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# OUR SERVICES



## Tankstorage

Wide range storage needs for chemicals/biofuels/lube oils



## Blending

A trusted partner in blending



## Support & Customs

We help with your administrative tasks.



## Accessibility

Accessible via waterway, road or railway



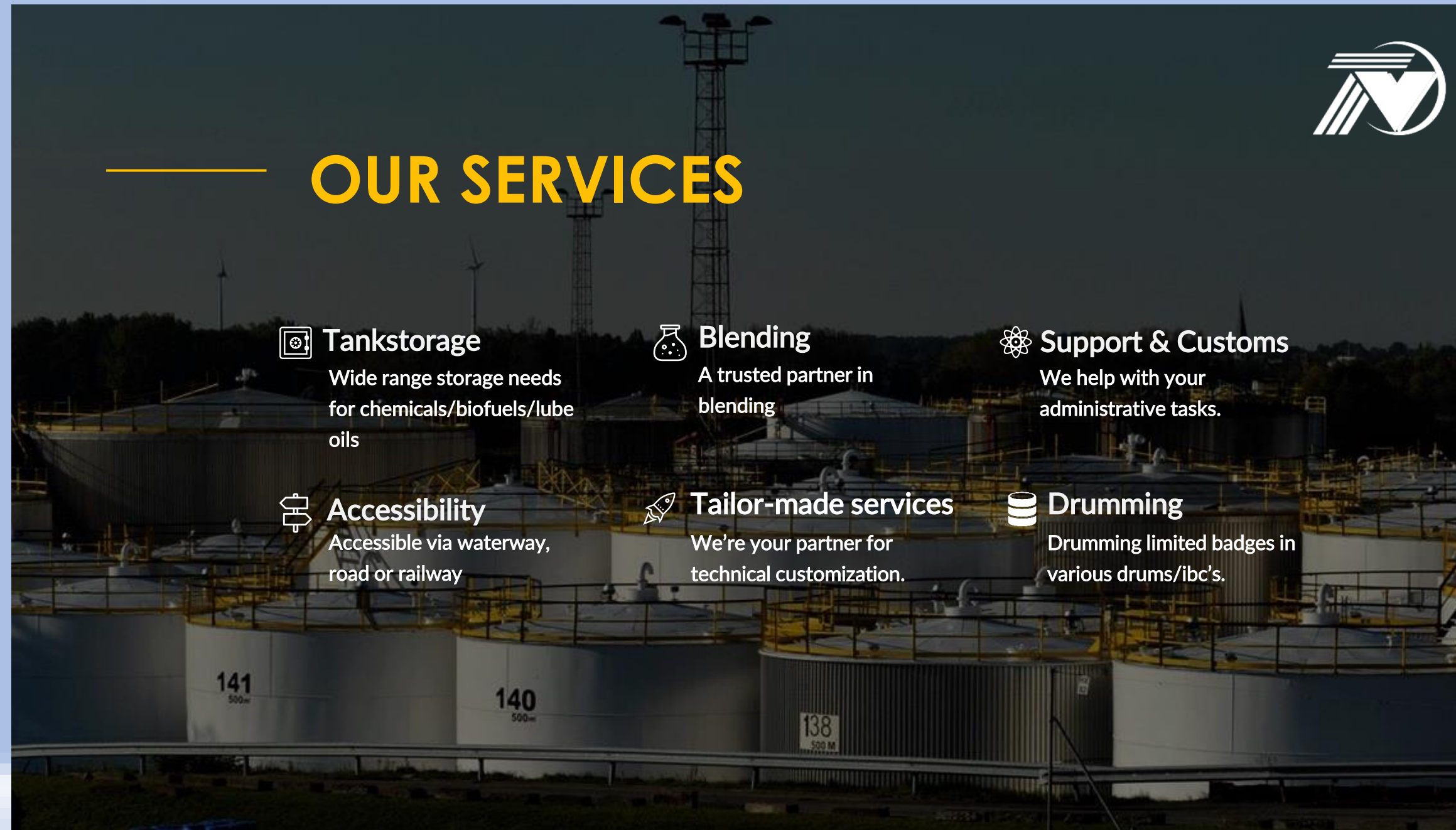
## Tailor-made services

We're your partner for technical customization.



## Drumming

Drumming limited badges in various drums/IBC's.



