LNG CHARTERING

Market & Negotiation fundamentals

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The basics – Vessel Specification

- Liquefied Natural Gas (LNG) is the Natural Gas that has been cooled down to -162 $_{o}$C
- Contains methane with some other impurities (butane, propane, etc)
- Specific cargo nature – cargo evaporates
- Boil Off Gas (BOG) can be used for propulsion or can be re-liquefied
- Technical evolution of the fleet:
  - Containment System
    - Moss
    - Membrane
  - Propulsion / Vessel Sizes
    - Steam Turbine / size 135k-150k m3
    - Dual Fuel Diesel Electric (DFDE) / size 150k – 174k m3
    - 2-stroke (XDF or MEGI) / size 174k – 180k m3
  - BOG/Cargo Management
    - Re-liquefaction System
    - Sub-cooler system

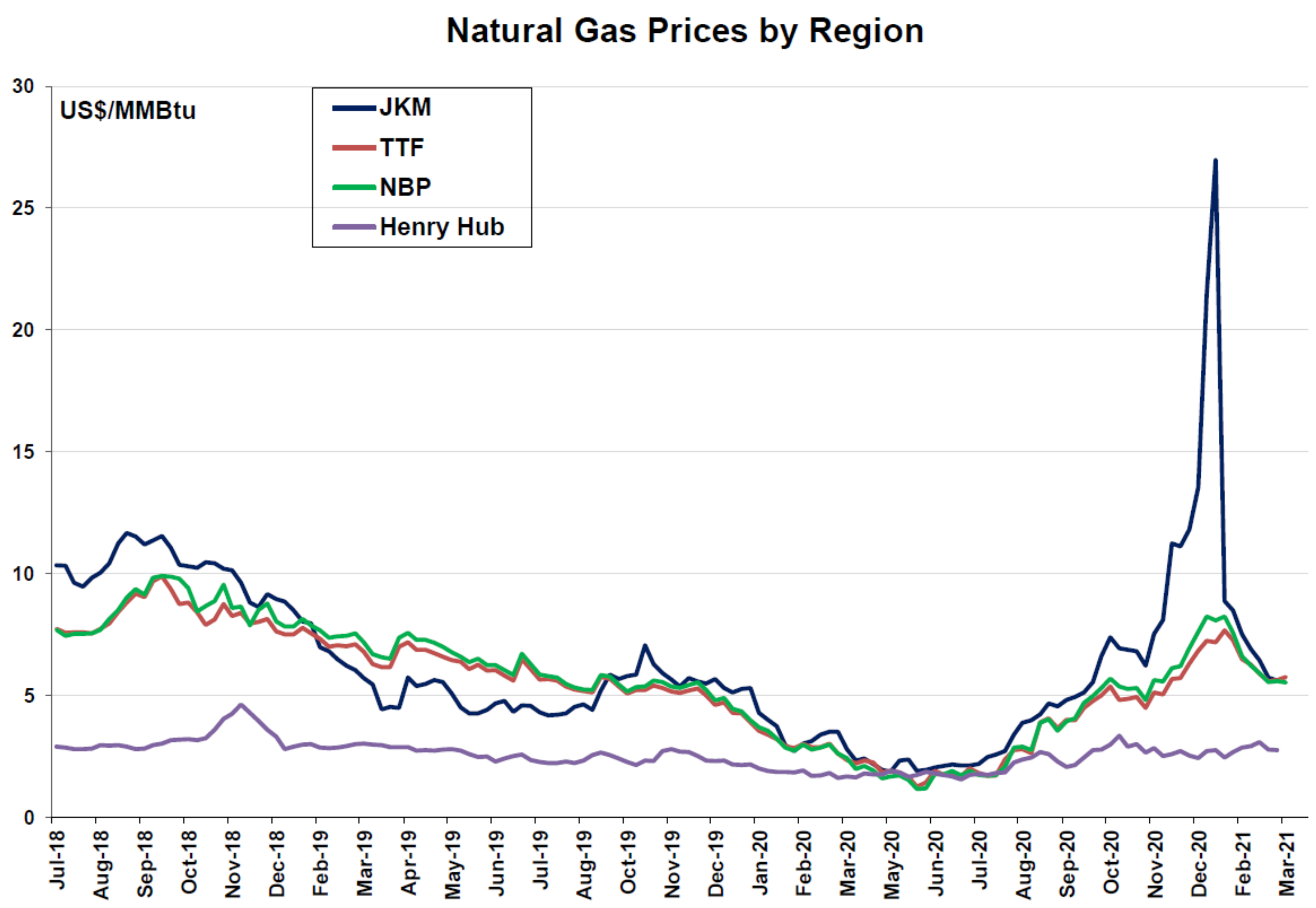
The basics – Business

- LNGCs are high CAPEX intensive assets
- New-Buildings Cost between $175-190m
- High OPEX requires steady cash-flow
- Completion lays on several areas such us OPEX, Management Quality and Finance
- Different type of Charter Periods:
  - Spot → 0-6 months
  - Short term → 6 – 24 months
  - Mid term → 3 – 5 years
  - Long term → 5 years+
- Average TC period that allows you to obtain financing: min 7 years
- A New-building vessel can be traded as portfolio or project vessel
- Types of customers:
  - Traders (Trafigura, Vitol, Glencore, Gunvor, etc)
  - Oil Majors (Shell, BP, Cheniere, etc)
  - DES exporters (i.e. Qatargas, Petronas, etc)
  - FOB Byuers/Utilities (ENGIE, CNOOC, Osaka Gas, Uniper, etc)

The basics – Cargo Trading

- Measurement of LNG Cargoes:
  - In Cubic Meters – for shipping
  - In MMBtu – for trading & cargo pricing
- Difference between DES and FOB shipments:
  - DES – Delivered Ex Ship: Shipment arranged and paid by the Seller of the cargo
  - FOB – Free On Board: Shipment arranged and paid by the Buyer or the cargo
- Different cargo pricing benchmarks:
  - Brent linked
  - JKM – FE DES Prices
  - TTF - North Europe Import Price
  - NBP - North Europe Import Price
  - Henry Hub – USG Export Price
  - Hybrid models / Netback
- Shipping cost is usually converted to US$/MMBtu to capture all shipping related expenses that traders have to pay in order to calculate their margins and includes:
  - Hire (including BB & Pos)
  - Port and Canal Fees
  - Cost of Fuel

Historical Analysis - Cargo



LNG Prices

- Market volatility continues to follow the seasonality
- 2020 has recorded the lowest prices of the last 5 years
- DES Prices (JKM) have seen a dramatic pick later than usual, to a winter that arrived late and will end late due to higher temperatures in FE during Oct-Nov

