VORTEXA

Special Iran Report
January 2023

Exclusive Report

Iranian crude & condensate exports: 2022 review

Key Takeaways

Iranian crude/condensate exports increased by 20% in 2022 (year-on-year), reaching a record high under sanctions in December 2022

Facilitating an increase in December exports, Iran's onshore crude inventories have fallen to multi-year lows as production remained flat

China imported record amounts of Iranian crude in December as independent refiners utilised the crude import quotas released in Q4

Iranian floating storage sank in January 2023, driven by China's increased imports coupled with an increase in NITC fleet utilisation

From a shipping perspective, the increase in Iranian export volumes in Q4 coincided with more tankers entering the Iranian trade on a net basis

Russia's impact on Iran's tanker supply was significant in 2022, as we observed tankers switch from Iranian to Russian trade, an ongoing operation given the familiarity of operators with the dark trade

This presentation has been compiled under the guidance of

Armen Azizian
Crude Market Analyst

Iranian crude/condensate flows analysis

Iranian crude/condensate exports reached record high under sanctions in 2022

Iran exported crude/condensate at record levels in 2022 under sanctions, averaging 1mbd in 2022, a 20% increase y-o-y

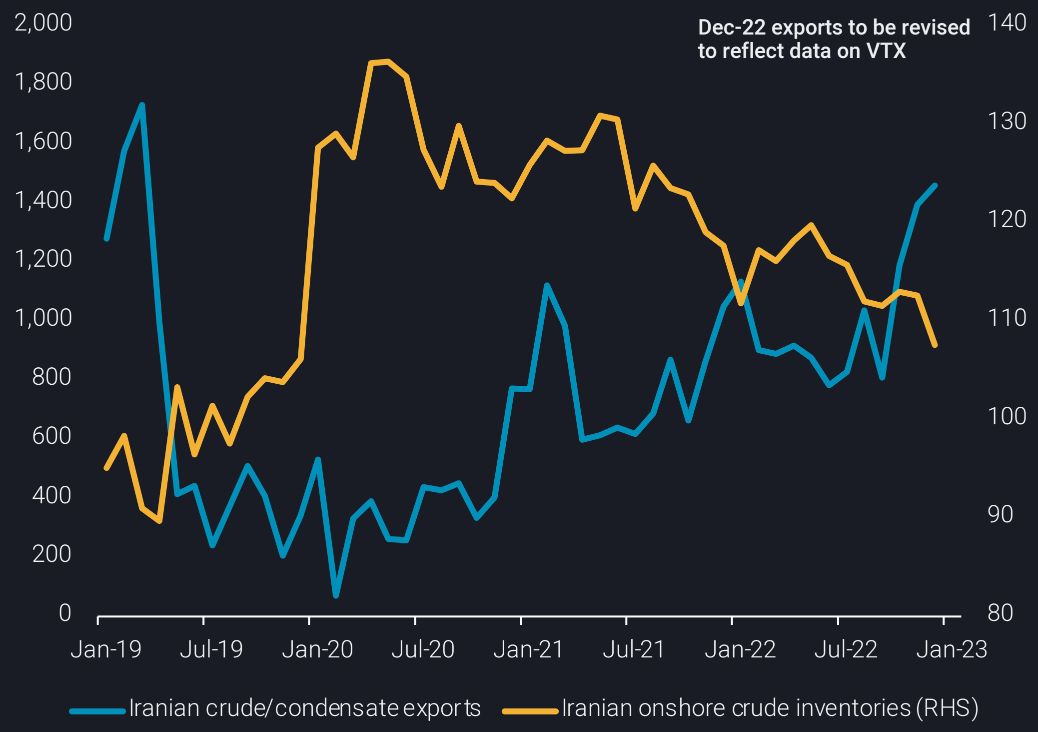
Iranian crude/condensate exports surpassed 1.4mbd in December 2022, a record high since sanctions were fully imposed in May 2019

- ➔ The was facilitated by higher Chinese demand (additional import quotas), less Russian competition and a rise in tanker supply
    - ➔ Vortexa data suggests 19 tankers newly joined the Iranian trade from Oct-Dec, helping facilitate higher exports in Q4
- ➔ Exports were 1.1mbd in Jan 2022, but thereafter moved flat-to-lower, averaging 850kbd (Feb-Sep)
    - ➔ Heightened competition from discounted Russian Urals weighed on Iranian crude exports during Mar-Sep 2022

