



tankbank
International Pte Ltd

International Energy Safety Conference 2022

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In partnership with:



ExxonMobil

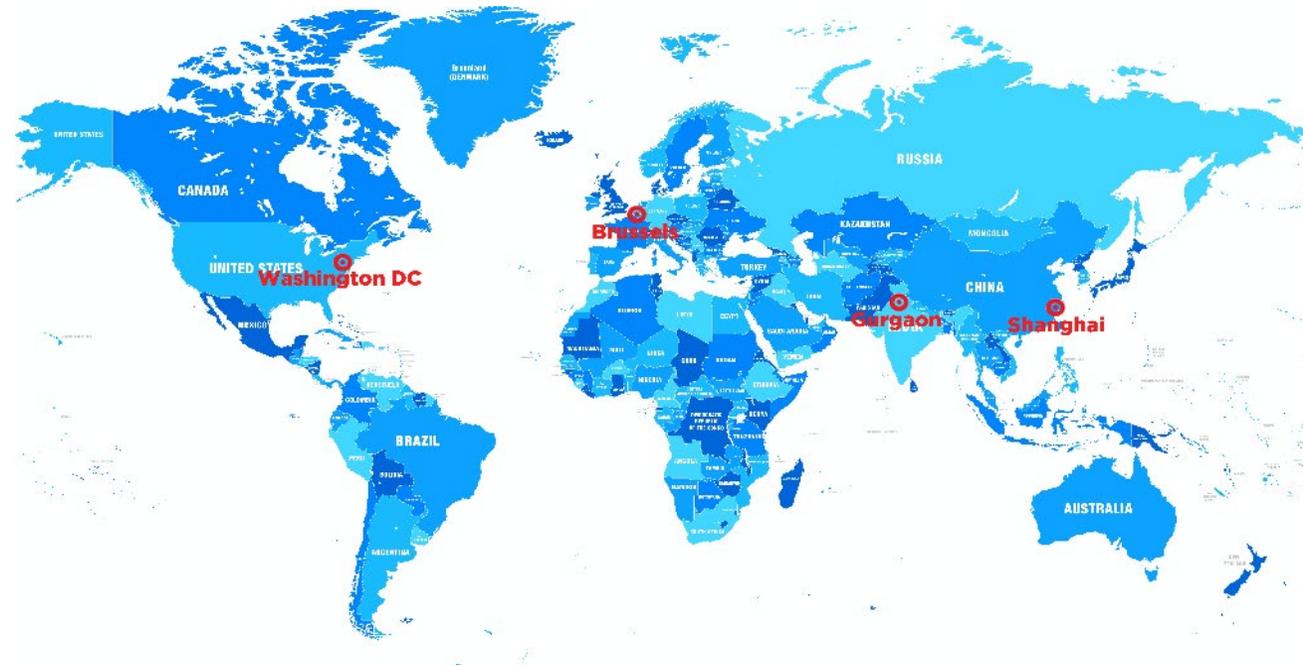


TIC Council

The Independent Voice of Trust



- Born from the merger of IFIA and CEOC
- Over 100-member companies & organizations active in more than 160 countries (HQ mapped)
- TIC Council has its head office in Brussels. It is also present in Washington DC, China and India.



TIC Council Vision



For the TIC Council to be recognized and trusted globally as the voice of the independent testing, inspection and certification industry, and to stand for best practice and the highest standards in safety, quality, health, ethics and sustainability.

TIC Council Mission



As the voice of the global independent testing, inspection and certification industry, the TIC Council engages governments and key stakeholders to advocate for effective solutions that protect the public, support innovation and facilitate trade.

The TIC Council works with its members to promote best practices in safety, quality, health, ethics and sustainability.

TIC Council Compliance Programme

Protect the trust, social
responsibility and
reliability of the sector

Principles:

- Integrity
- Conflict of Interest
- Confidentiality and Data Protection
- Anti-Bribery
- Fair Business Conduct
- Health and Safety
- Fair Labour

! Set the highest ethical business practices in the TIC industry.





Joint initiative - TIC Council and
O&G Majors

Forum to discuss and improve
safety awareness and ethical
behavior

Open, dynamic, result-oriented.

TIC Council Safety Conference

Background and goals



Previous Safety Conferences, a global effort



Rotterdam 2018



New York 2019



Safety Code

Part 1: Field Inspection

**FIRST
EDITION**

July 2019



Previous topics

- **Role of Leadership in Safety**
- **Ethics and Integrity in behavior-based Safety Systems**
- **Stop Work Authority**
- **Safety Code: Field Inspection**

Singapore 2022



In proud cooperation with Tankbank International, and with a broadened scope:

- To gain an understanding of the differences in safety culture between the APAC and the EU-American regions
- To provide updates on the global energy market

**TANKBANK
AND TIC COUNCIL
INTERNATIONAL ENERGY
SAFETY CONFERENCE 2022**

SAVETHEDATE 28 SEPTEMBER 2022

CONRAD CENTENNIAL SINGAPORE WWW.TANKBANKTIC.COM

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Programme



Lessons learned for inspections during the COVID-19 Pandemic

Building resilient and sustainable liquid bulk supply chain

Spectroscopic examination of tanker wash waters

APAC Trade Flows and the Importance of Digital Information

LUNCH

Current commercial market trends - Tank Storage: “Around the world in 30 minutes”

Terminal Managers panel discussion

Safety when boarding vessels

Cocktail Reception



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International Energy Safety Conference

28 September 2022
Singapore

In partnership with:



ExxonMobil





TIC

COUNCIL

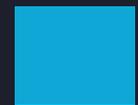
THE INDEPENDENT VOICE OF TRUST



Lessons learned for Inspections during the Covid-19 Pandemic

Singapore Sept 2022

© TIC Council 2022



Prologue: The Source



- Severe acute respiratory syndrome (SARS) is a viral respiratory disease caused by a SARS-associated coronavirus.
- SARS is an airborne virus and can spread through small droplets of saliva in a similar way to the cold and influenza. It was the first severe and readily transmissible new disease to emerge in the 21st century and showed a clear capacity to spread along the routes of international air travel.
- SARS can also be spread indirectly via surfaces that have been touched by someone who is infected with the virus.
- In the 2010s, Chinese scientists traced the virus through the intermediary of Asian palm civets to cave-dwelling horseshoe bats

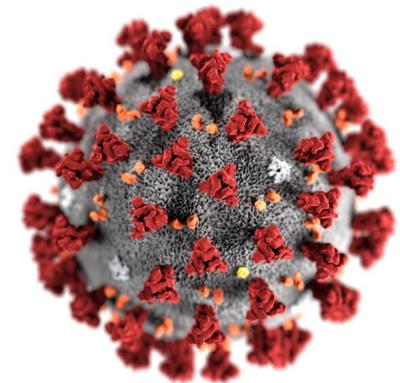
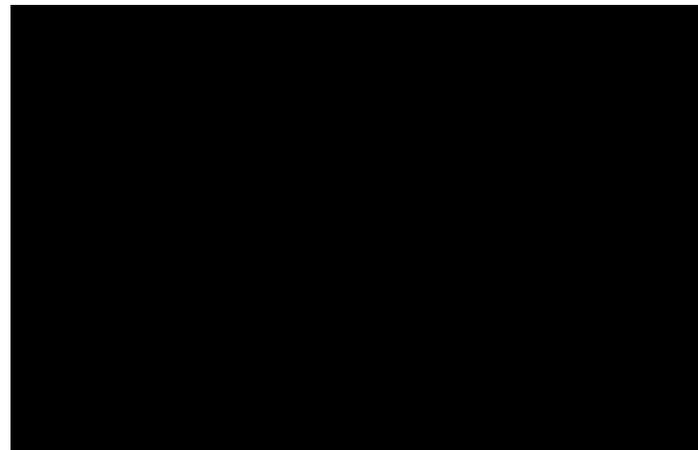
Phase 1: Pandemic pandemonium

- The Corona virus was first detected on November 19th 2019
- It swept across the Global Village and affected all of us
- Were we prepared as businesses to manage the problems created? Who had Business Continuity plans for Pandemics?
- This was very much a multi stakeholder challenge, but who had discussed or coordinated an approach with other stakeholders?
- Just like the virus we had to adapt to survive!



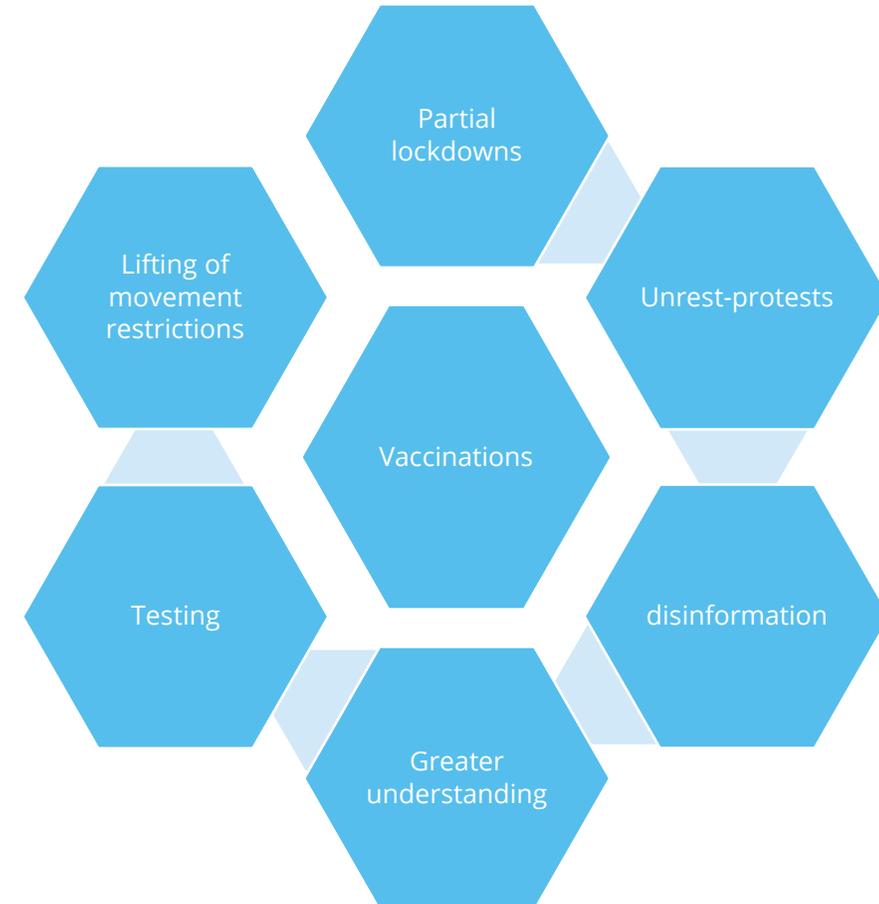
Lockdowns

- Governments have been cautious about easing lockdown measures after the lifting of restrictions over the summer led to new waves of the virus. For many, optimism generated by rapid progress in the development has been partially offset by concerns over slow rollouts and their efficacy with new, highly transmissible variants of the virus.
- Lockdowns compared: tracking governments' corona virus responses



Phase 2 Normalisation

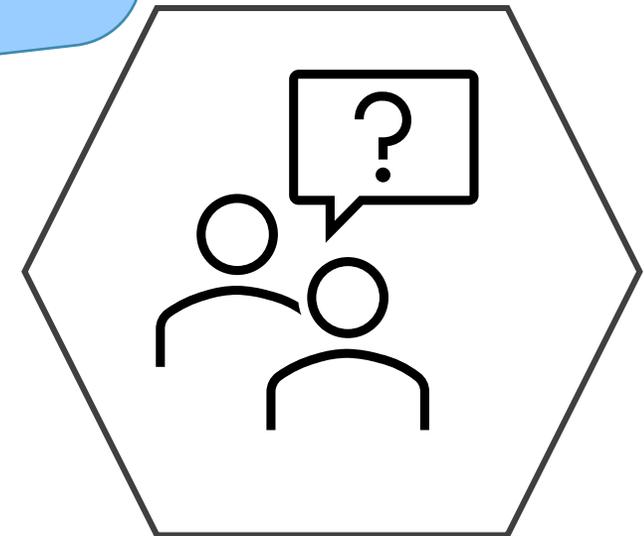
- Greater understanding of the virus and transmission vectors
- Lockdowns are less frequent
- Vaccination programmes begin to take effect
- Disinformation spreads
- Antivaxxers emerge
- COVID fatigue sets in
- Need to reinforce and maintain hygiene rules



Generic management issues

- Duty of care
- Implementation of hygiene rules
- Provision of PPE
- Introduction of new working
- Changing behaviour
- Morale & motivation
- Communication
- Procurement-PPE requirements
- Management of absence from the workplace
- Communication and training
- Increase with pandemic regulations as the situation evolved
- Business Travel

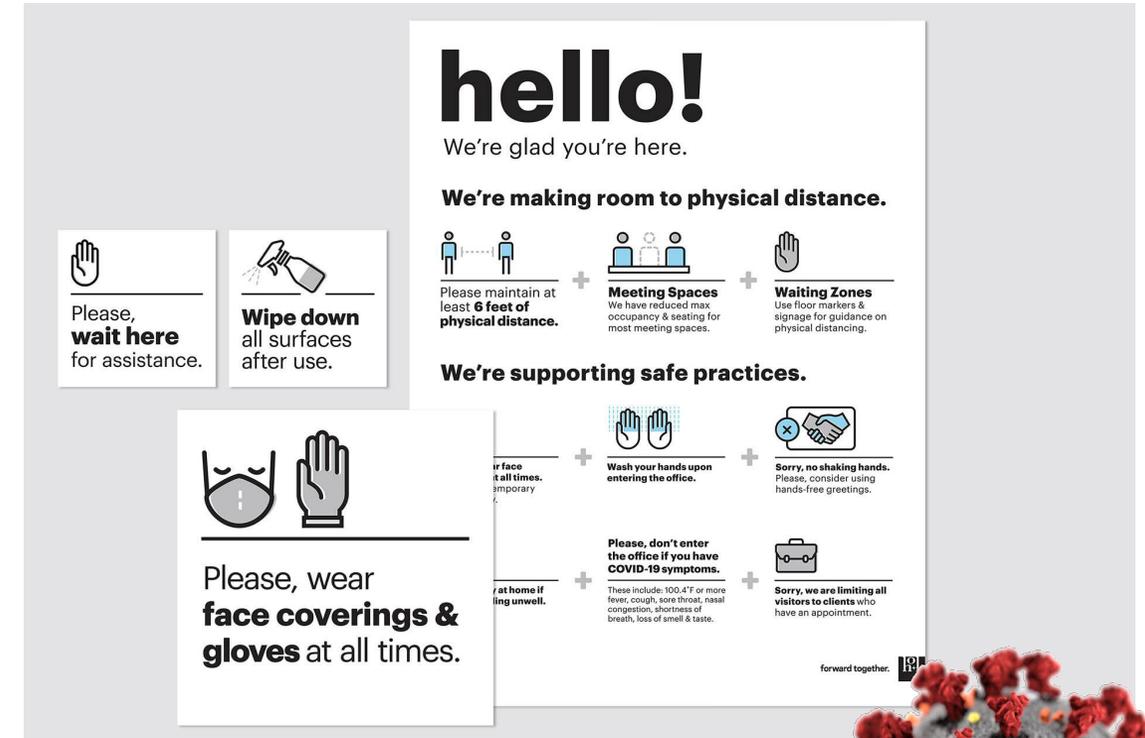
Can you tell us about your challenges?



Lessons Learned

For **office** employees :

- Shift to home working – provision of equipment, use of own equipment (phones, desks, offices, or other work tools).
- Innovative use of technology for communications
- Restricted access: just key staff or staff unable to work from home
- Division of teams into social bubbles
- Adaptation of workplaces e.g. physical barriers installed in reception areas.
- Monitoring of employee's behaviour
- Strict visitor protocols



hello!
We're glad you're here.

We're making room to physical distance.

- Please maintain at least 6 feet of physical distance.**
- Meeting Spaces**
We have reduced max occupancy & seating for most meeting spaces.
- Waiting Zones**
Use floor markers & signage for guidance on physical distancing.

We're supporting safe practices.

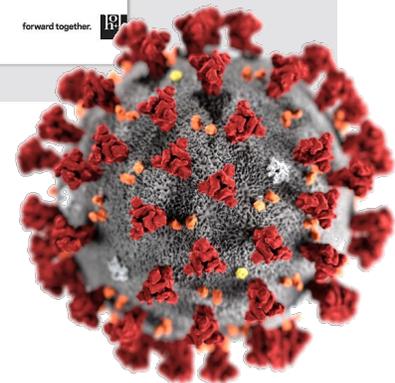
- Wash your hands upon entering the office.**
- Sorry, no shaking hands.**
Please, consider using hands-free greetings.
- Please, don't enter the office if you have COVID-19 symptoms.**
These include: 100.4°F or more fever, cough, sore throat, nasal congestion, shortness of breath, loss of smell & taste.
- Sorry, we are limiting all visitors to clients who have an appointment.**

Please, wear face coverings & gloves at all times.

Please, wait here for assistance.

Wipe down all surfaces after use.

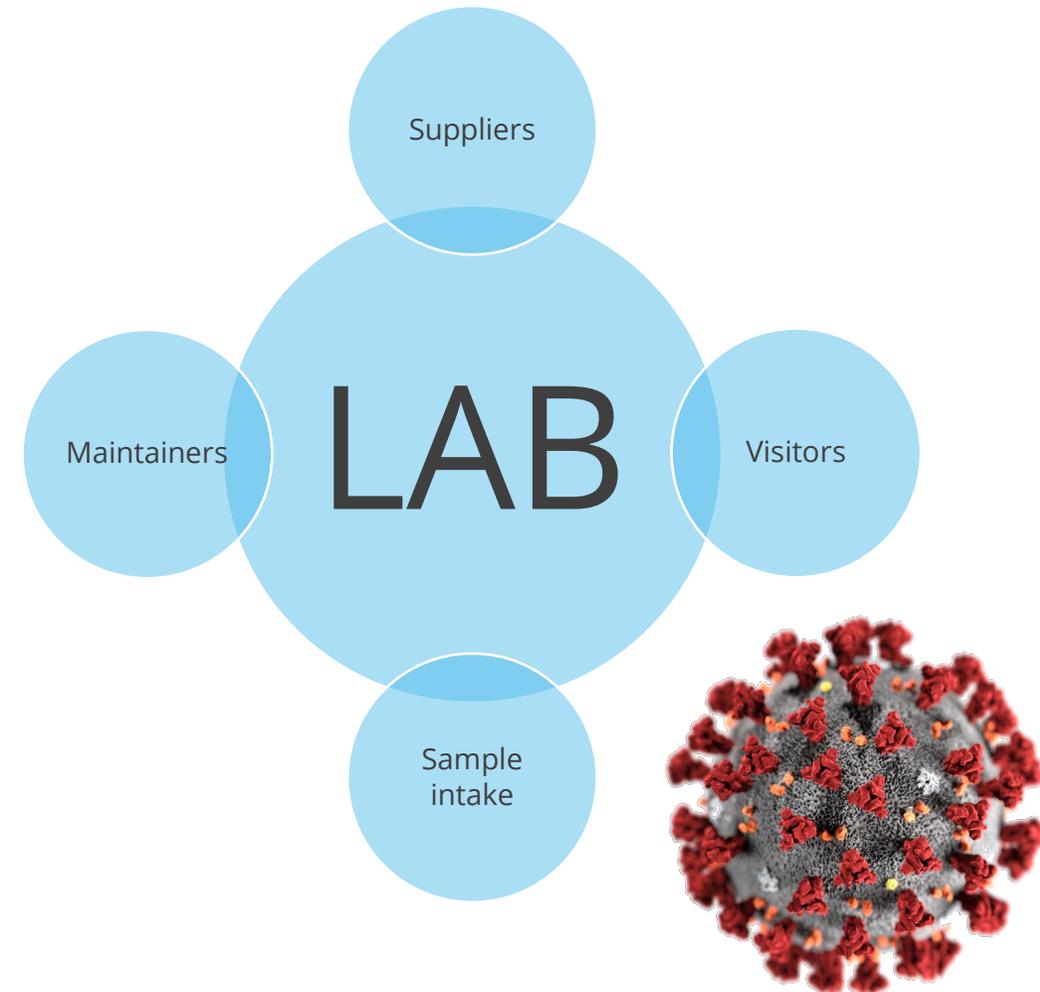
forward together. 



Lessons Learned

For laboratories:

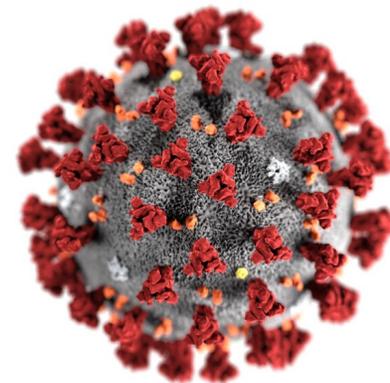
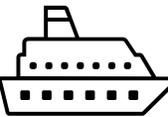
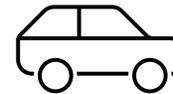
- Divided into smaller fixed teams or shifts to preserve separate “social bubble”.
- Redesign of workplaces, implementation of traffic flows.
- Sanitization of equipment and common areas between shifts.
- Ventilation and air conditioning required more frequent cleaning and disinfecting.
- Sample handling, containers had to be disinfected or quarantined.
- Continuation of vital supplies.
- Equipment maintenance.
- Visitors: a specific challenge was test observation.



Challenges around Inspections in a Post-COVID world: *Onshore*



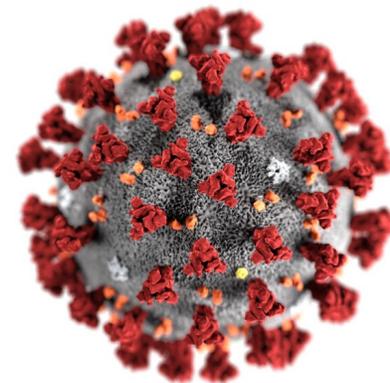
- Longer working hours for COVID-19 negative staff.
- Staffing assistance for locations with high incidence reduced due to travelling restrictions.
- PPE requirements and availability (particularly the type of facemask).
- Availability and type of diagnostic test kits.
- Ensuring terminals and vessels are infection free
- Terminals and vessels requesting higher screening to allow inspectors on site.
- Meeting social distancing requirements



Lessons Learned

For **field** employees :

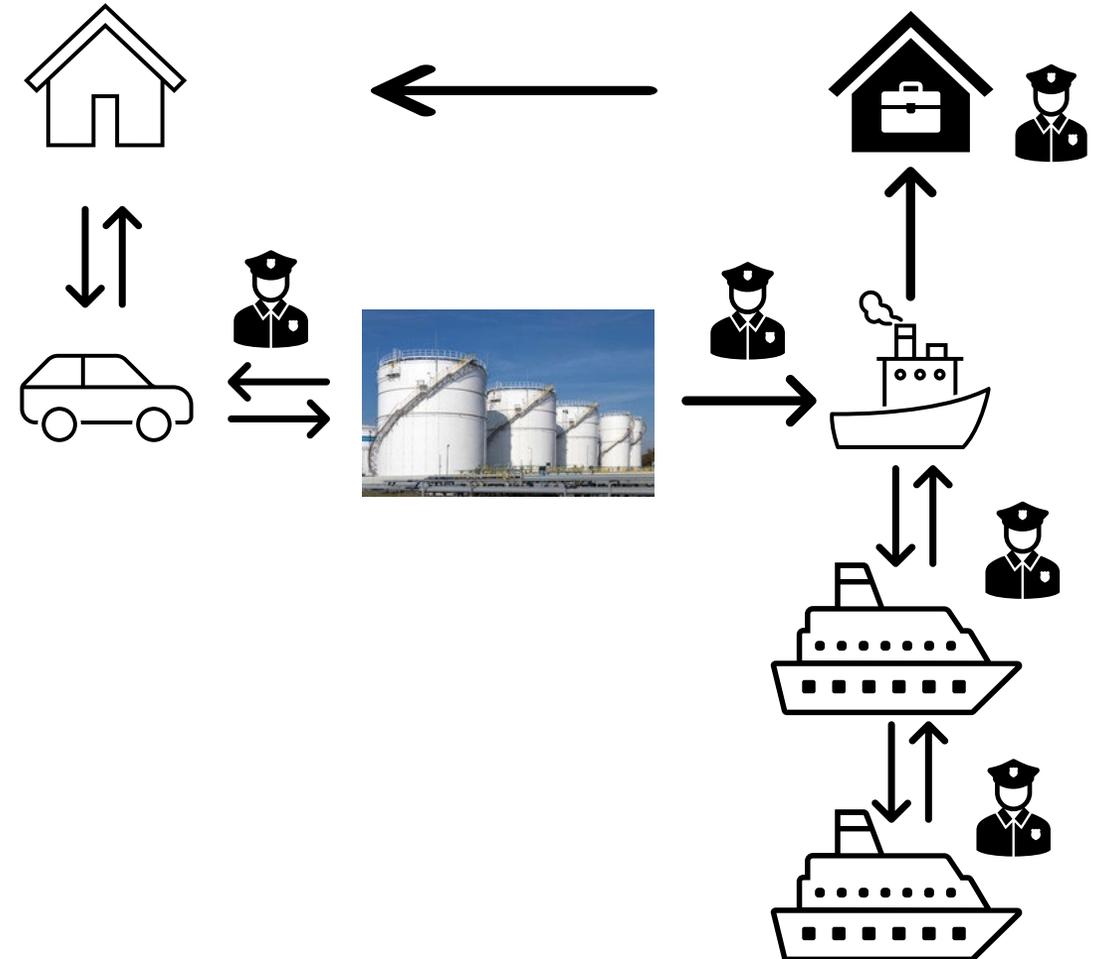
- Access to vessels accommodation area only with appropriate, approved type sanitary masks and gloves.
- Minimize accessing vessel and terminal control rooms and handling documentation which can be coordinated by email.
- Limit to outside activities (sampling and measuring) as much as possible.
 - Genuine difficulties encountered in limited spaces, such as tank top dipping platforms and around vessel coning hatches, when taking measurements that needed to be observed by more than one person or sampling at similar points.
 - Genuine discomfort of staff working for extended periods energetically with a mask on.
 - Fogging of (safety) glasses due to the wearing of approved-type masks.
- Avoiding using vessel's tools and equipment.