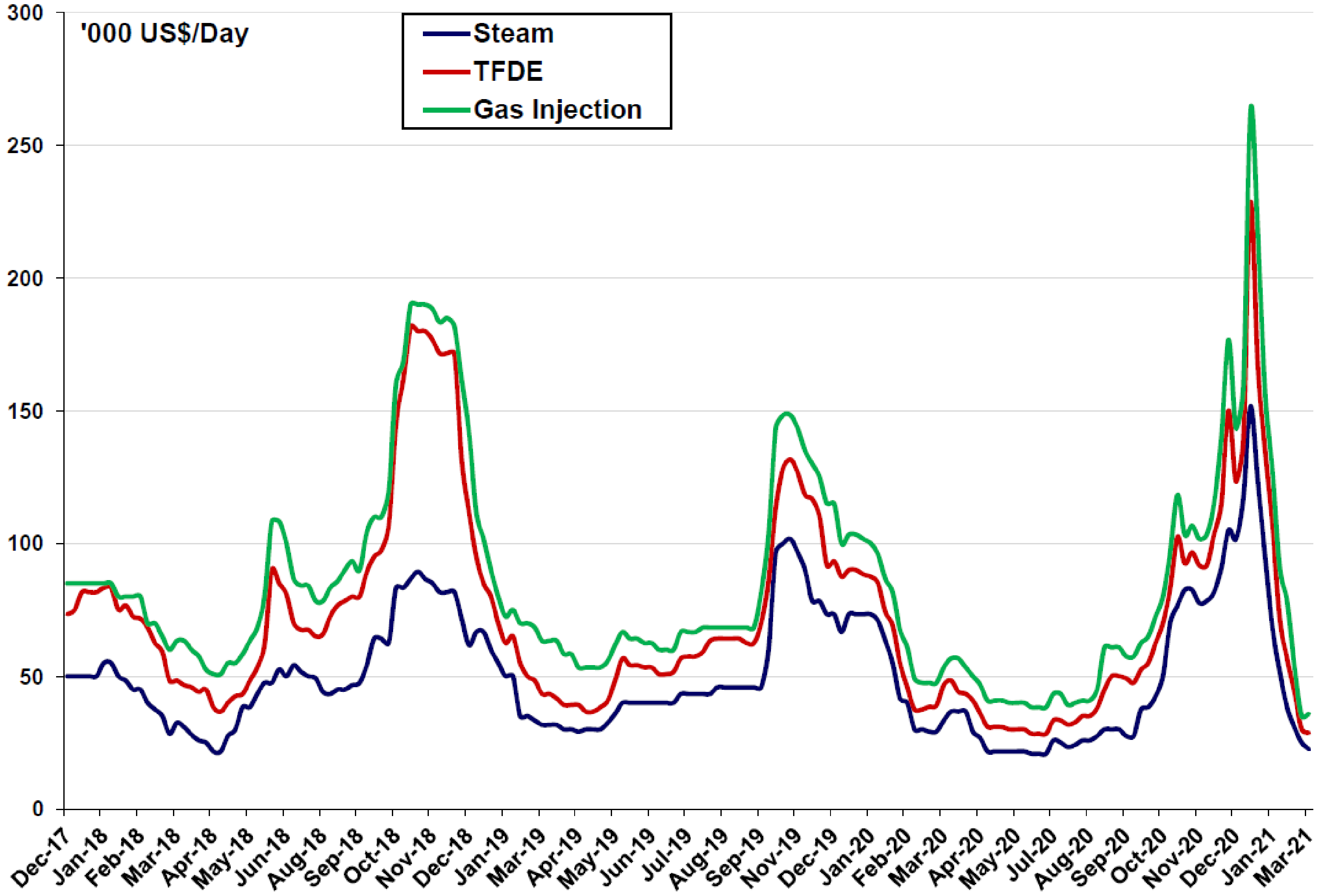
Exports

- U.S. exports have increased 35% month on month and have grown nearly 300% since the trough in 2020.
- Some disruption in production in Q4 2020 supported the increase of the prices.

Imports

- European imports have decreased due to high level of storage
- FE demand has slowed down compared to 2019
- India/Pakistan has improved

