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Reefer market update and challenges ahead

IBO, Lublin July 2023

Philip Gray, Reefer Analyst

Agenda

1	State of the reefer world
2	Reefer traffic modal split
3	Trade lanes
4	Container capacity development
5	Reefer capacity development
6	Freight rates
7	Enviromental aspect, the great challenge ahead
8	Conclusions

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State of the reefer world

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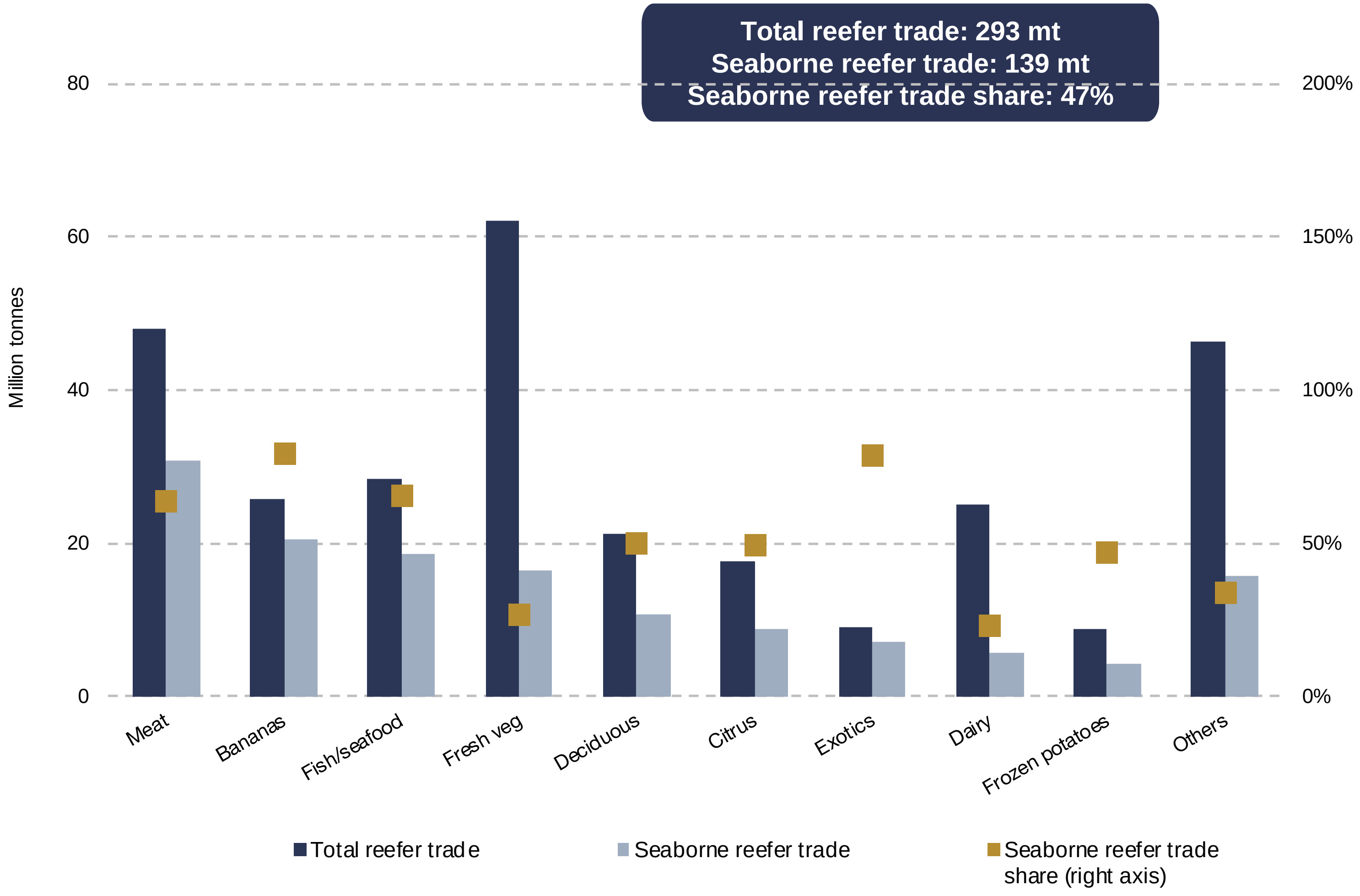
It is estimated that the world wide traffic of perishables reached 293 in the last 4 moving quarters.

The banana trade remains the highest in terms of seaborne participation with just under 80%

On the other side of the scale vegetables is the most traded commodity but has a relatively low seaborne participation of only 26%

World wide reefer traffic reached 293 million tons

Comparison between overall reefer traffic and seaborne reefer traffic



Source: Drewry Reefer Shipping Forecaster Q2 2023

The past two years have seen muted growth in the overall reefer industry.

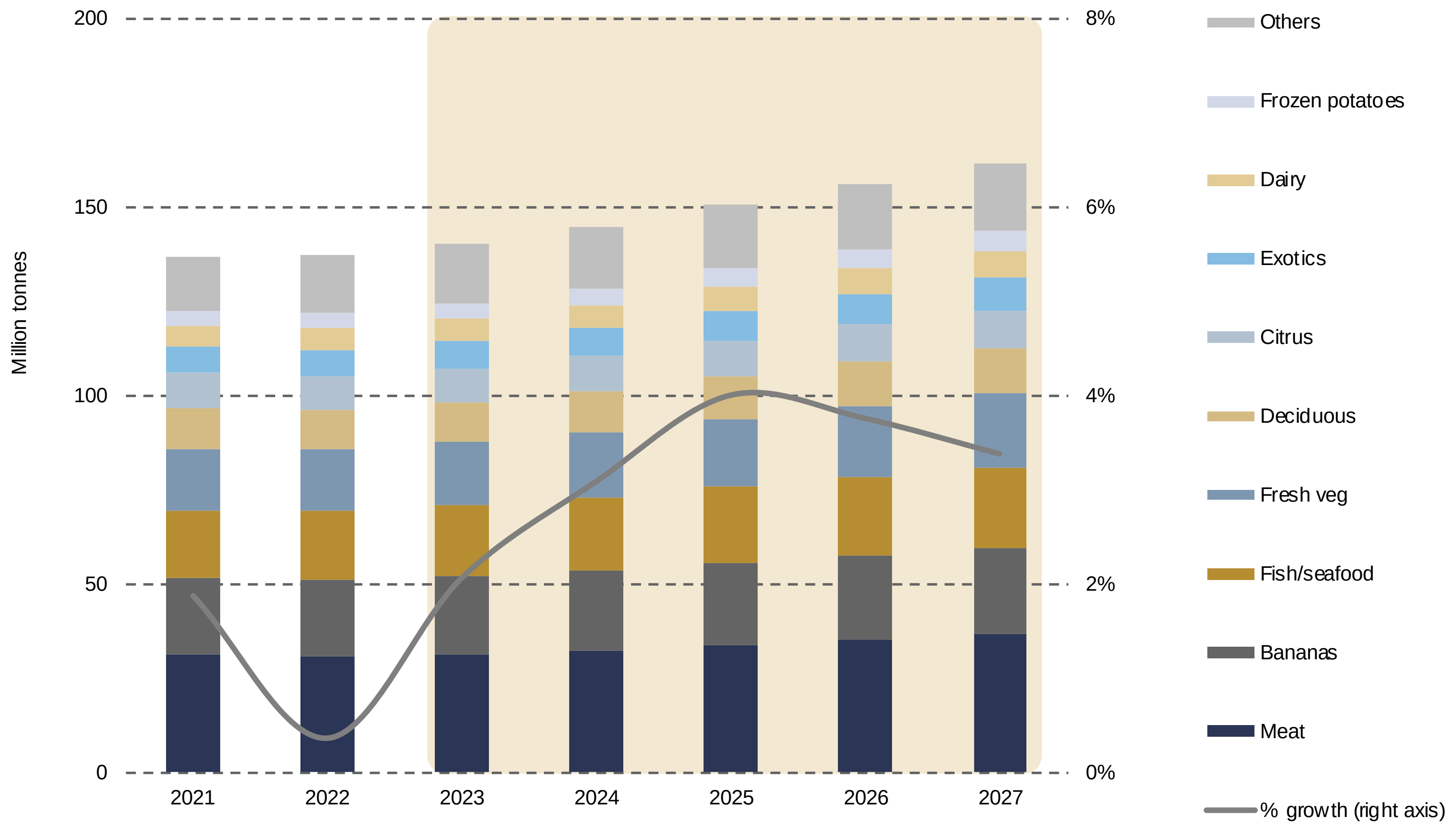
It is estimated that the seaborne reefer trade grew only 0.4% in 2022

Meat is king with 22% of the total seaborne market share, and bananas are queen with 15% of market share.

In absolute terms: 30.6 m tonnes of meat, 20.4 m tonnes of bananas and bronze medal for seafood with 18.56 m tonnes, 13%.

Growth expected CAGR 2023-27 2.8%

Seaborne reefer trade by commodity



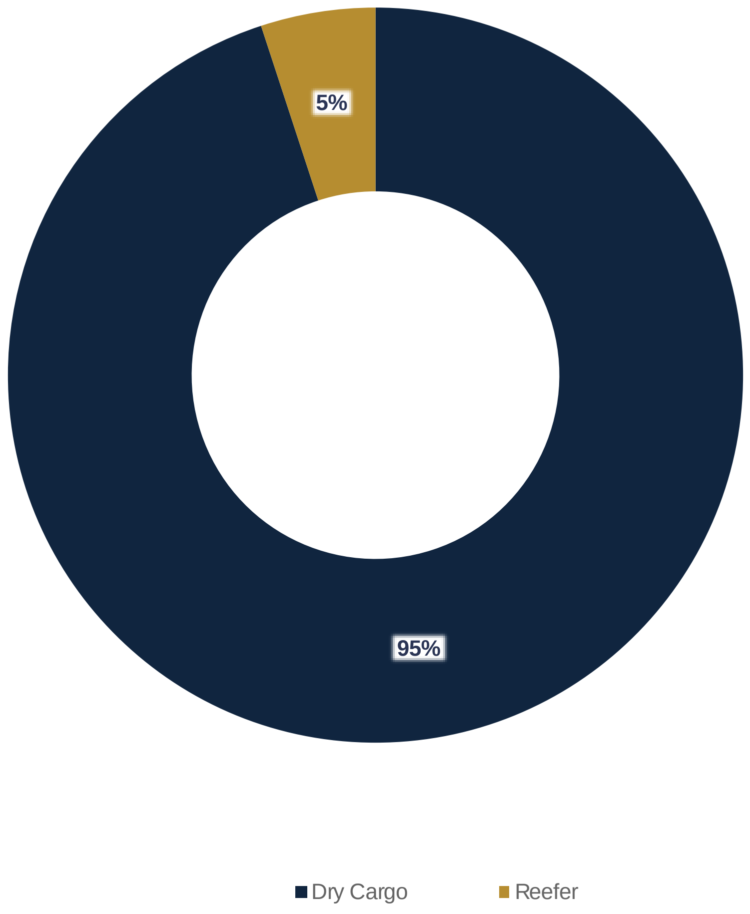
Source: Drewry Reefer Shipping Forecaster Q2 2023

It is estimated that in 2022, 215 million teu equivalent of cargo was transported world-wide.