Challenges around Inspections in a Post-COVID world: *Offshore*



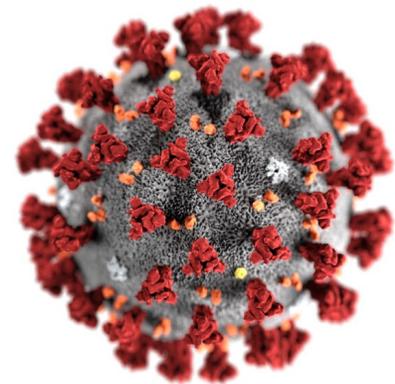
- Verify flag state pandemic requirements.
- Verify procedures to be followed in international waters.
- Verify that all vessels involved had procedures for infection prevention.
- Ensure that vessels involved are infection free.
 - *Providing the test certificates for each individual was challenging.*
- Verify if launch company made any changes to normal operations.
- Ever changing local COVID-19 regulations.
 - *Contingency for Quarantine on return. Place of quarantine a low-risk environment.*
- Verify ship's emergency and evacuation procedures.
- Managing vaccination and test certificates for staff to gain access to terminals and ships



Inspections in a Post-COVID world



- Pre-boarding questionnaire sent to vessels before arrival.
- Inspector health declaration form sent to terminal and vessels.
- Keeping close contact with terminal for infection outbreaks.
- Minimum face to face contact with terminal and vessel personnel.
- Stop work authority used if a person on board is having symptoms.
- Intercompany collaboration for heavily hit locations.
- Remote testing facility for IFIA inspector certification program



0

Assuming that we define stable working as being a situation whereby all jobs nominated could be accepted as normal, and attendance met normal (API) standards, for a given week how many months was it before your network was able to work in a stable manner?

- 1) 3 months ?
- 2) 6 months ?
- 3) 9 months ?
- 4) 12 months ?

Q

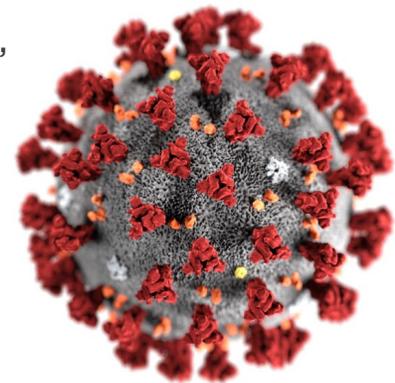
Could you easily identify who to talk to in other stakeholders about Covid 19 questions (e.g. terminals, customers, port authorities, public health, local government, central government) so that work could proceed as easily as possible ? (e.g. was your speed dial list adequate ?)

Inspections in a Post-COVID world



The challenge was to introduce procedures to ensure business continuity without compromising health or safety and regulatory compliance

- Issues with attending offshore operations due to mandatory quarantine on return.
- Supervisors stopping individuals who want to work having Covid-19 related symptoms.
- Communication changed as video conferencing became the norm.
 - Higher mental fatigue.
 - Medium term stress due to isolation
- Vaccination rollout within the workforce caused some challenges.
 - It created different cohorts within the workforce by age, location, etc.
 - Individuals not vaccinated for various reasons, including allergies, religious beliefs, etc., had to be managed appropriately



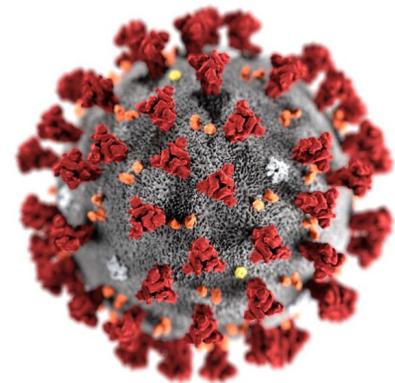
Lessons Learned



For all employees, basic sanitary advice needed to be followed. Initially this was well done, but one lesson learned was that **behavioural fatigue** set in after the first lockdowns.

Behavioural impacts that required monitoring and reinforcing:

- Body temperature taken & lateral flow tests at home.
- Use of government-approved apps.
- Social distancing .
- Respiratory etiquette - Personal hygiene
- Sanitary practices (routine cleaning and disinfecting)



Inspections in a Post-COVID world



- Biological incidents and infection outbreaks are becoming more common.
- We need to revise our plans to recognise the reality of communicable diseases just as we have for climate change issues.
 - ✓ *Communications need to be better, so emergency contact lists are a key document*
 - ✓ *Stocks of PPE need to be appropriate*
 - ✓ *Revised working models can help – discussions at standards bodies such as API and EI*
 - ✓ *Sharing ideas and aligning on best practice*

165	Antonine Plague
541	Plague of Justinian
735	Japanese Smallpox
1347	Bubonic Plague
1520	Smallpox
1600	17 th Century Great Plagues

1817	Cholera 6 outbreak
1855	The Third Plague
1878	Yellow Fever
1889	Russian Flu
1918	Spanish Flu
1957	Asian Flu

1981	HIV/AIDS
2002	SARS
2009	Swine Flu
2012	MERS
2014	Ebola
2019	COVID-19

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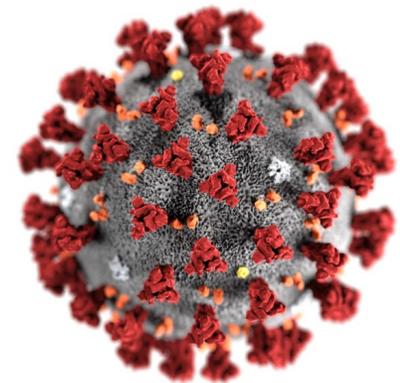


Inspection Companies where do we go from here?

Inspections in a Post-COVID world



- The inspection sector rose to the challenges well
- In a very fragmented situation, the work was done to a high standard and at almost 100% effectiveness
- There was considerable Innovation, Flexibility and Cooperation shown in a very short time span
- Whilst there were glitches, local teams worked very hard, and with great success at many levels to provide inspection and testing
- Global, regional and local teams worked very quickly to establish key communication channels and keep up to date in a very fluid and dynamic set of circumstances





Thank you for your attention.

(if you cannot do it safe, don't do it!)

Safety conference 28th September
2022

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TIC Council



Wikipedia page:
Testing, inspection and
certification

TIC-Council.org





INTERNATIONAL ENERGY SAFETY CONFERENCE 2022

BUILDING A RESILIENT & SUSTAINABLE SUPPLY CHAIN

Presentation by Rudi Stalmans,
Founder & Managing Director, ener8 limited

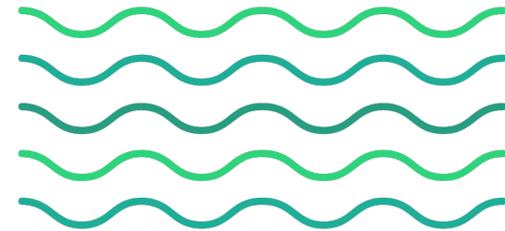
Singapore, 28 September 2022



MY GOAL

My goal is to help businesses in the liquid bulk and chemical supply chain improve supply chain resilience and sustainability.

By the end of this presentation, you should understand why supply chain resilience and sustainability are crucial and know how to start taking the first steps towards supply chain excellence.

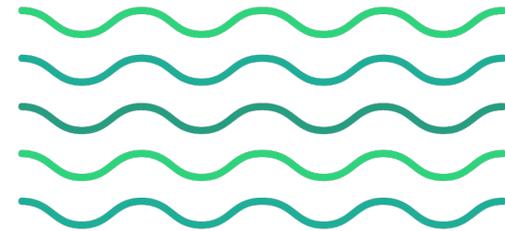


MY BACKGROUND

Worked for an oil and chemical major, one of the largest tank terminal operators, a global chemical shipbroker, and logistics companies.

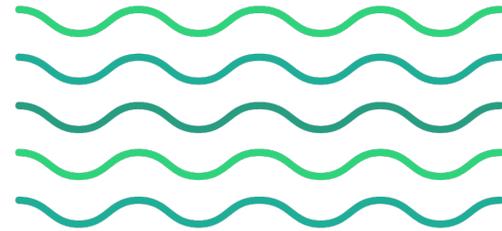
Experienced in tanker shipping, barging, tank containers, flexitanks, forwarding services, tank storage, and secondary distribution, including tank containers, flexitanks, drums, and IBCs.

Safety has always been my top priority, and I have been a fervent promoter of the implementation of high HSEQ standards in the Asian region.



FOR WHO

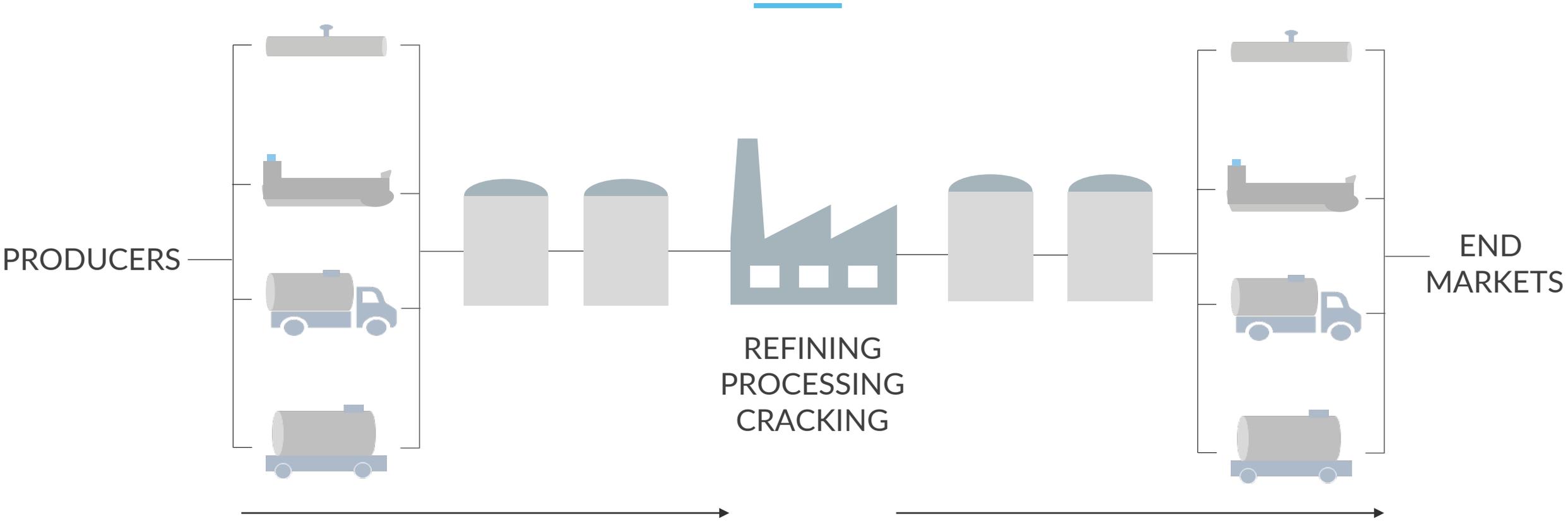
I help producers and service providers in the liquid bulk and chemical industry, including traders, commercial managers, supply chain managers, logistics managers, shipping managers, tank terminal managers, young talents, and many more.



(1) SUPPLY CHAIN RESILIENCE



THE SUPPLY CHAIN



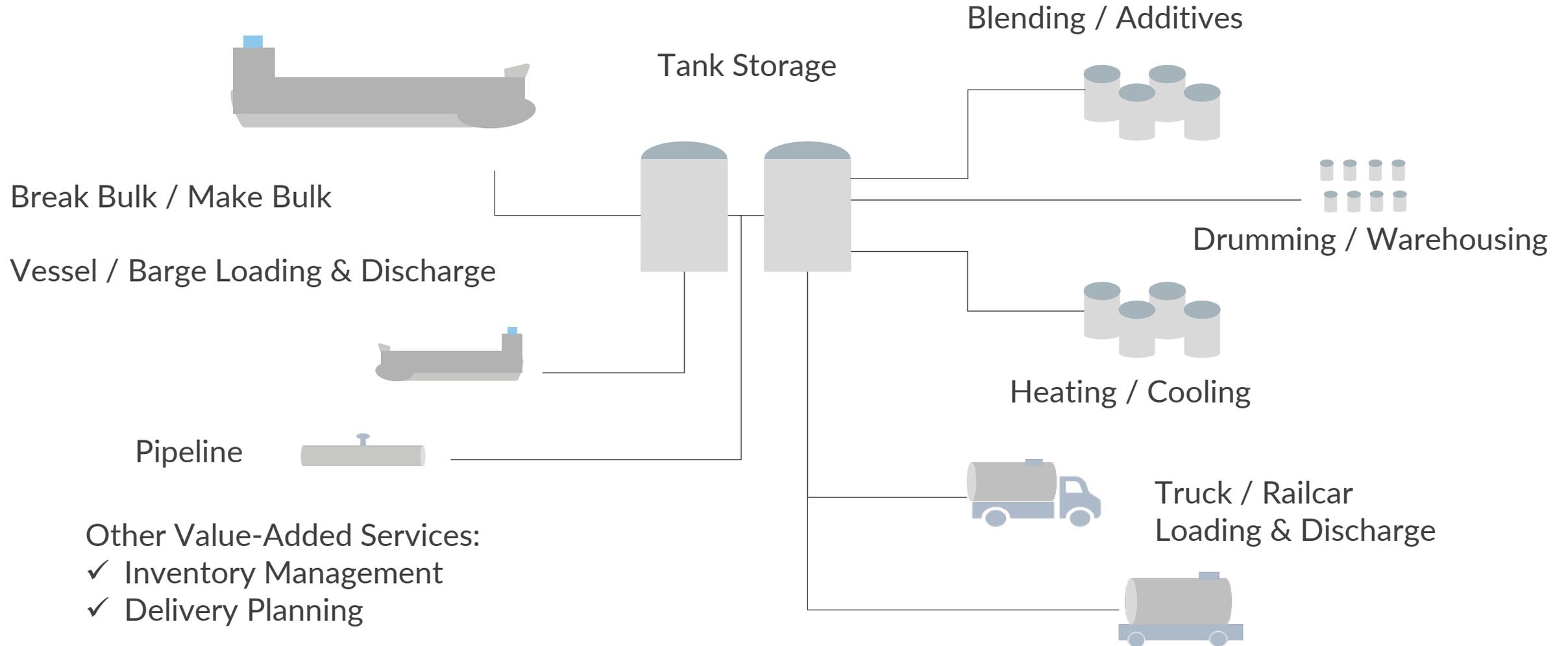
FEEDSTOCK SUPPLY

REFINING
PROCESSING
CRACKING

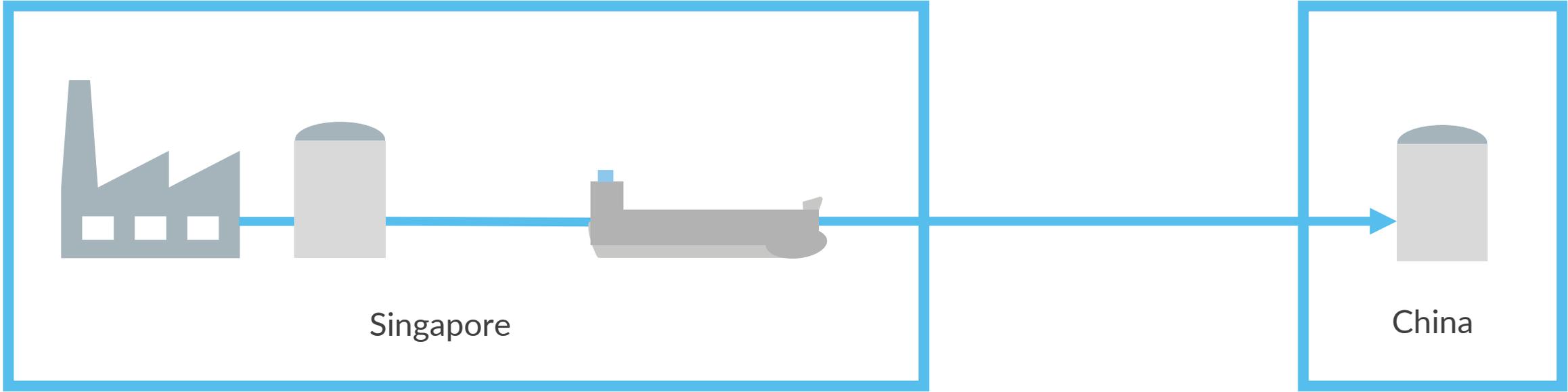
REFINED AND FINISHED
PETROCHEMICALS AND
PETROLEUM PRODUCTS
STORAGE - TERMINALLING

END
MARKETS

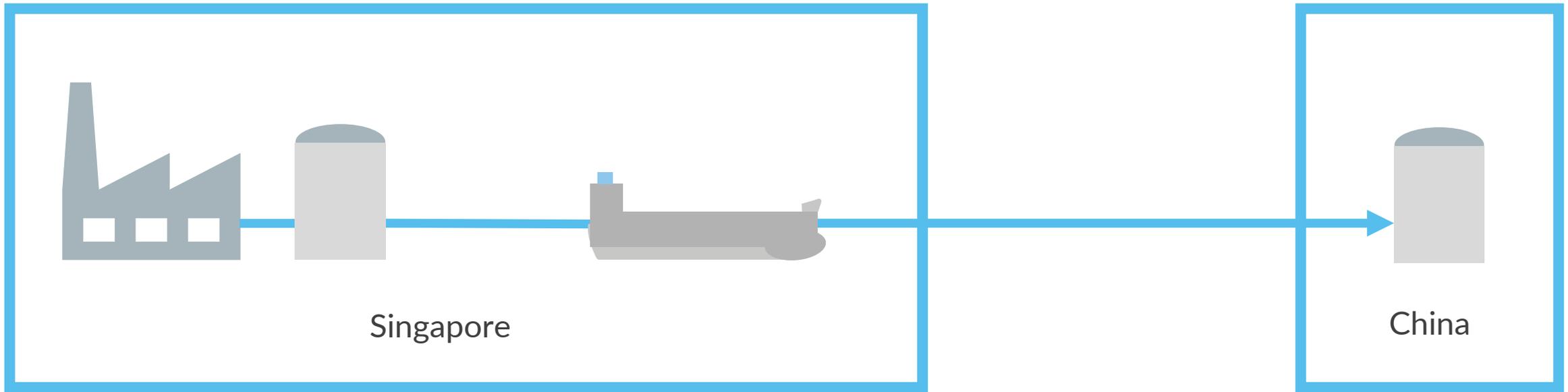
TANK TERMINAL SERVICES



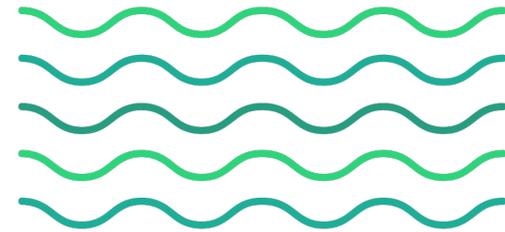
SUPPLY CHAIN EXAMPLE EX SINGAPORE

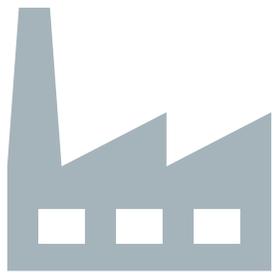


(1) PRODUCTION AND TRADING



Your business strategy should be supported by your supply chain strategy.



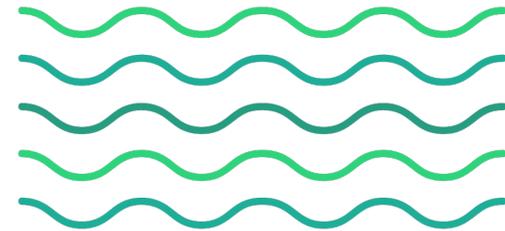


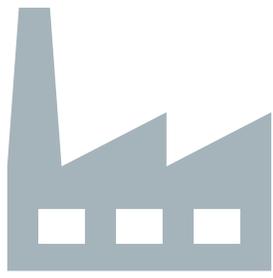
PRODUCTION AND TRADING

Commodities are produced and sold in the market.

Commodity traders take physical and paper positions and aim to buy low and sell high.

They use geographical, time, or technical arbitrage or take speculative positions in anticipating a move in prices and spreads. Under optionality, commodity traders need to create flexibility to profit from market opportunities and limit losses if the market turns against their position.



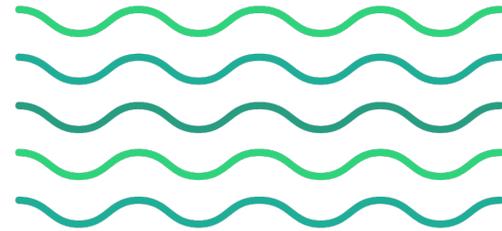


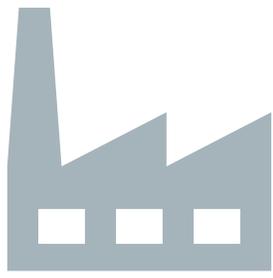
TRADING OPERATIONAL RISKS

International commodity traders face a long list of operational risks.

Operational risks rather than variations in prices or quantities are challenging for commodity firms.

For example, traders that ship commodities by sea are at risk of delays related to a technical breakdown of a vessel or bad weather, which could result in financial penalties.

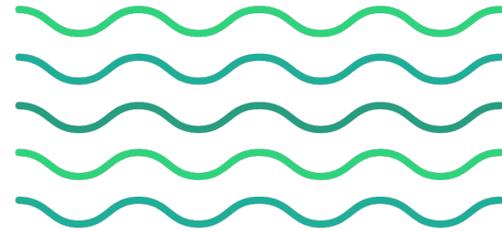


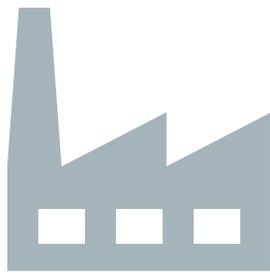


RISK MANAGEMENT

Poor risk management can turn a profitable business into a loss-making trade.

For example, a demurrage claim can quickly turn a deal unprofitable when margins are thin.



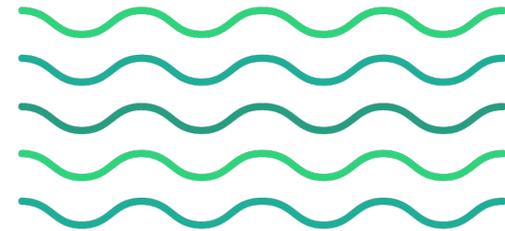


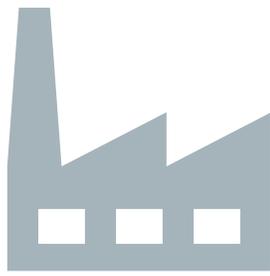
PRICING METHODOLOGY

Prices are negotiated between the buyer and the seller, relying on benchmark spot assessments.

The pricing methodology uses various principles and parameters for each product, including the assessment window, assessment timing, basis and location, credit terms, quality specifications, and standard sop.

The operational part and agreed nomination process in the commercial agreement requires a lot of consideration to reduce risk.





SALES & PURCHASE AGREEMENTS

SALES & PURCHASE
AGREEMENT

SPECIFIC
TERMS & CONDITIONS

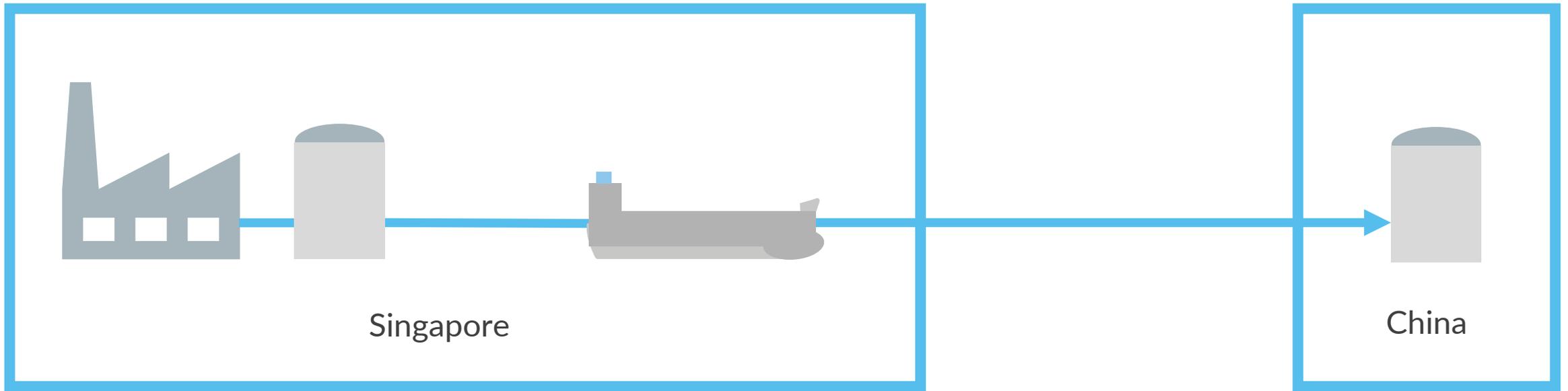
GENERAL
TERMS & CONDITIONS



SPECIAL PROVISIONS
(E.G. MARINE PROVISIONS)

In the event any of the terms, provisions or general subject matters contained herein or covered by, are in conflict with any terms and conditions contained in the Specific Terms and Conditions or Special Provisions, then the terms and conditions contained in the Specific Terms and Conditions and the Marine Provisions will control.

(2) STORAGE AND DELIVERY



Start planning your supply chain as early as possible to make sure you have the capabilities to deliver.

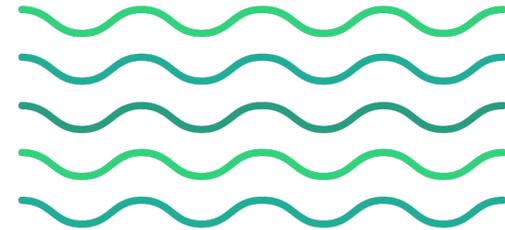


TANK TERMINAL SELECTION

The location of a tank terminal is key to supply chain success.

Also crucial are the accessibility of the facilities, hinterland connectivity, lead times, as well as the availability of transport options for both domestic and international deliveries. The quality of the infrastructure, environment, and weather conditions are other important factors to review. Regulations, ease of formalities, and tax regimes will also have an impact on your supply chain.

Demand for tank storage needs to be checked, with contango and backwardation are important drivers in the petroleum markets.



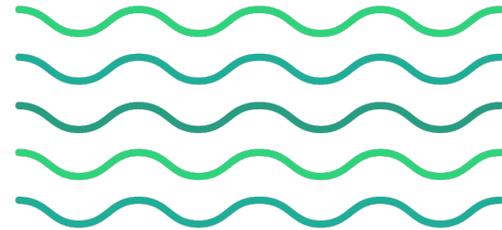


TRANSPORT SELECTION

Check the price breakpoint to select the best transport mode.