Historical Analysis – Spot Rates



2020 Average Spot rates have been the lowest of the last 3 years.

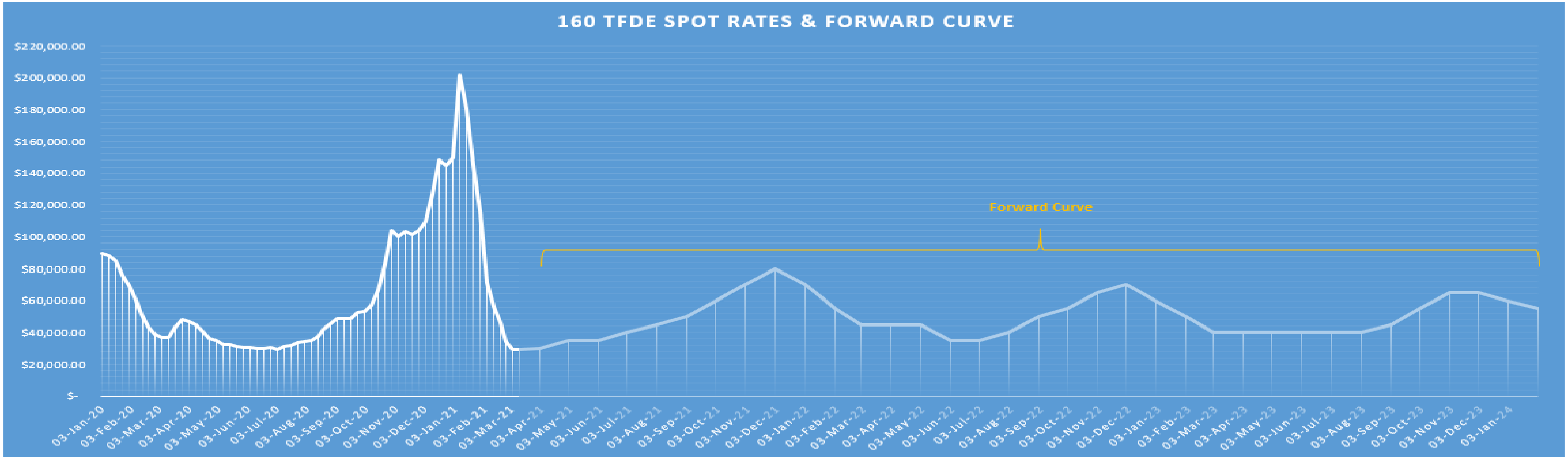
2020 Average: $58,424 per day

This can be translated to an estimated period rate (12-24 months) of **$46,500** per day, by applying a 20% utilization discount.

Historical high rates have been recorded at the beginning of 2021 with highest fixture reported at $350k

Disruptions in production, historical low temperatures in China, 14-day delays in Panama combined with the lack of response from Japanese players in securing positions led to a **domino effect** that supported rates to climb that high