Containerised refrigerated cargo only accounts for 5% of all those containers!

Dry cargo dominates the world of containers

Reefer share of worldwide containerized trade

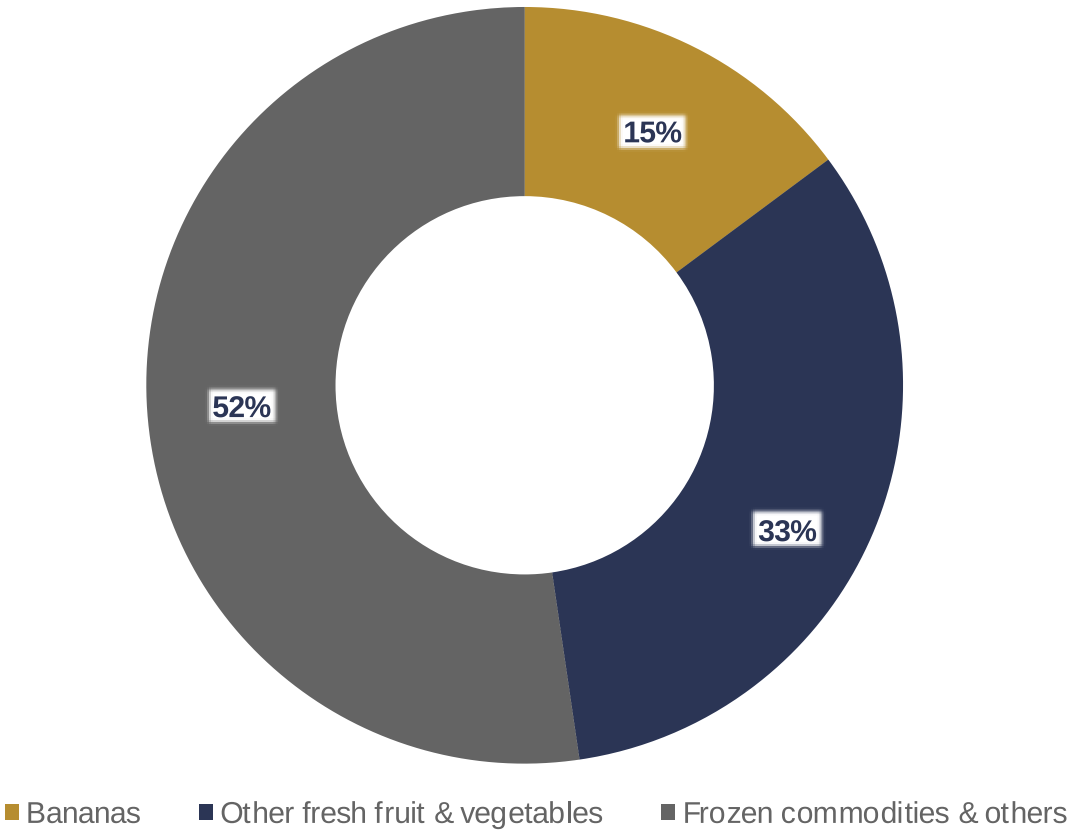


Source: Drewry Reefer Shipping 2023

Of the 139 million tonnes of perisables transported in 2022, 52% was frozen commodities/others with the balance 48% fresh produce.

Importance of frozen commodities in the reefer trade

Frozen commodities as % of reefer trade



Source: Drewry Reefer Shipping 2023

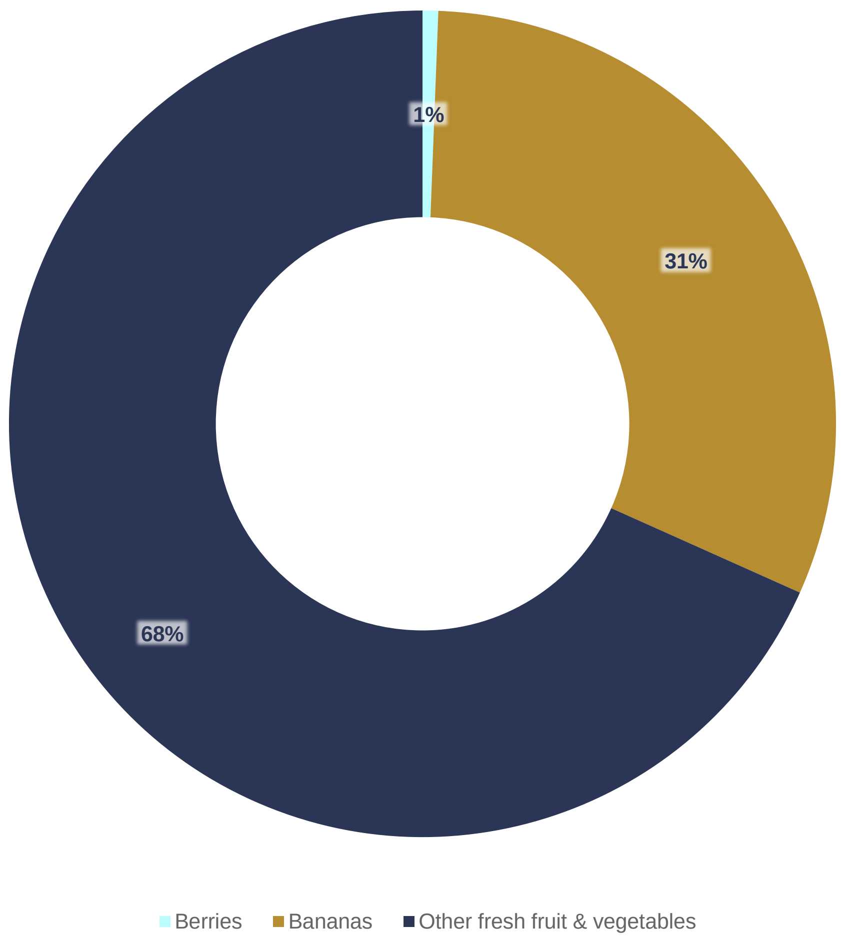
Visually we can see how from the total worldwide seaborne fresh vegetable and fruit trade bananas account for 31%, a staggering 20.4 million tonnes in 2022.

What is appealing to reefer operators is the year round availability. Seasonal produce pose a strong challenge to operators and many times struggle to cater to them properly.

Sensitive cargo pose an even further strain on reefer operators – discuss -

Berries v/s other fresh fruits & vegetables

Bananas are the single most important commodity in % terms



Source: Drewry Reefer Shipping 2023

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Reefer traffic modal Split

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It is estimated that 88% of all reefer traffic went in containers in 2022, and this is expected to go up to 91% in 2027

One caveat right now is that adjustments are expected as ship operators must reduce their carbon emissions on a yearly basis.

Measurements are mandatory as of Jan 2023 and many vessels and services will see adjustments (slower steaming = longer transit times)

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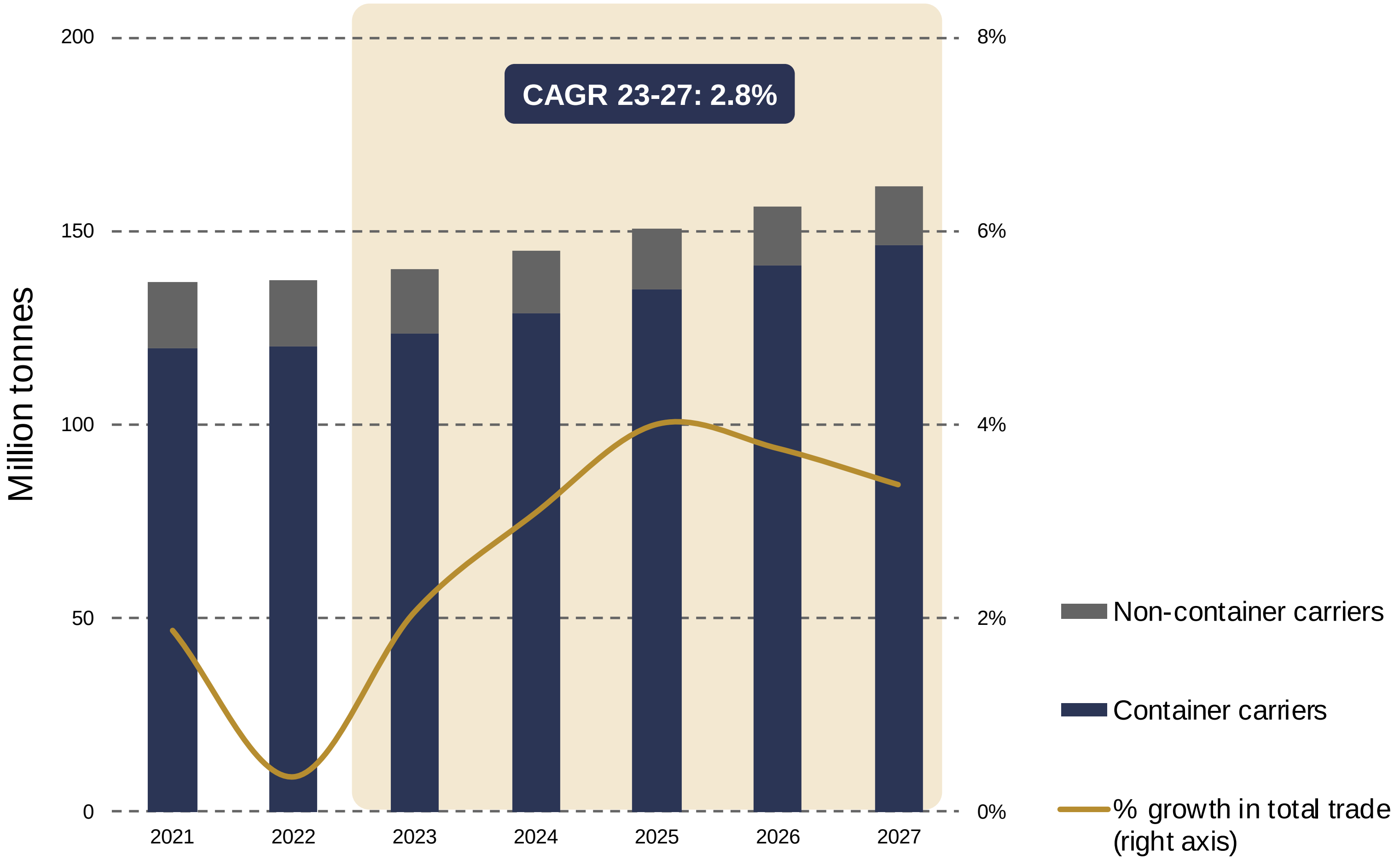
Containers keep 88% of the market in 2022