Meanwhile, Iran's onshore crude inventories decreased to 107mb in December - a 3-year low - after a 5mb draw since November 2022

- ➔ December 2022 crude/condensate exports increased 60kbd m-o-m, coinciding with a 160kbd stock draw over the same period
    - ➔ Multi-year low inventories were further supported by flat Iranian crude production in 2022 of 2.5mbd (OPEC)

Iranian crude/condensate exports (kbd, LHS) vs Iranian onshore crude inventories (mb, RHS)



Get live data on platform (Exports, onshore crude inventories)

China imported record Iranian crude amidst abundant quotas

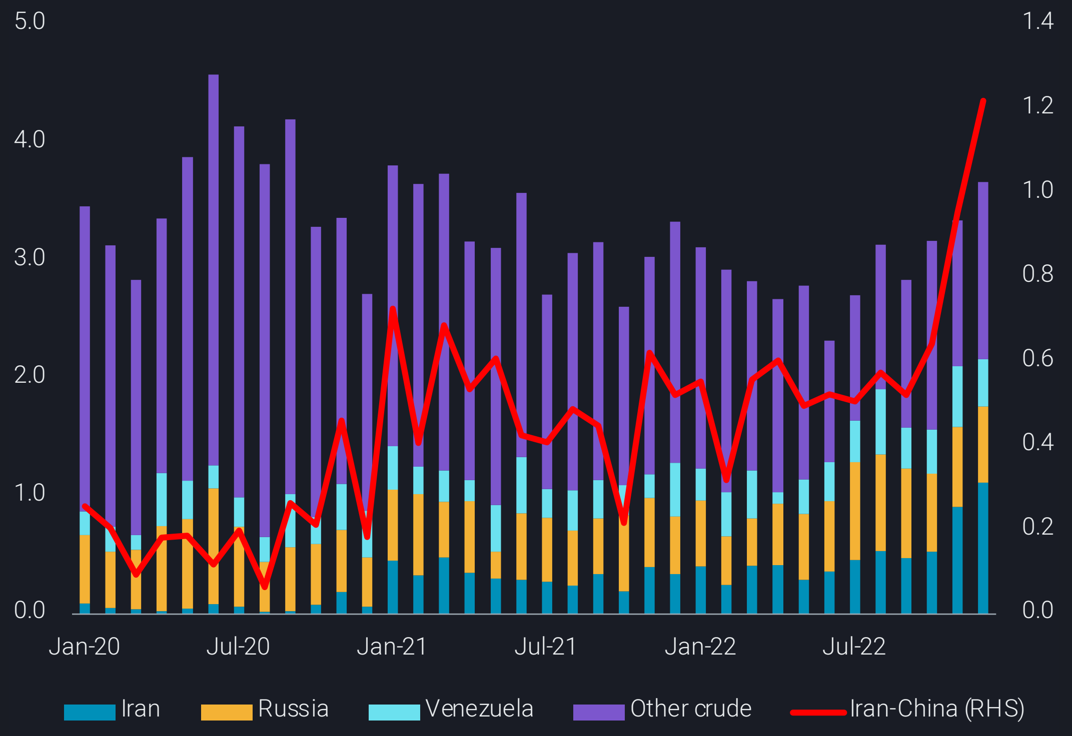
China's crude imports from Iran picked up to a new record in the last month of 2022, as Chinese independent refiners were encouraged to utilise the crude import quotas released in the last quarter of the year

- → Iran-China crude flows were arriving in China at a rate of 1.2mbd in December, up more than 130% year-on-year

Most of these heavily discounted barrels found home in Shandong province, as Shandong independent refiners have largely turned to discounted crude grades since H2 2022, amidst sluggish domestic fuel demand and depressed refining margins

- → Shandong crude imports from Russia declined to 650kbd in December, although ESPO-led Russian Far East grades picked up 15% m-o-m
- → Russian Urals crude, the main competitor to Iranian crude, were recorded at 45kbd, compared to 150-250kbd in June-November
- → With more Urals cargos expected to arrive in Q1 and offered at deeper discounts to Iranian crude, the strong momentum of Iranian imports may come to an end