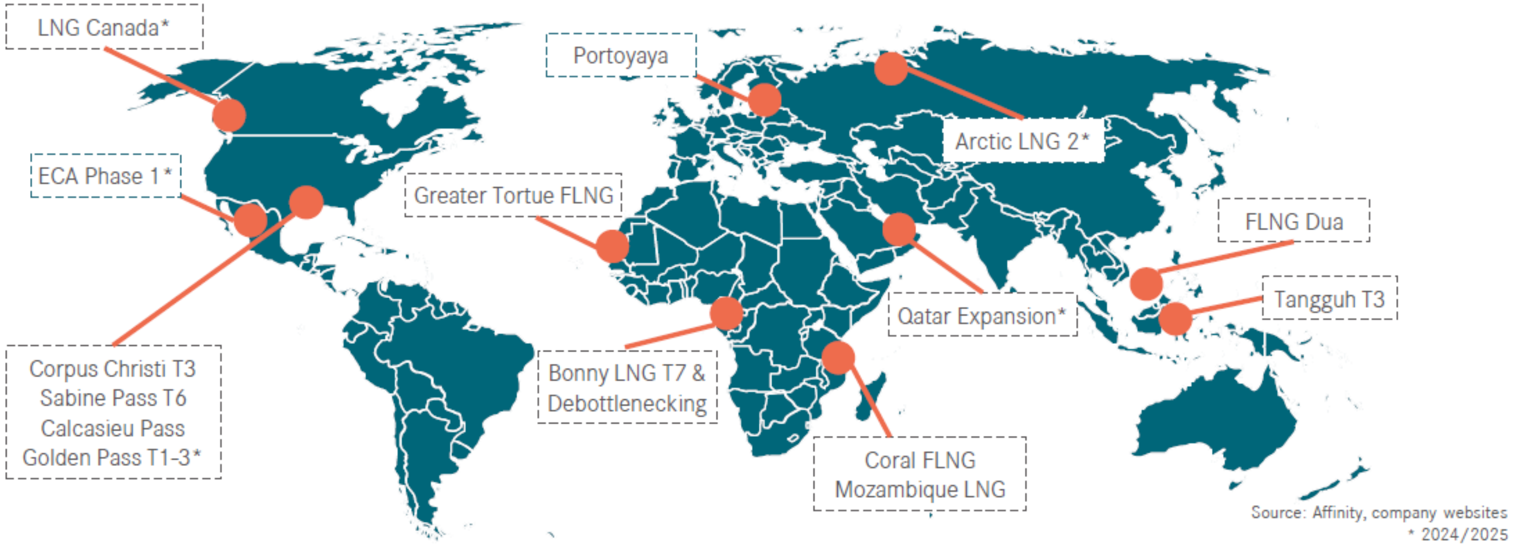
Spot Rates Forecast



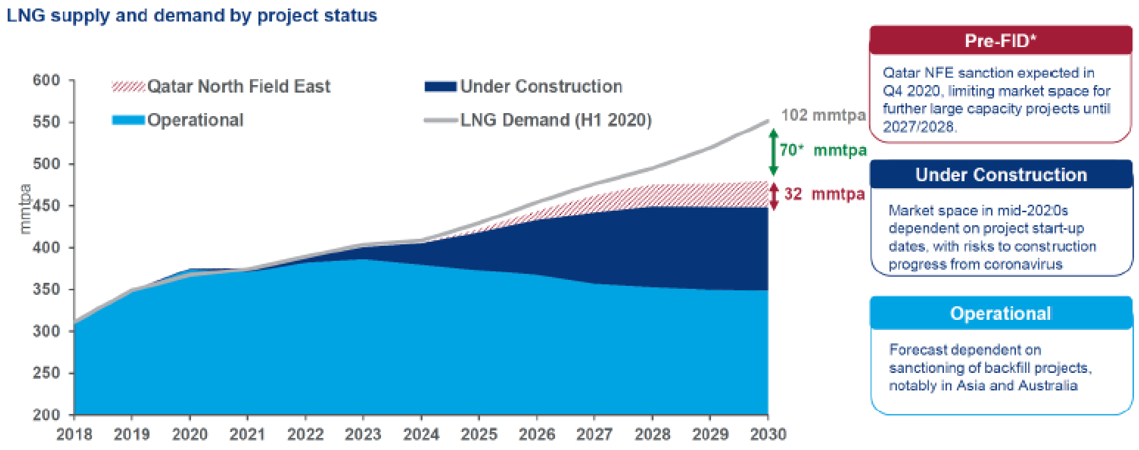
- Average spot rates of 2021 & 2022 are expected to be much lower than 2020. We estimate 2021 Average for 160 DFDE to be at **$53,000** per day while 2022 is expected to close at **$43,000** per day. Approx. 12% below 2020 actuals.
- By applying the standard 20% utilization discount to the average spot rates of 2021-2, in order to estimate the mid term rates (12-24 months), the average rate for a 24-month charter starting in Jan-21 is approx. **$40,500** per day
- The equivalent of a 36-month deal starting in Jan-21 and following the utilization rule of 80%, is calculated at **$37,600** per day
- Increased availability and record high of uncommitted Newbuilding deliveries in 2021 are expected to put an increased pressure on the rates. Approx. 16 uncommitted Newbuilding vessels will be competing for term business to secure cash-flow