Expected reefer volumes by mode



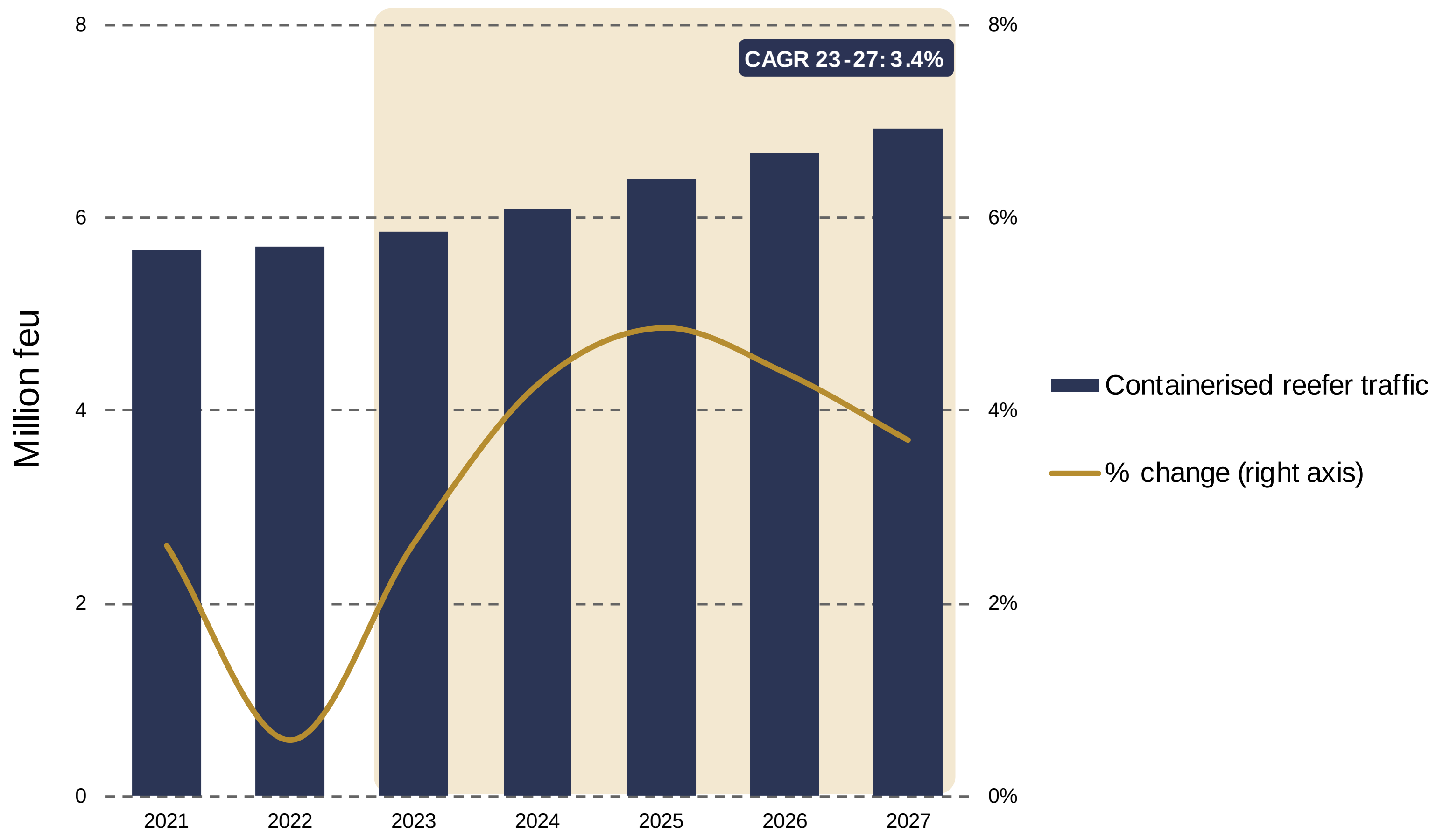
Source: Drewry Reefer Shipping Forecaster Q2 2023

Reefer container traffic is estimated to grow at 3.4% CAGR till 2027.

The container growth is naturally higher tan the market growth as specialised reefers loose market share to the container mode.

Reefer container traffic to grow 3.4% CAGR to 2027

Estimated reefer traffic

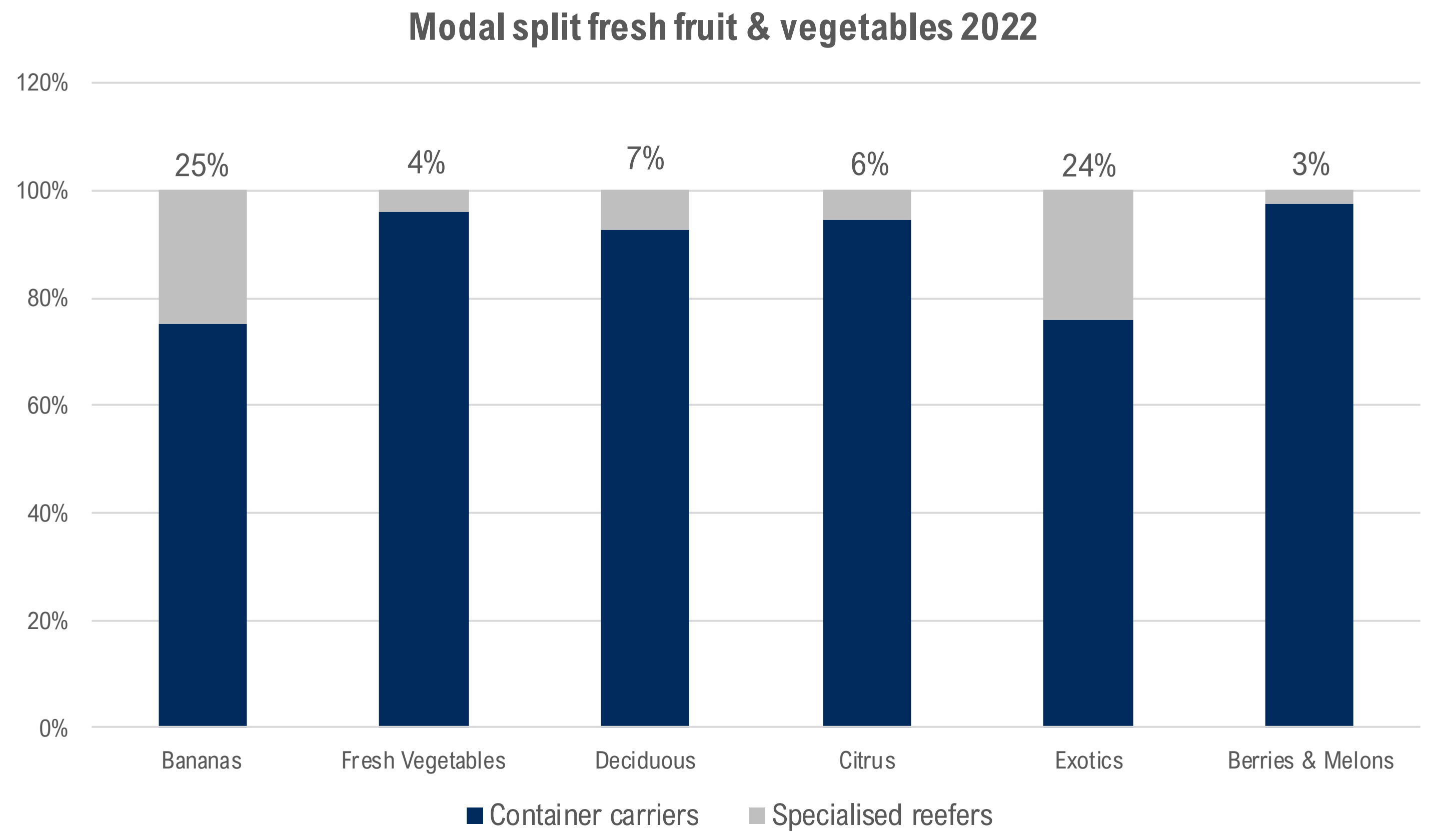


Source: Drewry Reefer Shipping Forecaster Q2 2023

Specialised reefers hold on to 25% of the banana traffic thanks to its ability to keep schedules and adapt to specific schedule patterns.

Split of fresh cargoes between containers and specialised

Modal split fresh cargoes 2022



Source: Drewry

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Brief overview of some of the main reefer trade lanes

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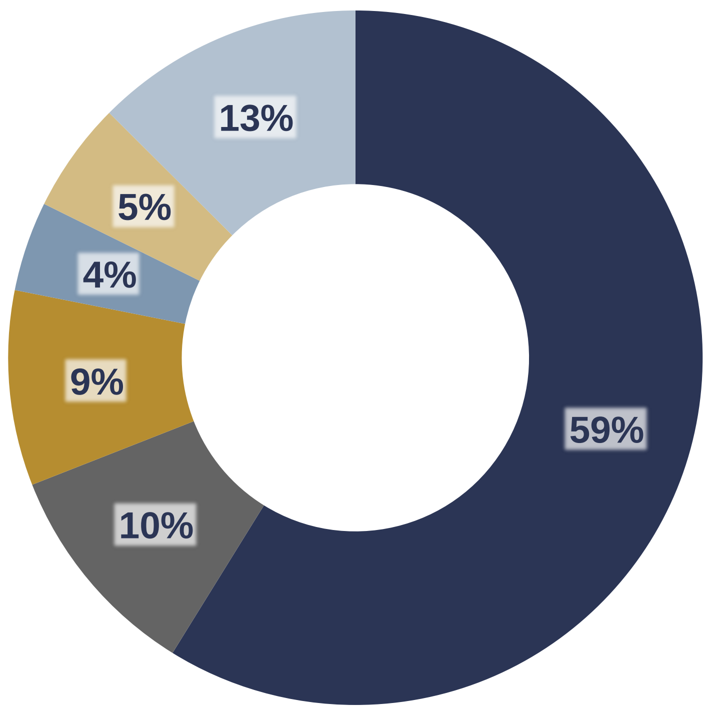
The largest single reefer traffic in the world accounts for 7.38 million tonnes