Shandong crude imports by origin (mbd, LHS) vs. Iran-China crude flows (mbd, RHS)



Get live data on platform (Shandong, Iran-China)

Iranian crude/condensate in floating storage declines to 43.5mb

As of 10 January, Iranian crude/condensate in floating storage is assessed at a base case of 43.5mb - 60% is condensate and 40% crude

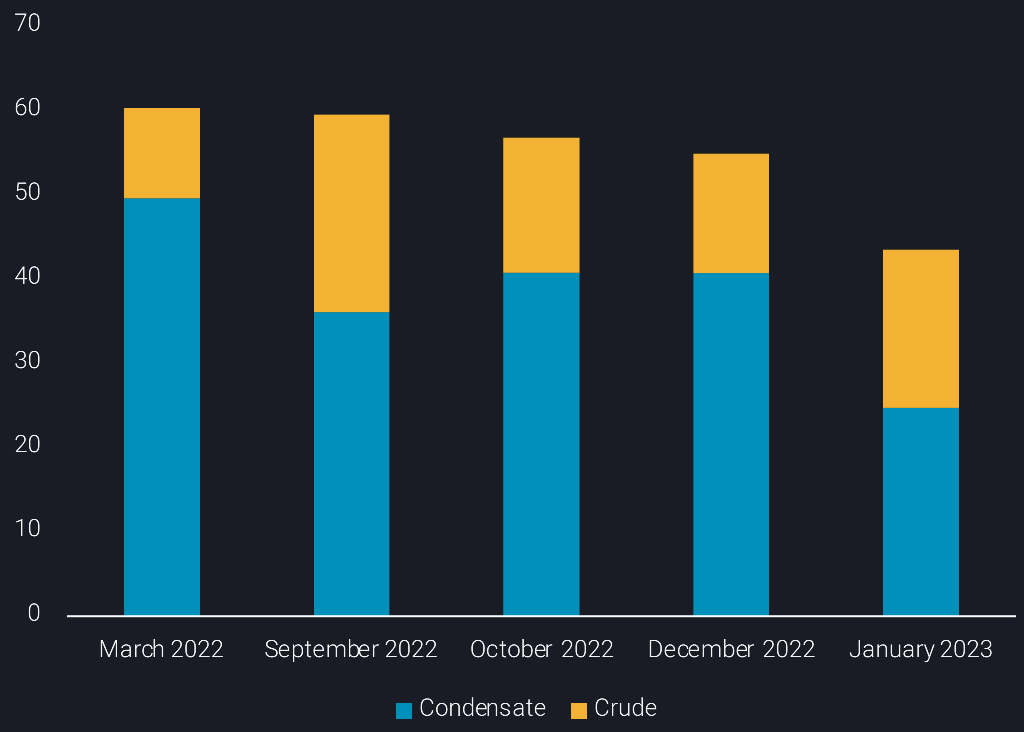
Iranian floating storage is 11.5mb lower m-o-m, reflecting the record volumes of exports and China's imports of Iranian crude/condensate

- South Pars Condensate in floating storage is assessed at 25mb in January, a 16mb m-o-m decline
  - Vortexa data suggests 11 NITC VLCCs loaded in December for export, hence the decline in floating storage capacity
- Iranian crude in floating storage is assessed at 18.5mb in January - a 4.5mb m-o-m increase
  - The increase is reflective of the record Iranian crude/condensate exports observed in Q4 2022

The 43.5mb base case equates to 35 tankers currently in floating storage - 24 VLCCs, 10 Suezmaxes and one Handymax

- The 40% of Iranian floating storage which is crude is based on both non-NITC tankers floating offshore Malaysia awaiting buyers and NITC tankers in Kharg Island anchorage

Iranian crude/condensate in floating storage (mb)



STS zones saw 600kbd of Iranian crude/condensate in 2022

Asia and the Middle East are prominent areas for STS transfers of Iranian crude/condensate – activity reached 600kbd in 2022

STS activity in 2022 increased 70kbd y-o-y, spurred by a strong Q1 2022, where total STS activity in all locations reached 80% of all exports

