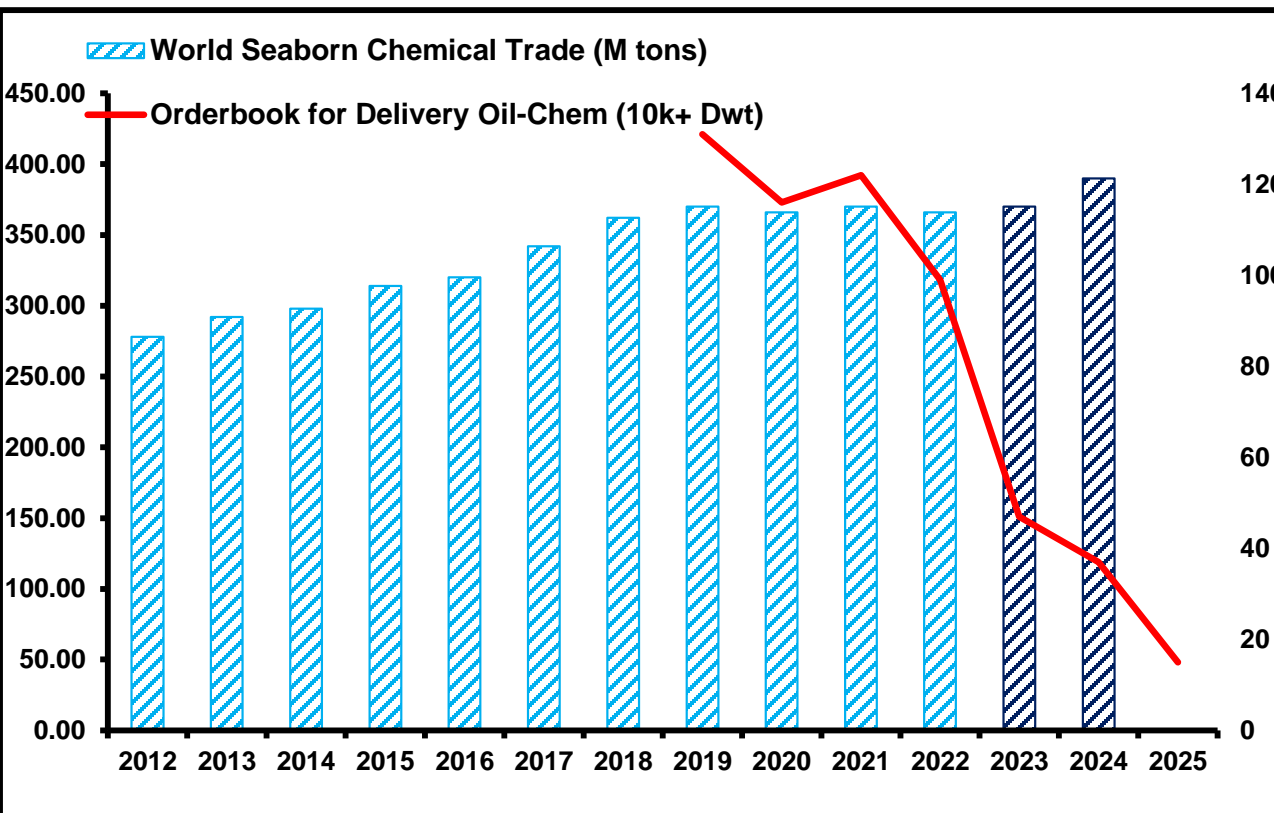




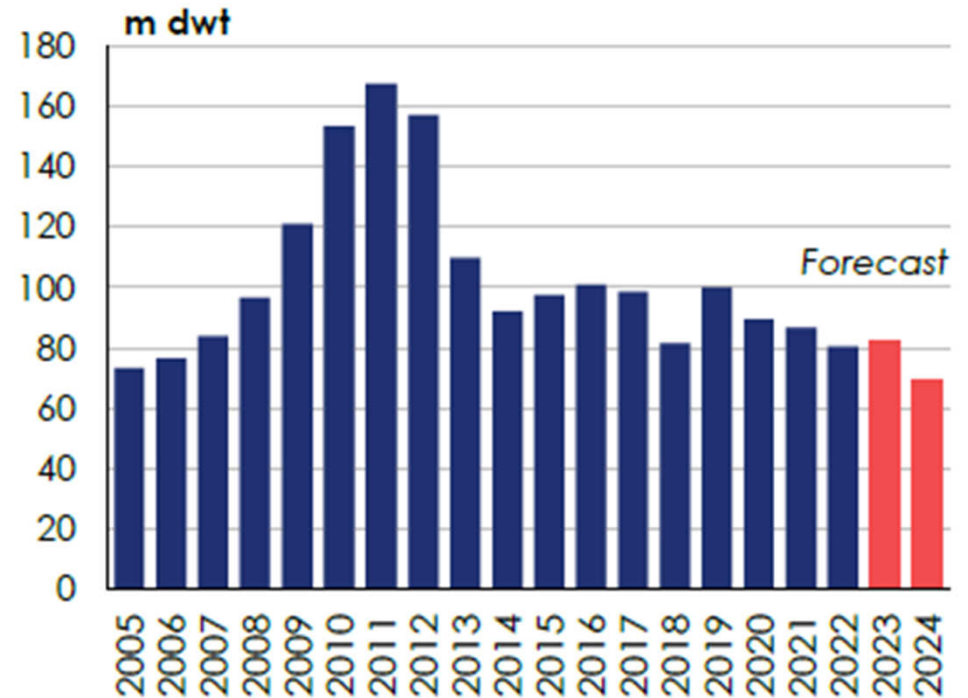
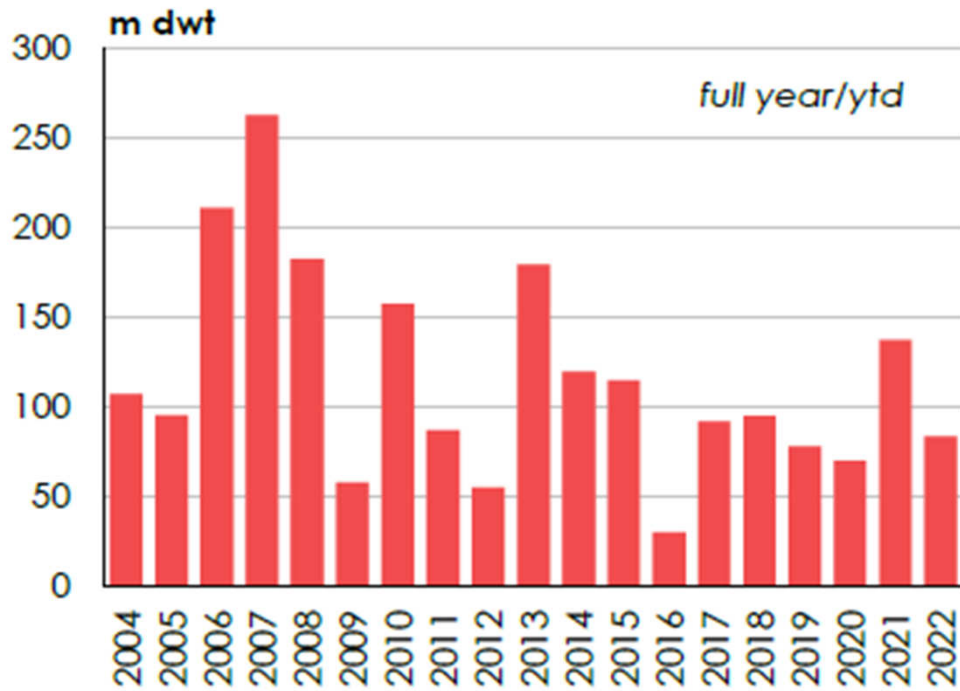
**New Notation: ENHANCED MAINTENANCE**  
**Aggiornamenti per l'industria di settore**