Other factors to consider are distance, geographical destinations, schedules, service availability, frequency, and the nature of the goods.

So, in addition to price, to find the best solution, you need to evaluate many other aspects, look at advantages, disadvantages, risks, and challenges.



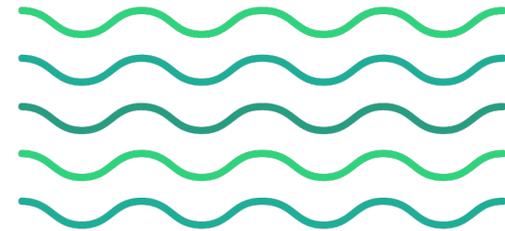


DEMAND FOR SEABORNE TRADE



Supply and demand imbalances in commodity markets drive the demand for seaborne trade.

There can always be a shift in trade lanes because of regional growth in chemical plants and refinery capacity.





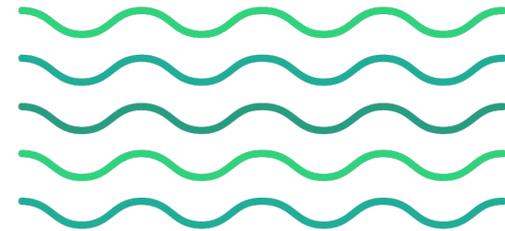
STATE OF THE TANKER FLEET

The fleet state = current fleet size + order book - scrapping

Often ships are scrapped when scrap prices are attractive. Scrapping sometimes happens to deal with the high cost of meeting regulatory requirements. But vessel age restrictions, which are often imposed by the vetting departments of oil and chemical majors on parcel tankers, also impact demolition decisions.

Oversupply will put pressure on freight rates, and a contracting fleet will provide support for higher freight rates.

Sophistication of ships is also crucial (coating, segregations,...).

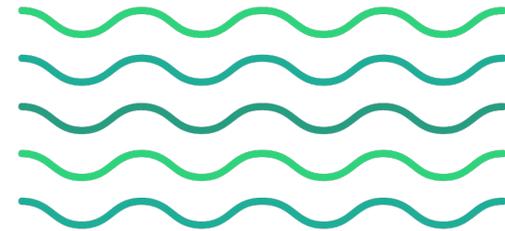




FREIGHT CYCLES



Also consider that there are short-term seasonal cycles and long-term economic boom and bust cycles.



OTHER SUPPLY CHAIN CONSIDERATIONS

Commercial agreement

Transit & lead times

Risk

Solution feasibility

Demurrage & detention

Value of the goods

Type of commodity

Product losses & goods
damage

Service provider selection
& reliability

Shipping quantity

Environmental footprint

Interfaces

ALSO KNOW YOUR CONTRACTS!

SALES & PURCHASE AGREEMENT

Contract between a buyer and seller of goods.

Covers load port (FOB Sales), or discharge port (CFR Sales).

Agreed laycan, laytime, loading window, demurrage rate, & time bar, for example, and may also refer to a Charter Party.

CHARTER PARTY

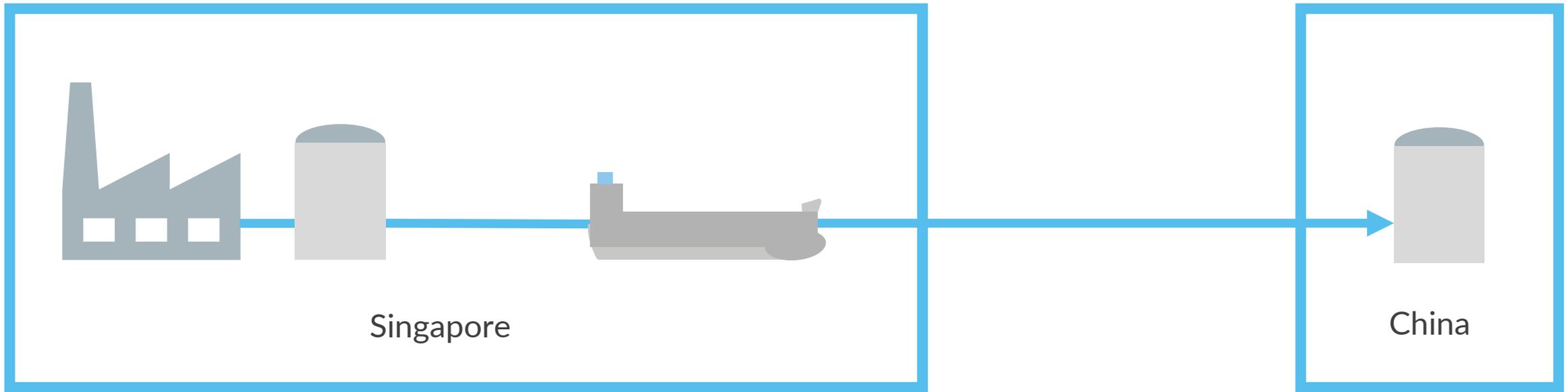
Contract between shipowner and charterer.

Covers load and discharge port.

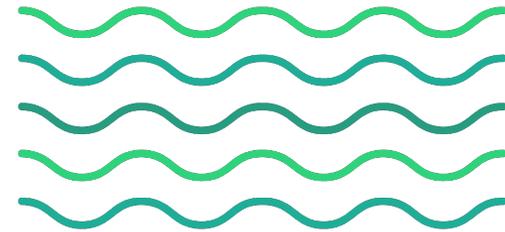
Agreed laycan, laytime, demurrage rate, & time bar, for example.

How well are your contracts aligned?

(3) SCENARIO PLANNING



Always plan for different scenarios, including what if scenarios, and evaluate the overall cost to supply goods from origin to end-users

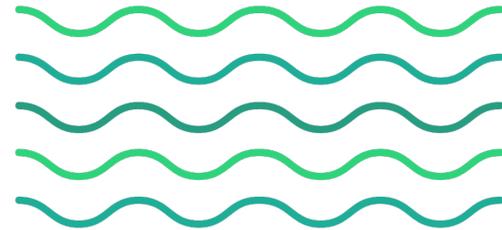


SCENARIO PLANNING

What-if scenario analysis is a business planning and modeling technique used to yield various projections for some outcome based on selectively changing inputs.

Evaluate how a given outcome, such as supply chain costs, might be affected by changes in particular variables, such as the impact of a parcel tanker demurrage claim, for example.

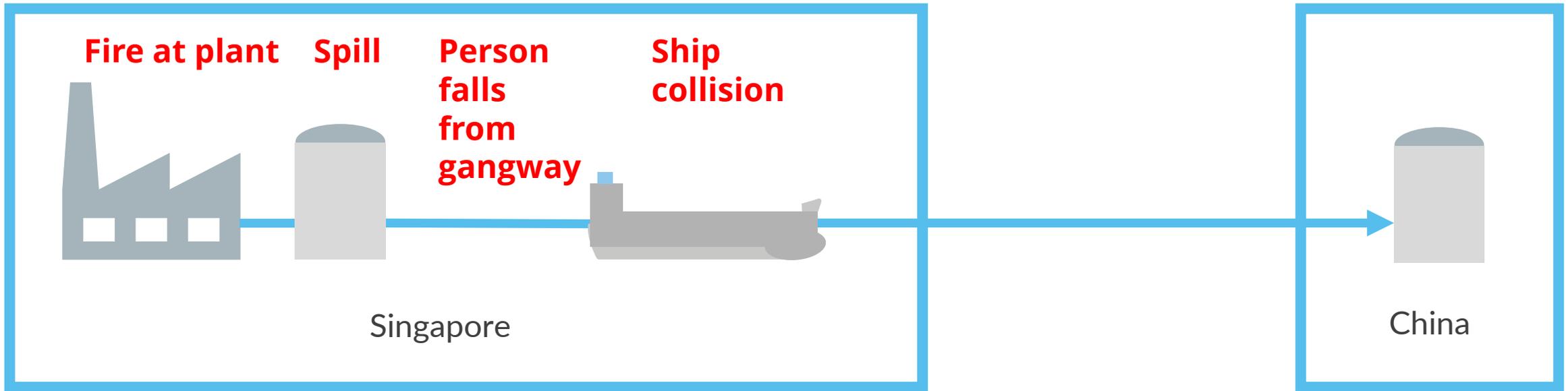
Plan how to handle different scenarios quickly and effectively or select the best solution.



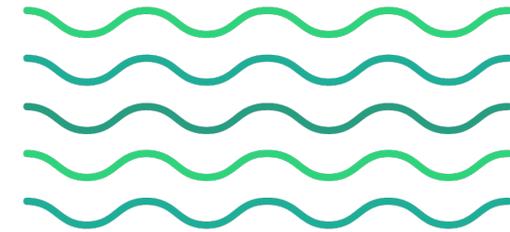
(2) SUPPLY CHAIN SUSTAINABILITY



WHAT COULD HAPPEN



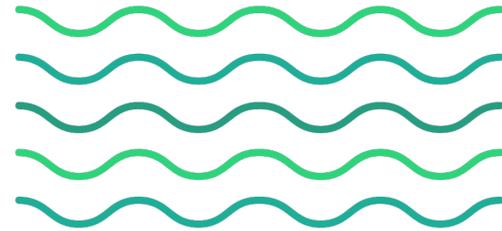
While commodity traders consider risks related to delays, many don't think of potential health and safety issues.



INCIDENTS HAPPEN

Incidents at terminals often happen during the loading and unloading of tanker ships and trucks. Operational error, equipment failure, lightning, static electricity, maintenance errors, tank ruptures, and piping ruptures are potential causes of accidents at storage terminals.

Accidents with tankers also happen and receive a lot of attention due to their impact on the environment.

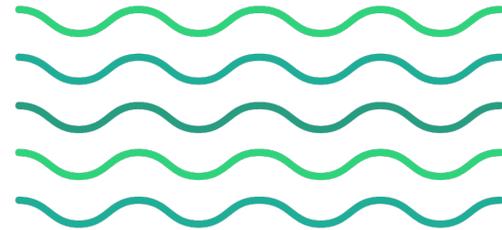


INTERNAL SAFETY MANAGEMENT SYSTEMS

Even when companies follow and enforce regulations, incidents happen.

As a result, numerous oil and chemical companies have developed internal safety management systems, such as tanker vetting and terminal risk assessments.

The implementation of risk assessment systems differs at each company due to business activities and size. Often companies that have had bad experiences tend to have more stringent risk assessment procedures in place as they understand the impact of an accident on their business.

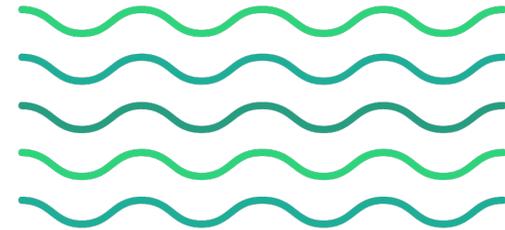


SAFETY CONCEPTS USED BY MAJORS

They rely on comprehensive preventive measures for occupational and process safety, health and environmental protection, and emergency response.

They work towards goal zero and expect the cooperation of all employees and contractors.

They can access various internal and external resources and dedicated HSEQ personnel.

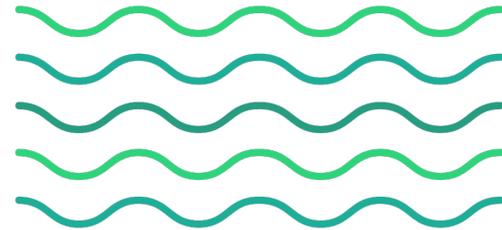


SELECTING LOGISTICS PARTNERS

Minimizing risk along the entire supply chain is crucial.

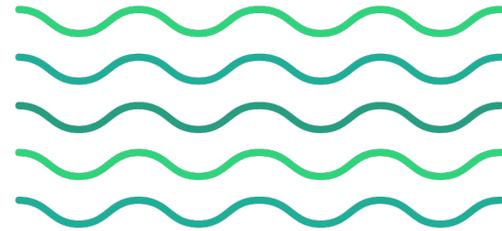
To guarantee safe loading and unloading operations, transportation, and storage, oil and chemical majors focus on selecting reliable logistics partners, using high standards, and implementing an effective organization.

External logistics service providers are carefully selected and regularly evaluated against high quality and safety standards.



PRODUCT SAFETY INFORMATION

Extensive product safety information is also shared to ensure that products are handled correctly and pose no risk to people and the environment.



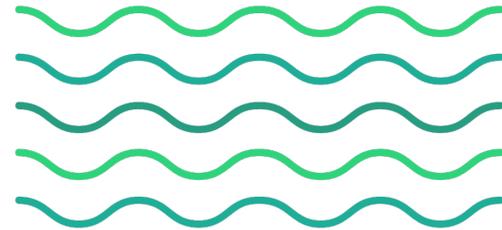
LIMITING RISK EXPOSURE

Commodity trading involves risk-taking and managing the various risks linked to trade.

To limit their exposure, traders will try to transfer risks to third parties.

Traders can use Incoterms and commercial agreements to define the responsibilities of the seller and buyer, for example.

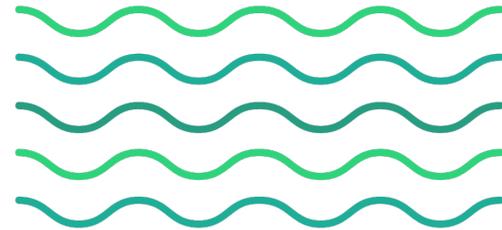
Smaller trading houses often do not focus on or even completely ignore the risk related to health and safety.



FIVE REASONS FOR IGNORING HSEQ

Here are five possible reasons why commodity traders may ignore health and safety.

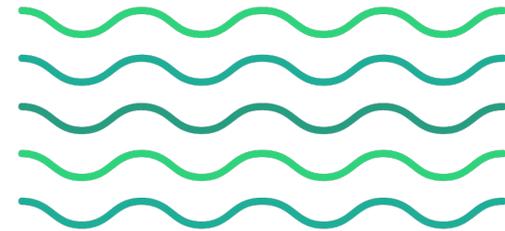
1. Unclear health and safety objectives
2. Lack of safety commitment
3. Safety is seen as a cost
4. Incidents are ignored
5. Lack of safety expertise



DEVELOPING OWN RESOURCES

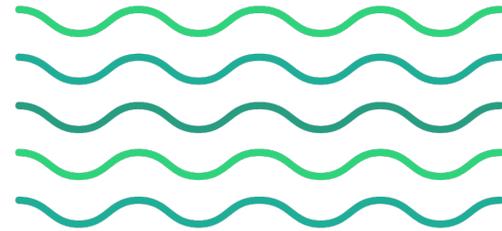
While large oil and chemical traders can have extensive resources for HSEQ, many commodity buyers and sellers fear that spending money and time on health and safety will make them less competitive and drive them out of the market.

Traders without health and safety capabilities often use a lazy approach by referring to the high standards of the large oil and chemical majors. Those traders need to be aware of the consequences of not investing in their own HSEQ, as one major incident could be the end of their company.

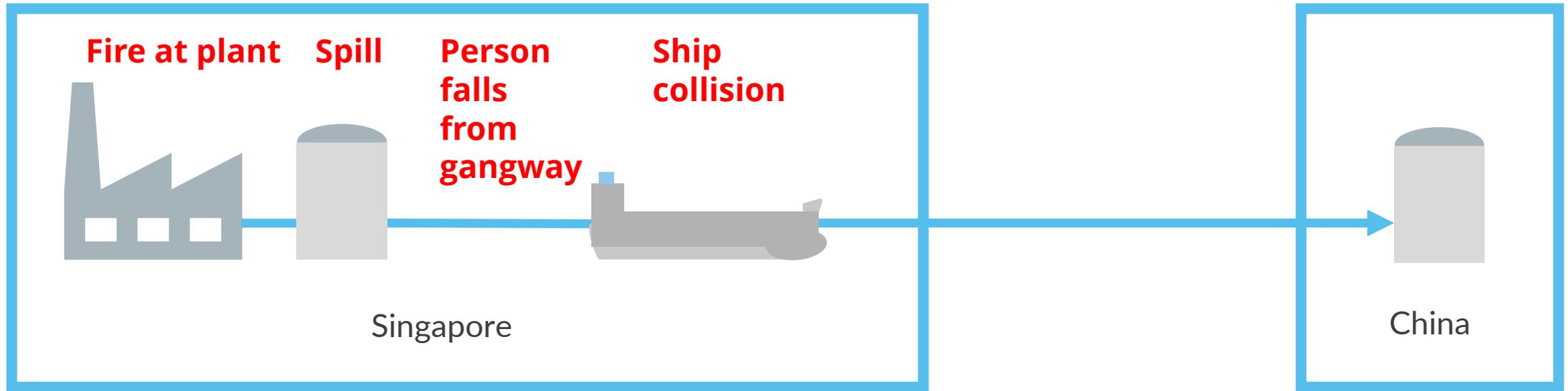


CHANGE SOMETIMES COMES TOO LATE

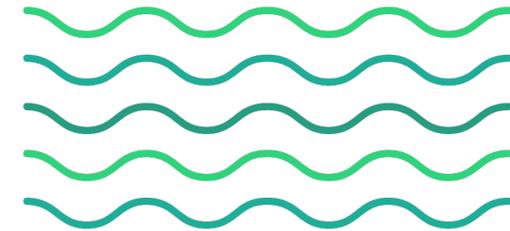
Ignoring safety will always impact people, the environment, assets, and reputation. Sadly, some companies only change when something bad has happened to them.

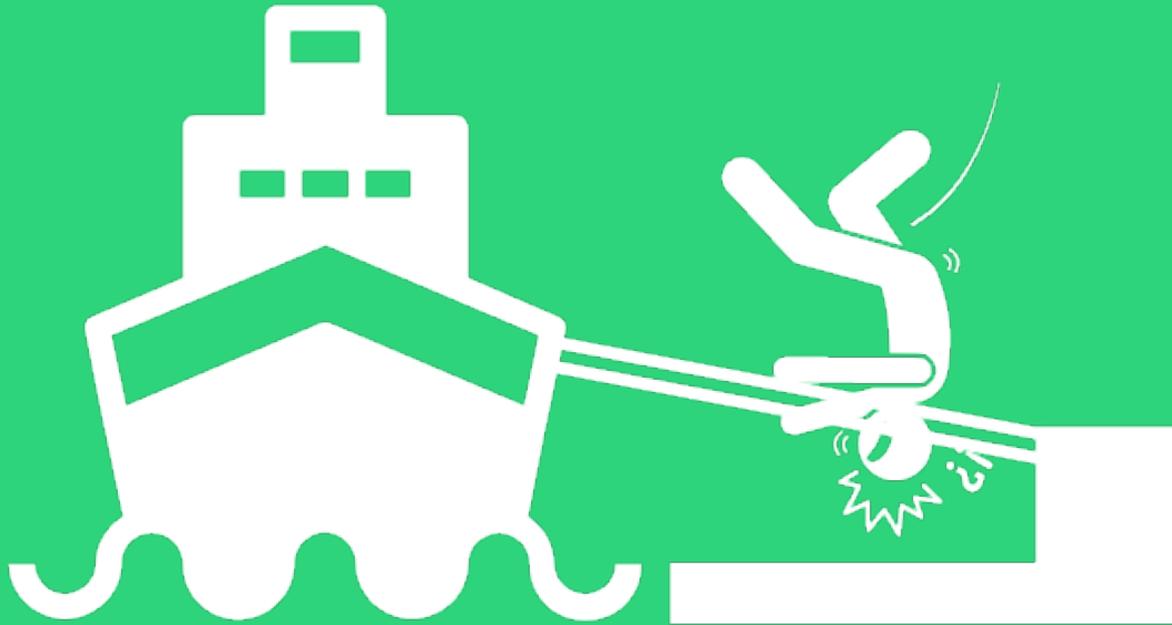


PEOPLE, ENVIRONMENT, ASSETS, AND REPUTATION



Health and safety incidents can severely impact people, the environment, assets, and the reputation of a business.





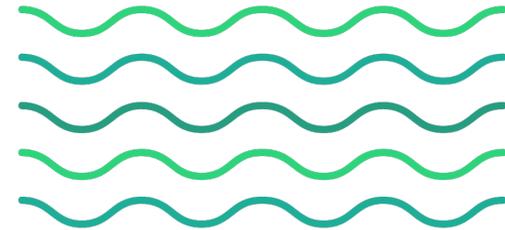
(1) PEOPLE

- A surveyor falls to a lower level from the top of the gangway
- The gangway was provided by the tank terminal and was in poor condition
- No safety harness, and as a result, suffers a significant injury



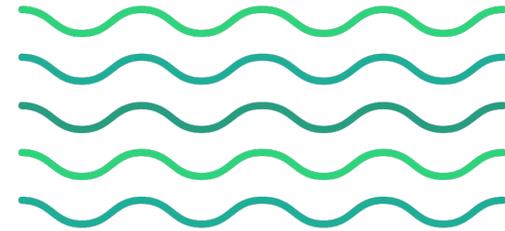
PEOPLE

- The operator suffers serious injury requiring one month off duty. If we assume that the average market price per hour for an individual working a 7.5-hour working day is US\$30, the total cost to the business will be US\$4,500
- Compensation for replacement workers
- Additional training
- Insurance claims and potential surcharge on insurance fees
- Non-compliance fees
- Civil or criminal penalties
- Loss of critical expertise
- But it could easily exceed this



PEOPLE

- Job-related injuries are expensive due to medical expenses, lost workdays, and insurance costs. Understand how serious injuries happen.
- The Liberty Mutual Workplace Safety Index 2021 compiles the 10 causes of the gravest disabling workplace injuries in the USA – those that caused employees to miss work for more than five days – and ranks them by direct cost to employers based on medical and lost-wage expenses. Direct costs of all disabling work-related injuries equal US\$58.61 billion, with the top 10 causes comprising 89.2 percent.



PEOPLE

	In billion
OVEREXERTION INVOLVING OUTSIDE SOURCES (HANDLING OBJECT)	US\$13.30 (22.7%)
FALLS ON SAME LEVEL	US\$10.58 (18.1%)
FALLS TO LOWER LEVEL	US\$ 6.26 (10.7%)
STRUCK BY OBJECT OR EQUIPMENT (BEING HIT BY OBJECTS)	US\$ 5.61 (9.6%)
OTHER EXERTIONS OR BODILY REACTIONS (AWKWARD POSTURES)	US\$ 4.71 (8.0%)
ROADWAY INCIDENTS INVOLVING MOTORIZED LAND VEHICLE (VEHICLE CRASHES)	US\$ 3.16 (5.4%)
SLIP OR TRIP WITHOUT FALL	US\$ 2.52 (4.3%)
STRUCK AGAINST OBJECT OR EQUIPMENT (COLLIDING WITH OBJECTS)	US\$ 2.46 (4.2%)
CAUGHT IN OR COMPRESSED BY EQUIPMENT OR OBJECTS (RUNNING EQUIPMENT OR MACHINES)	US\$ 2.01 (3.4%)
REPETITIVE MOTIONS INVOLVING MICROTASKS	US\$ 1.66 (2.8%)



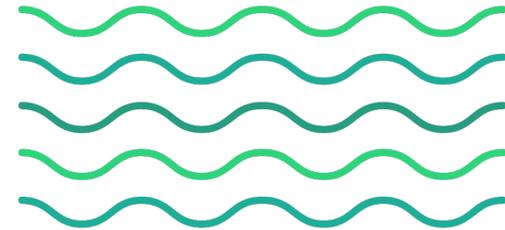
(2) ENVIRONMENT

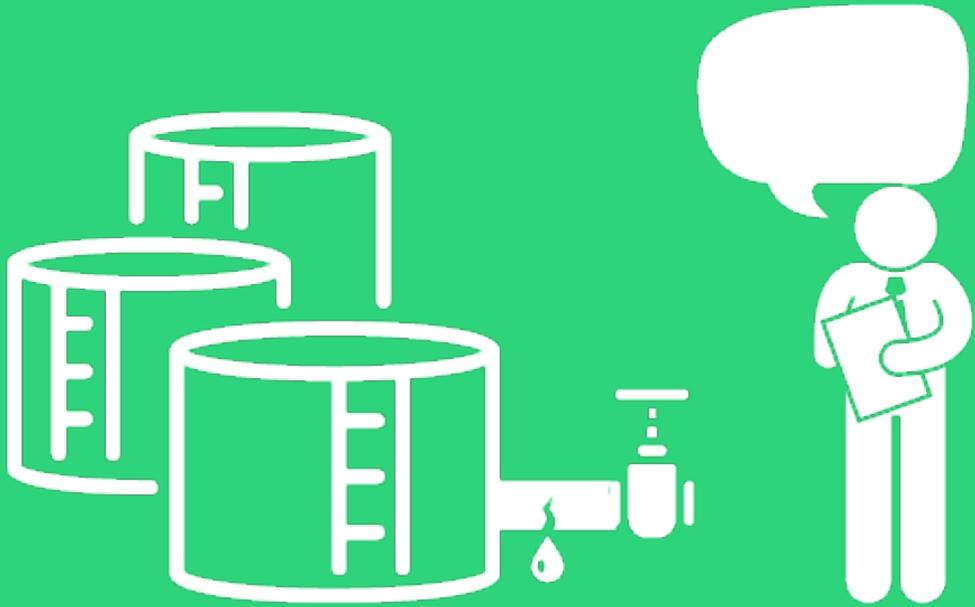
- A truck driver delivering a tank container with additives for blending is speeding and causes an accident on a bridge near the terminal
- Product leaks into the waterway and local drinking water supply is contaminated
- Safety manager of the shipper panics and slows down the emergency response and containment
- This is the first time the transportation company is used



ENVIRONMENT

- Charges for repairing damage to drainage infrastructure or the local environment
- Litigation and legal fees
- The cost of cleanup depends heavily on what product is spilled and where it occurs. The cost of cleaning up a tank container that spilled several tons of hazardous goods into a waterway could easily reach over US\$100,000
- More hazardous substances can invoke cleanups and lawsuits, costing millions of dollars
- Loss of product and delivery delays should also be considered