North America to Asia

Reefer traffic by commodity group

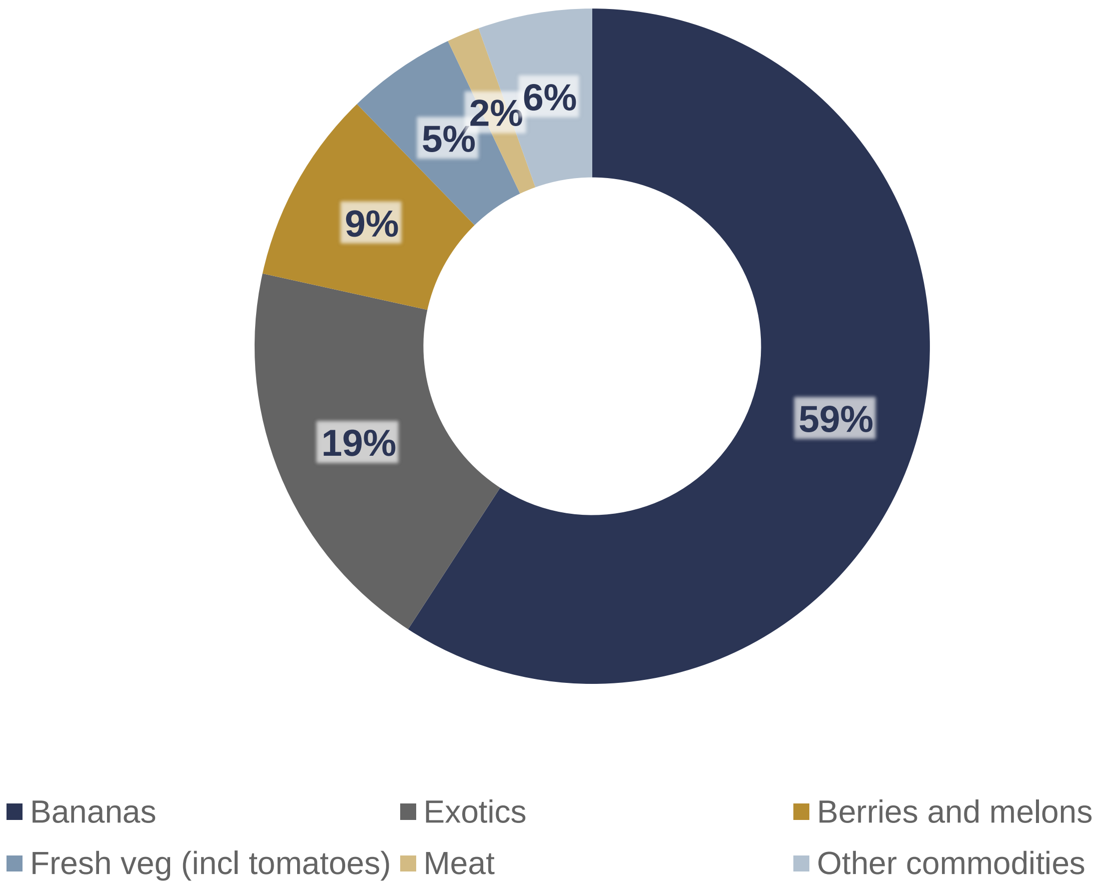


Source: Drewry Reefer Shipping 2022

The second largest traffic is dominated by bananas and accounts for 6.79 million tonnes

Central America and Caribbean to North America

Reefer traffic by commodity group



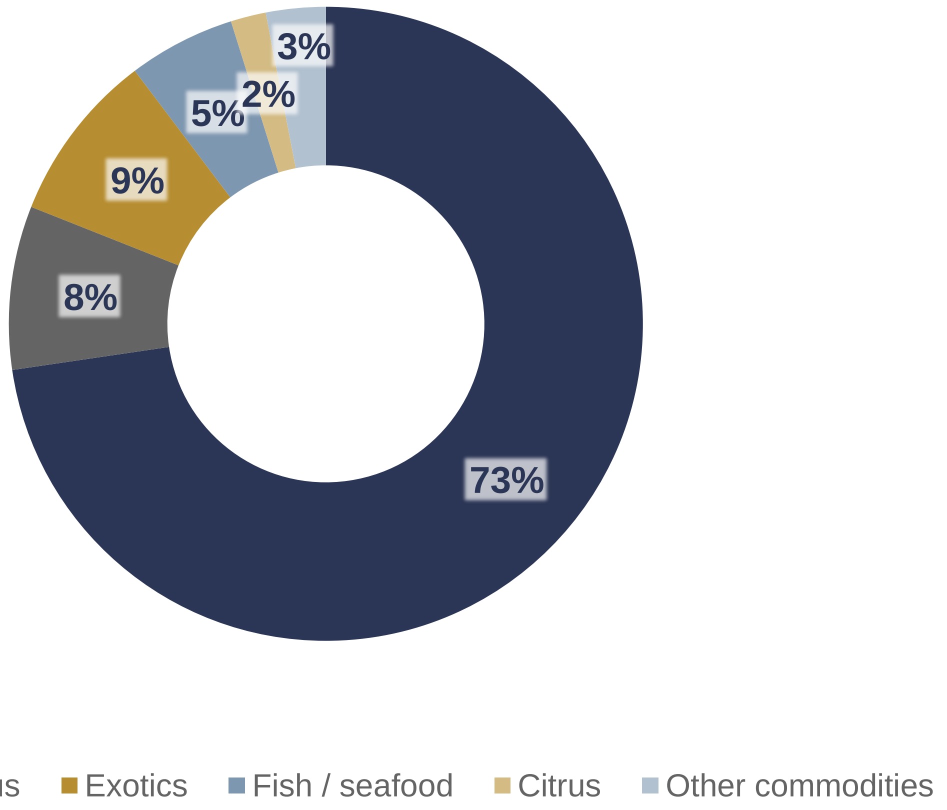
Source: Drewry Reefer Shipping 2022

Bananas clearly dominate the trade out of the WCSA to Europe, 73% of all cargo is yellow (green) gold.

Overall taffic amounts to 5.78 million tonnes

West coast South America - Europe

Reefer traffic per commodity group

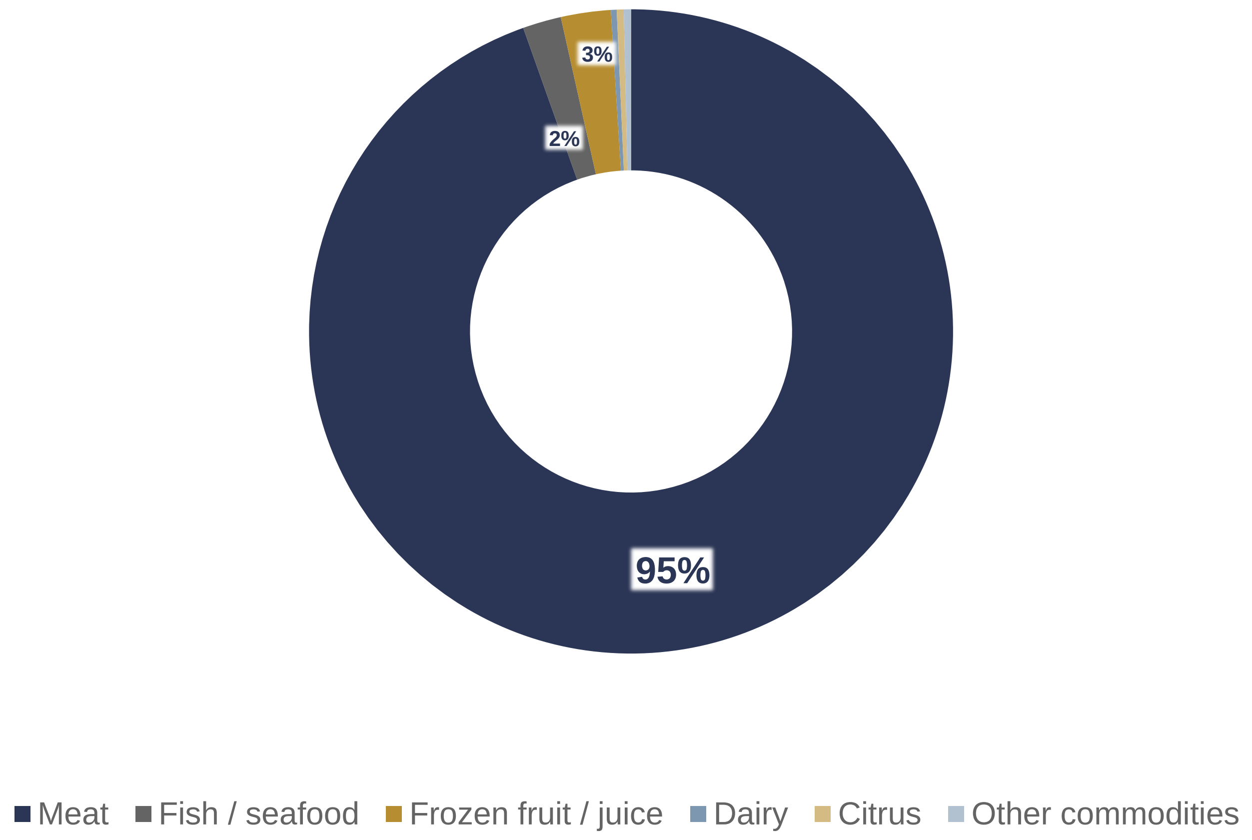


Source: Drewry Reefer Shipping 2022

The dominance of protein on this trade 5.22 million tonne trade is a staggering 95%

East Coast South America - Asia

Reefer traffic by commodity group



Source: Drewry Reefer Shipping 2022

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Capacity development

Container capacity in less hands

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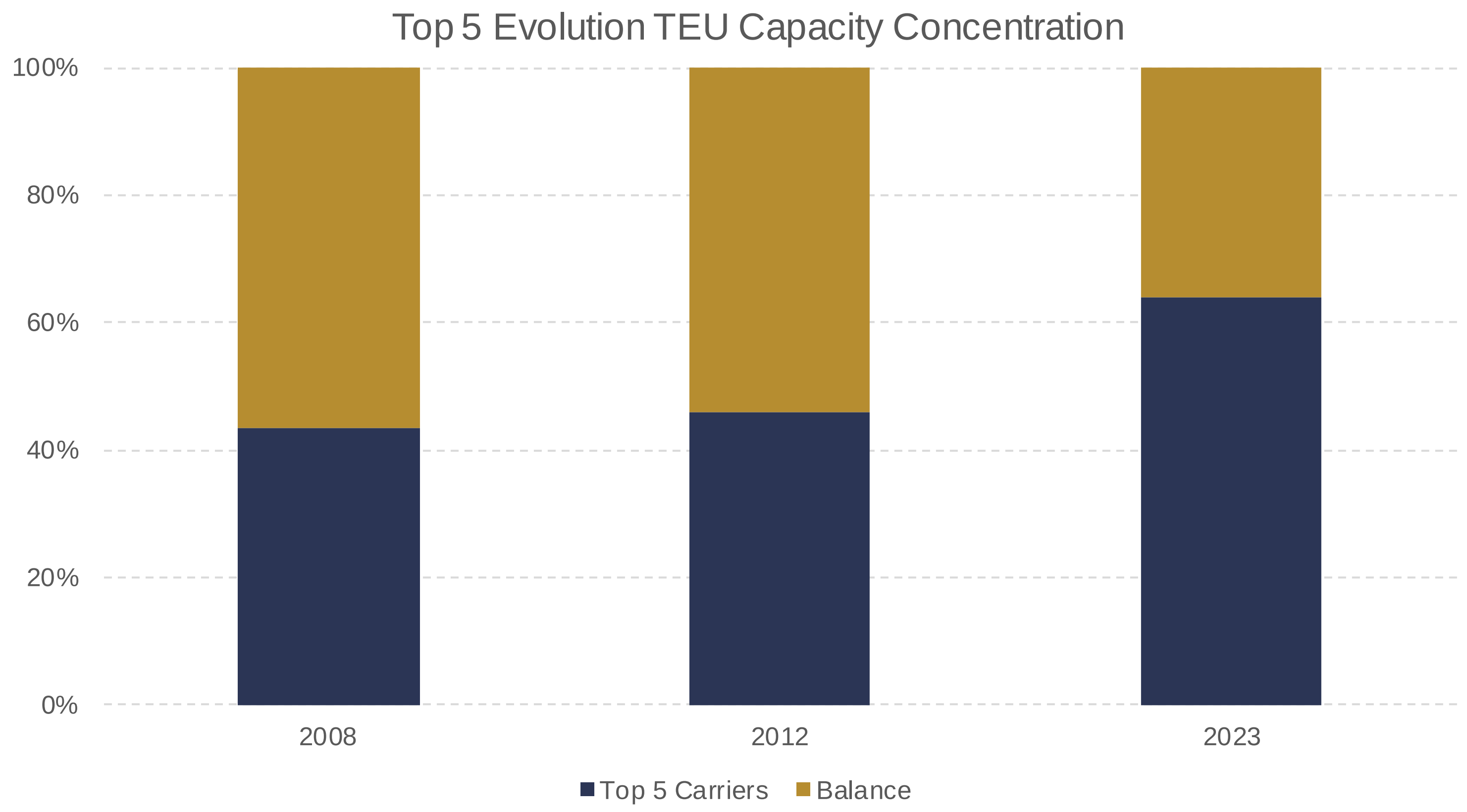
A quick look at the evolution of the conentration of the overall container market.