# Oil-Chem Tankers: Trends and Forecast

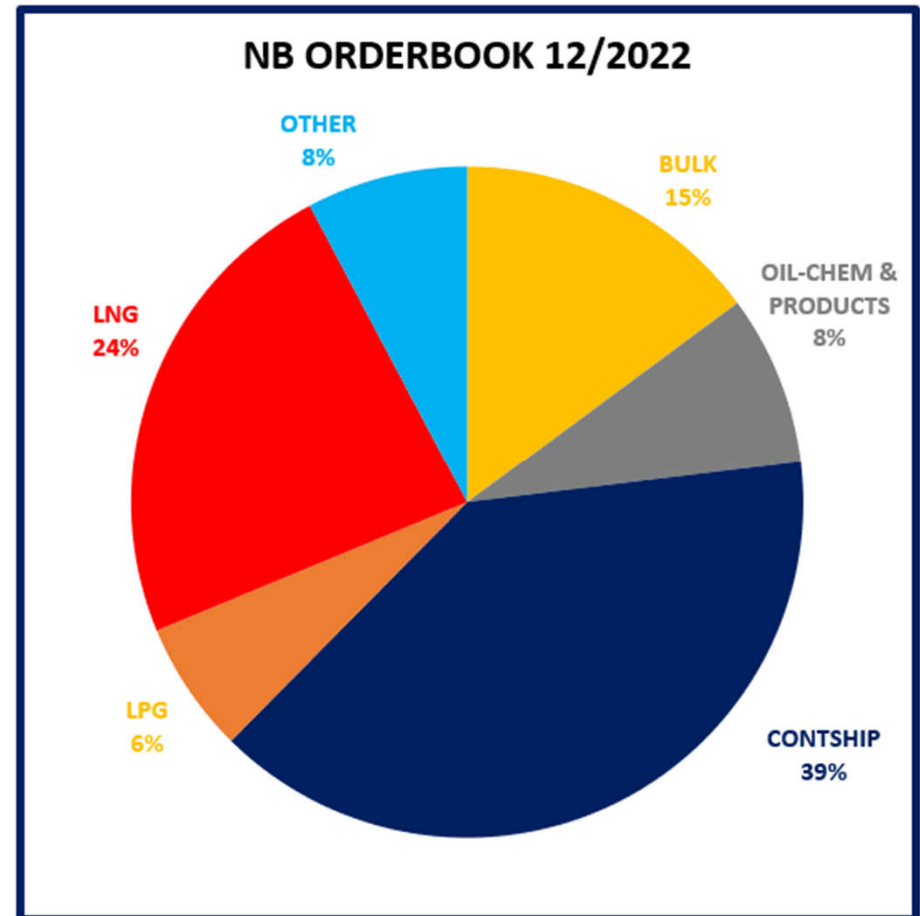
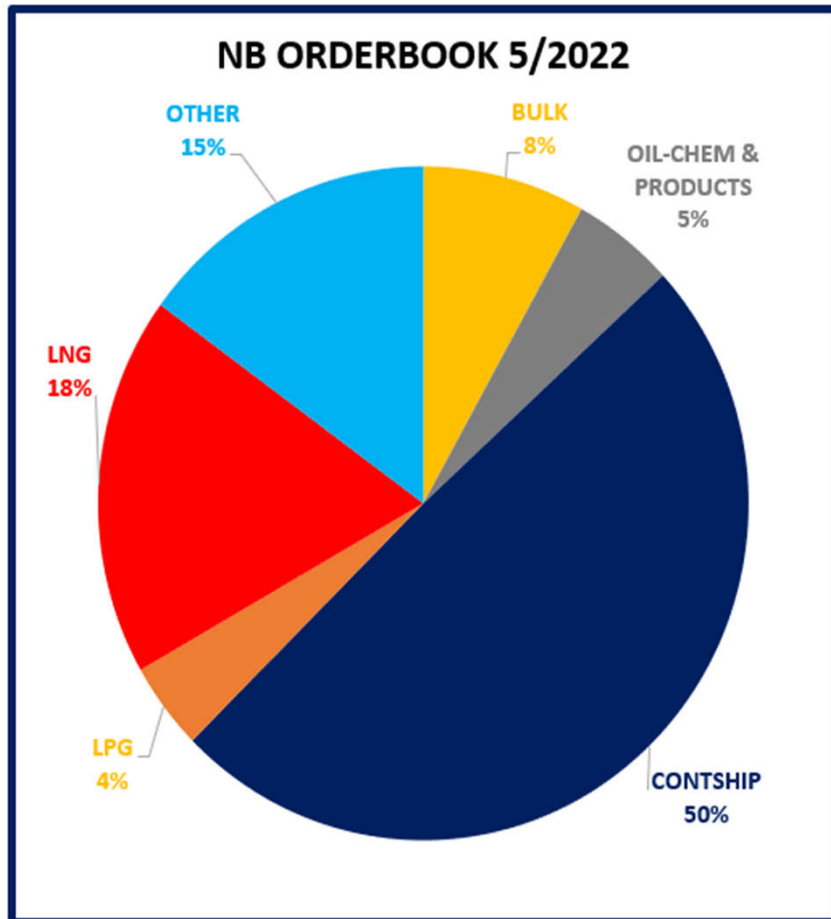


- Despite the initial worries, the world seaborn chemical trade is following a growing trend and a further growth is expected.
- A growth of the world seaborn chemical trade will increase the demand of oil-chem tanker ships of any size
- The increase of demand for more tanker ships is not balanced by a reasonable oil-chem tanker ships delivery, due to an uncertain market