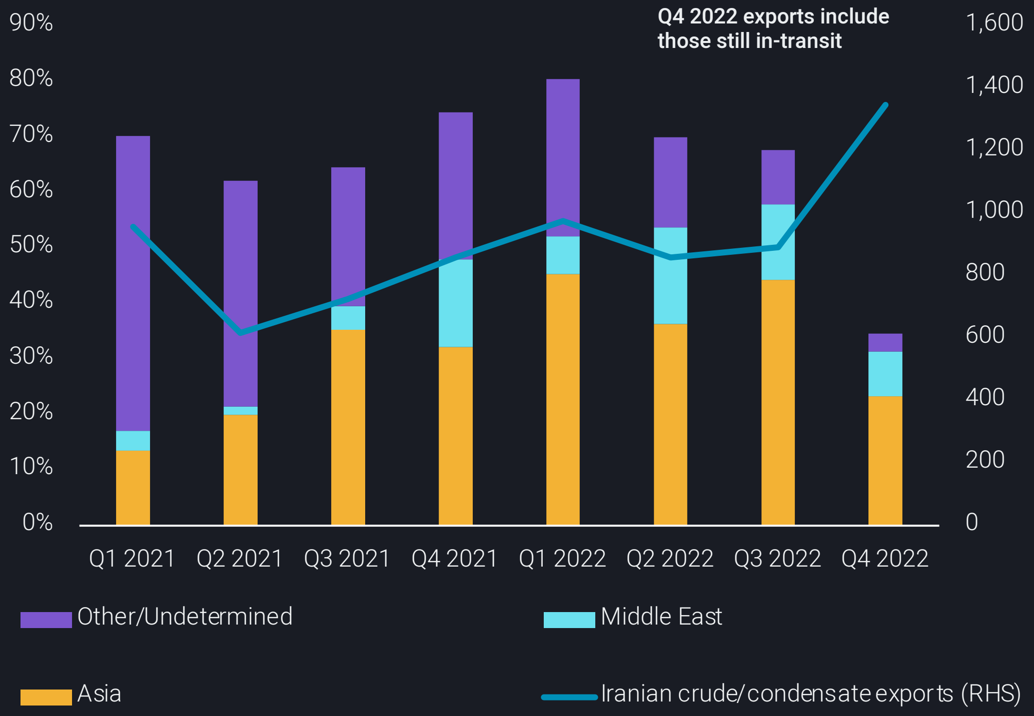
STS activity in H2 2022 fell 25 percentage points from H1, reflecting fleet utilisation changes as tankers switched to Russian trade after Q1

- ➔ Suezmaxes in Iranian trade increased 30% in 2022 y-o-y, whereas Aframaxes decreased 35% over the same period
  - ➔ The decline in Aframax use has resulted in more (bigger) tankers voyaging directly to China – its main buyer

H1 2022 saw 75% of Iran's crude/condensate exports transferred via STS (in all locations), before discharging at its destination

- ➔ This was largely accounted for by Asia, where 40% of Iranian crude/condensate exports were transferred via STS
  - ➔ Offshore Linggi and Singapore are the most prominent locations for STS transfers in Asia

Share of cargoes transferred via STS in Asia, Middle East and Other/Undetermined (%, LHS) vs Iranian crude/condensate exports (kbd, RHS)