Top 5 operators concentrate 64% of world capacity

Evolution of Carrier concentration



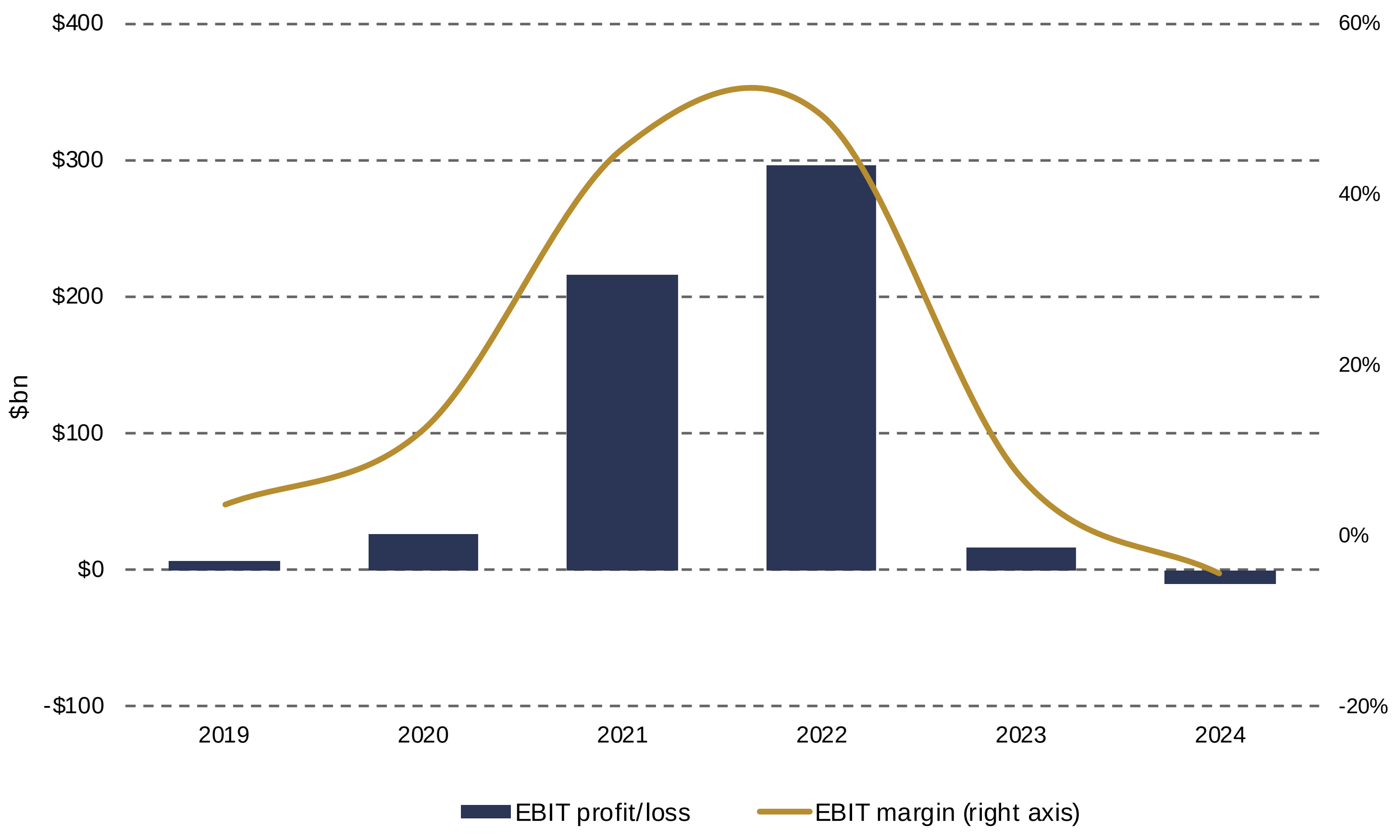
Source: Drewry

This chart is just to stirr emotions as of the massive profits the container lines enjoyed during the pandemic years.

What are carriers doing with all this money?

- Reducing debt
- Purchasing logistics companies
- Purchasing ports and terminals
- Technology for decarbonization

Container industry profit/loss overview

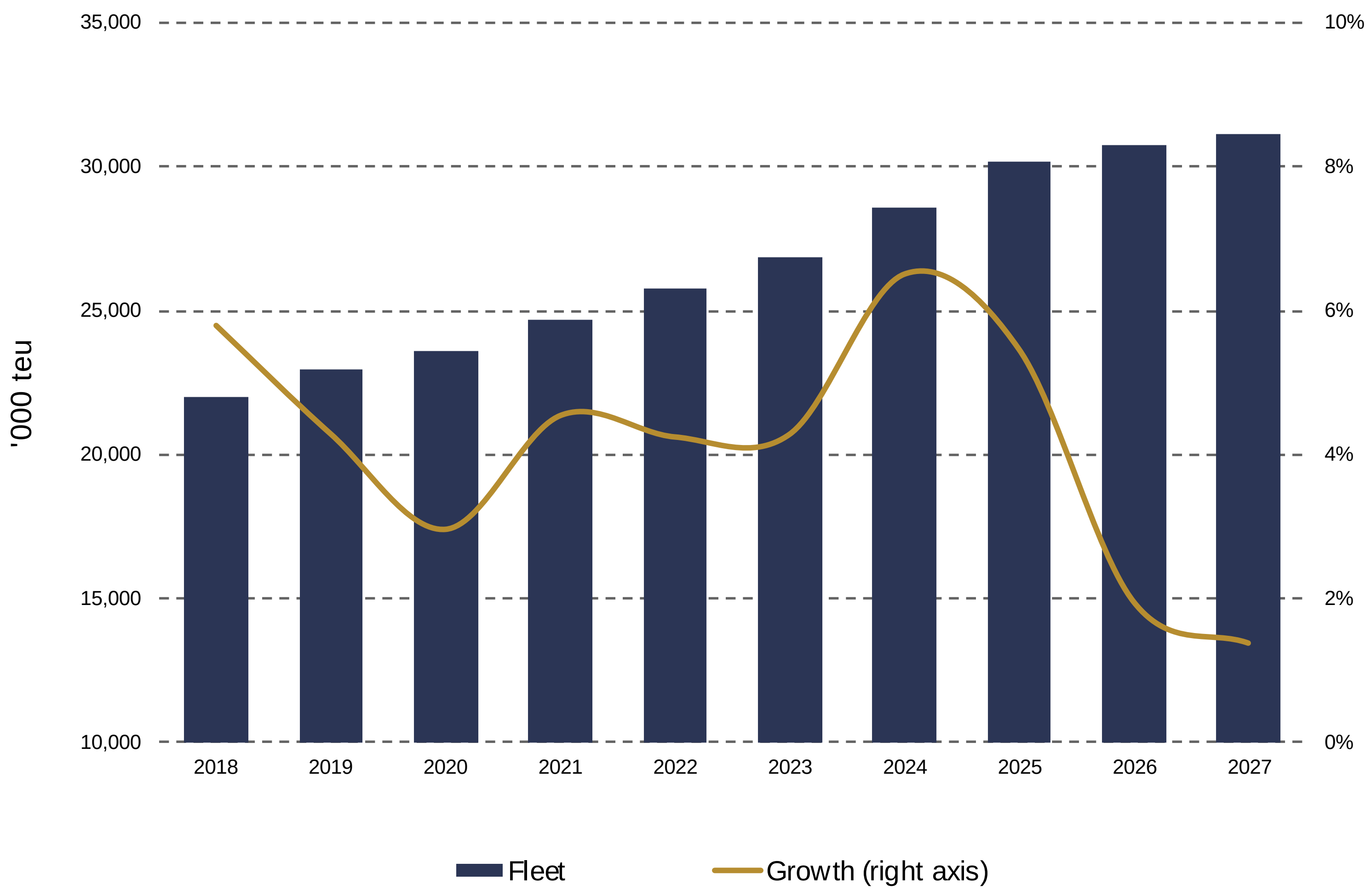


Source: Drewry 1Q 23 Container Forecaster

The container fleet is expected to grow 4.3% in 2023 and 6.5% for 2024 with overall teu capacity of 28.59 million teu!

By end of 2025 it is expected to breach 30 milion teu.