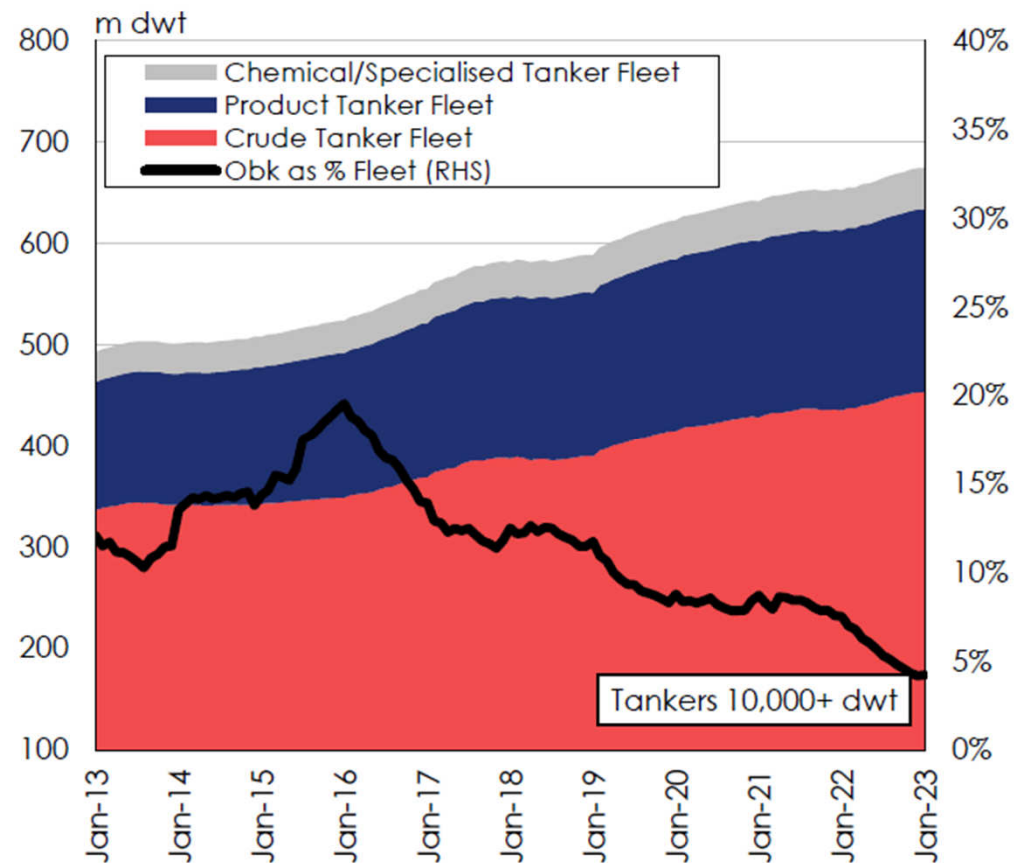
# Global Contracting & Deliveries



# Newbuilding Orderbook 2022: Main Sectors



# Tanker Fleet & Orderbook General Considerations



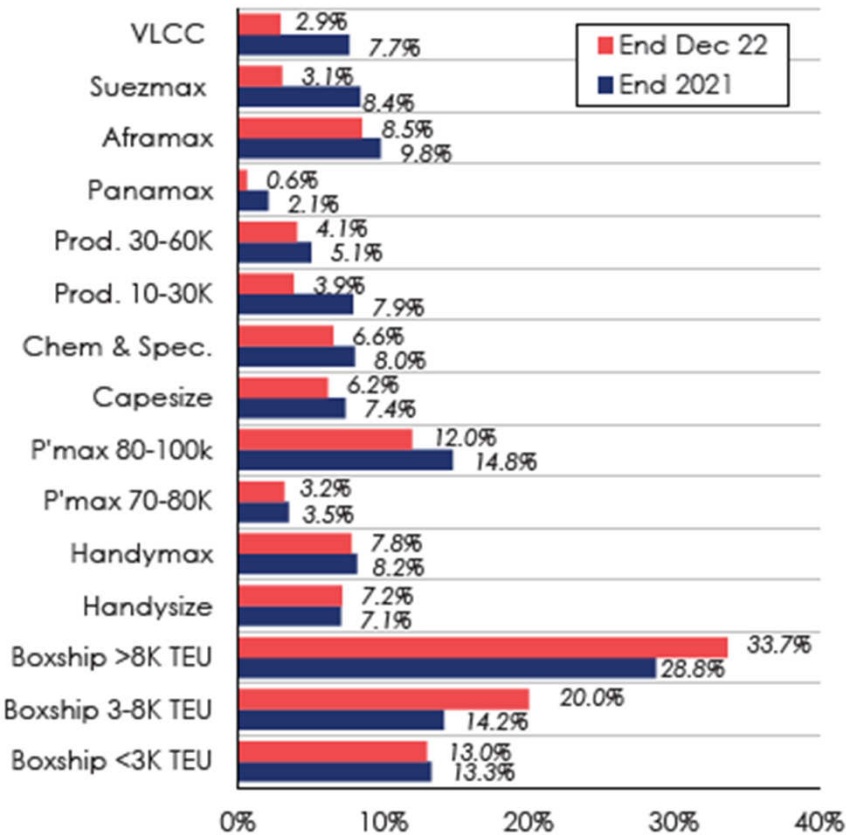
- Market status is persisting on the “watch and wait”
- As far as regulatory compliance is concerned, 2023 will be an important year for the carbon emissions data recording
- A first important economy supporting measure by the so-called “PNRR Shipping”
- In last 10 years the yards availability and internal organization is radically changed
- Effects of products portfolio expansion strategy applied by majority of first tier shipyards, with implication on negotiation

charts source: Clarkson

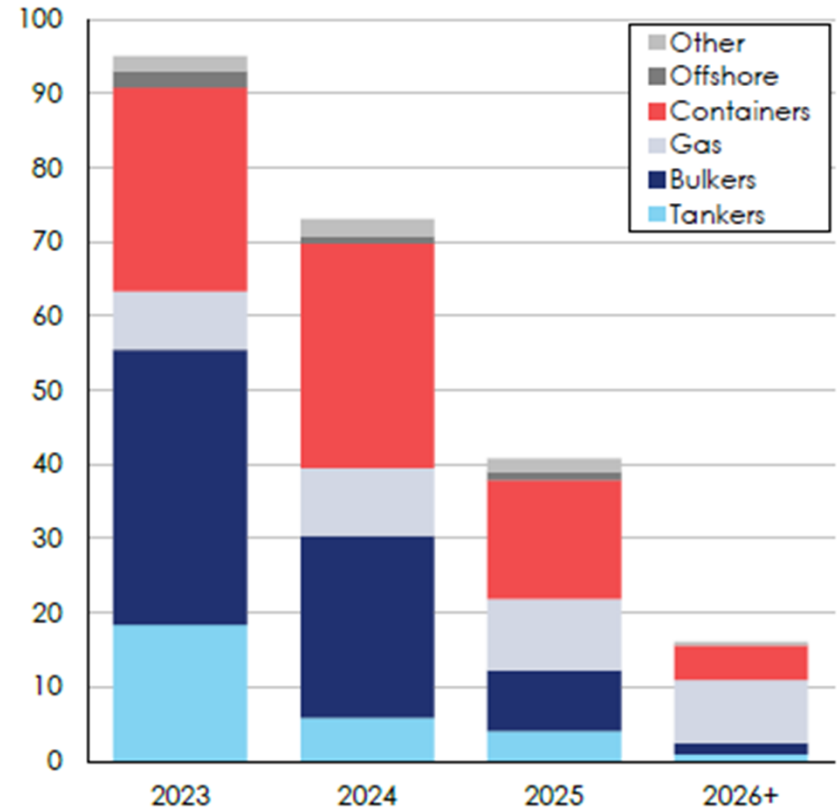
# Tanker Fleet & Orderbook General Considerations



Orderbook as % of Fleet (dwt)



Orderbook Delivery Schedule (m. dwt)