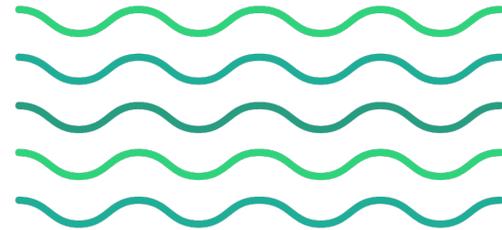


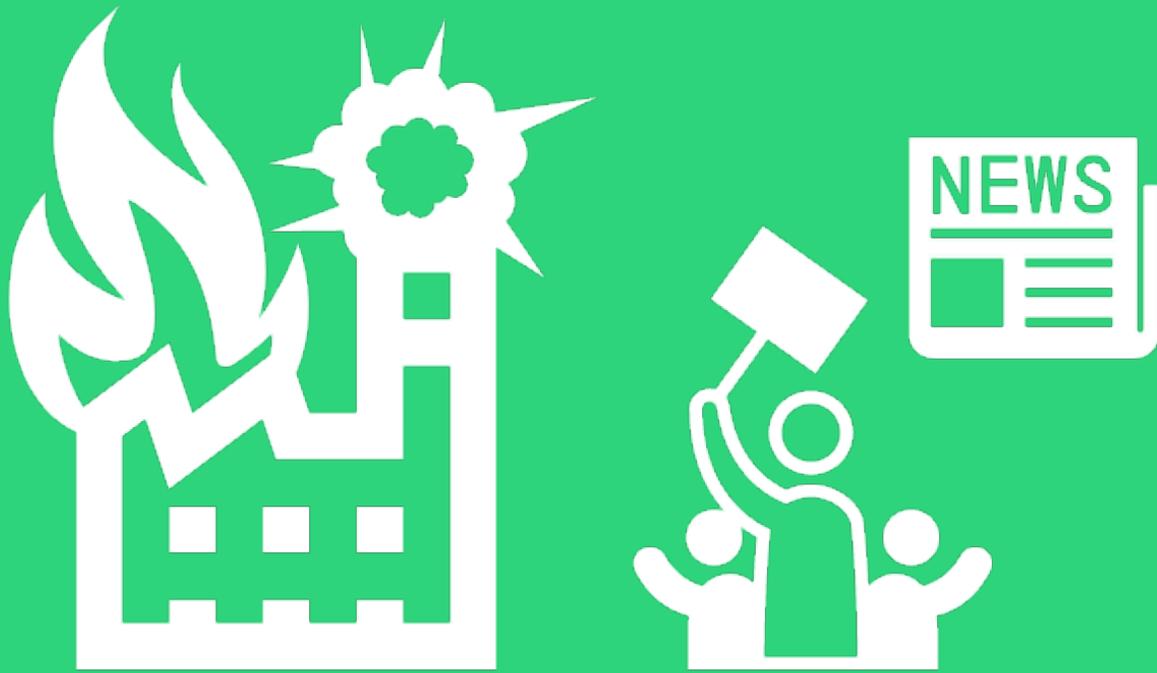
(3) ASSETS

- A leakage at a tank terminal
- No site-specific guidance during cleanup by a local emergency response provider
- As a result, hazardous materials went into the ground and contaminate 30 tons of soil.
- Valves were malfunctioning and not inspected periodically

ASSETS

- Excavation and incineration of contaminated soil can cost US\$1,500 per ton, leading to total costs of US\$45,000 to clean up the 30 tons
- During the cleanup, business operations may also temporarily cease





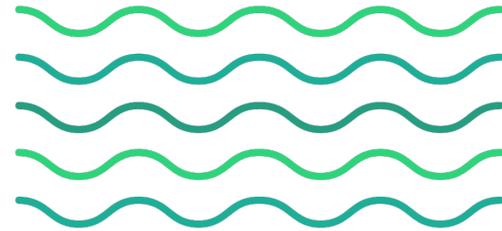
(4) REPUTATION

- Explosion and fire at the site
- The media is on top of a sensational story
- Consumers avoid the company's products & services
- Potential employees shy away
- The crisis response is slow, and communication with stakeholders is poor
- The explosion was the result of human error



REPUTATION

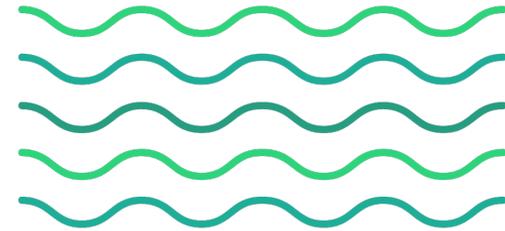
- Associated overall costs are not easy to measure
- Impact on reputation may hit the bottom line very hard
- Damaged client relationships
- Negative internal morale
- Poor crisis handling and communication will worsen the situation



DEVELOP YOUR CAPABILITES

Building a safety culture and putting in place some safety management systems does not need to be complicated and expensive.

Building and using internal capabilities is better than just referring to the standards used by the major oil and chemical companies.



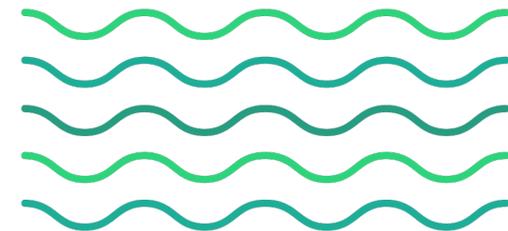
JOIN THE SAFETY CASE DISCUSSION

Demand from investors and stakeholders for transparency.

Engage and build trust around the health and safety aspects of trading liquid bulk commodities.

The changing environment and focus on sustainability will hopefully encourage traders to engage more with stakeholders on health and safety topics.

Today's event is the perfect platform to get involved!



(3) SUPPLY CHAIN EXCELLENCE



FREE WHITEPAPER

DOWNLOAD





**SUPPLY CHAIN EXCELLENCE
MATURITY SCAN**

BOOK NOW

Strategy → Do you have a clear supply chain strategy in place with clear objectives and tactics to meet your goals?

People → What is the level of expertise available and to what extent is your organization involved in supply chain management?

Processes → What processes are in place to plan, source, make, and deliver your supply chain?

Technology → What tools, databases, and technologies do you utilize to conduct market intelligence, measure, and manage your supply chain?

Continuity planning → What capabilities do you have in place to anticipate supply chain disruptions, respond, and recover from them?

SUPPLY CHAIN EXCELLENCE MATURITY SCAN

PART 1 - RESILIENCE



Safety culture → What is the level of your safety culture at all levels of the organization?

Safety management systems → What are the safety management systems you have in place for your business and supply chain?

Crisis response → How well prepared are you to respond to a crisis situation such as incidents and accidents?

Crisis communication → How well prepared are you to communicate with all stakeholders during a crisis?

Contingency planning → Do you have a tested contingency plan in place and does it cover all potential scenarios?

SUPPLY CHAIN EXCELLENCE MATURITY SCAN

PART 2 - SUSTAINABILITY



THANK YOU! ANY QUESTIONS?

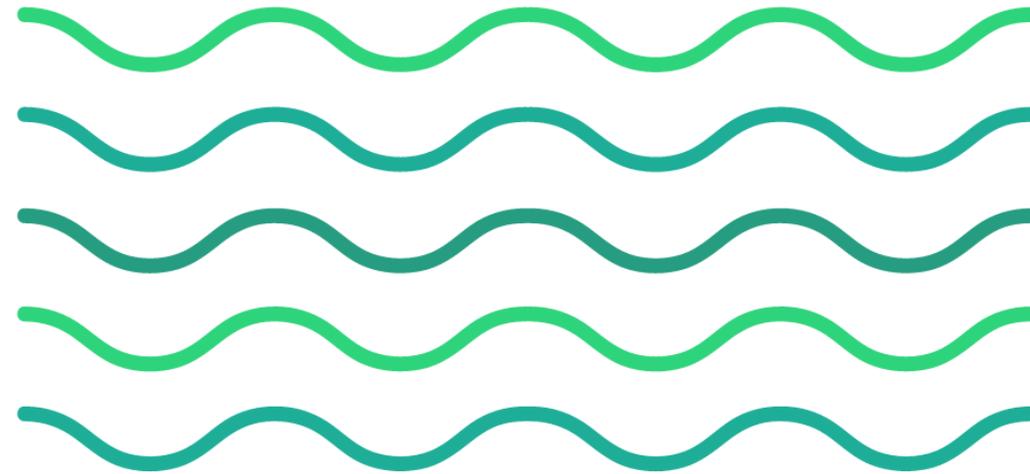
Rudi Stalmans,
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Email: rudi.stalmans@ener8.com

Website: <https://www.ener8.com/>

Whitepaper: <https://www.ener8.com/whitepaper-supply-chain-excellence/>

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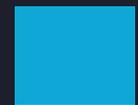
THE INDEPENDENT VOICE OF TRUST



Spectroscopic Examination of Tanker Wash Waters

Singapore Sept 2022

© TIC Council 2022

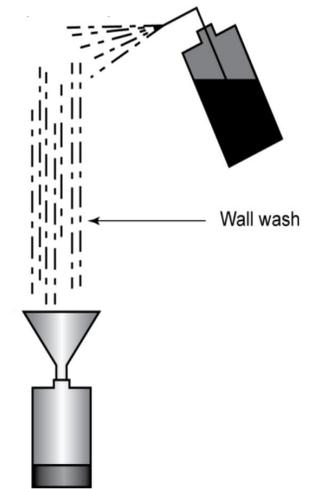


Traditional Ship's Tank Cleaning Verification



Part of the established and traditional pre-loading inspection as per API MPMS chapter 17.8 :

- ✓ Level of cleanliness required is agreed on (dependent on previous cargo, cargo to be loaded, tank coating etc...)
- ✓ Initial inspection from deck level
- ✓ Additional steps taken if OBQ is observed (stripping, sample and test OBQ, use alternative tanks etc....)
- ✓ If no OBQ is observed then any need for wall wash is determined by level of cleanliness required
- ✓ Tanks have to be certified as gas free
- ✓ Tank entry permits issued by vessel are needed (confined space entry permit if available and/or allowed by authorities)
- ✓ Select solvents for intended contamination (deionised water / acetone / methanol)
- ✓ Wall wash any accessible surface of tank (piping, sumps, heating coils, tank surfaces) usually below 3m height



Tank Capacity	Minimum No. Areas to Wash
<500 M ³ (3000 bbl)	5
500–1000 M ³ (3000 bbl to 6300 bbl)	7
>1000 M ³ (>6300 bbl)	9



Traditional Ship's Tank Cleaning Verification

- Samples are tested in lab to verify conformance with specifications
- Specification example : ASTM E2664 for methanol wall wash test for glycol
 1. Appearance Clear and bright (pass) by ASTM E2680
 2. Color 10 Pt/Co, maximum by ASTM D5386
 3. Hydrocarbons None by test (pass) by ASTM D1722
 4. Chloride 0.5 mg/kg, maximum by ASTM E2469

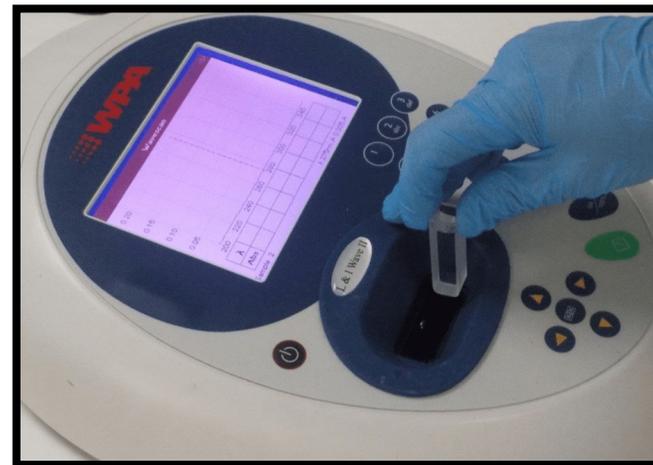


Wall Wash Technique Challenges

- ✓ Entry in confined spaces poses a safety risk.
- ✓ Level of cleanliness required is subjective
- ✓ Wall washing is time consuming
- ✓ The wall wash test is random by definition and thus impossible to standardize.
- ✓ Sampling technique represents at most 10 to 15% of the internal surface area of the cargo tank.
- ✓ Degassing tanks, wall washing and subsequent analysis is expensive and time consuming.
- ✓ Can only be performed when vessel is all fast.
- ✓ Much of the associated cargo handling system such as pipes and pumps cannot be assessed.

Tank Washing Waters Analysis Technique

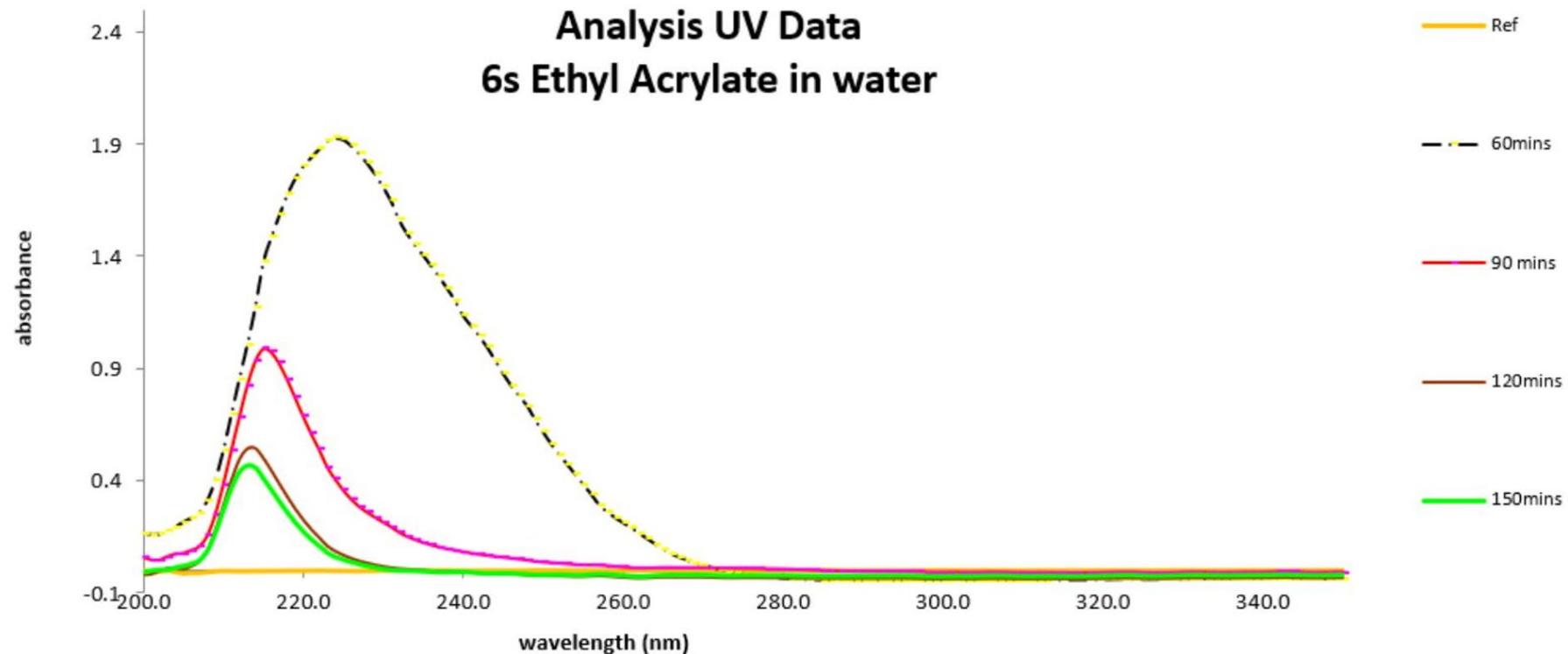
- ✓ Cargo tank water washing plans should be documented by ship's crew.
- ✓ Vessels should carefully determine the effluent wash-water sample point location(s) to be located at the end(s) of the cargo system being cleaned.
- ✓ Online analysis of wash-water are performed live during onboard cargo tank cleaning operations.
- ✓ Charterers and shippers must be in agreement on the use of the results from wash-water analysis to declare it adequately prepared.
- ✓ If wash-water sample is conformant and largely free from previous cargo residues, the cargo tanks and lines can also be considered adequately prepared.
- ✓ Analysis performed using a UV spectrometer capable of scanning between 200nm and 350nm which detects the common contaminants.



Tank Cleaning Spectrum

When obtained spectrum is below the reference spectrum for the pre-agreed limit, the tank is considered adequately prepared.

The level at which the wash water conforms is set by the charterer as there is no standard yet.



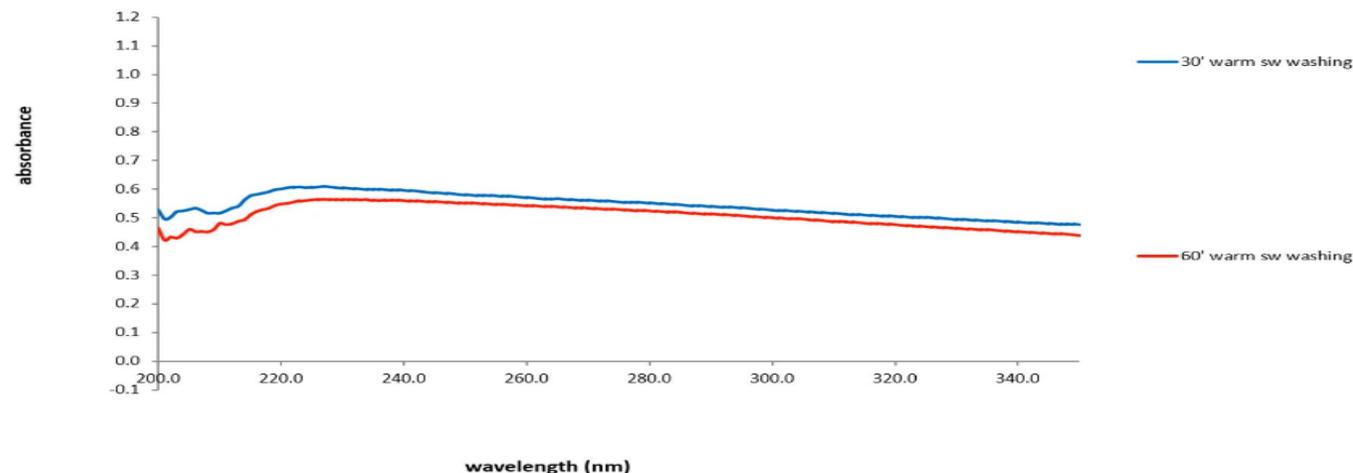
Tank Cleaning Spectrum

When cleaning from cargoes that have very low solubility in water, ships generally use chemical detergents that are specifically designed to remove water insoluble cargoes.

UV spectra in plain water, either cold or hot, are monitored over time and when the variance is low it means that any cleaning with water alone will not proved effective and chemical detergent is needed.

Palm Oil – warm water washing

cot 5p - ex palm oil

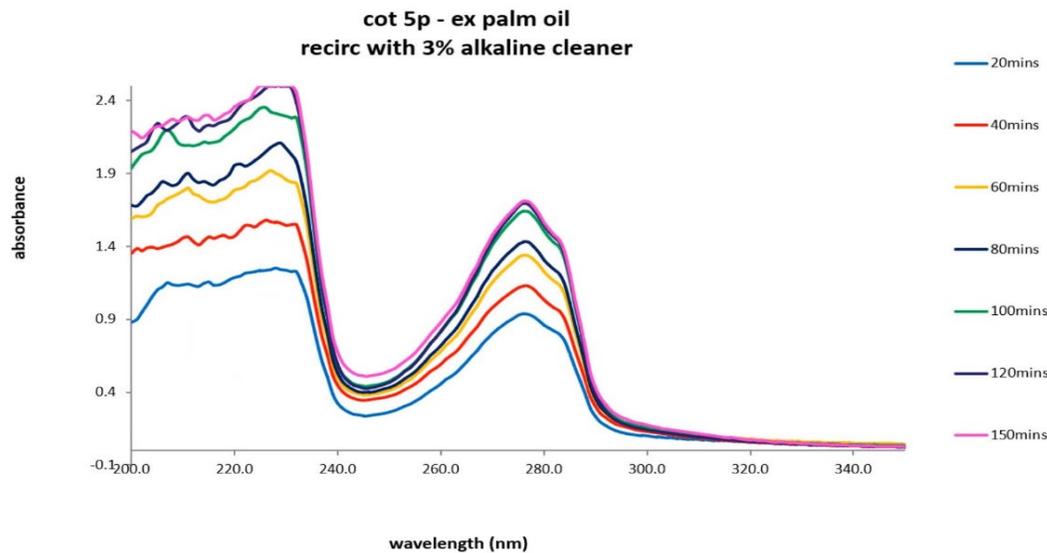


Tank Cleaning Spectrum

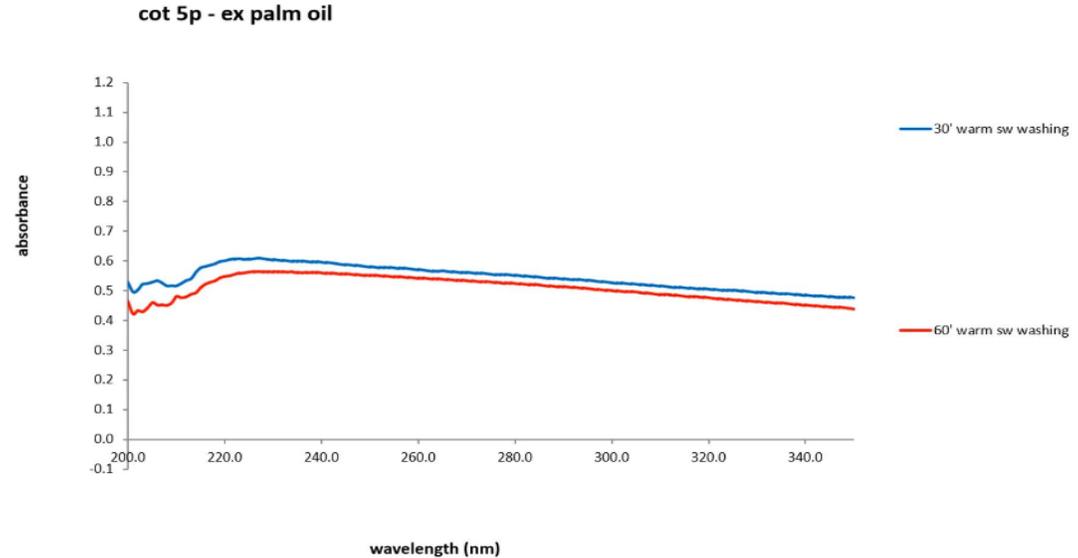
During chemical cleaning, the UV spectra indicate that water insoluble product is being extracted.

At the end of the cleaning using detergents, the UV spectrum wash-water sample should indicate level of product below the established threshold.

Palm Oil – chemical recirculation



Palm Oil – warm water washing



Tank Washing Waters Analysis Advantages



- ✓ Increased safety - less tank entries
- ✓ Time saved
- ✓ Increased efficiency / less demurrage exposure - load ready shortly after arrival at the berth (preapproved)
- ✓ Standardized methodology - objective records of the reading by the instrument
- ✓ Records are fully traceable
- ✓ Reducing last cargo restrictions - testing for traces of last cargoes
- ✓ Cleaning reassurance for the whole system (including tanks and lines)
- ✓ Environmental benefits : Each hour of hot water washing reduced saves 1.9MT CO₂ release into the atmosphere



Tank Washing Waters Analysis Challenges



- ✓ Currently not covered by any published API MPMS procedure and thus not yet established as a norm in the industry
- ✓ There will be questions, actually rather redundant as to if any guarantee can be given on accuracy, as is usual with any innovation. The industry and marine law tend to be conservative .
- ✓ Legal backdrop yet to be established, whereas wall wash testing is very well established and is often stipulated in contracts.
- ✓ Ship owners have to discuss and agree on the applicable terms and conditions with their charterers, insurers, and surveyors as this a relatively new process. This may require a transition period of a year or two.



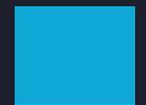
Tank Washing Waters Analysis Challenges



- ✓ Due consideration should be given to risk assessments, training protocols, etc. when establishing such new processes and procedures.
- ✓ Inspection companies role is only to interpret the scans as supplied by the vessel's spectrometer and are not responsible for the accuracy and traceability of the data provided.
- ✓ If a cleanliness certificate is required, inspection companies cannot take responsibility as data generation lies with the vessel.
- ✓ Wash water specifications is not correlated with wall wash specs. Inspection companies are not to be held responsible for specs which are too permissive.
- ✓ Currently we are in transition from wall wash to washing water analysis and thus UV spectrometers are still relatively uncommon on vessels.



Questions?



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Wikipedia page:
Testing, inspection and
certification

TIC-Council.org

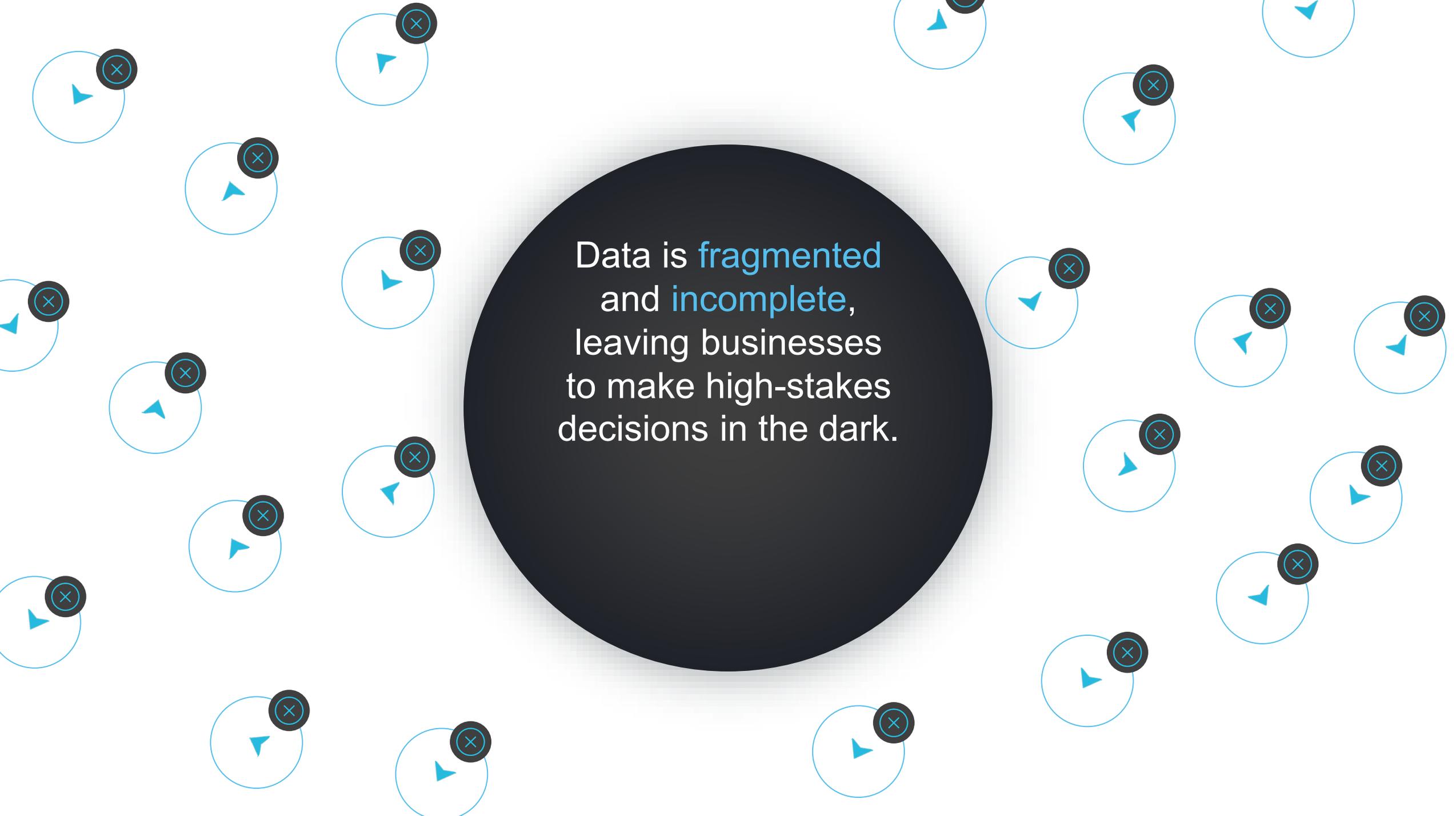




Data analytics: Fuelling the change in oil supply chains and logistics

The world trades **\$1.8T** worth of waterborne energy cargoes annually...