- More than 60 vessels came out of yard or out of long term charters in 2021, half of which opened in Q1 2021, competing directly with our DFDE fleet which will be coming out of the existing charterers by that time. This already puts a lot of stress in Feb/Mar 2021 rates.

Cargo Market Forecast

Overview of LNG Export Projects expected to come online in the next 5 years



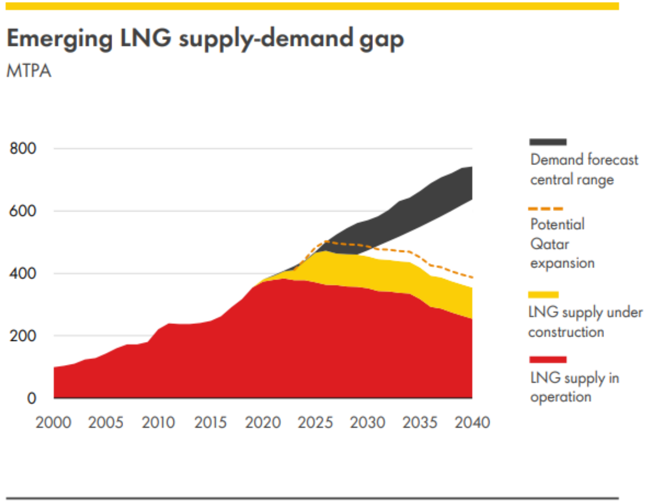
- The above presented figures reflect the current market outlook which predicts that the LNG supply with start increasing by 2024, to cover the growing demand, while shipping will not be enough to cover this expansion.
- Trade is expected to grow by 32% by 2025
- Global demand for LNG continues to grow as per Shell's LNG Outlook, while supply growth is expected to slow down following delays in new projects and FIDs especially due to COVID-19.
- Expected supply shortage in mid-2020s resulted in record FIDs
- Record FIDs delay expected supply demand gap
- LNG demand is estimated to double by 2040