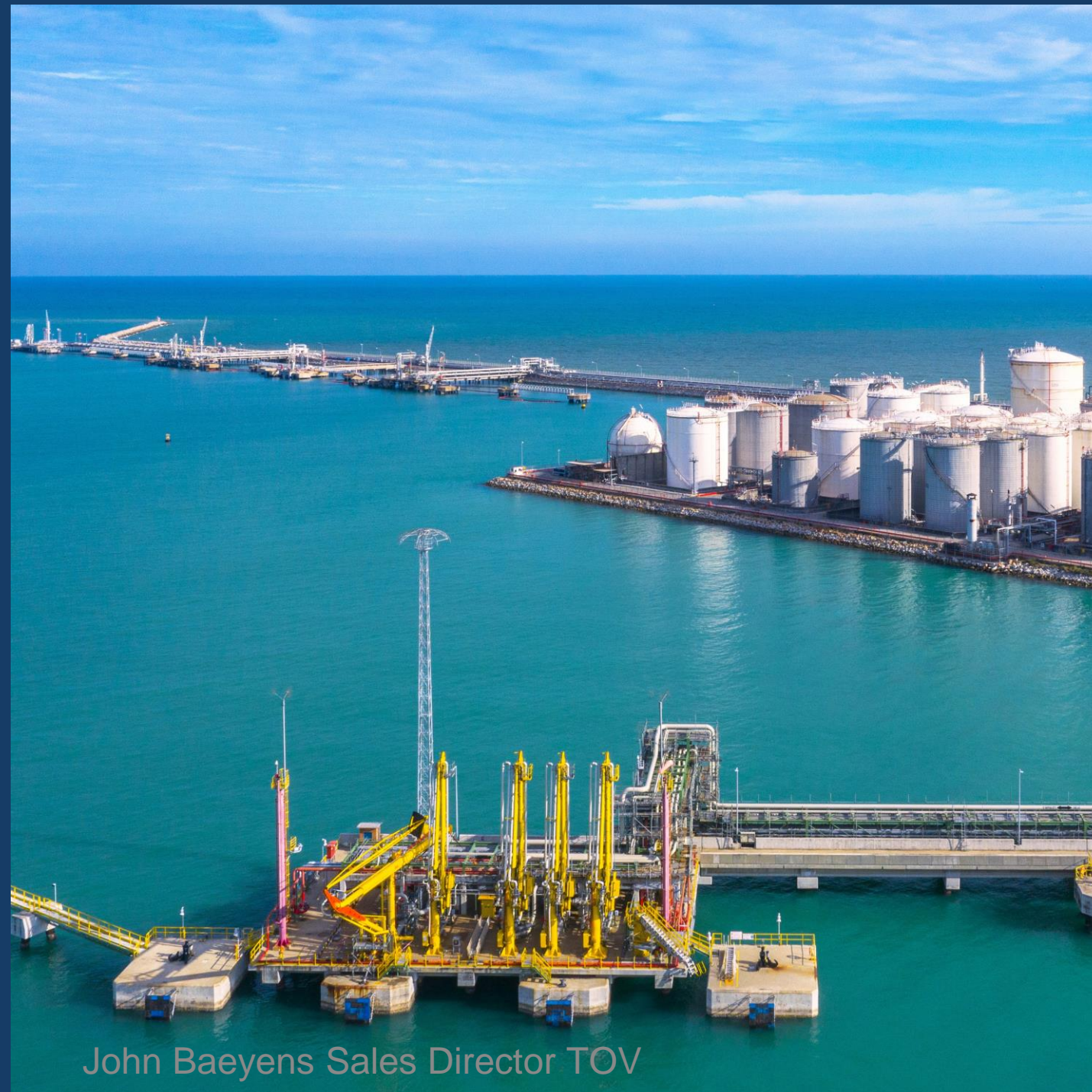




The Hague Centre  
for Strategic Studies

# European tank storage in global value chains Outlook to 2030

Irina Patrahau, Michel Rademaker, Lucia van Geuns, Sarah Ojukwu and Philip Geurts  
April 2022



