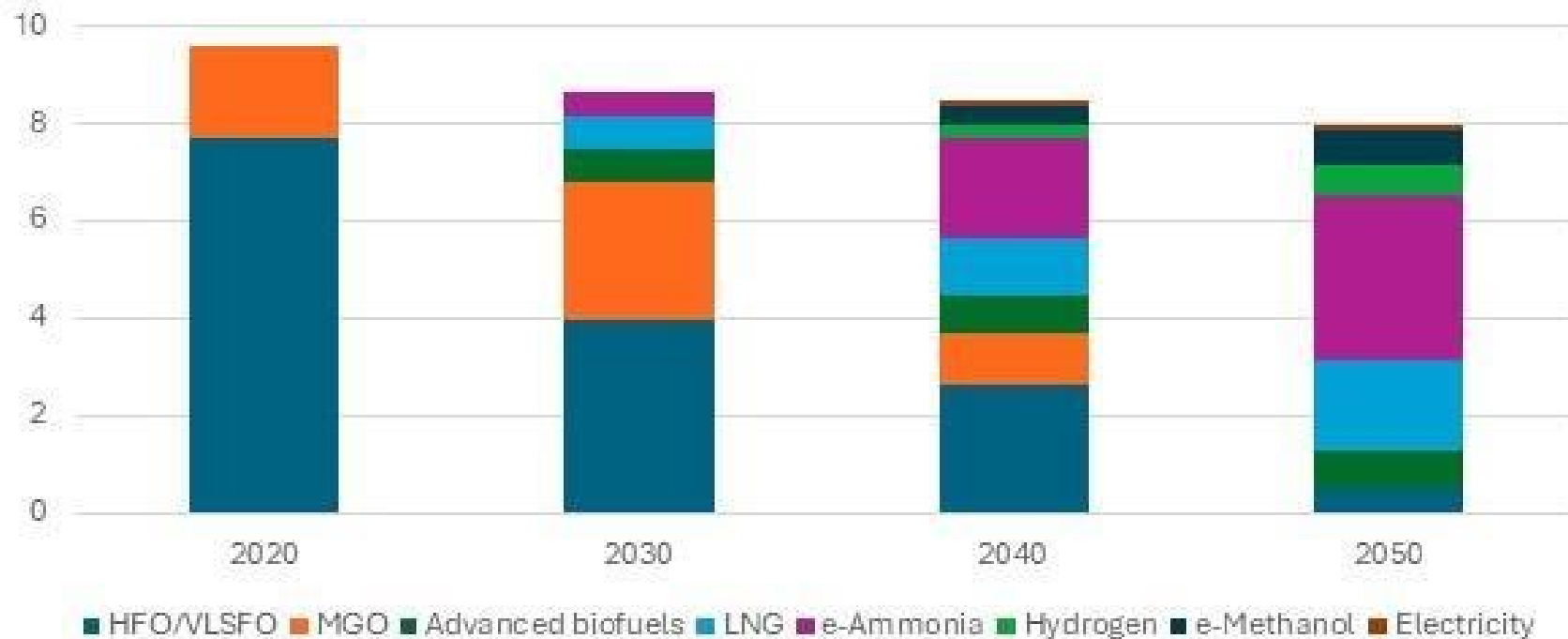


Green Fuels and port planning

Understanding global market dynamics and local production and consumption is essential for determining the right time to invest in green fuel port infrastructure

- **Hydrogen Demand:** Total hydrogen demand is forecast to grow from 100 million tonnes in 2024 to 320 million tonnes by 2050.
- Over half of this demand is projected for the transportation sector in the form of pure hydrogen, ammonia, methanol, and other green fuels. The remainder is earmarked for manufacturing.

Global ship fuels, forecast to 2050



Green Fuels and port planning

Ports must plan immediately for green fuels or risk being left behind. Detailed end-to-end planning, understanding regional variations, and engaging with stakeholders are crucial for acquiring the resources and partnerships needed for large-scale infrastructure projects

Green Fuel options

- **Methanol and Ammonia:** These are the most viable green fuel options for shipping. Methanol is favored due to its compatibility with existing dual-fuel engines, while ammonia requires dedicated engines still under development.
- **Environmental Impact:** Both fuels are derived from hydrogen and are carbon neutral if produced using renewable electricity. However, green methanol releases CO₂ during combustion, necessitating the use of green CO₂ in production

Infrastructure Requirements

- **Production and Handling:** Ports need to develop infrastructure such as pipelines, pumping stations, processing plants, and large storage facilities to meet the demand for green fuels
- **Safety Zones:** Due to the toxic and explosive nature of ammonia and hydrogen, establishing safety standards and conducting comprehensive impact assessments are crucial.

Investment timing

- **Ammonia Handling:** Investment should start between 2026 and 2030 to ensure market capture
- **Methanol Handling:** Immediate investment is needed to prepare for the growing number of methanol-powered ships

- **Infrastructure Design:** Ports should prioritize flexibility in infrastructure design and consider repurposing existing facilities to reduce capital costs and minimize risk
- **Phased Development:** A phased development approach will help ports gradually scale their infrastructure as demand increases. Initially, ports may rely on trucks for fuel transportation and storage in ISO containers or floating units. As demand grows, pipelines and permanent storage facilities must be introduced.

Conclusion

- Ports must plan immediately for green fuels or risk being left behind. Detailed end-to-end planning, understanding regional variations, and engaging with stakeholders are crucial for acquiring the resources and partnerships needed for large-scale infrastructure projects

Contact

Nishal Sooredoo
Associate Director
Ocean Shipping Consultants
Nishal.sooredoo@rhdhv.com

*Thank
You!*