Fleet Analysis

Tankers previously carried Iranian crude switched to Russian trade

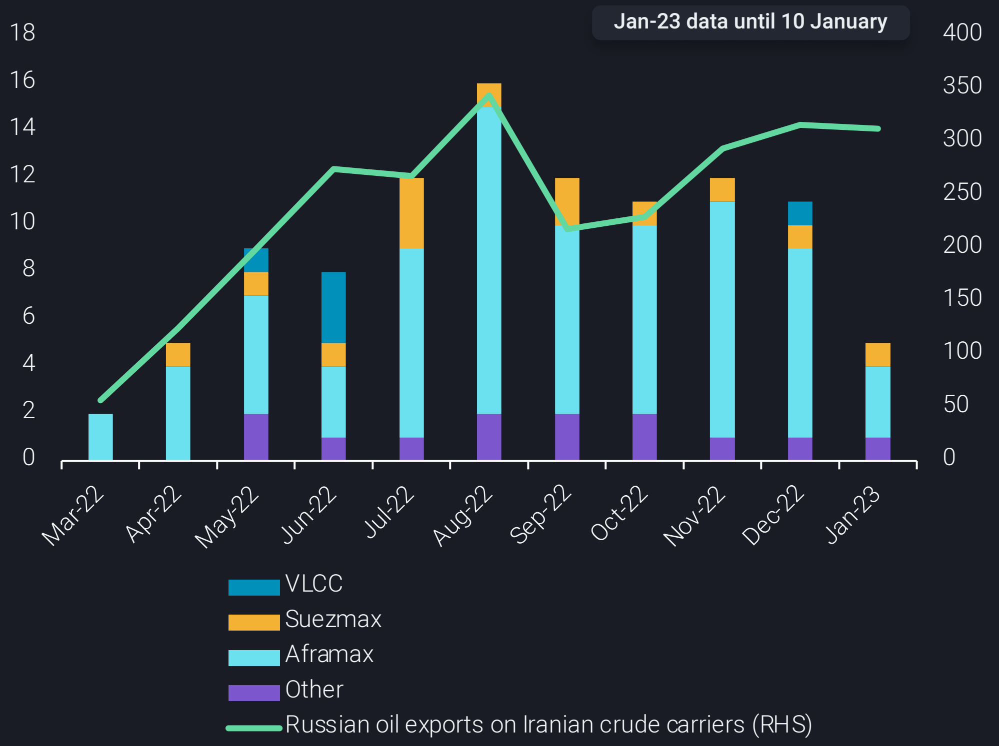
As of 10 January, we track 48 unique tankers which have loaded Russian oil since March 2022 and previously carried Iranian crude

- The 48 tankers have over 160 Russian oil liftings since March 2022, with VLCCs conducting STS transfers of Russian Urals
- As of 10 January, 11 of these tankers are in-transit carrying Urals, ESPO and HSFO signalling for East of Suez or Ceuta
    - Many of these tankers are on their second or third voyage carrying Russian oil

Of the 48 tankers, 30 are Aframaxes, three are VLCC's, six are Suezmaxes and nine are other smaller classes

- Russian oil exports on carriers previously involved in Iranian trade sit at 320kbd in December - a 20kbd increase from November - as a VLCC loaded Russian Urals via STS
- As more companies scale back from carrying Russian crude/ products, those familiar with the sanctioned crude trade will continue assisting Russia in exporting oil East of Suez

Count of Russian oil loadings on carriers previously carrying Iranian crude, split by vessel class (LHS) vs Russian oil exports (excl. CPC Blend) on these carriers (kbd, RHS)



10 tankers currently in transit with Urals and ESPO on board, having previously carried Iranian crude

As of 10 January, we track 10 tankers in transit carrying Urals or ESPO that previously carried Iranian crude

- The VLCC LAUREN II loaded Urals from three Aframaxes via STS offshore Ceuta and is now declaring for China (orange circle)
  - LAUREN II is operated by GREETEE CO LTD, a Chinese company and was involved in dark STS activity in Q3 2022
- Two Suezmaxes, AURIGA and MISCA, carrying ESPO and Urals, respectively, are both declaring for China (blue circles)
  - AURIGA is operated by KEETE CO LTD, a member of the Dalian network as is LAUREN II's operator
- The seven Aframaxes are all carrying Urals but with different declarations; Ceuta, China and Suez (red circles)
  - Offshore Ceuta has arisen as a location for STS transfers of Urals whilst Suez indicates either China or India

The average age of these tankers is 19.5 years old whilst Panama and Liberia are the most common flags

- The similarity to tanker profiles used in Iranian trade highlights the familiarity of operators with this trade

Tankers in transit carrying Urals and ESPO previously carrying Iranian crude - as of 10 January

[Get live data on platform]

Net fleet additions to Iranian trade turned positive in Q4 2022

In 2022, 181 unique tankers shipped Iranian crude/condensate, of which 48 tankers began trading Iranian cargoes in 2022