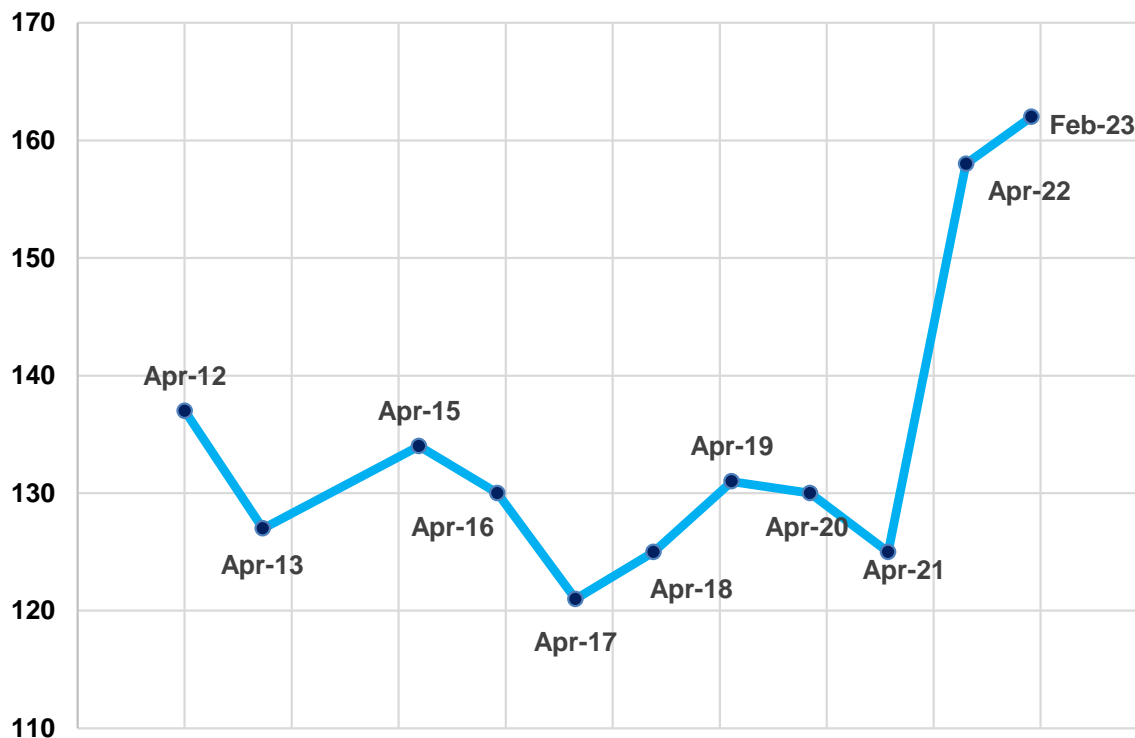


# Newbuilding Price – 11y Trends

## An expensive sector full of uncertainties



NEWBUILDING PRICE INDEX TRENDS



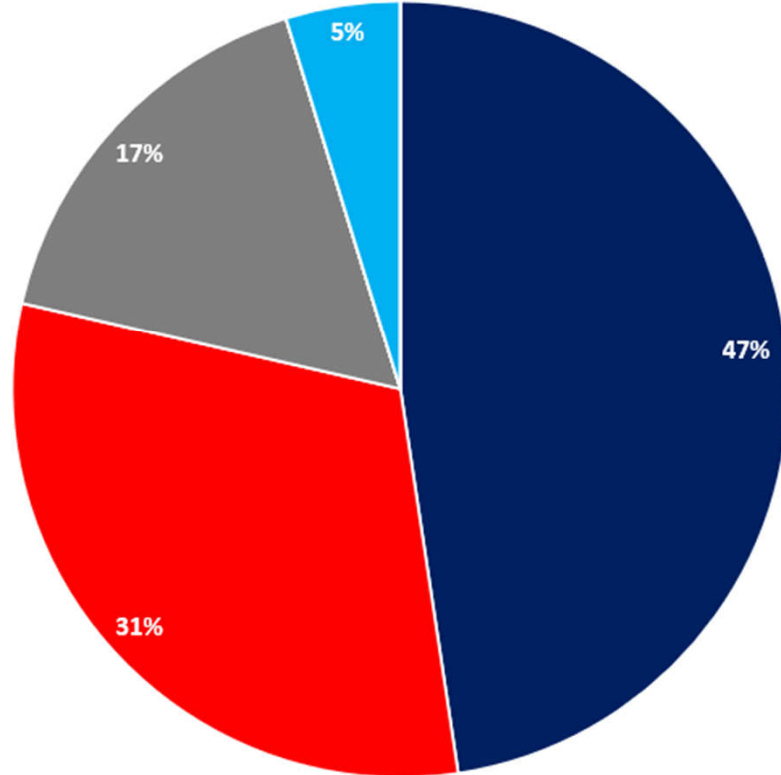
- Index: January 1988: 100 points
- Average trends
- Ships with “European Spec”
- Payments 20/20/20/20/20%
- First class shipyards

# Newbuilding Orderbook 2022 Considerations: Oil-Chem & Product Carrier VS New Technologies



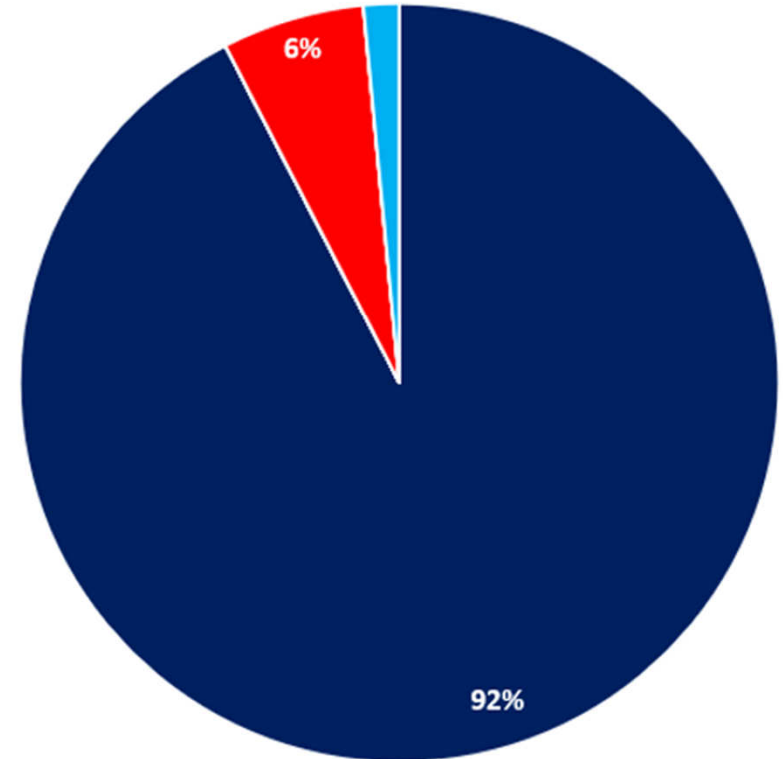
### ORDERBOOK OIL-CHEM (8K ~25K Dwt)

■ CONV ■ LNG-DF ■ BATTERY ■ LNG-READY ■ METHANOL-READY ■ AMMONIA-READY



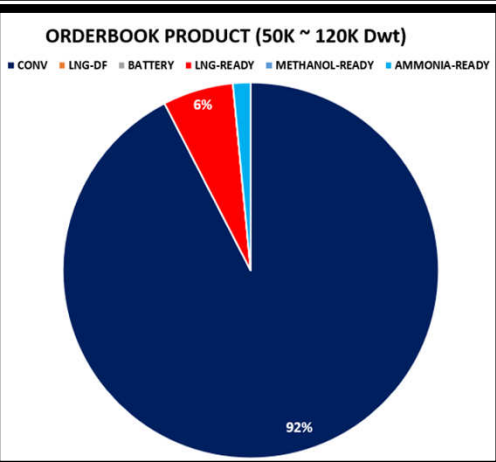
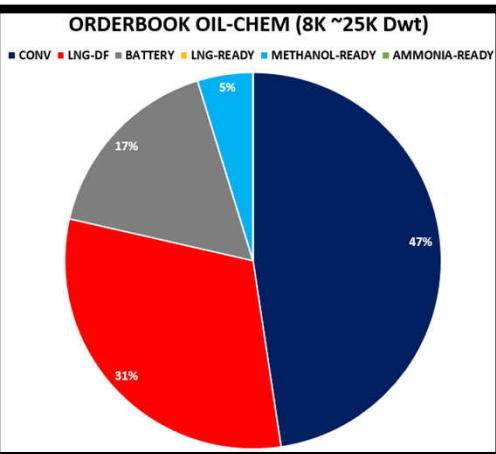
### ORDERBOOK PRODUCT (50K ~ 120K Dwt)