The overall container ship fleet continues to grow



Source: Drewry 1Q 22 Container Forecaster

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Reefer capacity at a glance

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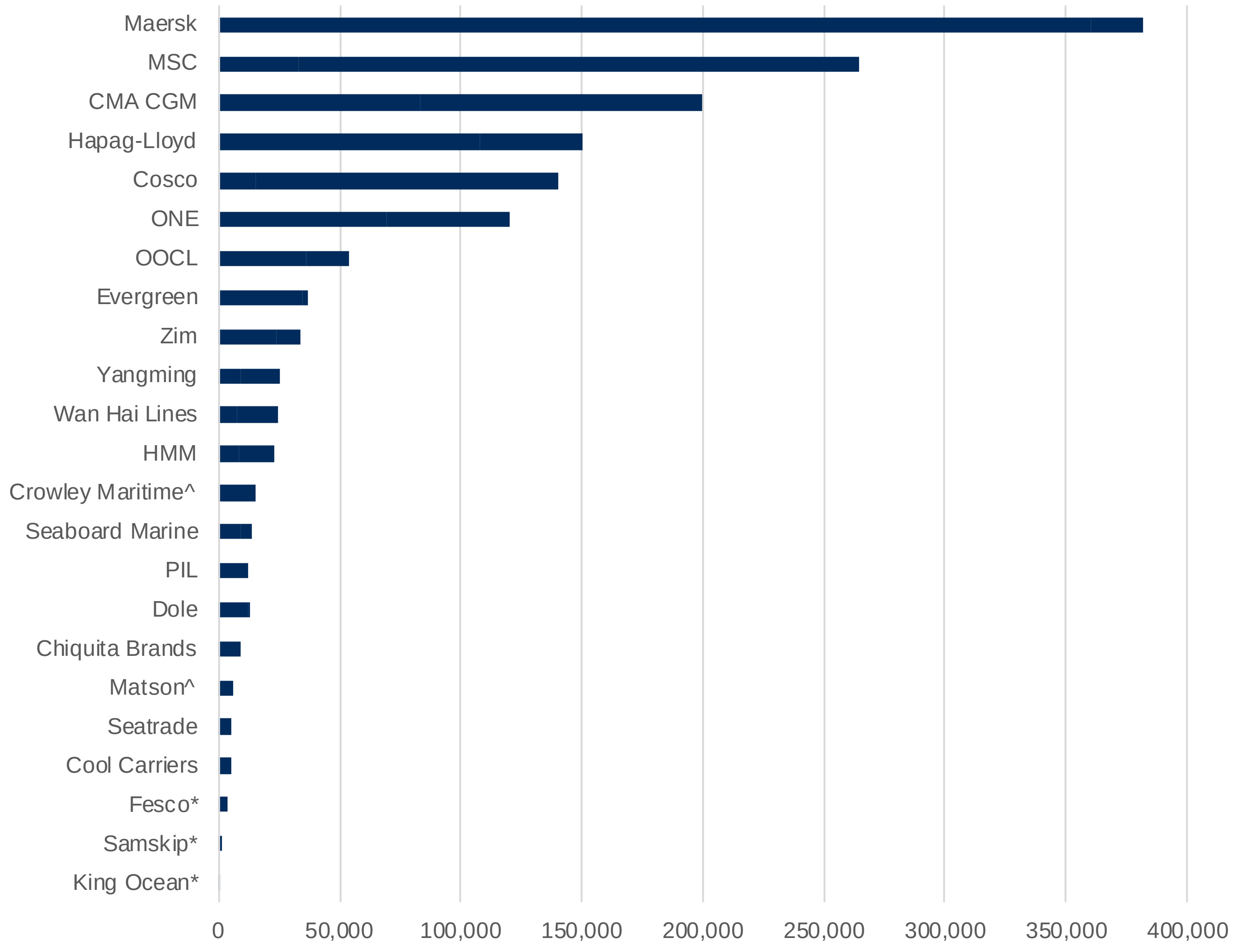
Maersk dominates the reefer container business, even if it is no longer the largest container operator in number of ships/slots

Major reefer container operators

40’ reefers per operator



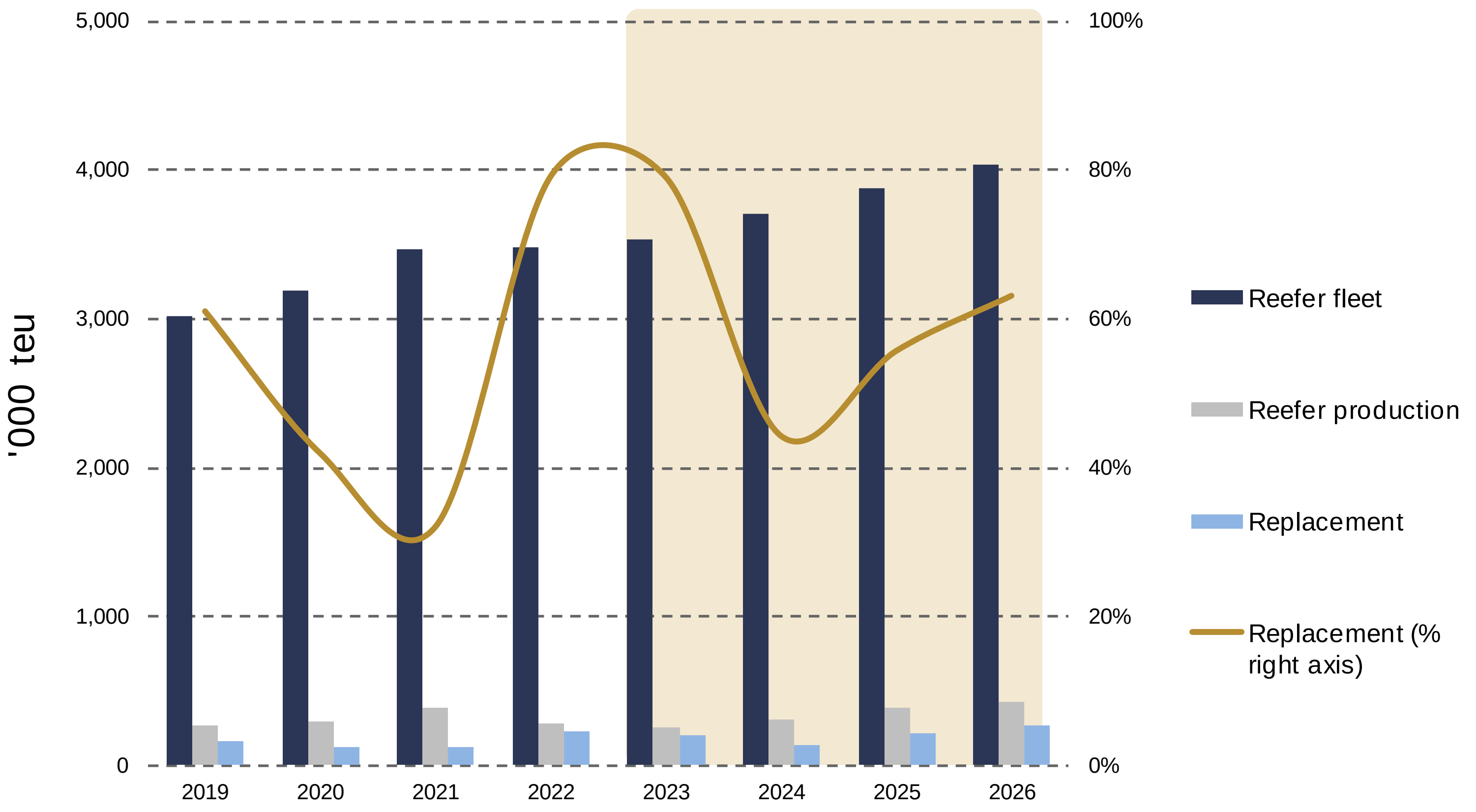
Source: Drewry Equipment Forecaster Q4 22

In the year 2022 a modest production of 141 K equipment was recorded after the record of 2021 which reached 193 K (Feu equivalent)

By 2026 the reefer container fleet is expected to breach the 4 million teu (2 million 40' reefer equivalents)

Reefer container fleet grows

Container fleet, production and replacement



Source: Drewry Reefer Shipping Forecaster Q2 2023

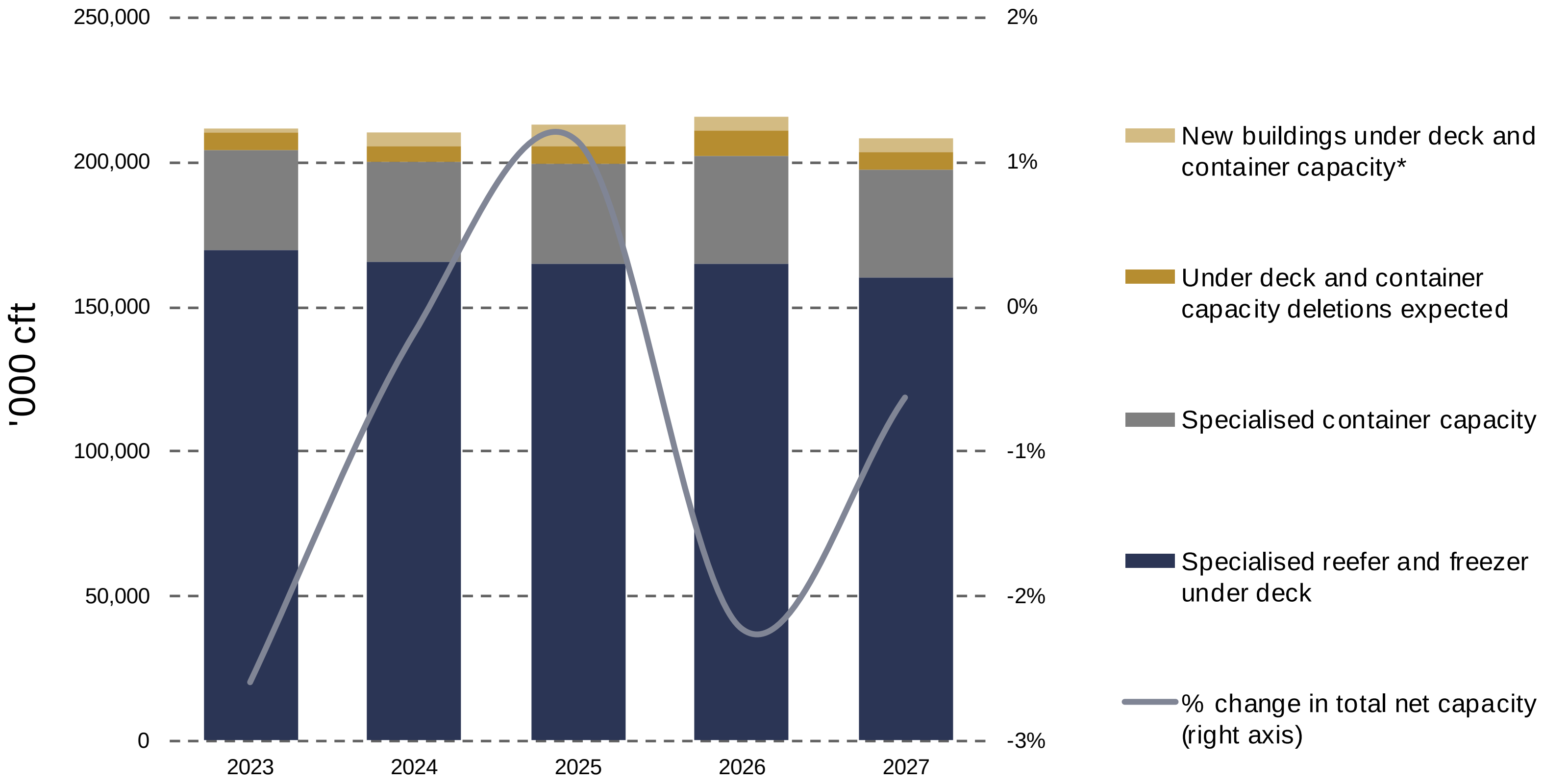
The measure for the specialised reefer fleet is the under deck carrying capacity.

The fleet as of April 2023 reaches just under 170 million cubic feet capacity shared by 487 vessels.

The new IMO regulation is putting great pressure on this fleet which is 27 years of age on average.

Reefer fleet shrinks only slightly

Reefer fleet evolution expected to 2027



* Based on confirmed and estimated orders.