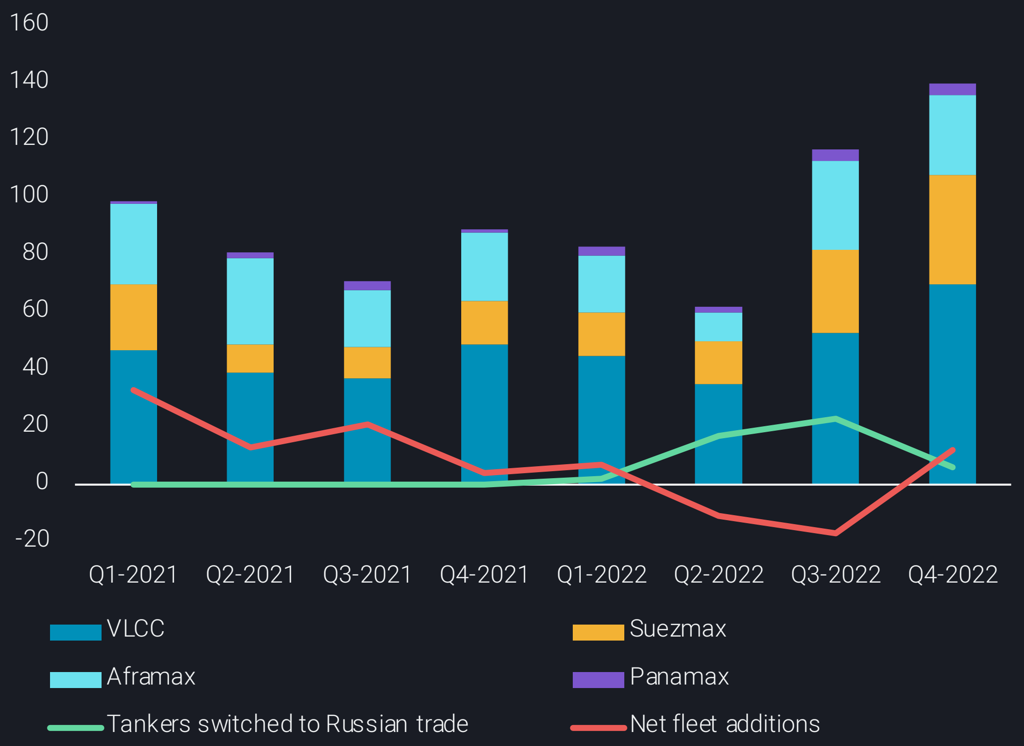
Net fleet additions to Iranian crude trade turned positive in Q4 2022 after facing net losses through 2022 as tankers switched to Russian trade

- ➔ Q4 saw net additions of 12 tankers to the Iranian crude trade compared to the net loss of 17 tankers observed in Q3
  - ➔ Q4 was driven by 19 tankers which newly joined the Iranian trade though six tankers switched to Russian trade and one tanker was decommissioned
  - ➔ This contrasts with Q3, where seven newly joined the Iranian trade but 23 tankers switched to Russian trade and one tanker was decommissioned

There were two Iranian crude carriers scrapped in H2 2022 - a contrast to the 14 tankers scrapped in H2 2021

- ➔ This reflects the current reluctance to scrap older tankers as operators continue using them for Iranian and/or Russian trade

Count of Iranian crude/condensate loadings split by vessel class, tankers switched to Russian trade & net fleet additions