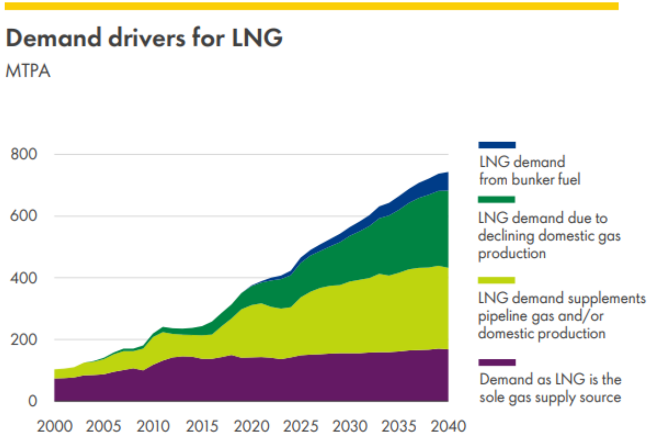


*In addition to Qatar NFE we also assume that Corpus Christi Stage 3 Phase1, Costa Azul and Obsky LNG will take FID over the next 18 months, resulting in additional 13 mmtpa of LNG supply by 2030. As a result, the supply-demand gap in 2030, would reduce from 70 mmtpa to around 60 mmtpa

Source: Wood Mackenzie Global Gas Service H1 2020, LNG Tool Q2 2020

Source: Wood Mackenzie





Source: Shell interpretation of IHS Markit, Wood Mackenzie, FGE and Poten & Partners Q4 2019 data

The Orderbook

The orderbook stands at 125 vessels as of End-2020. 88 vessels or 70% of the orderbook are committed and 37 vessels or 30% are open.

Note: Excludes FLNG, FSRU and FSU, small vessels <65k m^3

Open New Builds by Owners	
BW LNG	2
Capital Gas	3
CSSC Leasing	2
Flex LNG	1
H-Line Shipping	1
JP Morgan	1
Maran Gas	3
Minerva Marine	4
MOL	1
Nakilat	2
Nisshin Shipping	1
NYK Line	7
Sinokor	4
Thenamaris	1
Tsakos	1
Others	2
Total	**37**

Source: Affinity

SHIPPING MARKET EASES FURTHER ON MODEST DEMAND GROWTH AND SCHEDULED

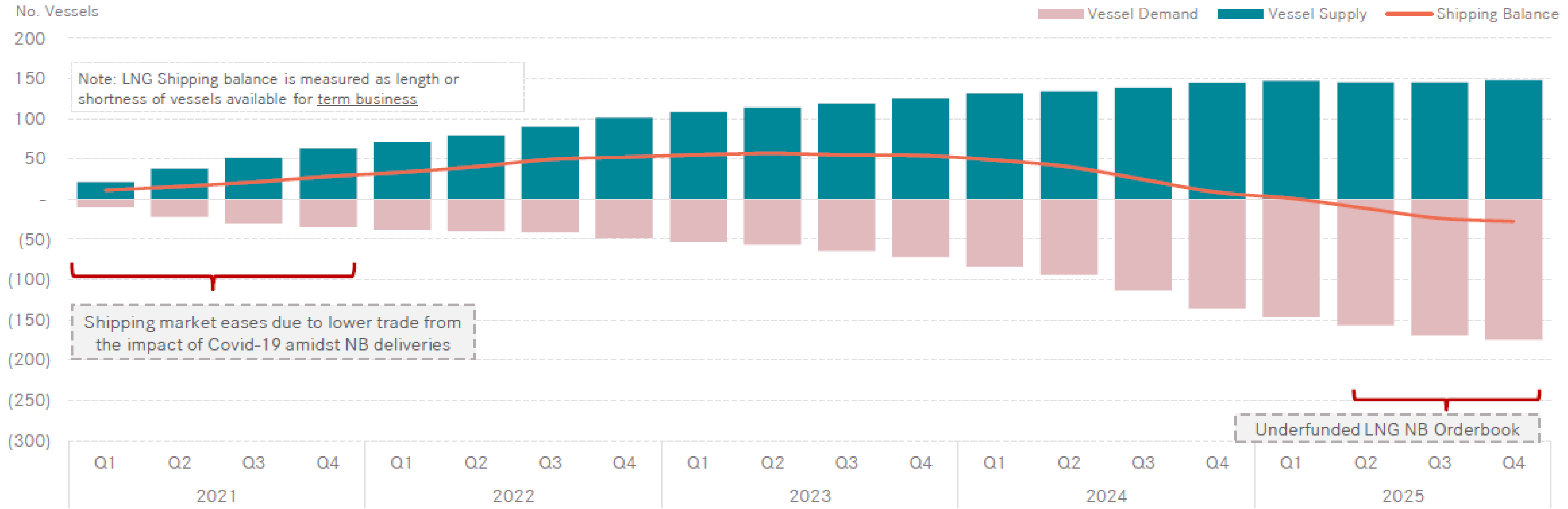
Structural LNG shipping length has gotten long on the back of reduced demand growth, delayed capacity additions, and on-schedule newbuilding deliveries.