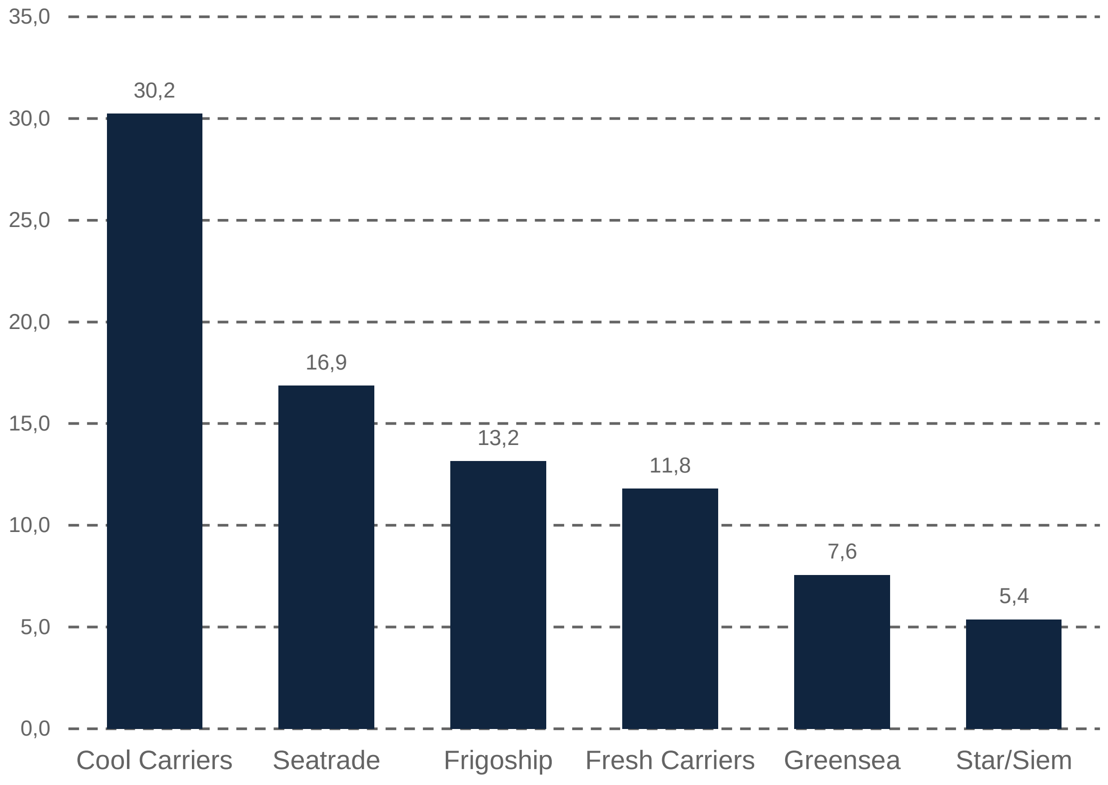
Source: Drewry Reefer Shipping Forecaster Q2 2023

Cool Carriers is today the major operator of specialised reefers with 49 vessels and just above 30 million cft capacity.

Greensea and Frigoship participate mainly in the frozen segment of the market

Major specialised reefer operators

Top 6 operators control 50% of all capacity



Major Specialised Reefer Carriers million cubic feet operated

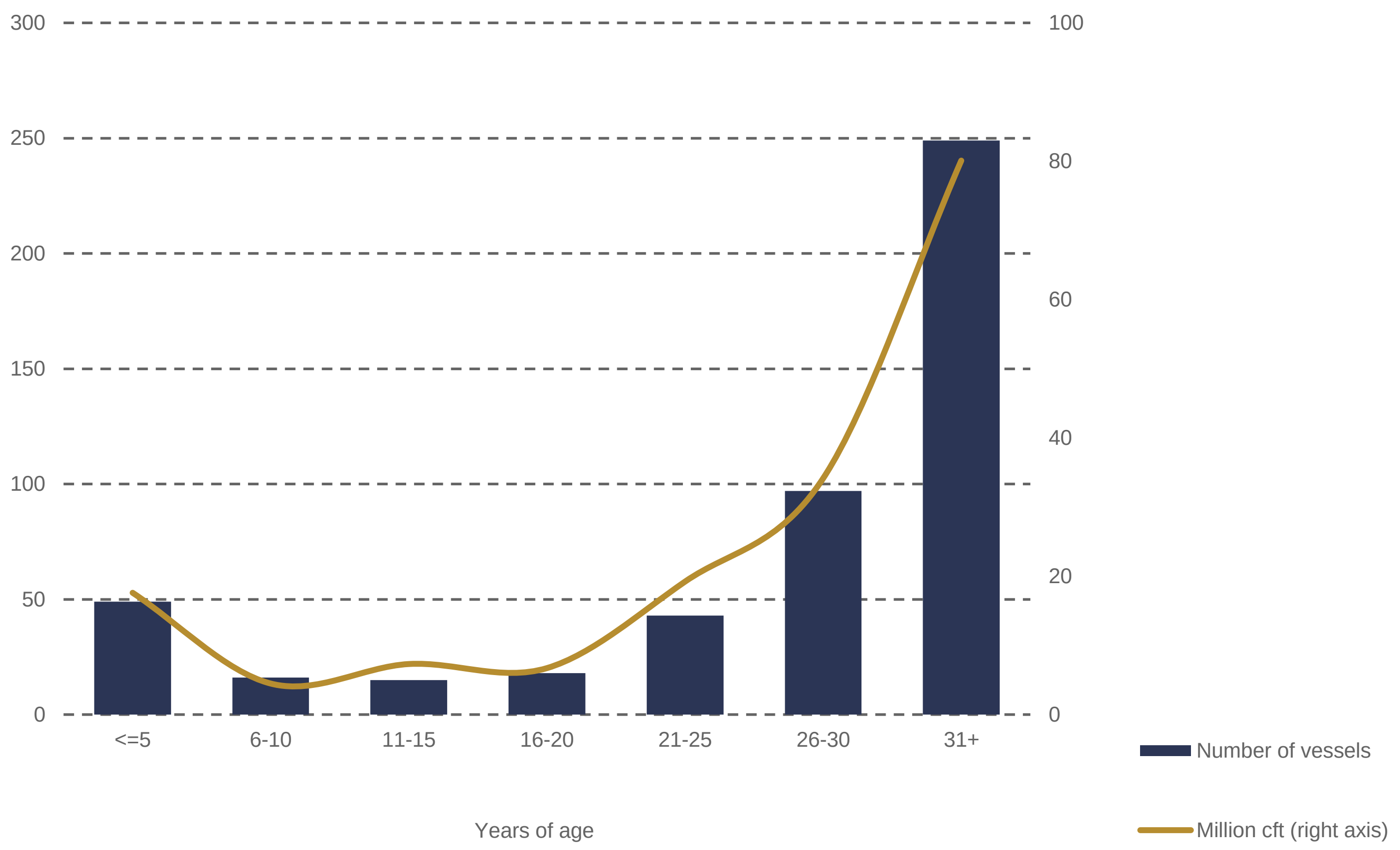
Source: Drewry Reefer Shipping Forecaster Q2 2023

The new IMO regulations are putting great pressure on this fleet which is just under 27 years of age on average!

Nearly half the fleet is over 30 years old.

Specialised reefers, an aegeing fleet

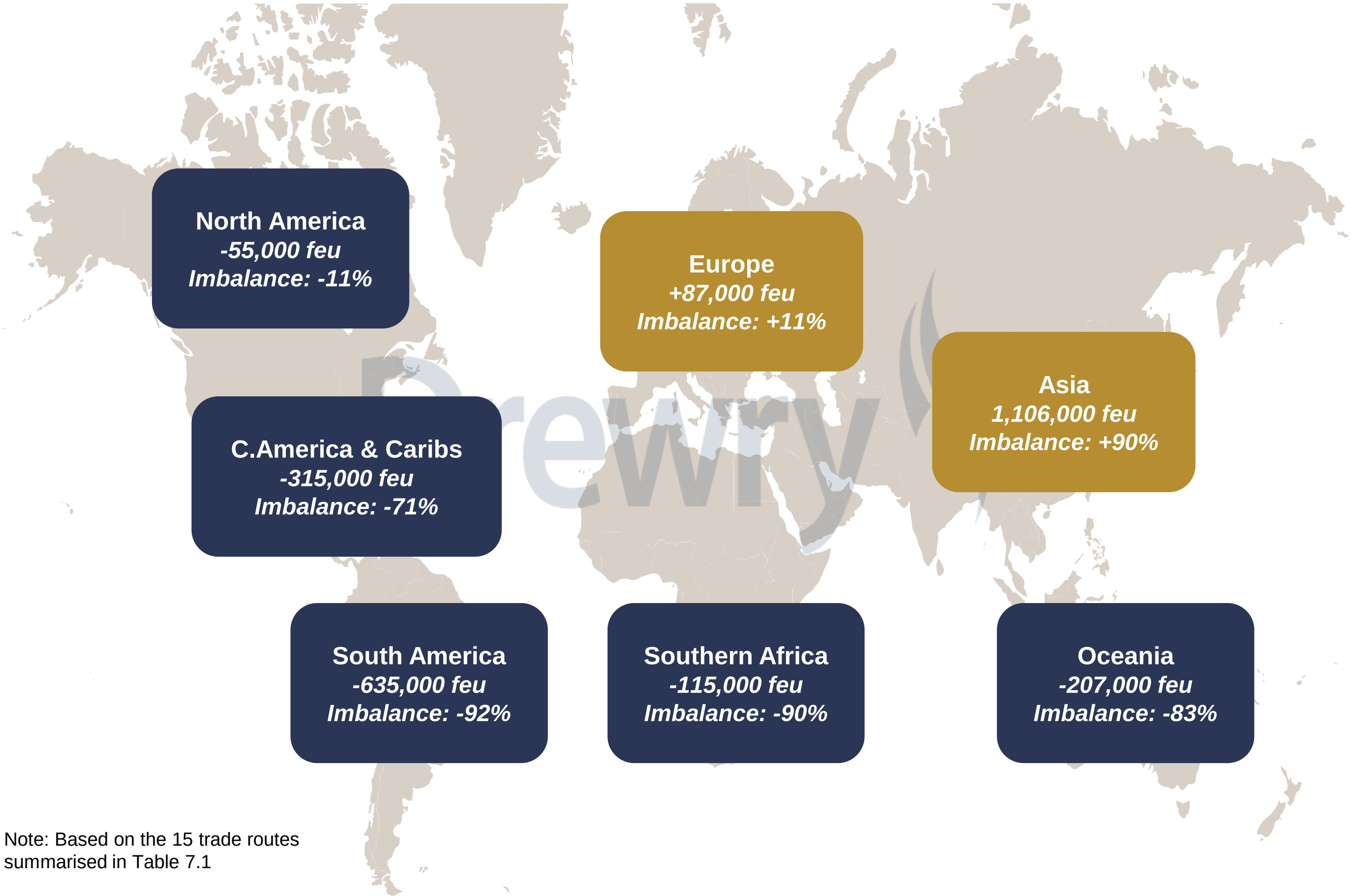
Reefer fleet age profile May 2023



Source: Drewry Reefer Shipping Forecaster Q2 2023

The elephant in the room remains the reefer imbalance with Asia taking the Crown of imports but also of imbalances!