Fleet utilisation reflects Russia impact in 2022

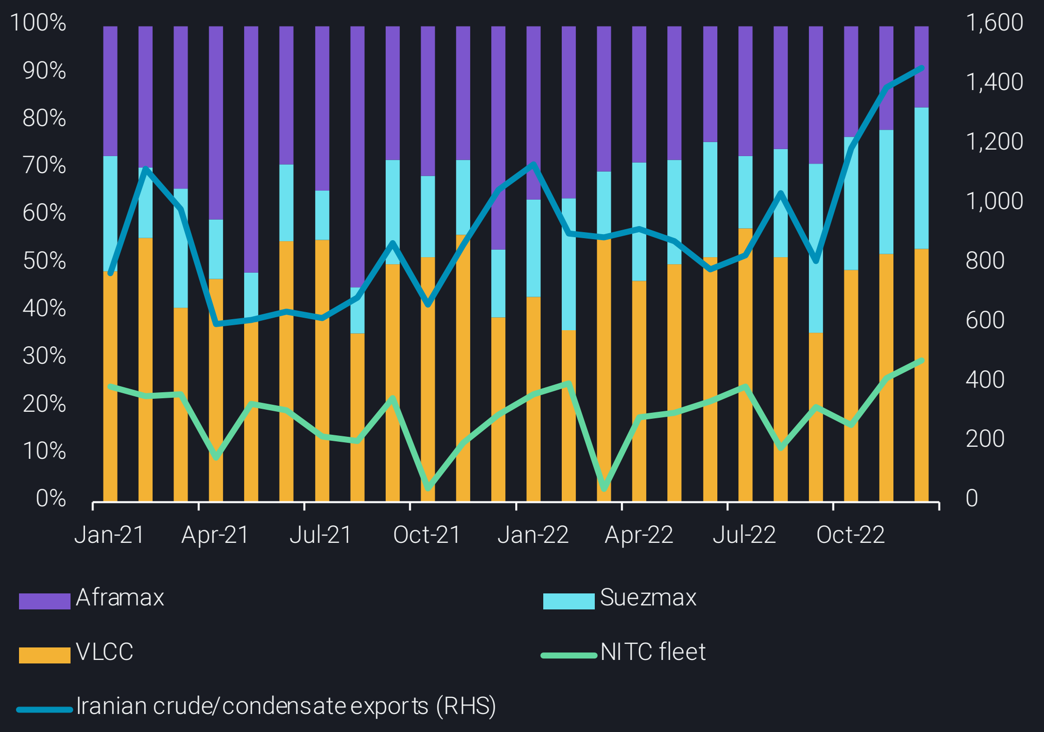
The Russia-Ukraine conflict shifted the fleet utilisation across the three largest tanker classes which carried Iranian crude in 2022

- → Aframax utilisation saw the largest shift in 2022, falling 30 percentage points y-o-y to 17% in December 2022
  - → This is reflective of tankers switching from Iranian to Russian trade, as over 60% are Aframax class
- → In contrast to this, VLCC and Suezmax utilisation increased 14pp and 16pp y-o-y, respectively, to 53% and 30% in December 2022
  - → 70% of the tankers which newly joined the Iranian crude trade in 2022 were VLCCs and Suezmaxes

Vortexa data also shows an increase in NITC fleet utilisation in 2022

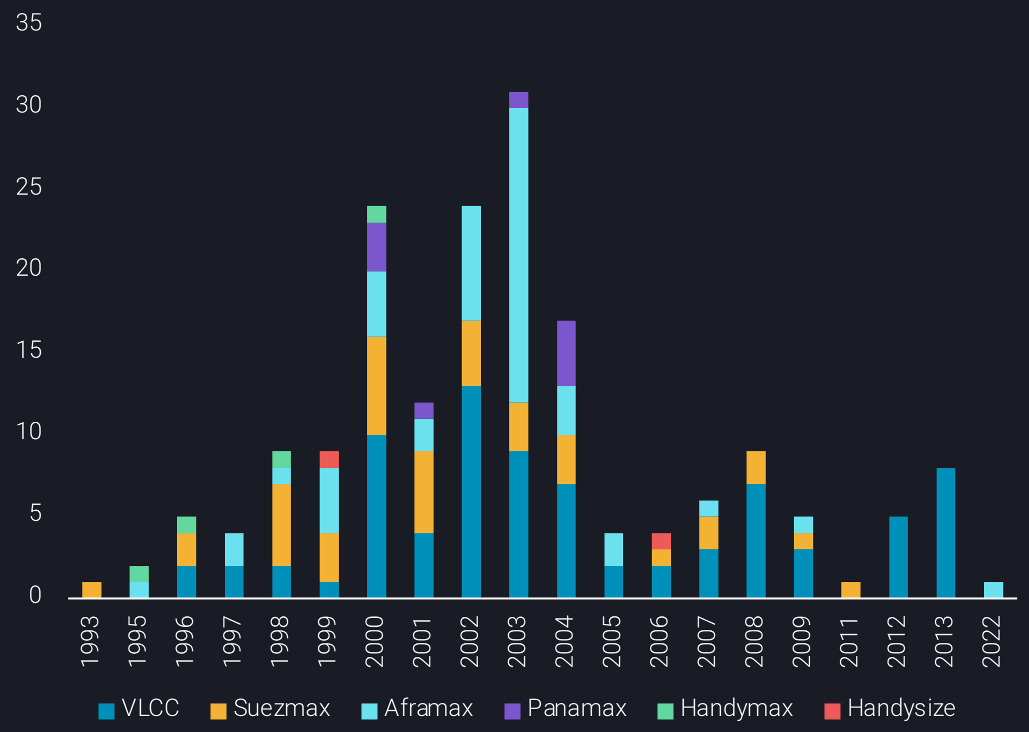
- → On average, NITC fleet utilisation climbed to 25% in Q4 2022, an increase of 13pp from Q4 2021
- → The NITC fleet is 75% VLCCs, which supports why the NITC fleet utilisation of 30% in December 2022 coincides with 53% VLCC utilisation for the same period
  - → This is also reflective of the record high Iranian crude exports observed in December 2022