■ CONV ■ LNG-DF ■ BATTERY ■ LNG-READY ■ METHANOL-READY ■ AMMONIA-READY





# Newbuilding Orderbook 2022 Considerations: Oil-Chem & Product Carrier VS New Technologies



- The solutions finally selected indeed depends by the ship's size (i.e. the operational profile)
- The solutions finally selected indeed depends by the maturity of the system, both in terms of technology and production costs
- The solutions finally selected depends by the fuel supply chain
- The additional class notation READY are supporting the transition to innovative solutions

# Orderbook 2022 & 2023 Considerations: Gas Carriers LPG



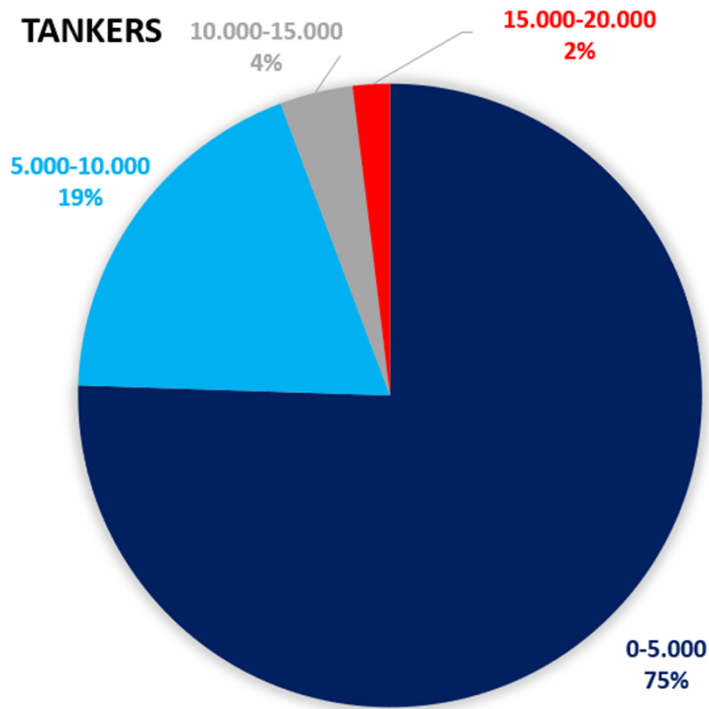
- The combined orderbook for 2022 and 2023 for the LPG Carrier is for 58 + 5
- 2023 Orderbook are all VLGC
- 2022 Orderbook are 5x5k, 3x25k, 2x35k, 48 VLGC (60k)
- Among the ships on order, 75% are expected to be fueled by cargo vapor



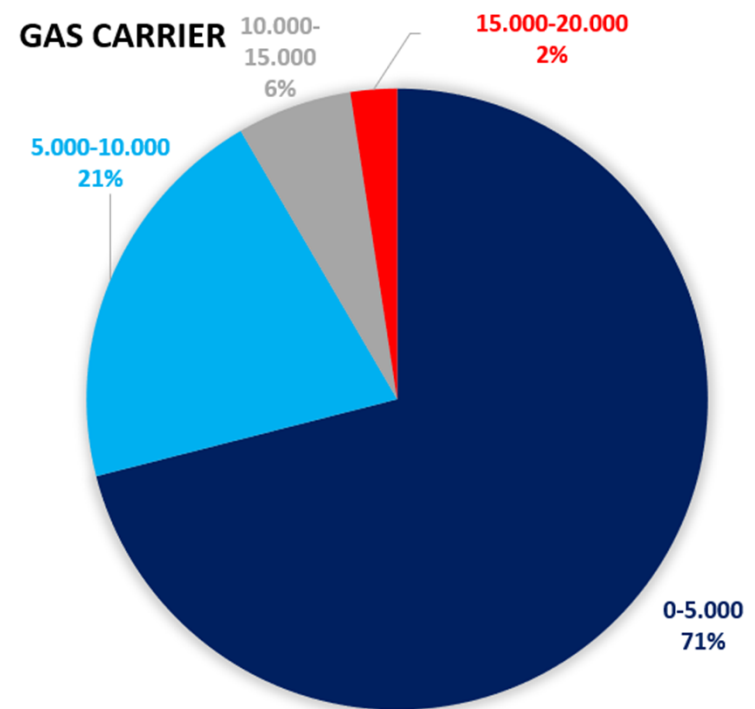
- Non-toxic and Non-corrosive
- Pollutants emissions reduction (99% SOx, 15% CO2, 15% NOx, 99% PM)

- It needs in higher capacity vs diesel
- As gas it is highly flammable and can cause suffocation (heavier than air)