...but this industry is one of the largest
unstructured and opaque marketplaces on the
planet.



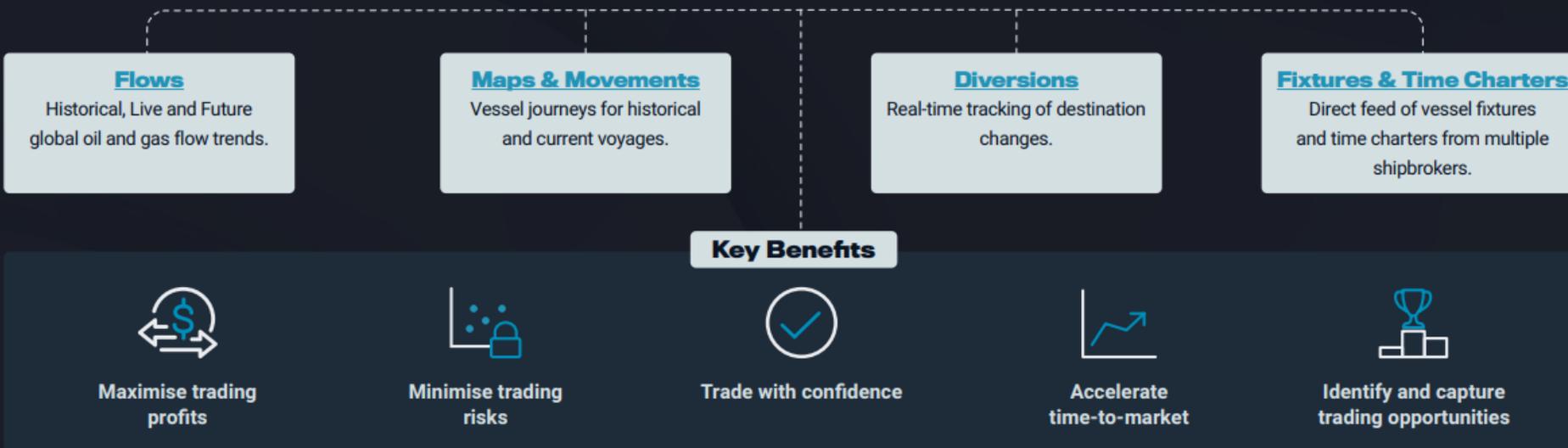
Data is fragmented
and incomplete,
leaving businesses
to make high-stakes
decisions in the dark.

Energy Flows Analytics

[Download](#)

Vortexa's Energy Flows Analytics signals key trading indicators ahead of others. Our forward-looking insights help market participants understand supply/demand conditions and capture physical arbitrage opportunities.

We cover waterborne crude oil, refined oil products, LPG and LNG flows, giving a complete cargo history of every tanker above 5,000dwt - including STS operations and opaque vessel activity.



Inventories Analytics

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Vortexa presents the most complete data and analytics for global **Onshore Crude Inventories** available in the market today, covering:

20,000+

STORAGE TANKS

5.5+

BILLION BARREL CAPACITY

112

COUNTRIES

Vortexa's **Cushing Inventory Data** is available two days before the official EIA storage numbers are released, allowing traders to position themselves well in advance of the United States Department of Energy (DOE) weekly statistics.

Vortexa's market-leading **Floating Storage** data also provides detailed global coverage of offshore crude and refined oil products inventories.

Key Benefits



Track inventory changes to get the best global and regional view of supply and demand balances.



View aggregations by time, location and tank-type to optimise assets and trade strategies.

Freight Analytics

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Vortexa's Freight Analytics suite gives charterers, shipowners and analysts critical insights into supply and demand dynamics and freight pricing.

Vessel Availability

Forward and historical tonnage supply for all tanker classes globally.

Fleet Utilisation

Real-time and historical tanker demand across vessel classes and trade routes.

Fleet Distribution

Real-time vessels spread across regions.

Congestion

Real-time view of delays within ports and anchorage zones.

Voyage Calculator

ETA, ETD and speed requirements for chosen routes, including via waypoints.

Our freight intelligence helps charterers to fix the best vessels in the market while minimising costs and demurrage and gives shipowners the power to enhance fleet positioning and capture freight trading opportunities before others.

Key Benefits



Maximise trading profits



Minimise freight trading risks



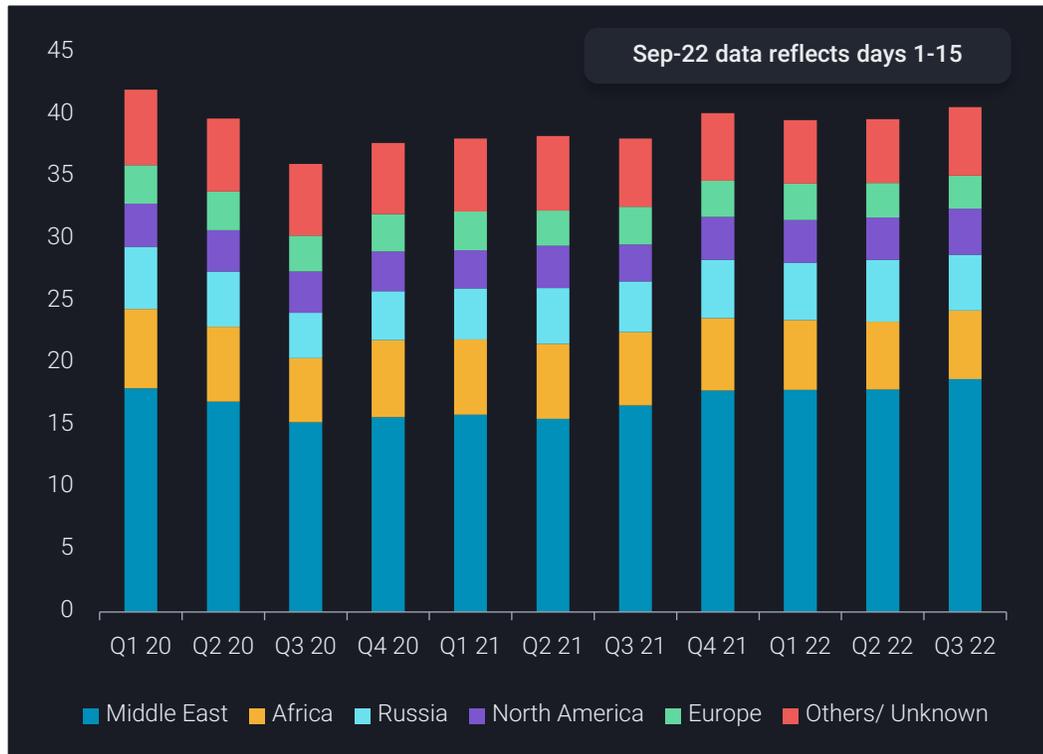
Discreetly evaluate competitors



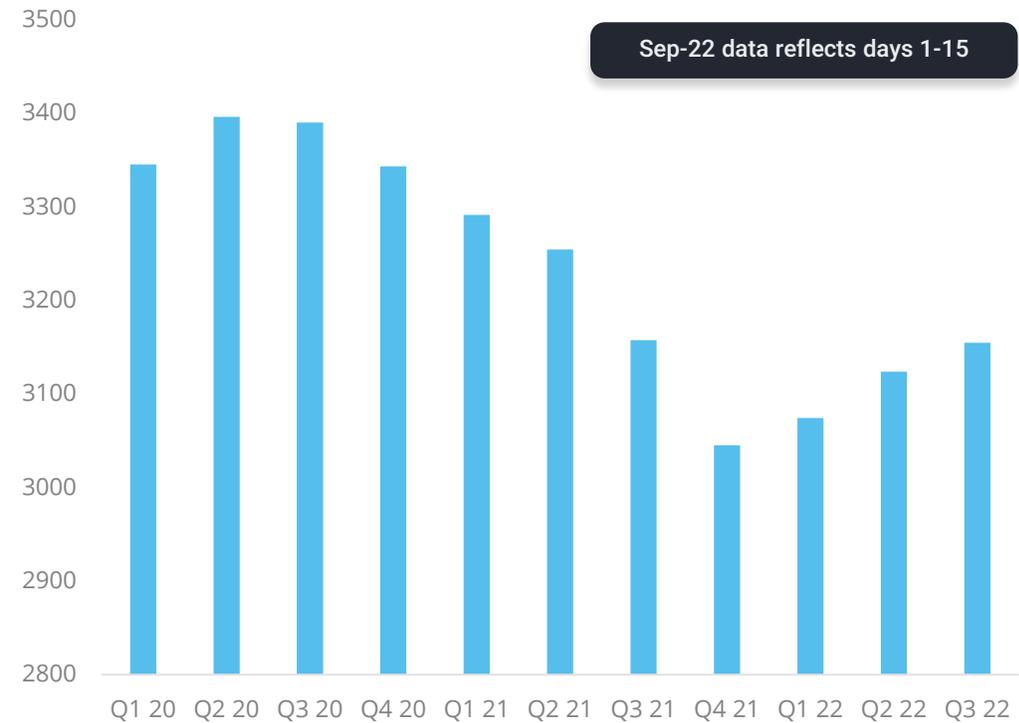
Confidently negotiate with counterparties

Global onshore crude inventories build led up higher crude liftings and slowing oil demand

Global crude loadings by origin region (mbd)

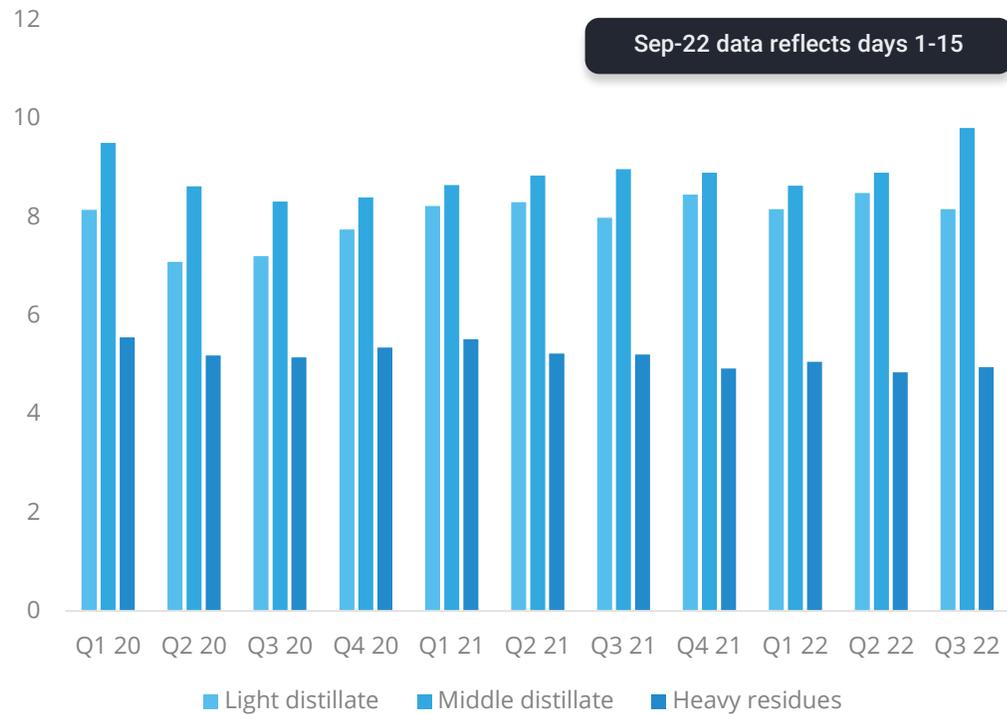


Global onshore crude inventory (mb)

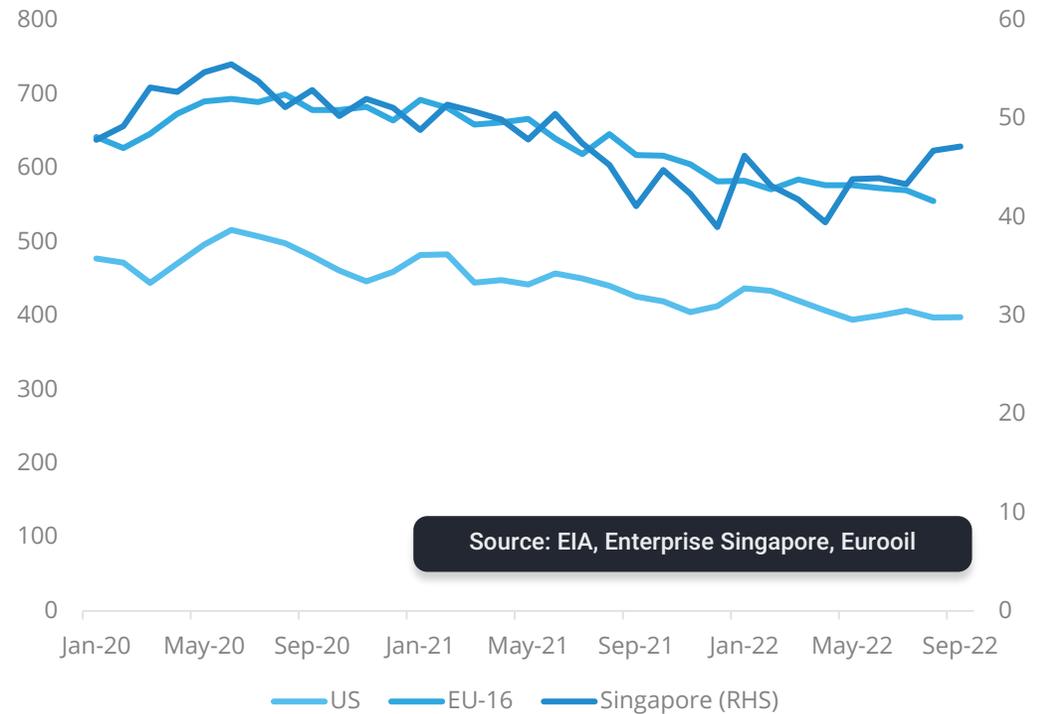


Refined products inventories subdued, EU ban on Russian imports likely to tighten market next year

Refined products loadings (mbd)

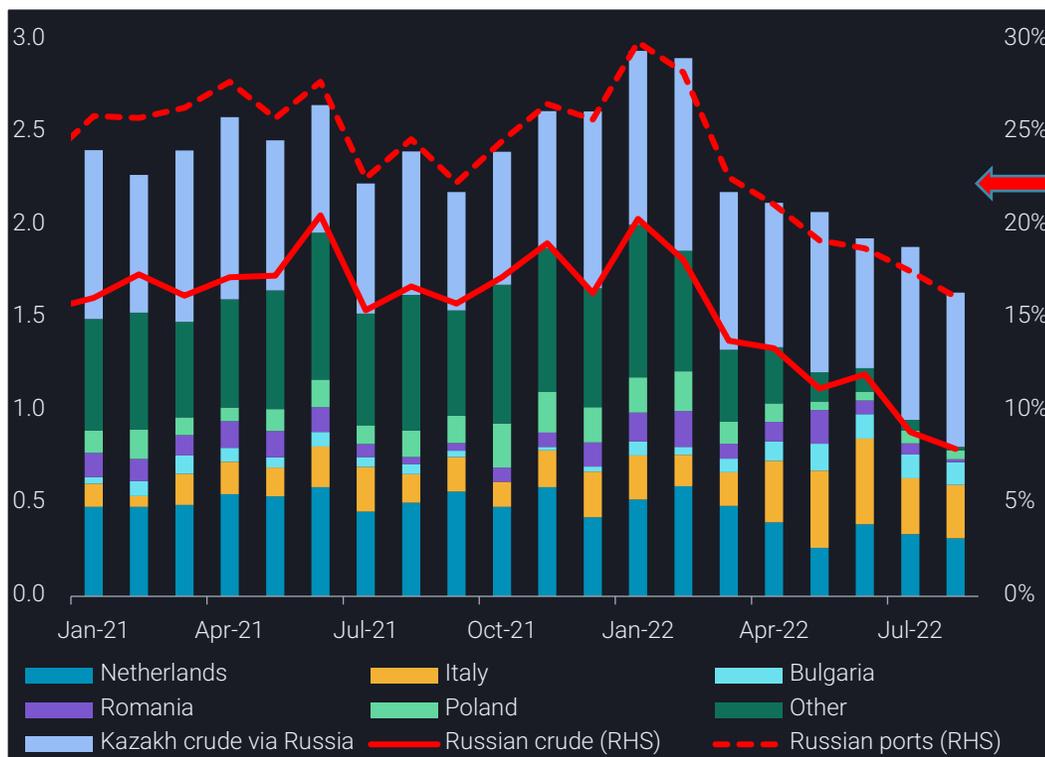


Refined products inventories for key storage hubs (mb)

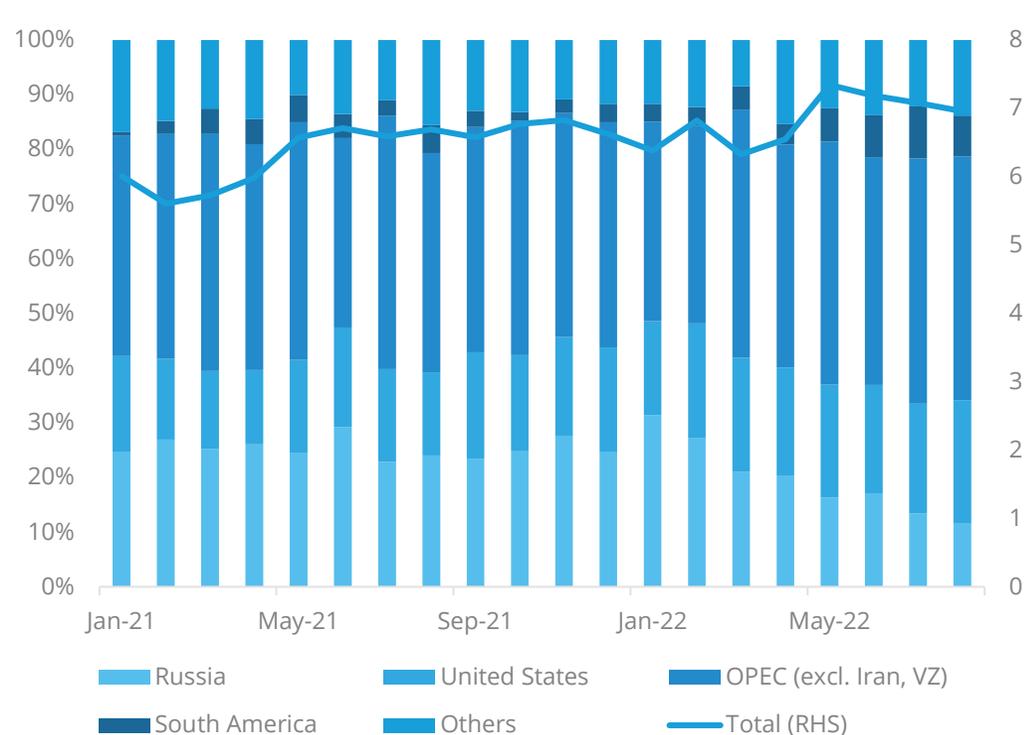


Tracking Russian oil molecules: Europe's imports of Russian crude down to 8% of total imports

European seaborne crude imports from Russia (bars, mbd, LHS) & dependency on Russian crude and ports (% , RHS)

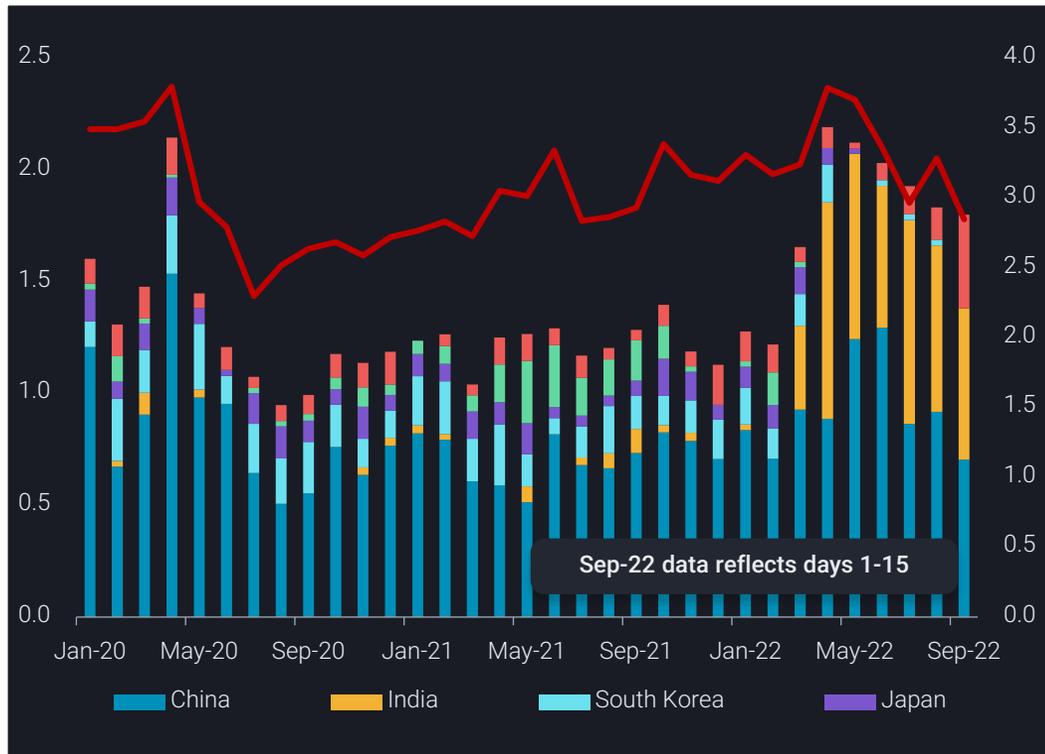


Europe crude imports by origin country/ region percentage (% , LHS) and total imports (kbd, RHS)

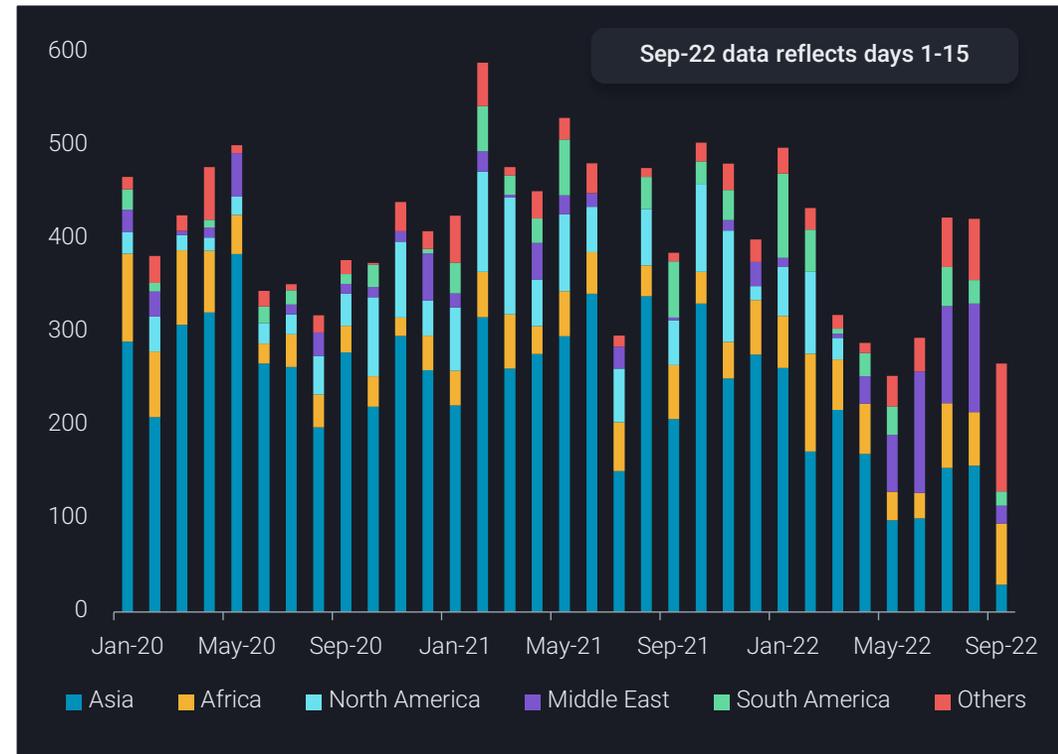


Russia's reliance on Asia and Middle East as alternative storage and end destination rises as EU ban approaches

Russian crude exports excl. Europe (mbd, LHS) and total exports (mbd, RHS)