Fleet utilisation (%, LHS) vs Iranian crude/condensate exports (kbd, RHS)



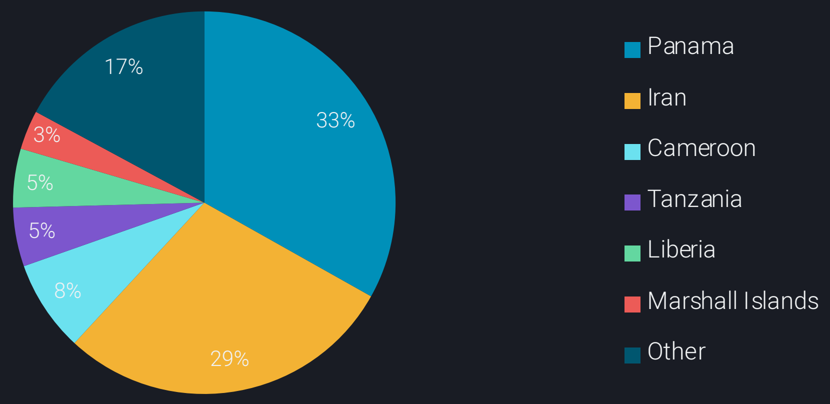
Fleet profile - Age & Flags in 2022

Fleet age profile (build year)*



*Includes NITC tankers

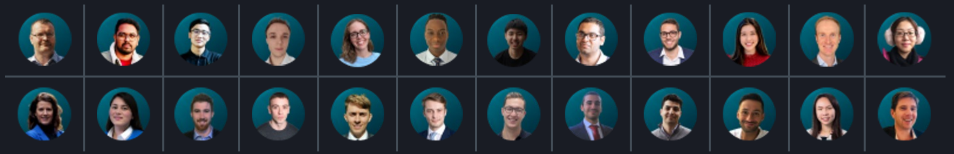
Share of Iranian crude/condensate carrying fleet (count of tankers) by flag



Fleet age profile

Age (year)	Tankers	Share	Scrapped in 2022
0-5	1	1%	0
6-10	8	4%	0
11-15	20	11%	0
16-20	62	34%	3
> 20	90	50%	6

Market Intelligence & Analytics Services



The Vortexa market intelligence & support team comprises 20+ people globally, averaging 10+ years in energy and freight analytics. Based in London, Singapore and Houston, our analysts work with our clients to extract value from our analytics.

Client reports

- 3 PDF reports p/w
- Weekly Freight Newsletter
- Concise bullet & chart format covering energy flows & freight

Client video briefings

- 2 x 15 minute live video briefings p/w
- Attendees anonymous to others
- On demand archive available

Analyst support

- Expert support
- Useful tips & tricks
- Customised briefings

VORTEXA

Thank you!

London

Vortexa Ltd.
Portsoken House
155 Minories
London
EC3N 1LJ

Singapore

Vortexa Asia Pte Ltd
36 Robinson Road
Singapore
068877

Houston

Vortexa Inc.
2200 Post Oak Blvd
Suite 1000
Houston, Texas
77056

New York

New York
Vortexa Inc
368 9th Ave
New York

Get in touch with us today for a free demo

VORTEXA

www.vortexa.com