# Tankers & Gas Carriers: Fleet Data

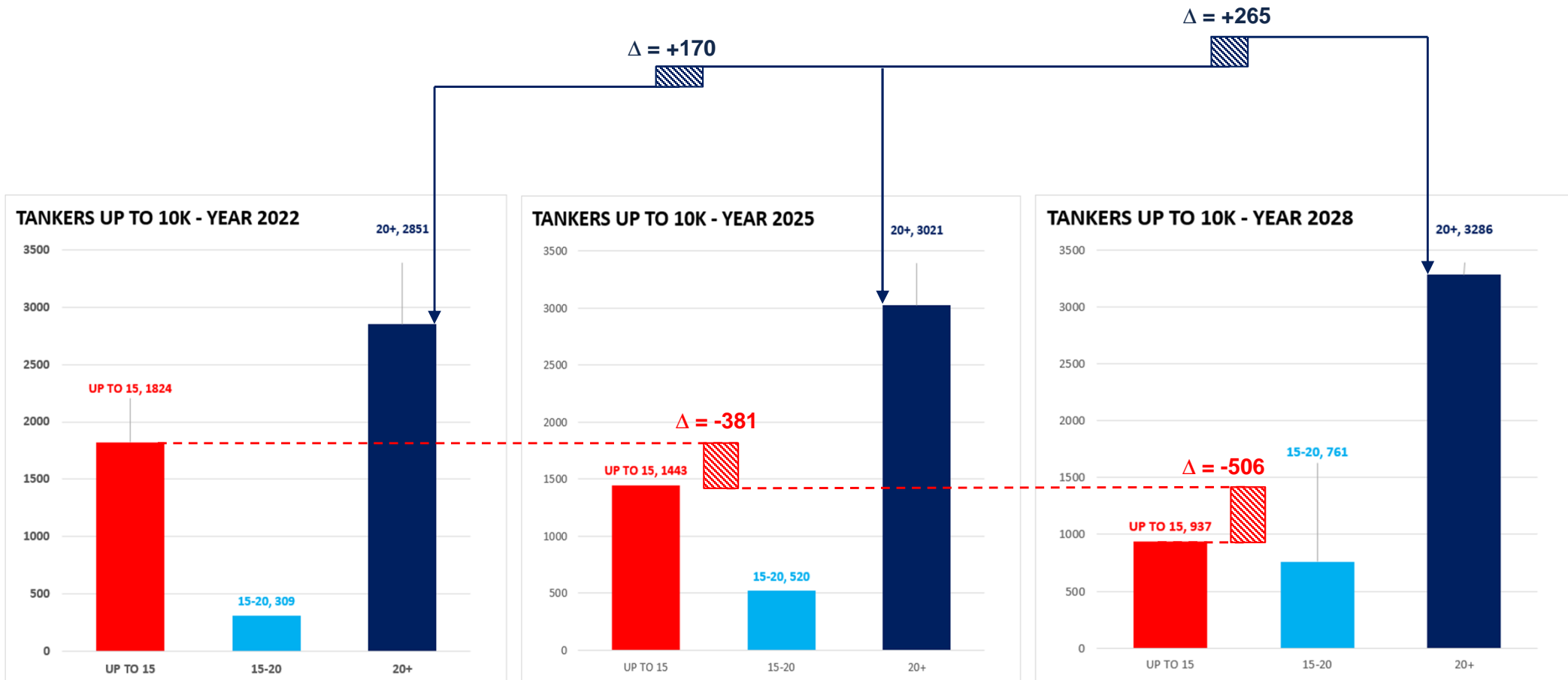


Ship Type	DWT	No.
Tankers	0-5.000	4,007
	5.000-10.000	996
	10.000-15.000	201
	15.000-20.000	102
<b>Grand Total</b>		<b>5,306</b>

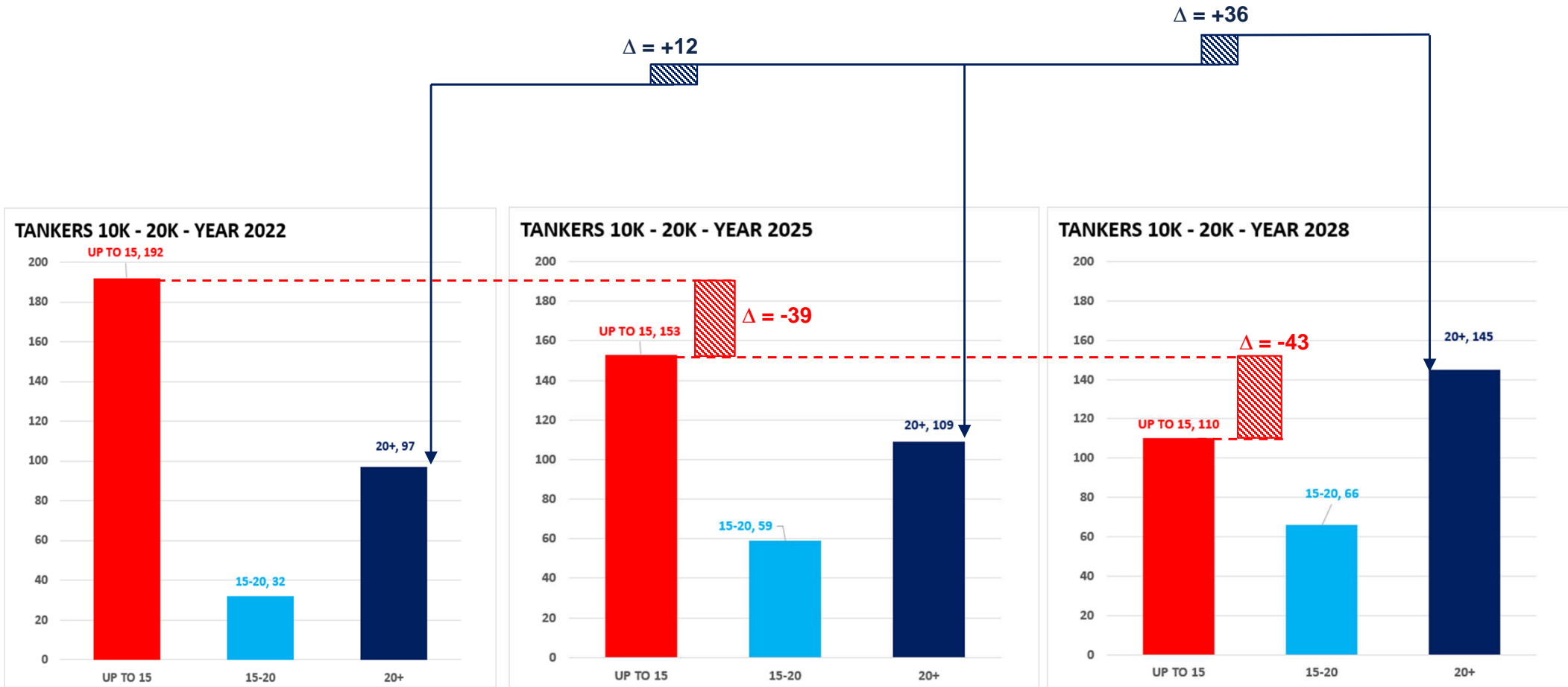


Ship Type	Gas Capacity	No.
Gas Carrier	0-5.000	735
	5.000-10.000	213
	10.000-15.000	62
	15.000-20.000	25
<b>Grand Total</b>		<b>1,035</b>

# Tankers (up to 10k Dwt): Age Trends 2022~2028



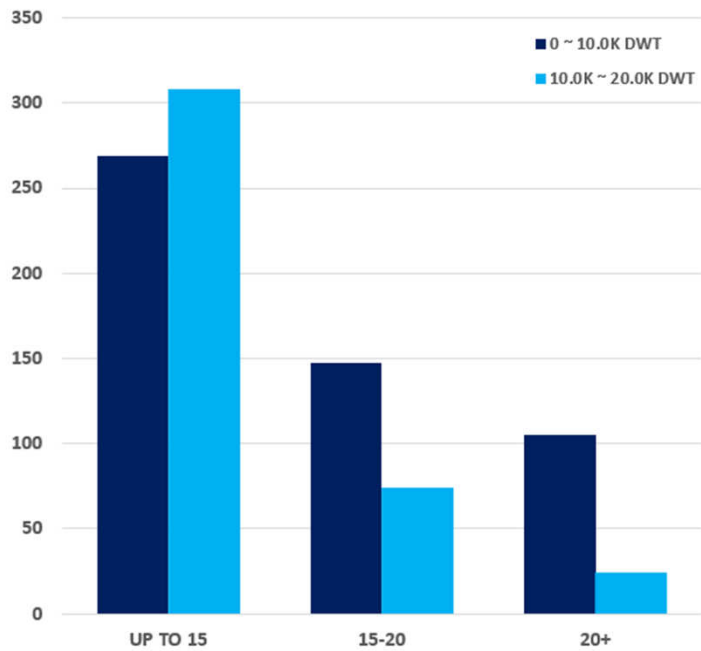
# Tankers (10k ~ 20k Dwt): Age Trends 2022~2028