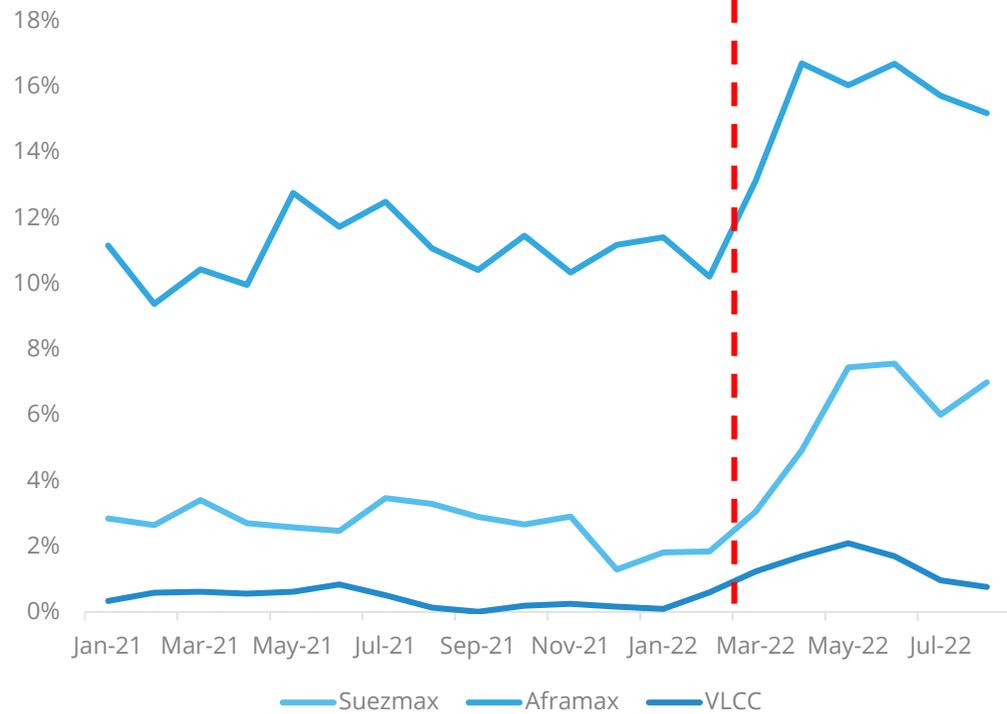


Russian refined product exports excl. Europe (mbd, LHS) and total exports (mbd, RHS)

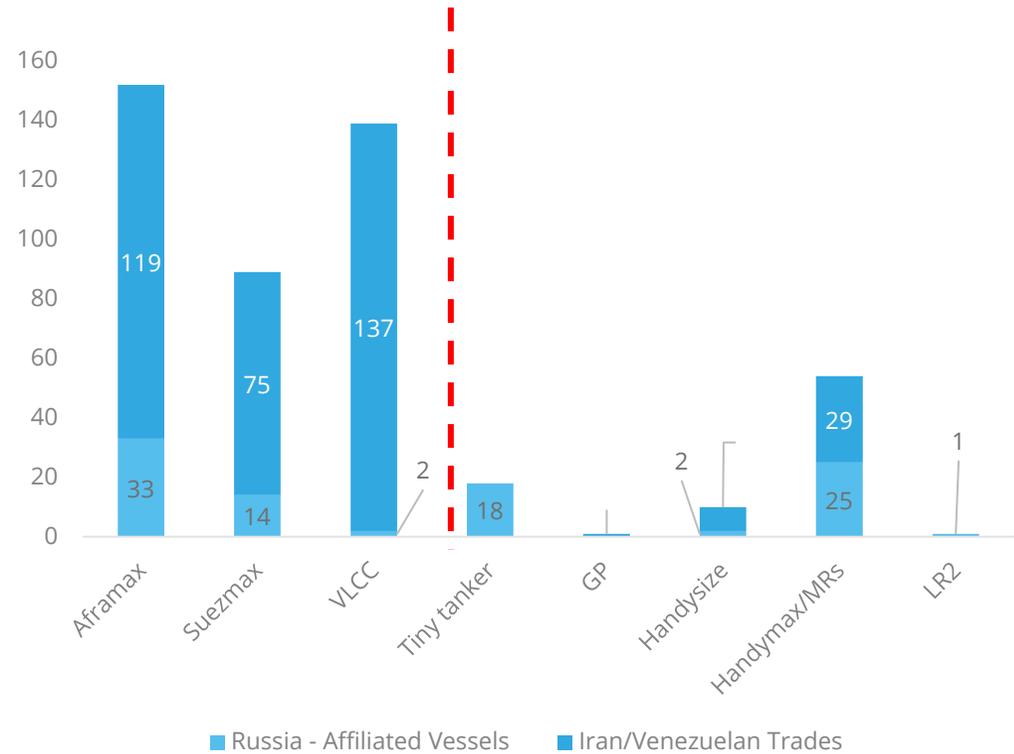


EU Insurance Ban: Significant impact on tanker freight markets if cap is not implemented; there is no “dark” clean fleet available

% of crude tanker fleet employed carrying Russian grades



Alternative Candidates for carrying Russian oil & products (no. of vessels)

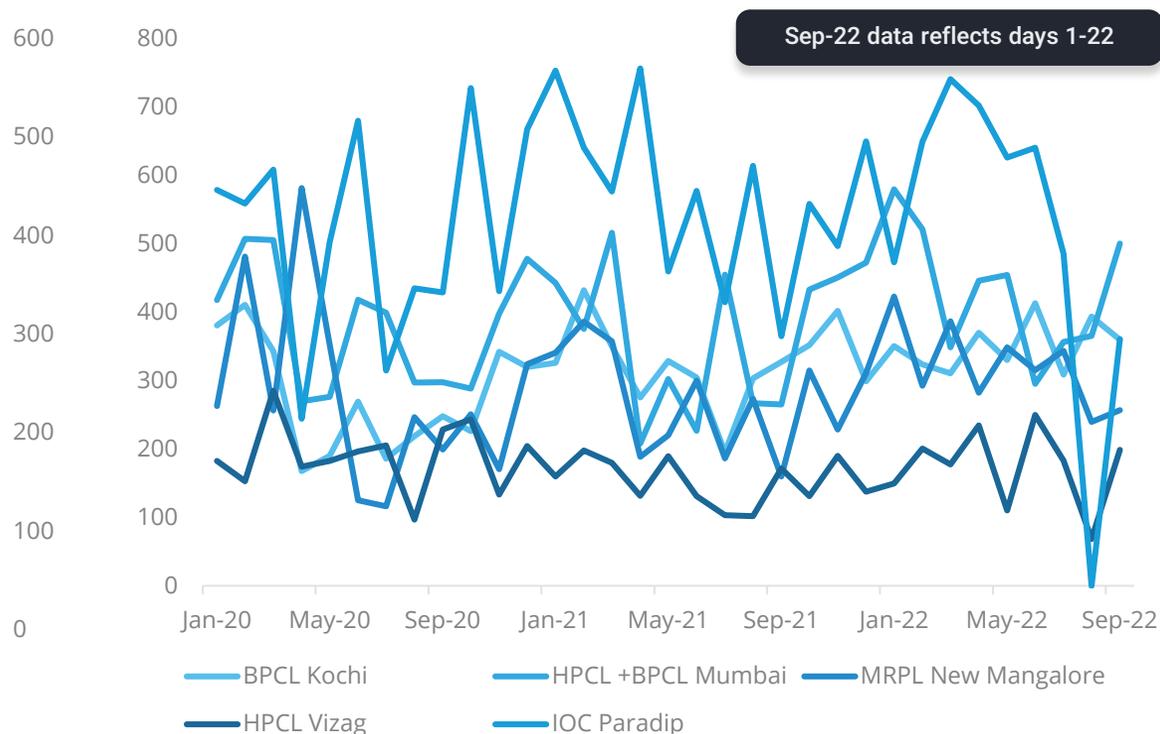


Monitor refinery runs ahead of official data: India's refinery runs slow in lieu of planned maintenance

India's private refiners implied crude runs (kbd)

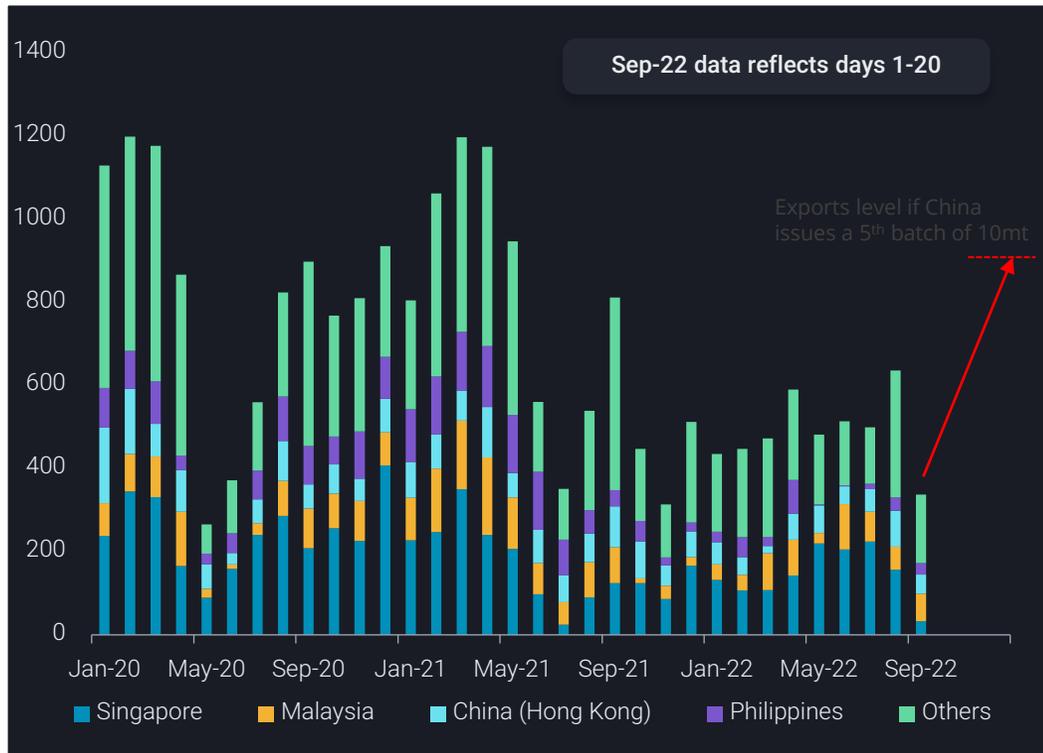


India's public sector refiners implied crude runs (kbd)

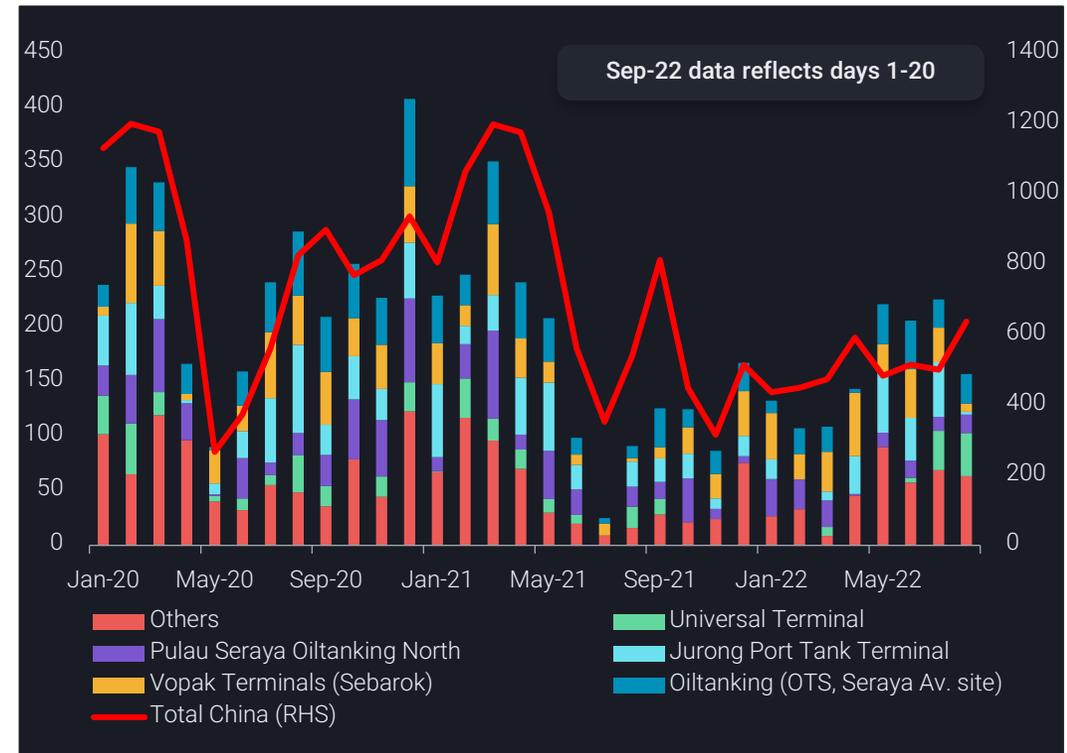


Anticipate China's exports changes: More supplies headed to Singapore if additional quotas issued

China's clean product exports by destination country (kbd)

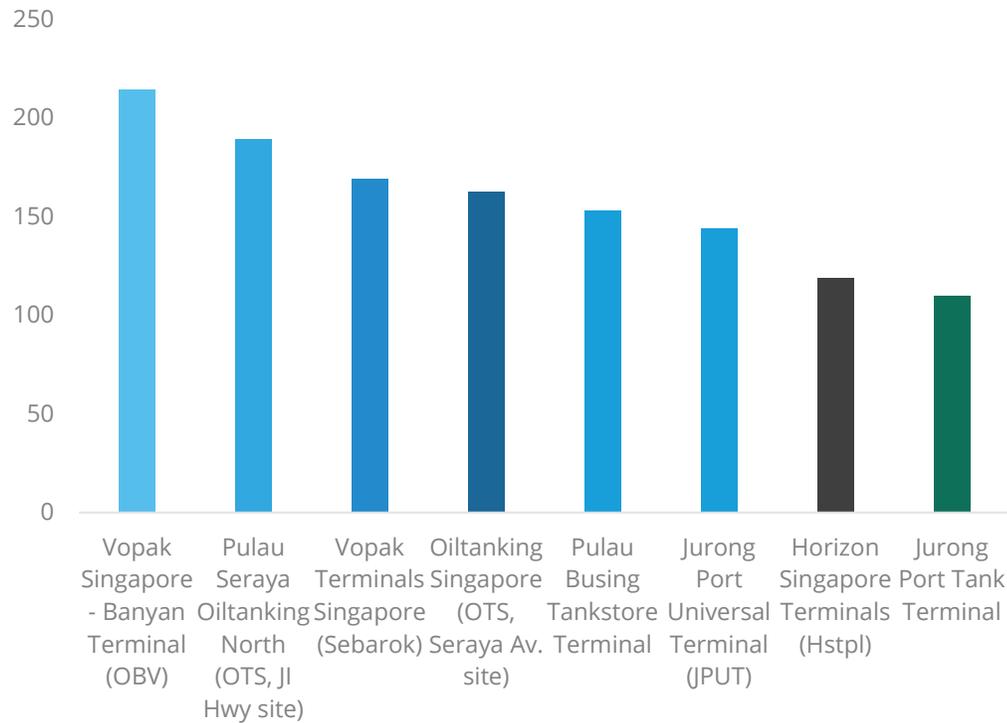


China's clean product exports to Singapore (kbd, LHS) and total China exports (kbd, RHS)

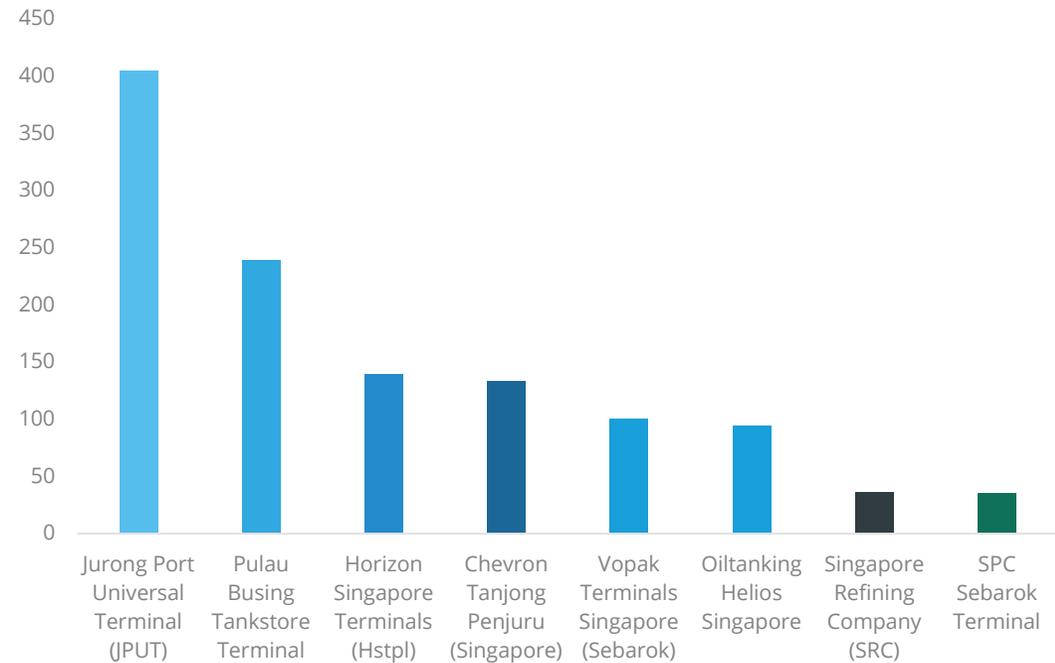


Benchmark your assets against other market players

Seaborne clean product imports and exports for top storage terminals in Singapore (Sep 2021 – Sep 2022) (kbd)



Seaborne dirty product imports and exports for top storage terminals in Singapore (Sep 2021 – Sep 2022) (kbd)



Thank you

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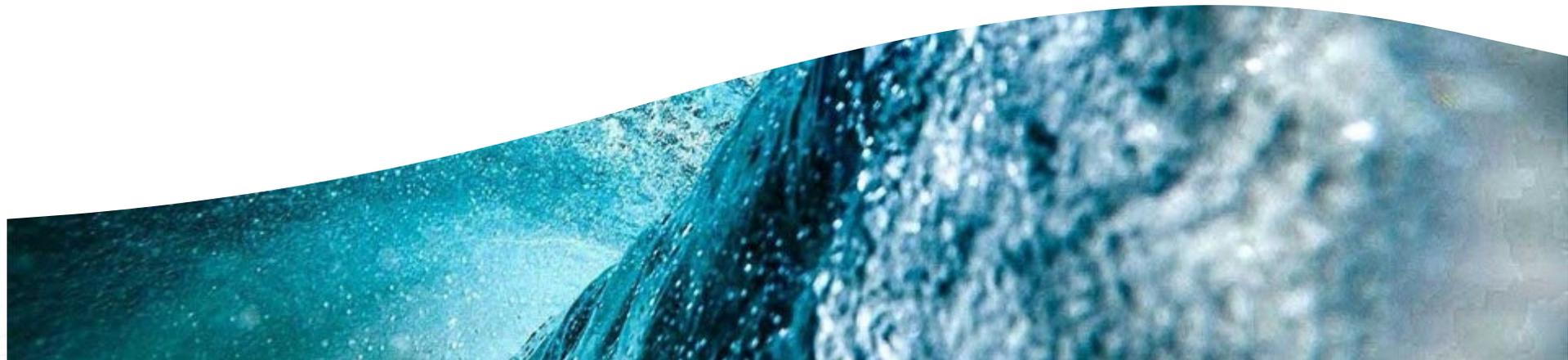
tankchat.com ener8 Chevron ExxonMobil Shell bp

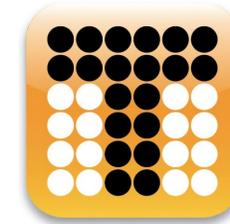




Around the world in 30 minutes
Energy Transition and the Future of Storage Terminals

Tony Quinn – CEO Tankbank, Operating Partner Prostar
Capital





Tony Quinn

- Tankbank International Pte Ltd– Owner
- Prostar Capital Partners LLC – Operating Partner
- Petrochemical Global Logistics Convention - Partner
- Board Advisor – GTI Fujairah, GTI Statia, Fujairah Oil Terminal (FOT)
- Acting Commercial Manager - GTI Statia
- Advisor to KIT and MPIC
- Previously – LBC, BP, CASTROL, SIMON STORAGE, MABANAFT and many others.....

PANDEMIC RECOVERY
ENERGY TRANSITION
DIGITALISATION
MILITARY CONFLICT
AND MARKET VOLATILITY

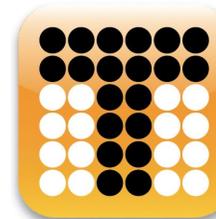
What do you need to attend this year

PGLC 2022 Barcelona
16/17 June 2022
www.pglc.biz

Speakers from:



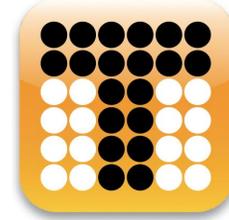
Sponsored by the Port of Barcelona



PGLC was a great success in June this year

 **tankchat.com**
where energy professionals meet

TANKCHAT 4.0



TankChat now at 10,000 members

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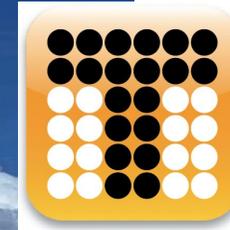
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ANDROID APP ON
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GTISTATIA.COM



Products: Crude Oil, Distillates, Gasoline, Intermediate Petroleum and Blend Components, Residual Fuels, Condensates

Dock/Vessel Data: Six mooring locations



Single Point Mooring (SPM) buoy, servicing vessels up to 520,000 dead weight tons (DWT); Very Large Crude Carriers (VLCCs) and Ultra Large Crude Carriers (ULCCs). Draft is 60 meters or 197 feet. Handling crude and fuel oil with discharge rates up to 75,000 barrels per hour (BPH).



Jetty with two berths, handling vessels up to 177,000 DWT (Suezmax). Draft is 16.7 meters or 55 feet. Capable of handling crude oil, fuel oil, distillates, gasoline, and gasoline components.



Monopile with two mooring locations, servicing vessels up to 80,000 DWT (Aframax). Draft is 14.3 meters or 47 feet. Capable of handling distillates, gasoline and gasoline components.

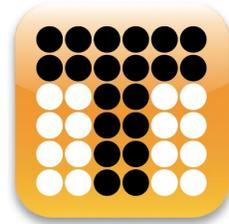


Floating Hose Station, servicing barges dedicated to bunkering operations. Draft is 7 meters or 23 feet. Capable of handling fuel oil and distillates.

Commitment to a Culture of Safety

The safety of our employees, contractors, environment, and the community is our highest core value.



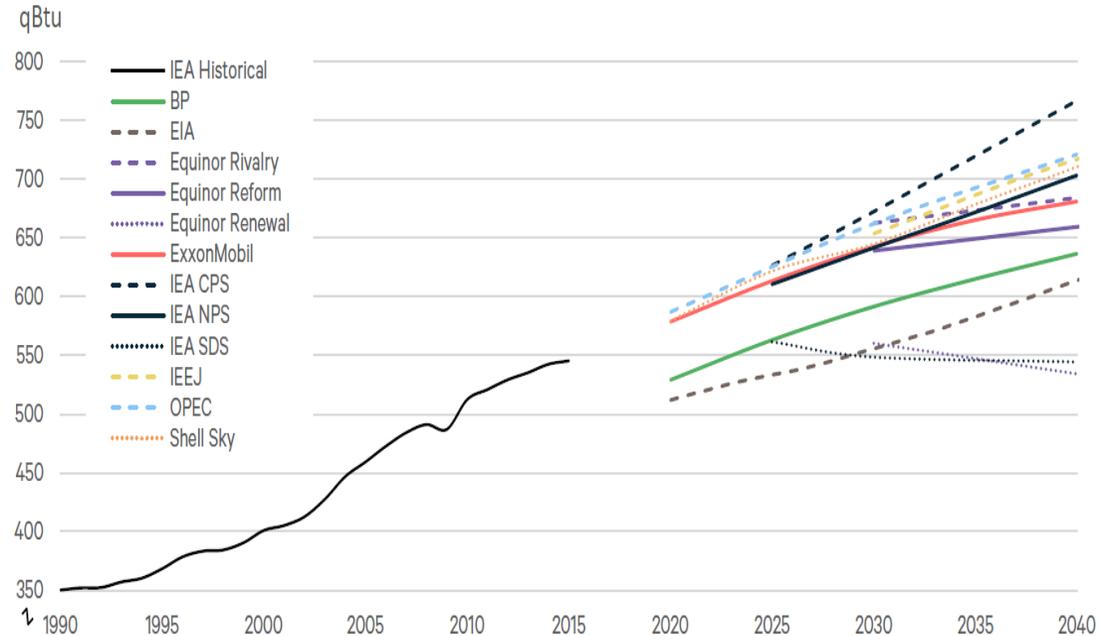




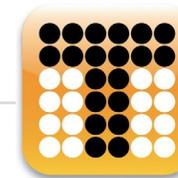
IEA Current Policies (IEA CPS) most aggressive at over 200 qBtu increase in demand

Equinor most 'optimistic' with their Renewal forecasts

All reports show an increase in energy demand

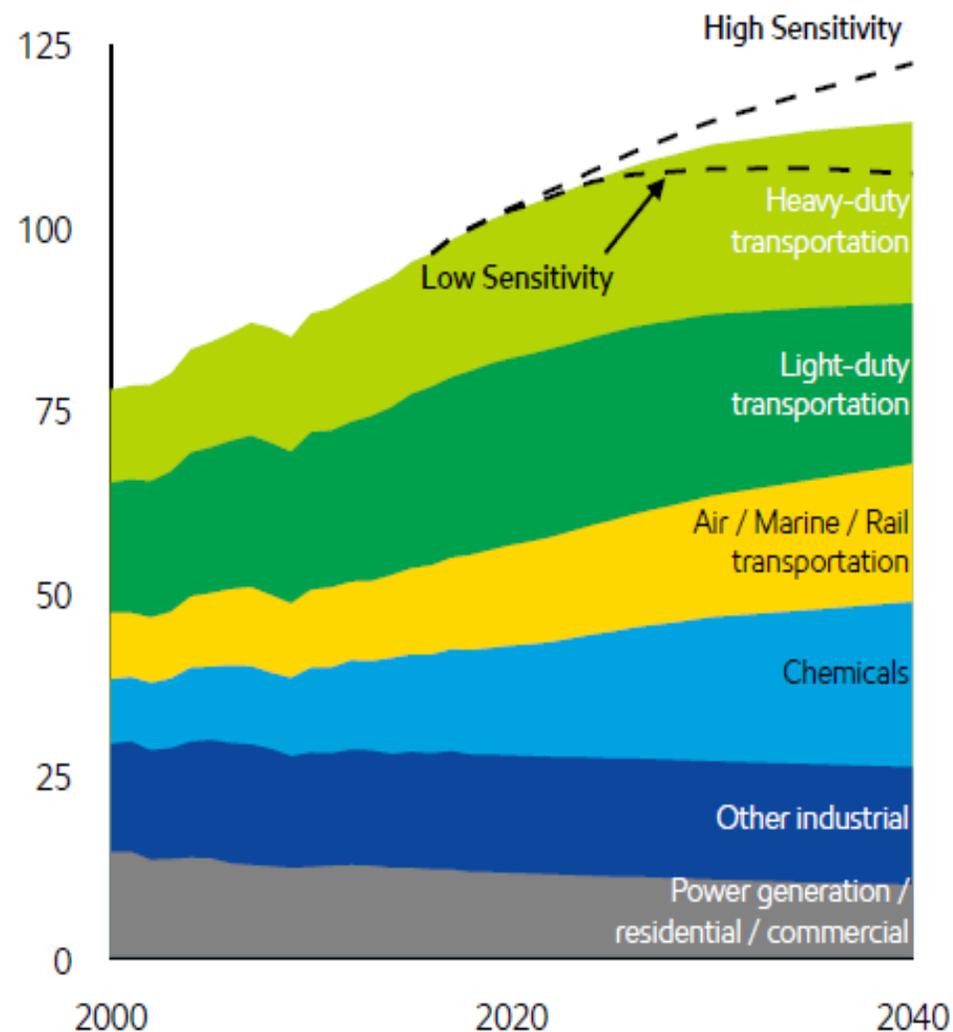


Source: Resources for the Future, "Global Energy Outlook 2019: The Next Generation of Energy," at <https://www.rff.org/publications/reports/global-energy-outlook-2019/>.