- The impact of the pandemic on demand and supply continues to weaken the shipping balance.
- The shipping balance tightness that was expected for 2021 at the start of the year has since been reversed.
- The confluence of vessel deliveries and demand/capacity delays contribute to creating an oversupply of vessels that will peak in 2023. We expect the shipping balance to start tightening towards the end of 2024.
- There are 125 vessels in the order book as of the end of 2020, with 39 new orders placed in 2020. Currently there are 37 vessels uncommitted and looking for long-term employment.

The Shipping Balance is an indicator for the length in LNG shipping market, using December 2020 as the reference base month.

The outlook is affected by following factors:

- Fleet replacement/conversions/disposals, project delays, newbuild orders/order delays, fleet optimization, Panama Canal transit restrictions



Note: All vessel figures normalized to 160K m³, 35 years useful life, excludes vessels in layup and FSRU/FLNG/FSU

Source: Affinity

The fundamentals of LNG Spot Chartering

- High volatility due to seasonality
- Increasing liquidity
- Time Charters mainly
- Heel management
- Different tiers for each vessel type (basis propulsion and size)
- Most common CP is ShellLNGTime2
- Rate structure/elements:
  - One-way economics, Round Trip (RT) or Three-way economics
  - Fixed rate or Index (Baltic linked or Brokers average)
  - Ballast bonus
  - Positioning fee
  - Best way to compare the different opportunities is by calculating the TCE

The Steps

- Market Analysis
- Identifying the right opportunity
- Submission of an indication
    - Always higher than your expectations
    - No commitment but avoid upsetting your customer
- Submit a firm offer with short validity
- Receive firm counter with negotiated main terms
- Exchange firm counters until one of the parties accepts
- Place the vessel on subs – prepare the Recap
- Lifting subs
    - Subs which usually include:
        - Management subs
        - SSCS clearance subs
        - Know Your Customer (KYC) subs
        - TCP Negotiation subs
- Once all subs are lifted we consider to have a clean fixture
- Execution of the TCP with a Power of Attorney (POA)

Main Negotiating Terms

- Rate Structure
- Ballast Bonus (RT or Hub) & Positioning Fee
- Period & Options
- Declaration of Option Periods
- Delivery place, condition, laycan
- Redelivery range
- Delivery/Redelivery Notices
- Fuel Price (LIFO, FIFO, LNG Price)
- Heel retention
- Broker Nomination/Fee

Tricky Clauses to pay attention to

- Off-hire & Termination
- Voyage expenses (i.e. armed guards, SSCS, AWRP, COUs)
- Laycan narrowing mechanism
- Dry-dock
- Key Performance Criteria
- COVID-19 BIMCO Clause & Pandemic
  - This has been proven rather challenging these days as the volatility of the market in many cases does not allow Crew Changes to be performed

Tips when negotiating a TCP

- Be well aware of all terms. Always seek legal advise.
- Get a good understanding of the English law
- Do not give everything away… learn to trade
- Aim higher
- Keep the communication
- Pick up the phone
- Know your market and your competition
- Use time to your benefit
- Be careful when submitting an indication or firm offer/counter
- Keep it confidential until all subs are lifted

Some piece of advice

- 90% of our job is relationship building
- Keep a constant communication with brokers and charterers to get a better sentiment of the market
- Be careful on what you share on the phone
- There are things that can be said and things that cannot
- If you keep everything for your self none will be willing to feed you with info
- Process the info properly and trust only a few people
- Build a name for yourself
- DO NOT talk only about business… none likes nerds
- Spend time to learn technical and ops… you need to know in depth the product you sell
- Be creative and flexible… this is were profit is