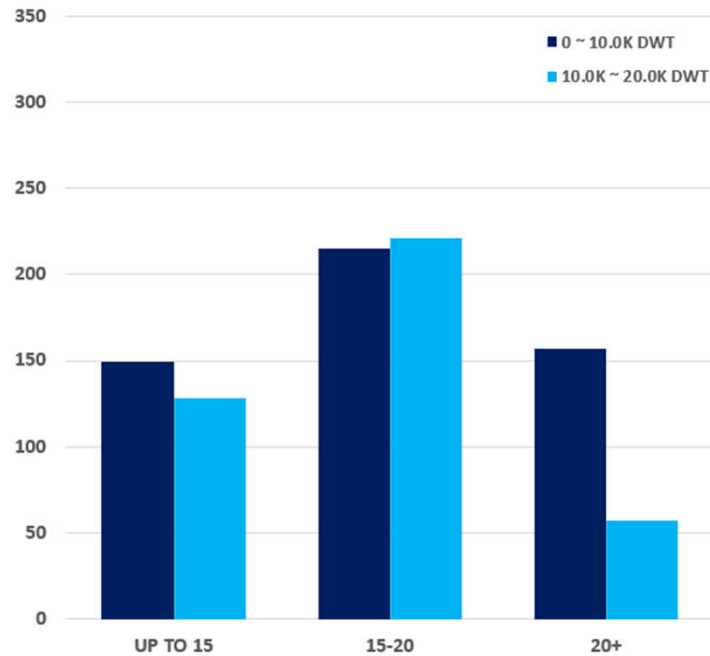
# Tankers (up to 20k Dwt): Fleet Data EURO & MED



TANKERS 0~10K & 10K~20K DWT - Y2022



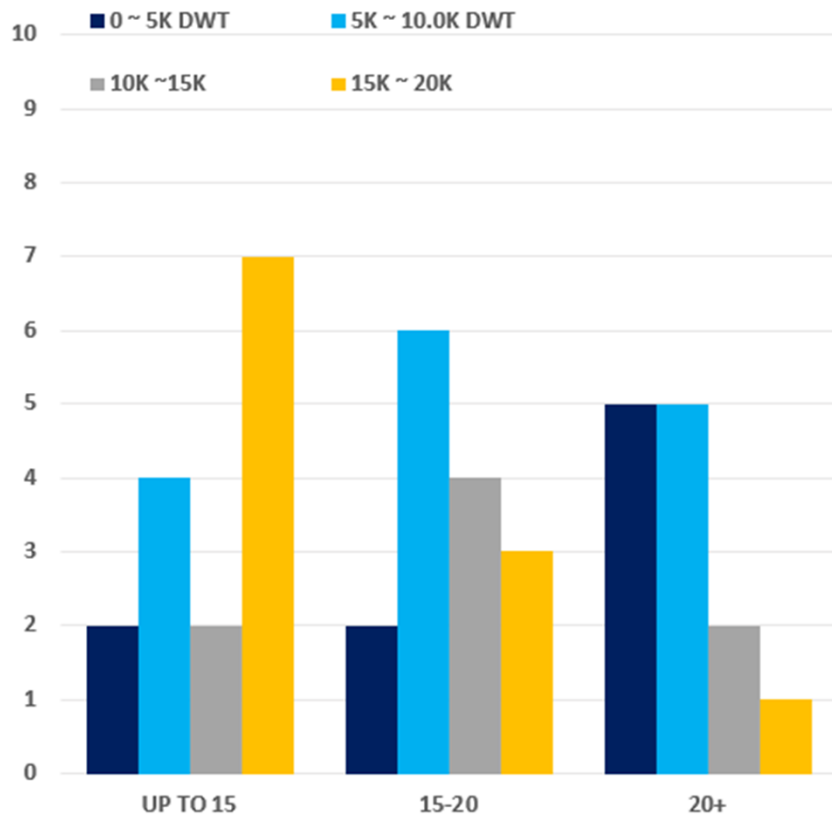
TANKERS 0~10K & 10K~20K DWT - Y2025



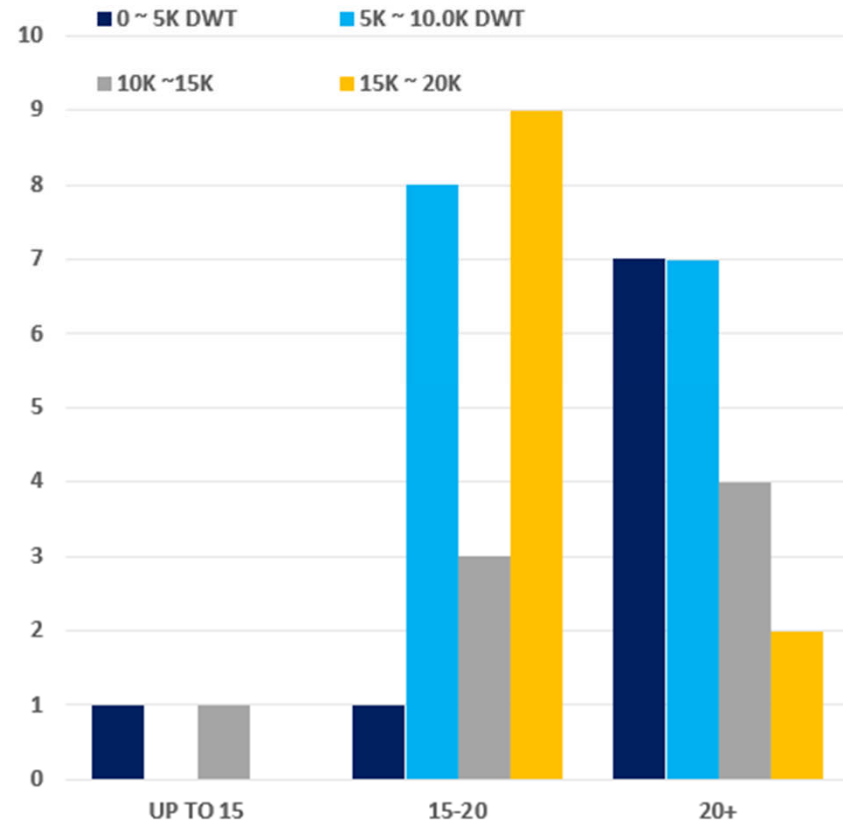
# Tankers (up to 20k Dwt): Fleet Data ITALY



ITALY / OIL-CHEM DWT VS AGE @2022



ITALY / OIL-CHEM DWT VS AGE @2025



# Notation Key Pillars

---



- We have an important presence of tankers, within their second half operational cycle (i.e. beyond 20yo)
- To support the industry in the current tankers market and the expected ships demand growth, the new notation is presented
- The notation is based on requirements about technical and procedural aspects
- The final goal of the notation is to stand out those ships that preserved high standards despite the age
- Ships assigned with the new notation may deserve more attention by the Charters, shifting the focus from the age to the ship actual compliance with enhanced requirements



# Notation Updating: Follow-Up

---



Considering the suggestions exchanged during the event in Rome on May 2022 and the inputs from Shipowners and Operators, the notation is currently undergoing a revision aiming to be harmonized with the operational activities.