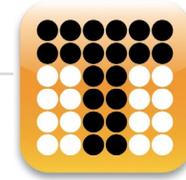
Oil Demand by Sector to 2040

- By 2040, there will be a 25% increase in oil demand
- Transportation for commerce and trade over 50% increase on 2019 demand
- We will travel more – aviation demand increasing 2.2.% per year, depending on the return of the aviation (transportation) sector to pre-2020 levels
- Personal vehicle ownership will grow, but demand for oil will peak with increased efficiencies and electric vehicles



Million barrels per day. Source: ExxonMobil 2019 Energy Outlook

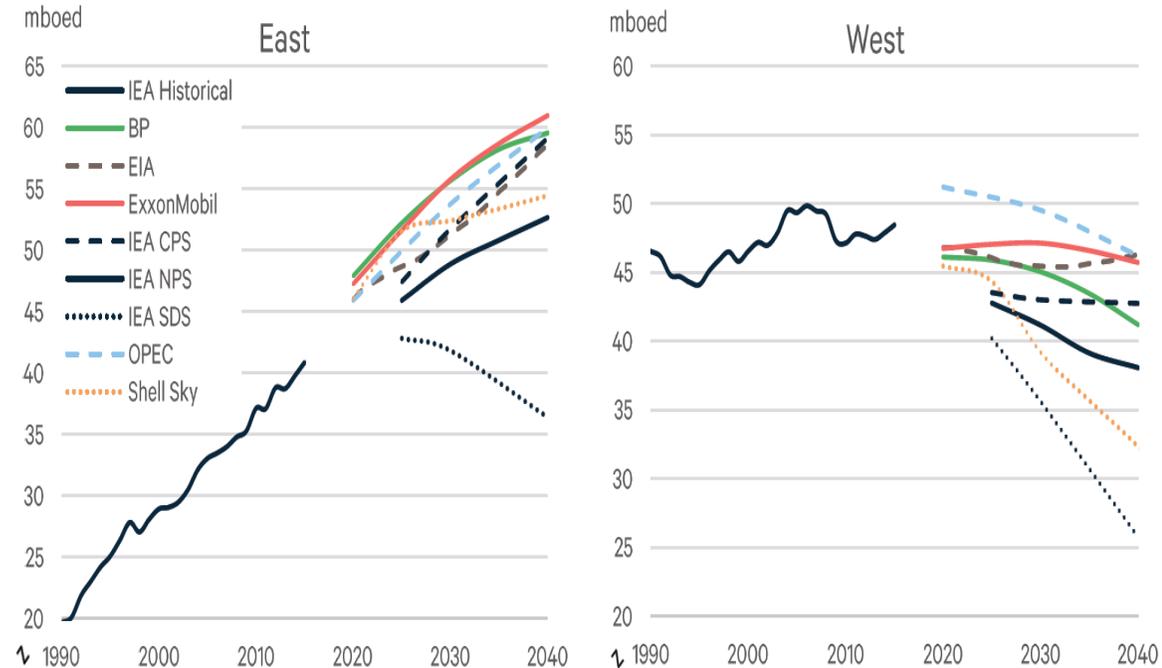
Current Market Overview – Growth is Regional



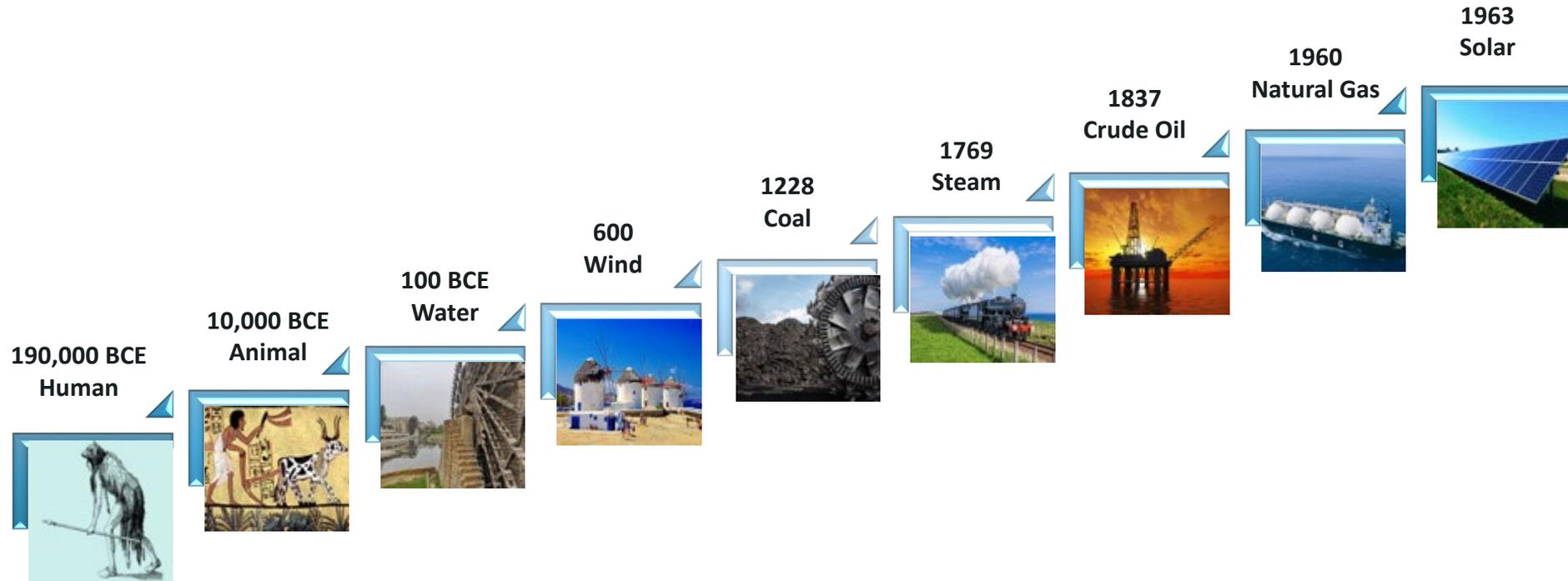
Asia, Africa and Middle East are demand drivers: 29%- 49% higher

Europe, Eurasia and the Americas see decline in demand

All reports show an overall increase in energy demand except IEA Sustainable Development model (IEA SDS).



Source: Resources for the Future, "Global Energy Outlook 2019: The Next Generation of Energy," at <https://www.rff.org/publications/reports/global-energy-outlook-2019/>.



Global Energy Transitions:

- 1st - Wood to Coal
- 2nd - Coal to Oil
- 3rd - Oil to Natural Gas
- 4th - Fossil Fuel to Renewable

Source: Vaclav Smil, *Energy and Civilization: A History* (2017)



Energy Transitions Take (a lot of) Time

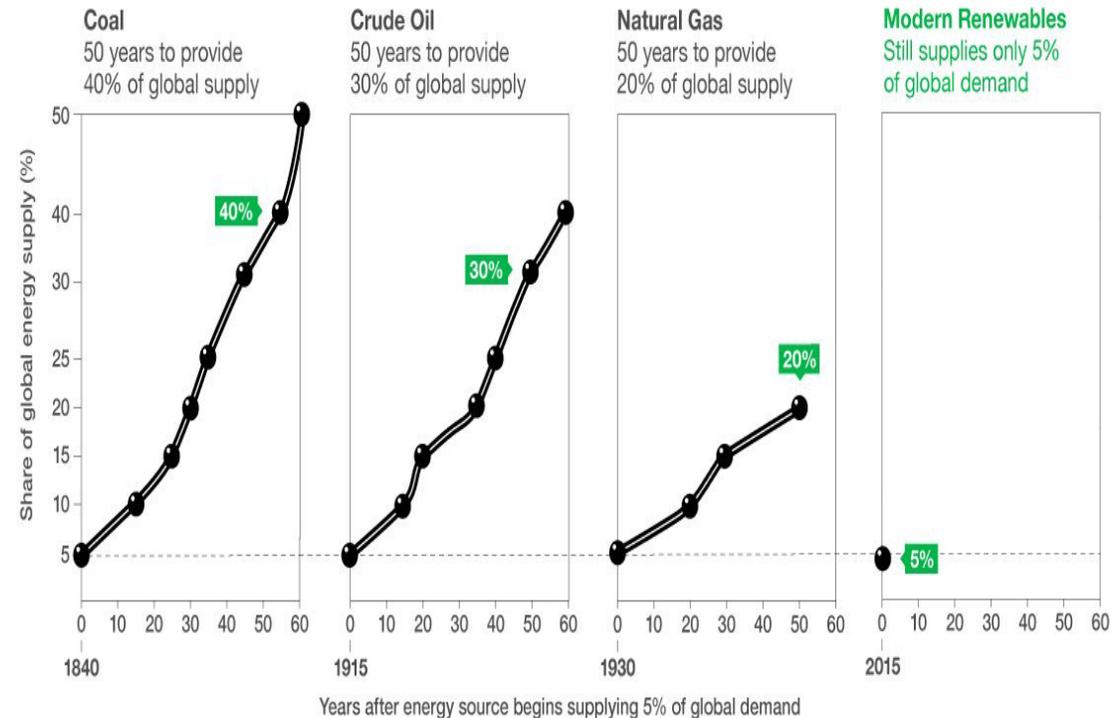
2 – 3 generations to capture a large share of the global energy market

Requires enormous infrastructure investments

Inertia of the embedded energy system

Fossil fuels still supply over 80% of our primary energy

Global Energy Transitions take 50 – 75 Years



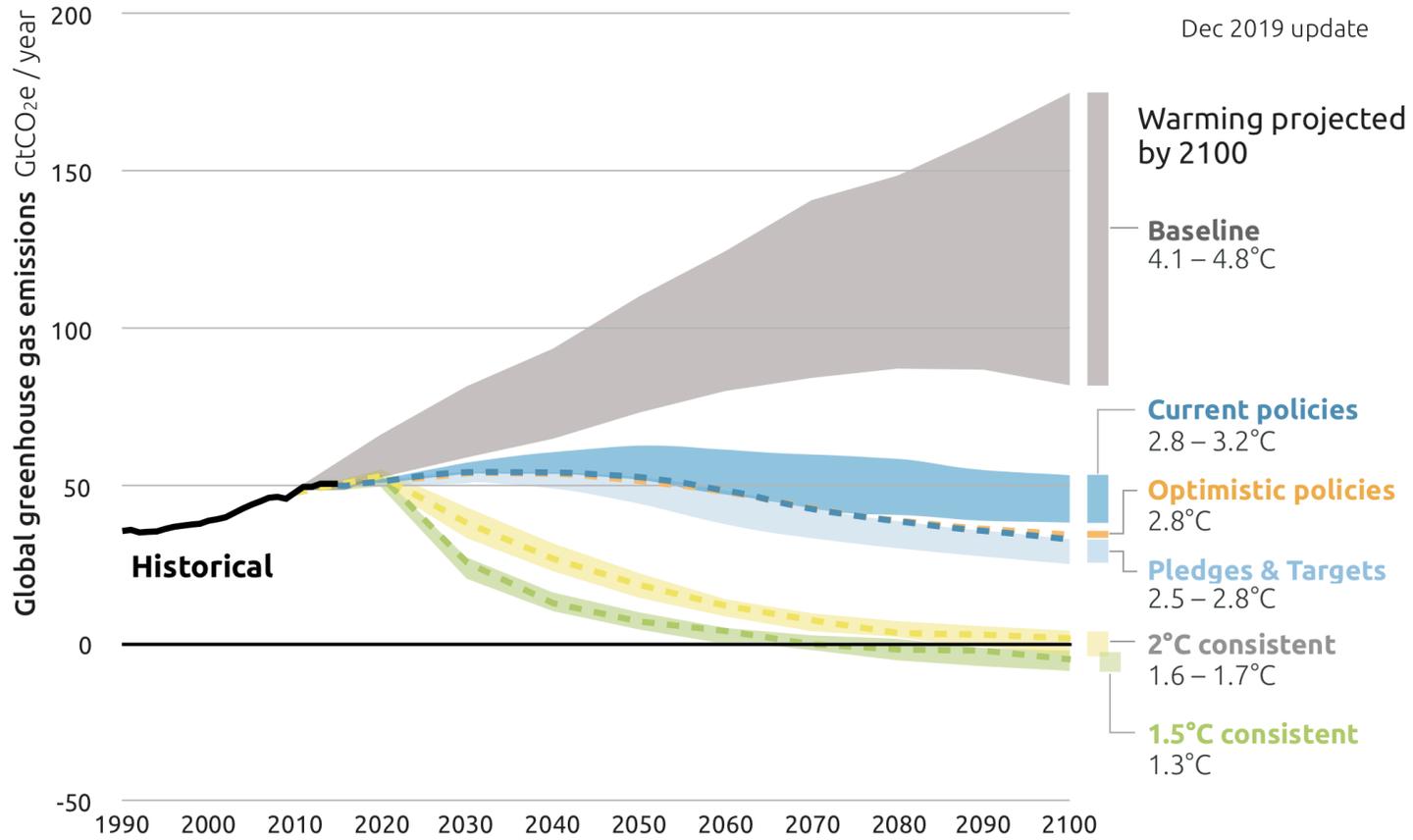


Emissions and expected warming based on pledges and current policies

Aim is **not** zero greenhouse gas emissions by 2100.

Aim is to reduce emissions to 1990 levels

Storage of oil products at 1990 levels



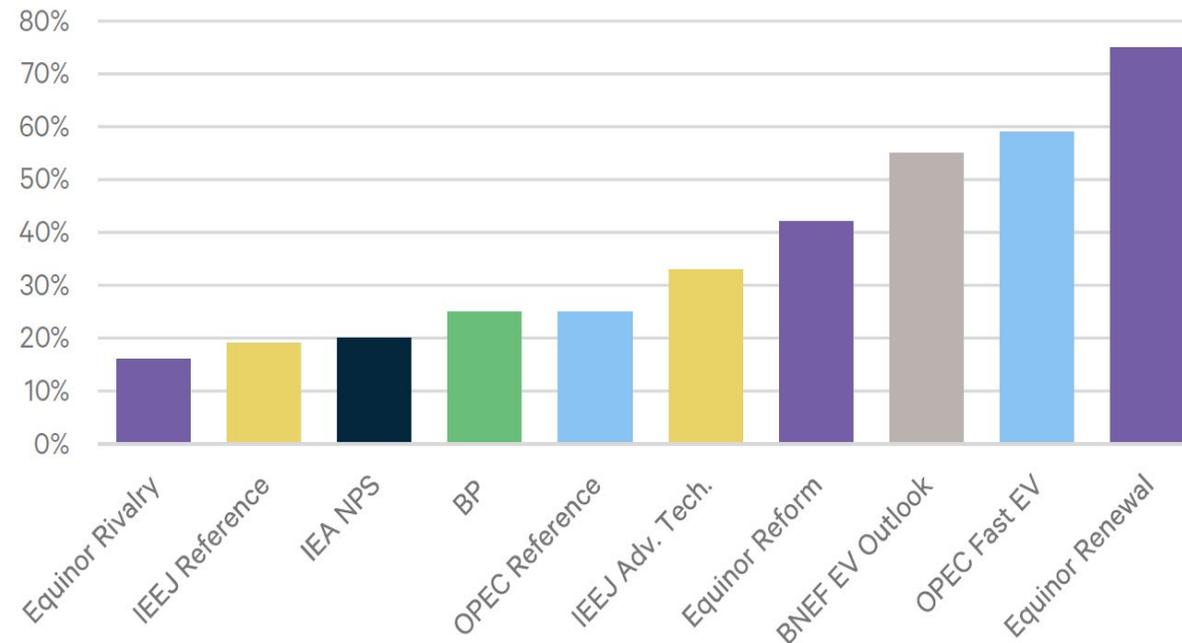
Source: Climate Action Tracker 2021

Electric Vehicles are coming .. but when?



- Less than 1% of global car sales
- Currently 5.1 million on the road, globally
- Equinor's scenarios give the most bearish (16%) and bullish (75%)
- For every 100 million EVs on the road, liquids demand could fall by ~1.2 million barrels per day in 2040

Electric Vehicles in 2040
Percentage of global car sales



Source: Resources for the Future, "Global Energy Outlook 2019: The Next Generation of Energy," at <https://www.rff.org/publications/reports/global-energy-outlook-2019/>.



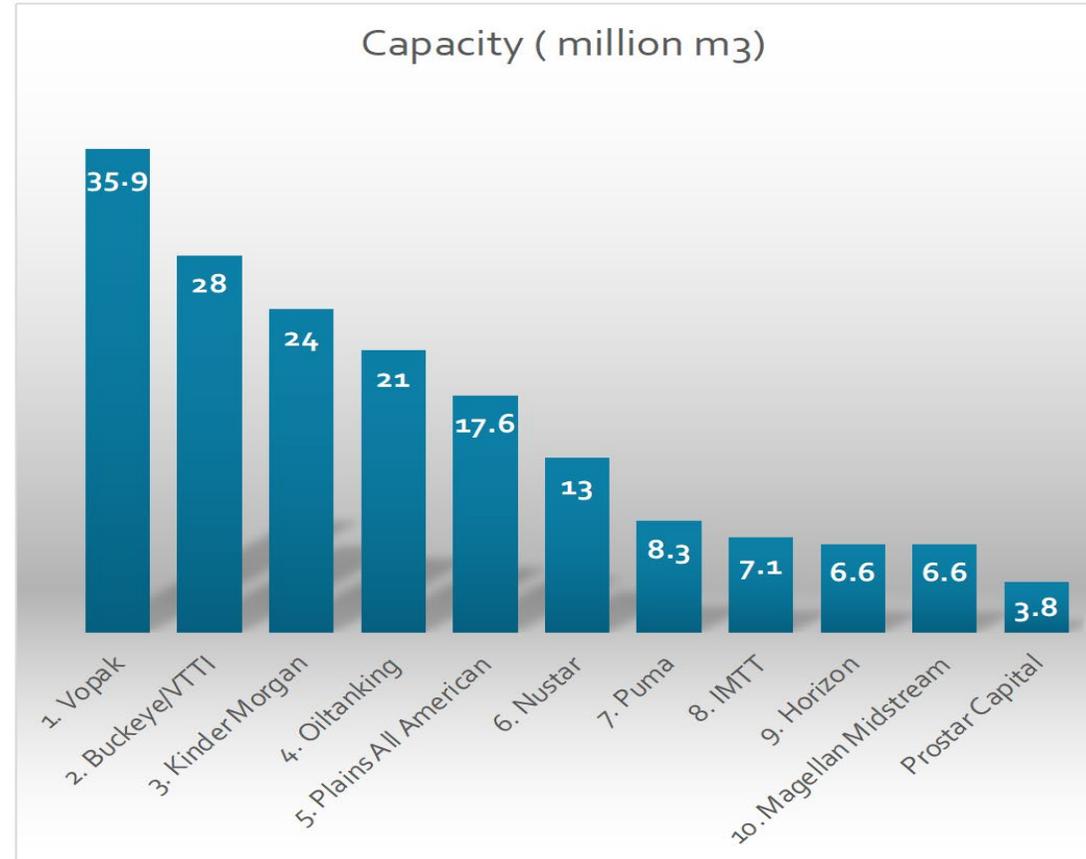
Independent Storage Transition



- * **1880's:** First oil storage tanks to service the first oil tankers
- * **1950's:** First parcel tankers service market
- * **1960's:** Development of ARA, Caribbean and Houston storage hubs
- * **1990's:** Development of Singapore storage hub
- * **2010's:** Development of Fujairah storage hub



Largest Independent Terminal Operators





Rotterdam losing
momentum in Liquid
Business





Antwerp

Chemical storage
pays off





Amsterdam
Struggling due to environmental
pressures





UK – mature and developed – needs to diversify





Poland still waiting
to divest good
infrastructure but
Russian
relationship not
helping





Germany
Same issue a
Poland
Plus overtanked
market





Turkey

Ceyhan continues to
Pump oil...





Spain – difficult market





Iran – where it
all started





Israel - where Oil trading
Started





Fujairah





India





China –
Development slows

China overtakes US
as biggest oil buyer
for the last 7 Years





Korea Ulsan





Philippines – independent market – small players





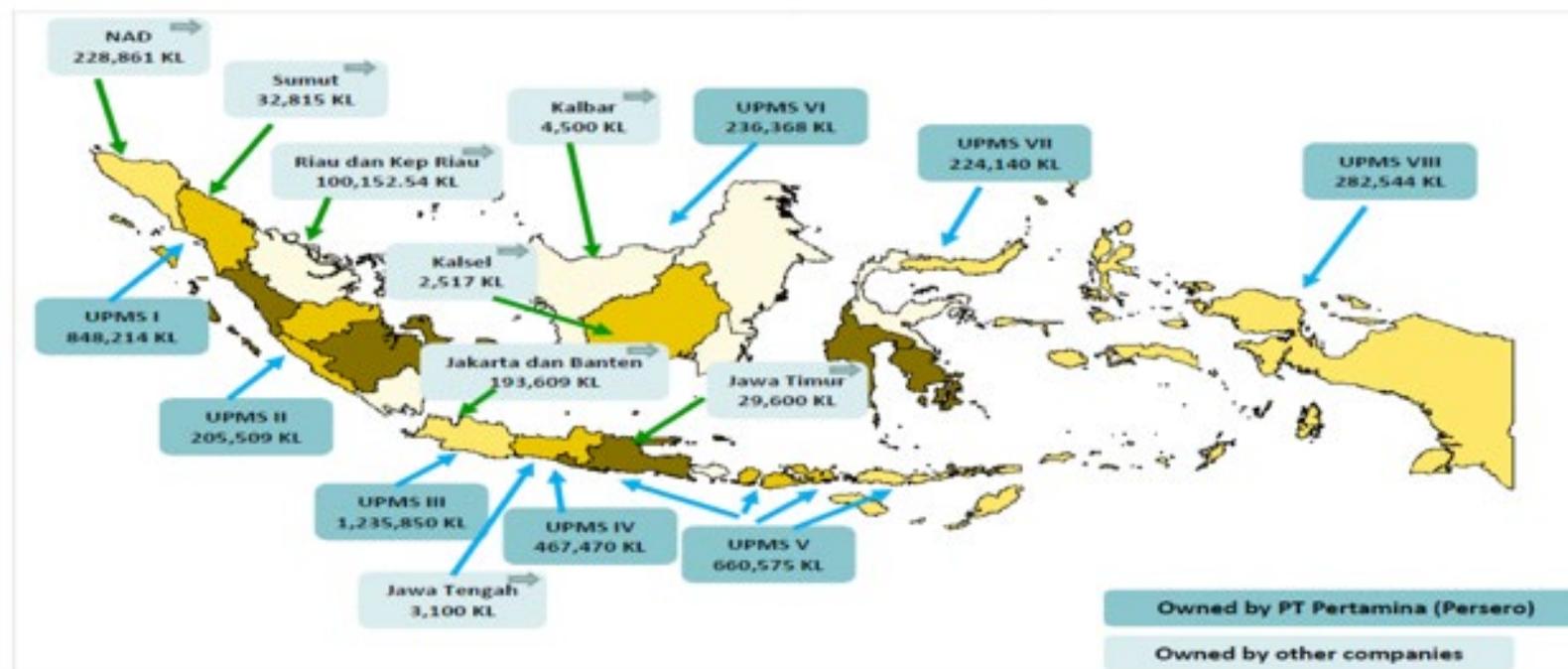
Vietnam – unstable market
But good future
opportunities

(Van Phong)





Indonesia





Greater Singapore
Pengerang





Japan – Strategic Storage
And lots of capacity



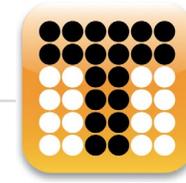
Australia -
The new fuel
Importer





Gulf of
Mexico





- Storage industry integral to supply chain with organic growth in current terminal locations until 2030
- Terminal operators expand range of oil products stored e.g. renewable blend components
- Diversification to new storage markets e.g. petrochemical, industrial terminals, LNG





The future of Storage ?



Thank you for your kind attention.

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COUNCIL

THE INDEPENDENT VOICE OF TRUST



Safe Vessel Access for Inspectors

Singapore Sept 2022

© TIC Council 2022



This session will ask those present to give their own reaction to what they see and hear.

Please react, this is a safe space, and your reactions are important.

There are no 100% correct answers here.

Please react promptly:

- To keep thing on schedule
- Because our staff and colleagues must react immediately in the field.