Reefer imbalance at a glance



Note: Based on the 15 trade routes summarised in Table 7.1

Source: Drewry Reefer Shipping Forecaster Q2 2023

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Freight and charter indexes

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Reefer rates peaked in Q3 2022 and are now correcting as a follow up of how dry cargo is correcting downwards.

It must be stressed that different trade lanes have very different seasons and levels of competition.

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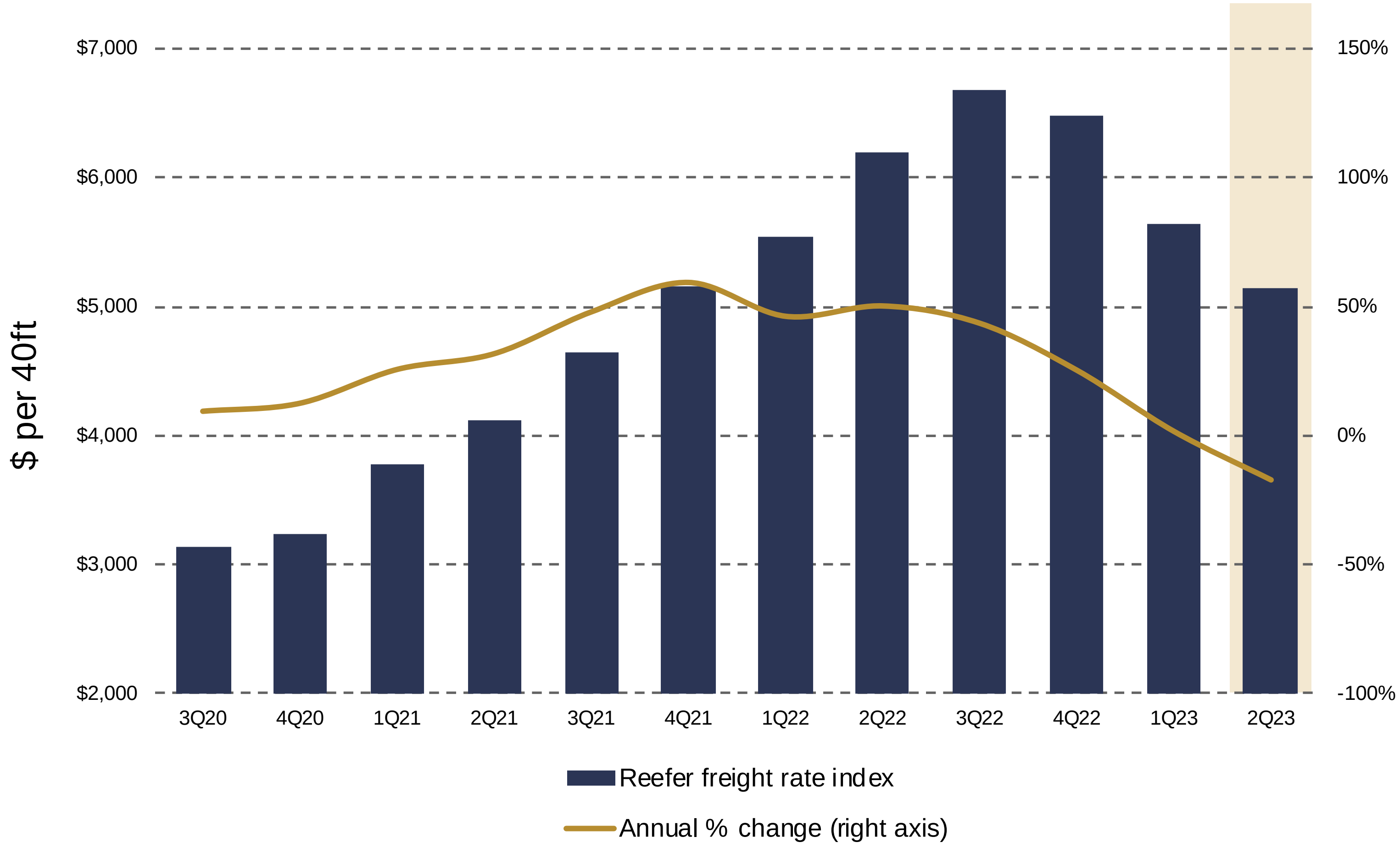
Drewry's reefer index

Reefer freight rates peaked in Q3 2022



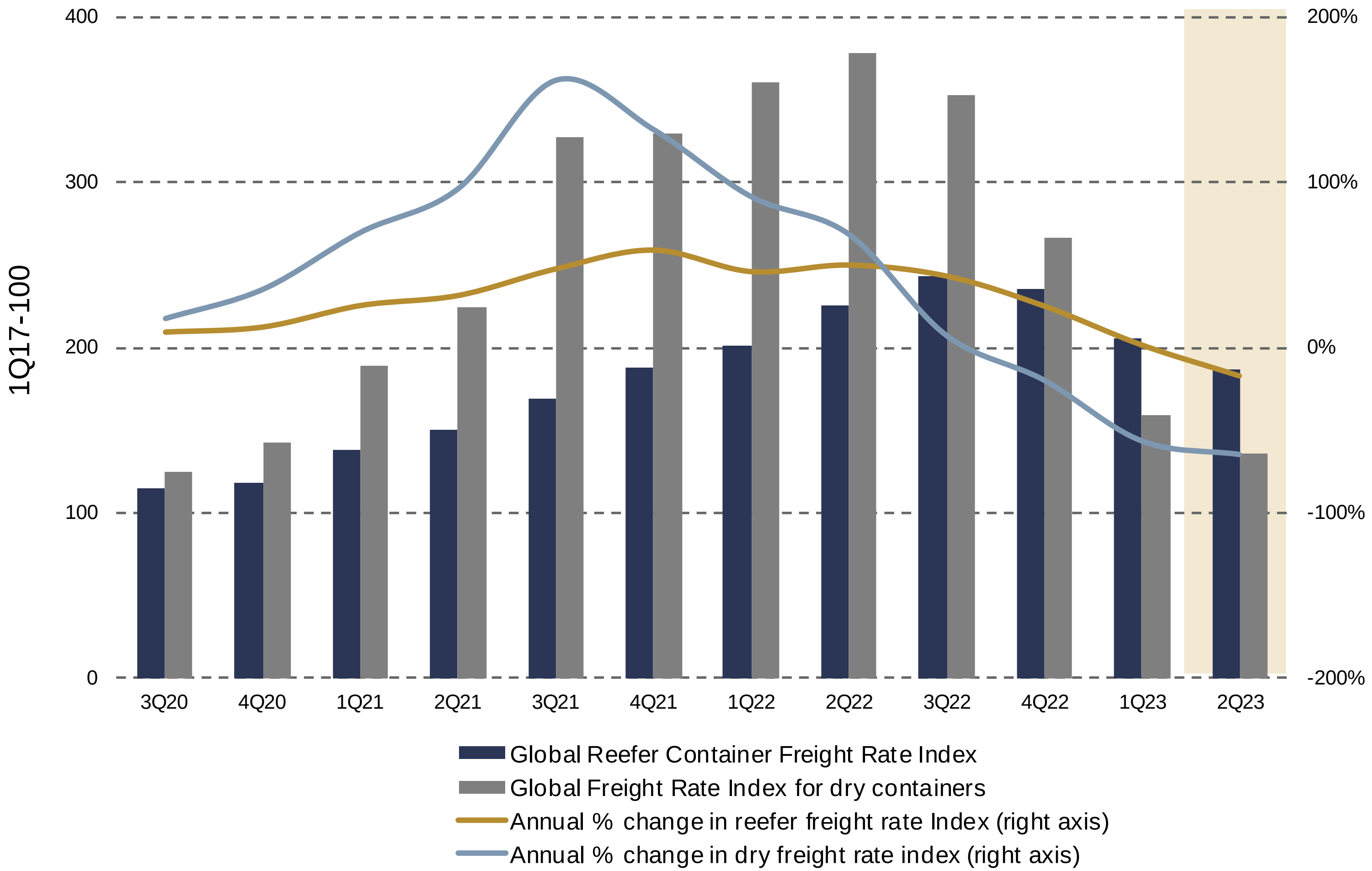
Note: Based on weighted average freight rates across the main reefer intensive trade routes.

Source: Drewry Reefer Shipping Forecaster Q2 2023

Reefer rates trail the evolution of dry rates

Drewry's reefer index against dry index

Reefer freight rates peaked in Q3 2022



Note: Global Reefer Container Freight Rate Index based on weighted average freight rates across the main reefer intensive trade routes.

Source: Drewry Reefer Shipping Forecaster Q2 2023

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Enviromental aspect, the challenge ahead

Seaborne transport and the path to decarbonization

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The IMO 2020 low sulphur fuel requirements seem far away now, but while two years of pandemia kept the world busy with other issues, the clock was ticking for the important push to decarbonize.

IMO requires as of January 2023 all ships to measure their emissions and report them. Ships will get energy labels

Shipping to reduce CO2 emissions by at least 40% by 2030 with efforts to reach 70% by 2050, using 2008 as base-line

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The path to decarbonize shipping

A complicated menu of acronyms such as:

EEDI: Energy efficiency design Index

EEXI: Energy efficiency existing ship Index

SEEMP: Ship energy efficiency manageement plan

CII: Carbon Intensity Indicator

EPL: Engine power limiter

Energy Labels: A, B, C D, E

EU ETS: European Union emissions trading system

Source: Drewry Reefer Shipping Forecaster Q1 2022

There is still plenty of work and different levels of ambition with the EU and Japan having stronger amibitions in decarbonizing than IMO.

Talks to set fresh targets are on going this week in London

In practice will result in higher costs for all stakeholders

Slow (er) steaming

Additional vessels to keep rotations (more ships to carry same amount of cargo)

More transhipments

Investments in green (er) fuels such as LNG, Ammonia, Methanol, Bio-fuels

Broader requirements for 'cold ironing'

Carbon tax at European level as of 2024 in phases (direct impact on freight charges)

Source: Drewry Reefer Shipping Forecaster Q1 2022

Transparency of the supply chain & accountability

- Schedules
- Transit times
- Temperature and parameter settings
- Monitoring (and be able to do something about it)
- Energy consumption = less cost = lower carbon footprint
- Measuring all the above
- Technology for all the above and…
- Control!

Conclusions

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Conclusions

- Moderate growth over the next 5 years
- Containers take the forward growth (3.4%) as specialised reefers decline (even if some newbuildings are coming)
- Freight rates peaked in Q3 2022
- Carriers awash with cash and spending it
- Reducing energy consumption will help to ahcieve decarbonization faster and reduce the burden on costs, but overall costs will increase in the efforts to have shipping at zero emissions by or close to the year 2050 - discuss -