Herewith below are the main revision items:

- Hot Spots: The survey on board required by the notation will be carried out by RINA Surveyors;
- Enhanced Maintenance: The spare parts management will be based on a risk assessment approach;
- Machinery Equipment: The IMP (Inspection & Maintenance Plan) will be organized considering also those equipment necessary to fulfil the Charter requirements (i.e. these equipment are usually in addition to those minimum required by Class and Statutory requirements);

## Notation Key Pillars

---

**MONITORING:** Periodical check / audits and sharing of information

MONITORING

**IMP:** Inspection and Maintenance Plan

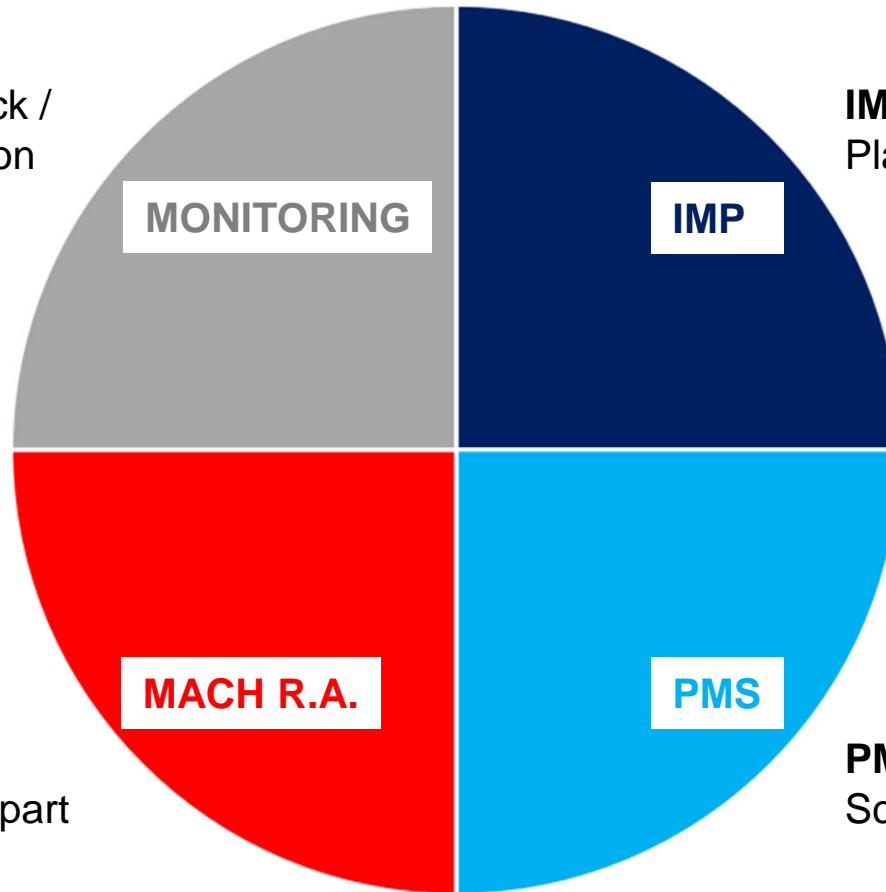
IMP

**MACH R.A.:** Ship-specific risk assessment for the machinery part

MACH R.A.

**PMS:** Planned Maintenance Scheme





PMS



# Notation Fundamentals

---



-  Special focus on ships already under the ESP program and with operational life more than 20 yo
-  Inspection and Maintenance Plan (IMP) for hull and machinery: based on a hot spots map prepared considering also the sip's history
-  Planned Maintenance Scheme (PMS) added with a specific risk assessment
-  Monitoring: Yearly Audit at Shipowner's premises

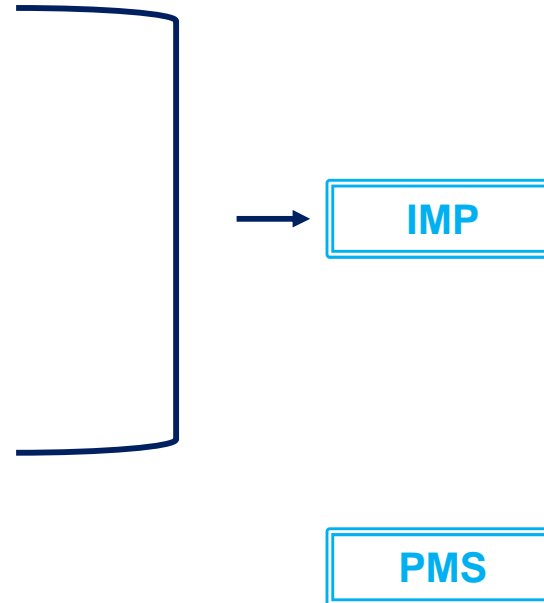
# Notation – Streams



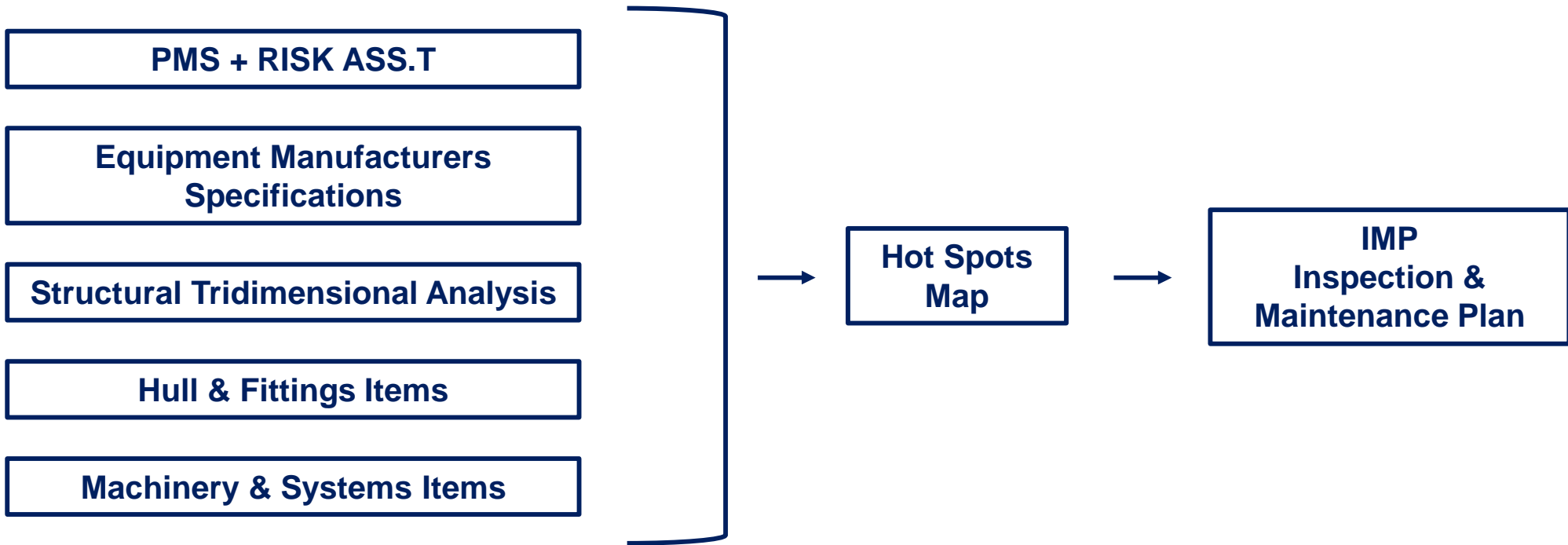
## HULL STREAM



## MACHINERY STREAM



# Notation – Assignment Process





**New Notation: ENHANCED MAINTENANCE**

**Aggiornamenti per l'industria di settore**