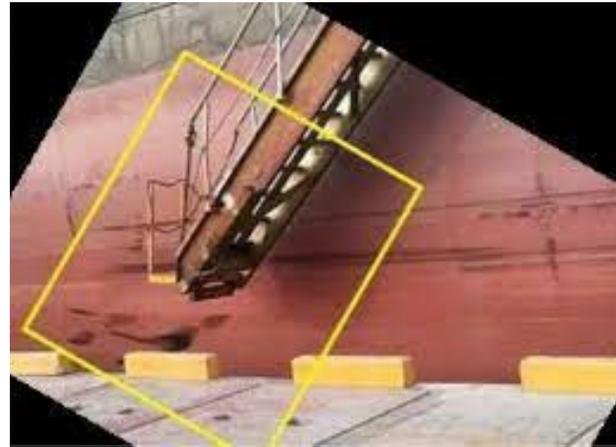


The challenge

- To provide guidance for all member's staff needing to gain access to vessels for whatever reason and in whatever circumstance.
 - At shore terminals
 - Offshore in sheltered settings
 - Offshore in unsheltered settings
- To address the complex issues and demonstrate that
 - Stop work authority (SWA) can and SHOULD be used if necessary
 - It is always a matter of informed, educated judgement by the individual worker
 - Equipment and local regulations may vary, but the goal, to send everyone home safe and well, remains constant.



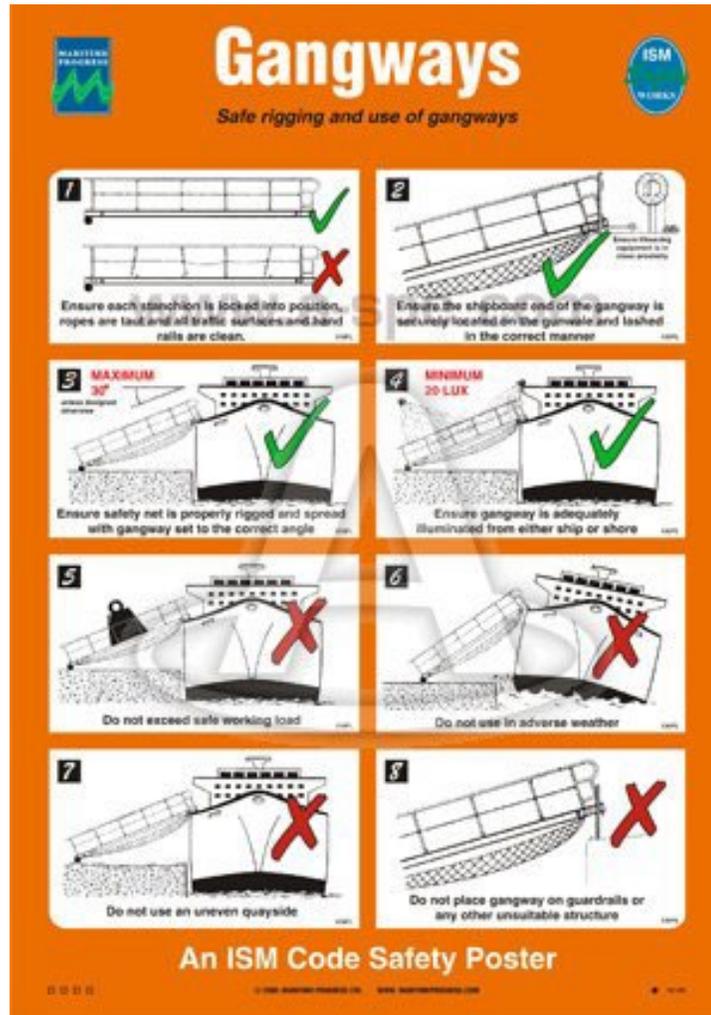
Boarding of vessels at Jetties are more common



Some interesting pictures of gangways we don't use!!!

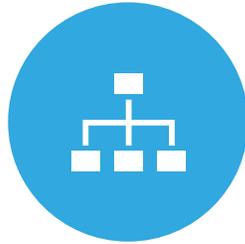
No lifejacket or safety harness

Boarding of vessels at Jetties are more common

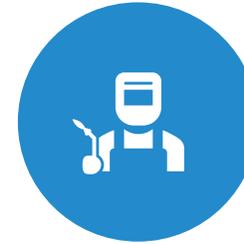


Whilst we are focusing today on offshore boarding, there are also ongoing issues with Jetty boardings, and we see an increase level of SWA use

Boarding offshore is a global challenge, but a patchwork of circumstances.



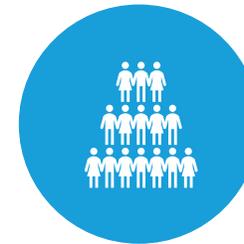
Many stakeholders, from customers, to ship and terminal operators, and even our own local branch management staff, start from the basis of local regulation.



The equipment available and how that equipment is deployed, maintained and operated, varies enormously.



Custom and practice varies, as do expectations. Safety cultures, the degree to which risk assessment and management is implemented, varies a lot.



Training of everyone involved varies.

The backdrop to any onboarding or disembarkation situation



Local regulation and guidance



Training and company guidance



The equipment to hand, and the condition and deployment of the same.



The weather conditions



The experience and skill of others involved, such as launch crew



Material and Guidance is helpful, and should be freely available to staff, and used.

- Local Regulation and Guidance
- Terminal regulations
- International regulation and guidance
- Customer contract stipulations and guidance
- Company Training
- Company Policy
- Local management supervision
- Company HSE best practise
 - Briefing staff
 - Toolbox talks
 - Equipment inspections



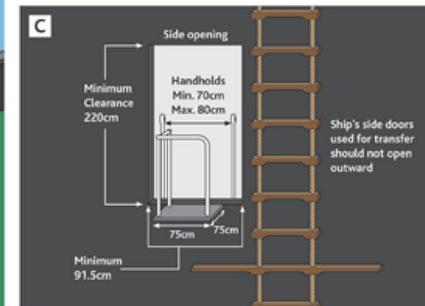
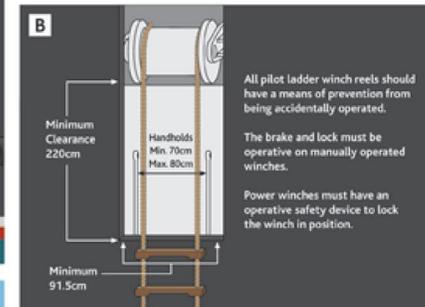
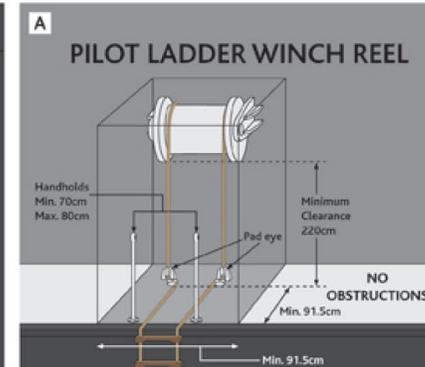
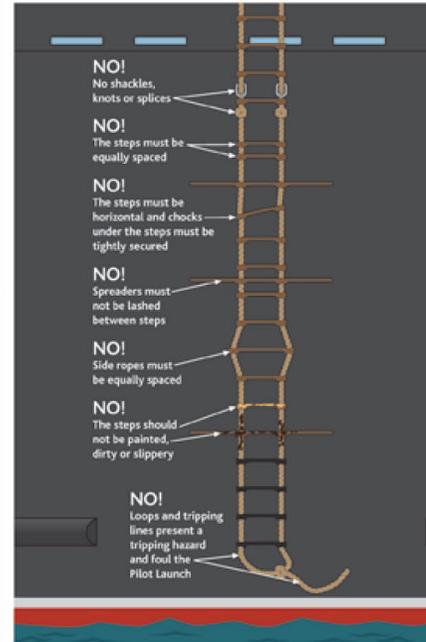
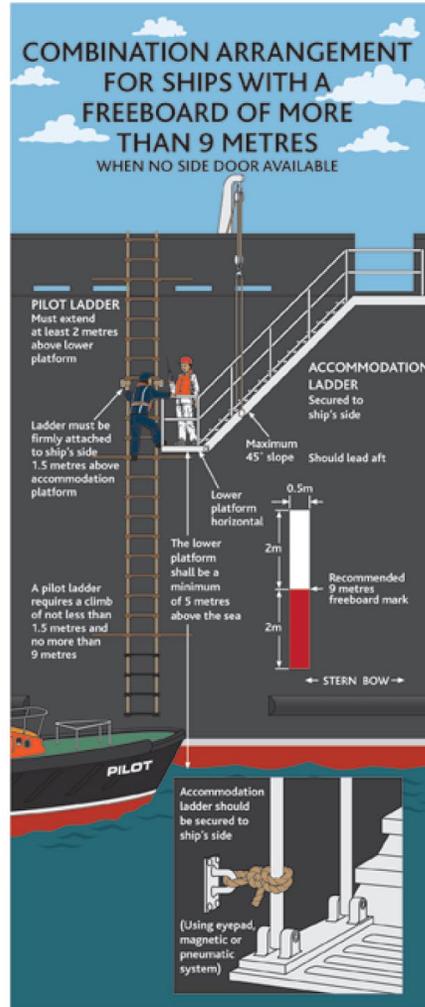
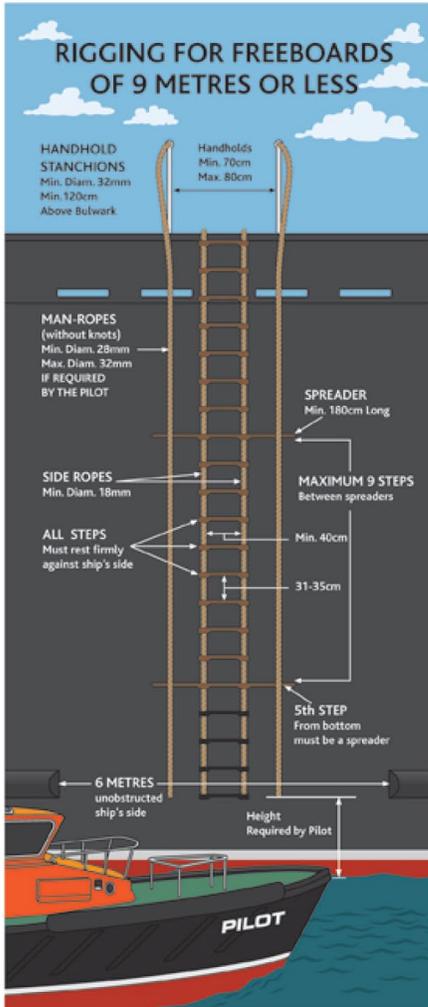
REQUIRED BOARDING ARRANGEMENTS FOR PILOT

In accordance with SOLAS Regulation V/23 & IMO Resolution A.1045(27)

INTERNATIONAL MARITIME PILOTS' ASSOCIATION

H.Q.S. "Wellington" Temple Stairs, Victoria Embankment, London WC2R 2PN Tel: +44 (0)20 7240 3973 Fax: +44 (0)20 7210 3518 Email: office@impahq.org

This document and all IMO Pilot-related documents are available for download at: <http://www.impahq.org>



Typical Guidance issued by International Maritime Pilots Assn.

Available at [Pilot%20Transfer%20guide.pdf \(pla.co.uk\)](http://www.pla.co.uk/Pilot%20Transfer%20guide.pdf)





MARITIME AND PORT AUTHORITY OF SINGAPORE

PORT MARINE CIRCULAR
NO. 034 OF 2020

07 August 2020

Harbour Craft Community
Pleasure Craft Community
Shipping Community

GUIDELINES FOR SAFE TRANSFER OF PERSONS BETWEEN VESSELS AT ANCHORAGES

The Maritime and Port Authority of Singapore has conducted a safety analysis and identified that some of the common causal factors contributing to persons falling overboard during transfers between vessels at the anchorages, were due to slips and trips, unsuitable embarking/disembarking arrangements and unfavourable weather conditions. Whilst majority of such personnel transfers are conducted under proper supervision and with appropriate personal protective equipment, such as donning of lifejackets, there were still some who did not observe such safe practices. These have resulted in a few injuries and/or loss of lives, which could have been prevented.

2. Under the ambit of the National Maritime Safety at Sea Council to raise safety awareness, the Maritime and Port Authority of Singapore and the Harbour Craft Safety Working Group represented by industry stakeholders, have prepared a set of guidelines to promote safe practices while conducting transfer of persons between vessels at the anchorages. The guidelines aim to prevent persons falling overboard incidents during transfers between vessels at the anchorages. Please see attached **ANNEX A**.

3. Safety at sea not only prevents economic losses, but more importantly, protects people and the environment from harm. It is important for every individual in the harbour and shipping community to share the responsibility towards fostering good habits and a culture of safety.

4. Please call Capt. Scott Ngiam at Tel: (65) 6773-7401 or Ms. Eunice Pui at Tel: (65) 6325-2477 if you have any queries regarding this circular.

CAPT KEVIN WONG
PORT MASTER
MARITIME AND PORT AUTHORITY OF SINGAPORE



An example of local regulations

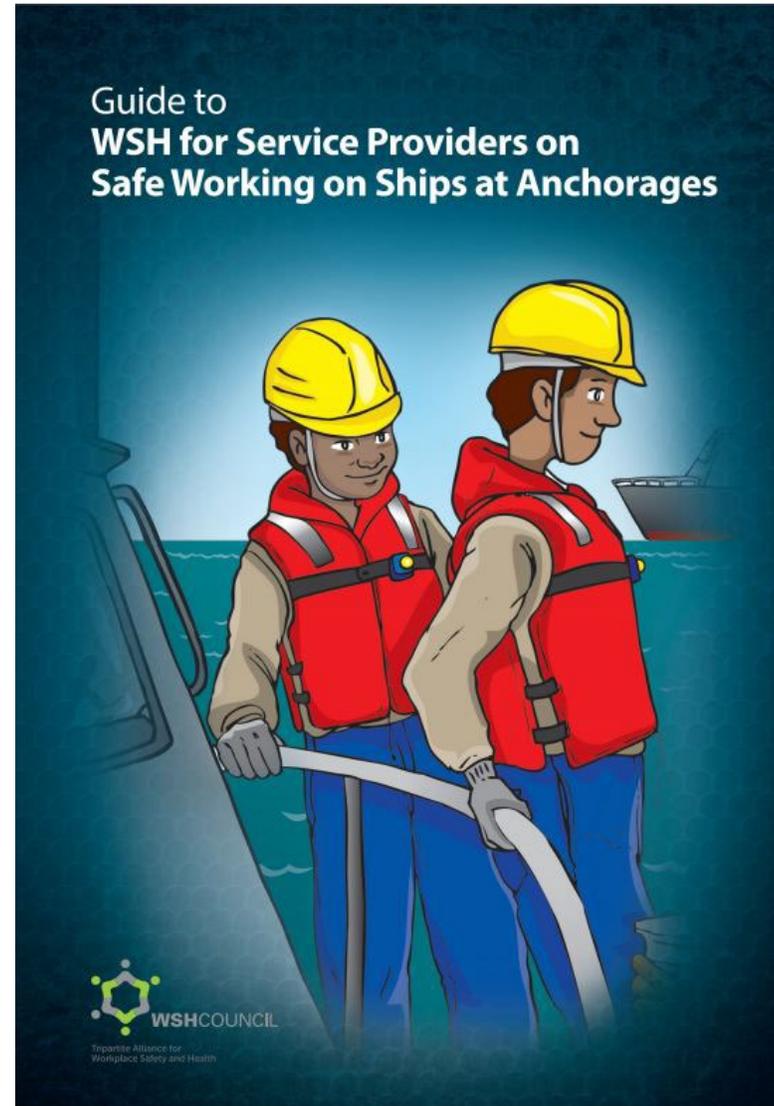


Typical training material published by authorities

Occasionally these differ from the international requirements.

This is available from WSH Council at:

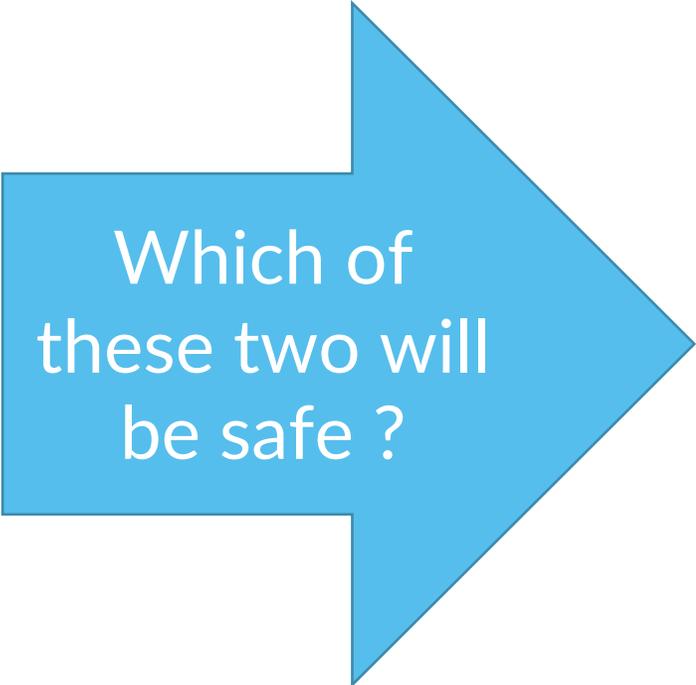
[Guide to WSH for Service Providers on Safe Working on Ships at Anchorage - Revised 2019 \(tal.sg\)](#)



Training

- Training should incorporate
 - Classroom / on line sessions (but with significant Q & A)
 - Practical elements in the field (although this can be a challenge)
 - Risk assessment training and self assessment and hazard identification
 - Communication training
 - Stop work authority and how to use it
- References should be made to
 - Local regulations
 - Company regulations and guidance
 - Customer regulations and guidance
 - The use of port and weather data
 - Lessons learned material
 - Equipment condition assessment





Which of
these two will
be safe ?

A large, solid blue arrow pointing to the right, with the text 'What to do here?' written inside it in white, sans-serif font.

What to do here?



Improvements
are a continuous
process

- Lessons can only be learned by organisations who
 - Identify Hazards
 - Record near misses
 - Follow up on incidents and analyse them
 - Use the analysis of hazards and incidents to improve working methods
 - Educate, monitor and change.



Examples of lessons learned

BACKGROUND INFORMATION

- ▶ During the approach, the service boat requested lee side but vessel refused to weigh anchor to provide lee
- ▶ Without lee, the vessel was not safe to embark via combination ladder, as a result of high freeboard and heavy swell (1.5-metre waves)
- ▶ A collapsible transfer basket (PTB) was provided by vessel to substitute the combination ladder method. The basket's make was observed as 'WORSTAN' (Zeus Transfer basket 4 & 6 Persons).
- ▶ The inspectors, all equipped with the required PPE held on the basket with four points contact
- ▶ The service boat deck man signaled the vessel crew to lift the PTB. The crane started lifting the basket but the response was too slow. The PTB should be lifted high enough to be clear from obstacles, but this did not happen
- ▶ The PTB's base ring got stuck for a split second on the bollard of the service boat. This caused the PTB's base ring to bend while the crane was pulling it; here our surveyor lost footing and handgrip, so he fell. The section of the PTB where it got stuck and bent, was the same where our inspector was standing.
- ▶ As a result of the lost handgrip, one off the inspector's gloves tore.
- ▶ The other two inspectors, who were standing on the intact side of PTB, continued their ascension and boarded the PAROS safely.
- ▶ The inspector tore the ligaments on his left ankle and will be off from field duties for a minimum of 6 weeks



Service boat bollard



Examples of lessons learned

Embark/Disembark VESSELS

Accident data

Date: 05/04/2016. Area: Europe.

Activity: Disembark Vessel during STS operation
Personal injury: arm got stuck (no injury) /



What happened?

In this incident, the inspector was leaving the vessel by accommodation ladder. The inspector waited on the accommodation ladder while the launch boat came alongside. The accommodation ladder was lowered to 1.5 meters above water level. The inspector was standing below on the platform, while the launch master made his first wrong approach to the vessel.

The approach was made with the nose to the portside of the vessel. Obviously with the swell of approx. 1.5 m the nose of the launch came below the platform and when the launch came up again he took the accommodation ladder with him, with the inspector still on it. The accommodation ladder turned for about 90° and the inspectors arm got stuck between the accommodation ladder and vessel."

Probable causes

Direct Cause:

Accommodation ladder turning causing inspector's arm to get caught between gangway and vessel

Contributing causes:

- Inspector was standing on the accommodation ladder
- Launch master make a steering mistake
- Small swell of the sea
- Accommodation ladder lowered to far. On same height as the launch.
- Launch hit the Accommodation ladder
- Miscommunication between staff involved.

Root Cause

- Poor assessment of environment and conditions by all parties involved in this operation / communication breakdown / No TRA

Corrective and Preventive actions and Recommendations



- Staff has been instructed to revitalize the relevant procedures
 1. Always do the LMRA
 2. Use of SWA if necessary
 3. Always maintain 3 points of contact when climbing
- Instructed all inspectors that stepping from accommodation ladder on a launch or vice versa is prohibited.
- Instructed to only use pilot ladder
- Watch video "safe boarding of vessels" on HSE manual
- Carefully execute your LMRA and use SWA if necessary. Never assume it is safe, check it before proceed If something goes wrong immediately notify your supervisor and the safety officer/ REPORT!
- See PowerPoint presentation "Safe boarding vessel"
- Refresher chapter 8.10 "Embark and Disembark program"
- Use the appropriate checklist (SSF 16) for these types of jobs

But there's more...

Remember that embarking or disembarking via pilot ladder shall only be done:

- When weather conditions permit this and with good clear visibility.
- Always avoid wearing any extra weight when climbing to the vessel. Use of heavy lines to embark/disembark inspector equipment or material.
- Never overload yourself in order to climb ladder
- Always wear all your PPE and assess that all PPE is in good working order. (it is the last line of defense)
- Access must be attended by a crew member and pilot staff in order to provide assistance if needed

Lessons learned

- Take time for Safety! Be safety conscious and follow required protocols and procedures **before** performing your tasks.
- If a hazard is identified, the inspector should notify the crew before proceeding with any job.
- Inform at all times all responsible persons when a critical event occurs.
- There are many tripping hazards in our worksites which inspectors must be aware of in order to take necessary precautions to prevent slips, trips, and falls. Watch your steps, maintain 3 points of contact.
- Inspectors must pay careful attention to where they are stepping and determine safest available options.
- We shall make sure that inspectors sign off at the end of their shift and that we are assured that they are safe back home or at the office, without injury

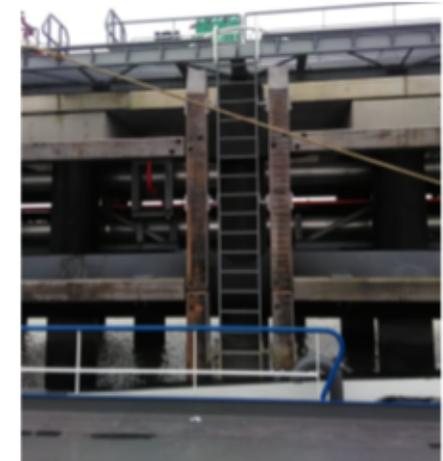
Falling from height

What happened

When disembarking from an inland barge, the jetty operator used the dock's built-in vertical ladder (see picture), instead of using the "lazy" gangway route. While climbing the ladder, the operator was "hit" by the spring due to an unforeseen movement of the barge. The spring hit the operator off the ladder causing a fall 3 to 4 meters onto the railing of the barge.

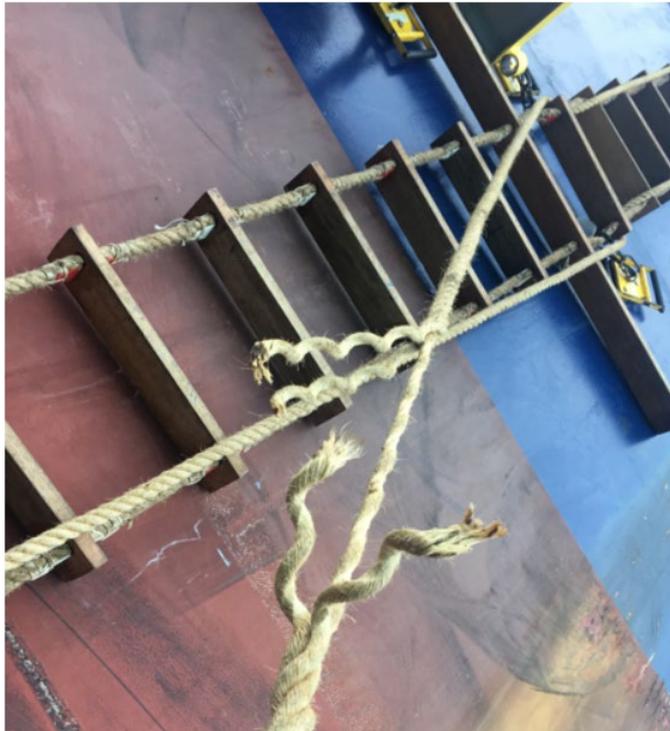
Insights

- Using the built-in vertical ladder was the shortest route
- The operator was an external hired person to support the team during covid period



Examples of lessons learned

In February 2022, the Australian Maritime Safety Authority issued notice 03/2022 on pilot transfer and compliance to SOLAS Chapter V Regulation 23:



Example of an unsafe man rope

Paragraph 10.1 of Part A of the International Safety Management Code (ISM) requires vessel operators establish procedures to ensure a ship is maintained in conformity with the relevant rules and regulations, including pilot transfer arrangements. Such procedures should include regular inspections of the pilot transfer arrangement and storage of such equipment when not in use.

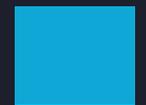
During recent PSC inspections AMSA surveyors have noted pilot ladders which have been constructed with splices in the side ropes.



Pilot ladders constructed like this are considered non-compliant by AMSA. Vessel operators and vessel masters are recommended to check their pilot ladders for splices in side ropes.



Now we will look at
an inspector getting
ready to board



Q & A

open session and
brain storming

- How can we address the issues raised today and make an improvement in the safety of personnel boarding vessels?
 - Is use of SWA widely accepted?
 - Should there be direct communication with the vessel before arrival to layout clear expectations?
 - Reporting of poor vessel access to authorities, OCIMF, Charterers, etc?
 - Should LFI's be issued by TIC to industry bodies, would this be supported?



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**In Loving memory of
Richard "Dick" Taylor**



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