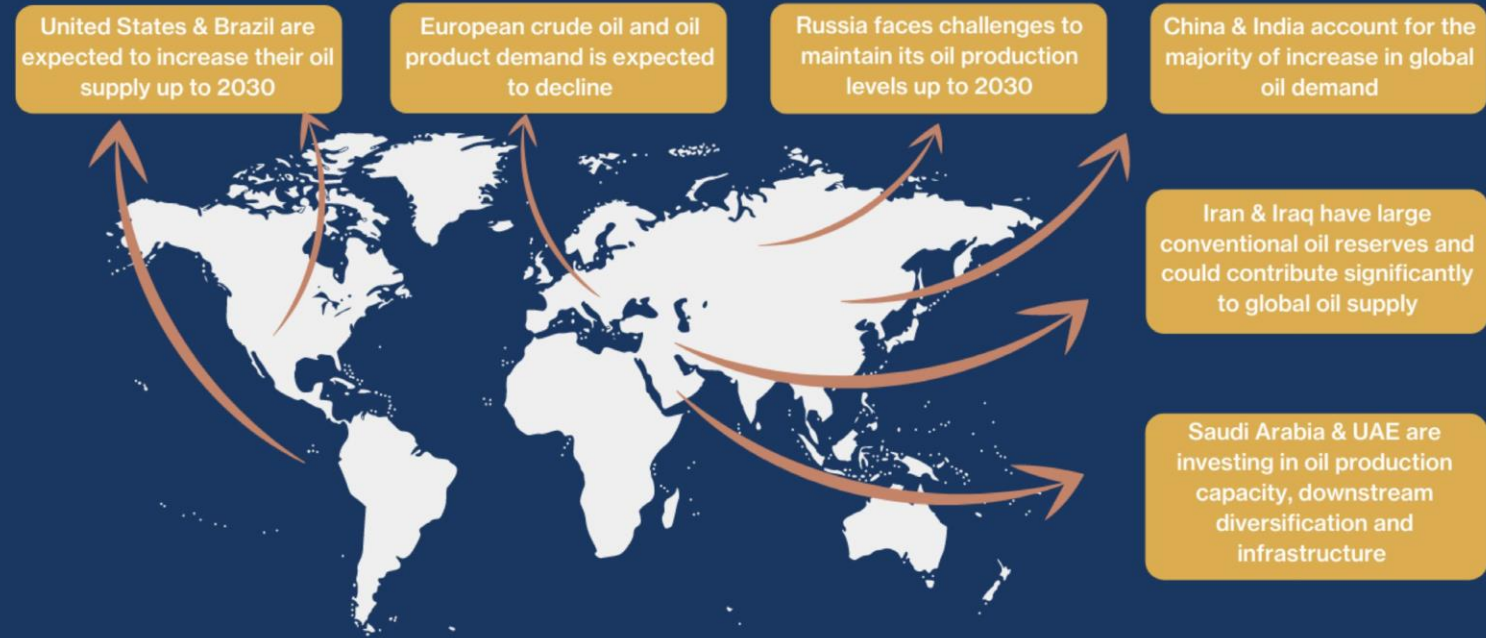
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# European tank storage in global supply chains

Outlook to 2030

## The international oil market up to 2030



## Trends affecting European tank storage



### OPPORTUNITIES

- MORE DIVERSIFICATION:** There is an increasing need of specialized storage services for diversified products.
- EXISTING CAPABILITIES:** Existing knowledge and infrastructure can support the deployment of new fuels.
- INTEGRATION & ENERGY HUBS:** The added value of storage companies can increase by integrating services.
- REFINERY CLOSURES:** The storage sector becomes more important in securing European energy supplies.
- STRATEGIC STORAGE:** The storage sector is key in securing strategic and military supplies, and in supporting the decarbonization of defense.
- NEW COMMODITIES:** Low costs, integrated services and infrastructure will determine the location of new trade hubs.
- FIRST-MOVER ADVANTAGE:** Companies that innovate and act quickly can shape the transition and gain first mover advantages in emerging markets.

### THREATS

- MINDSET:** Strategic vision and willingness to learn and expand expertise are essential.
- PUBLIC OPINION:** Increase transparency to gain a sustainable license to operate.
- LICENSING:** New safety and environmental protocols are still unclear.
- SPACE:** Industry has no space to build new facilities and continue operating existing ones.
- WAITING GAME:** Storage companies must be proactive and play a role in shaping the next decades.

Table 1. Mid-term outlook for tank storage



| Product                  | European storage requirements | European trends   | Global trends   | Implications for European tank storage  |   |
|--------------------------|-------------------------------|---|---|---|---|
|                          |                               |   |   | Opportunity   | Threat  |
| Crude oil                | ↓                             | European demand and production of crude and refined oil products are reduced due to the expected decrease in demand for road transport fuels (gasoline and diesel). | The global production center of crude oil is even more concentrated in the Middle East, with Saudi Arabia and UAE reaping benefits from the lack of investments elsewhere. China becomes the largest refiner in the world and leads petrochemical production.<br>The global consumption center moves toward Asia Pacific and Africa due to increasing living standards and population growth. | Increased need for blending services for transport in the mid-term. As European industry weakens, storage becomes more important for imports and domestic security of supply.       | Trading slowly moves toward larger oil production and consumption centers, outside of Europe. Blending is an intermediate solution before complete electrification. |
| Gasoline                 | ↓                             |   |   |   |   |
| Gasoil/diesel            | ↓                             |   |   |   |   |
| Fuel oil (shipping fuel) | ↔                             | Aviation and shipping will not be fully decarbonized in the mid-term. Blending synthetic with conventional fuels is essential in reducing emissions.                |   | Aviation and shipping continue requiring oil products as fuels, with increasing blending targets.   | Blending is an intermediate solution before complete decarbonization.   |
| Kerosene                 | ↔                             |   |   |   |   |
| Naphtha                  | ↔                             | European chemical and petrochemical industries are struggling to maintain profitability due to international competition from China and the Middle East.            |   | In the mid-term, naphtha continues to be the main feedstock for industry.   | In the long-term, industries will start using alternative types of low carbon feedstock.  |
| LNG                      | ↑                             | Europe is increasingly dependent on LNG imports.  | Qatar and UAE are investing in new infrastructure for the production of natural gas. It is unclear whether Russia remains Europe's main supplier. Consumption moves toward Asia Pacific, with China as the world's largest gas consumer.  | More LNG will be traded toward and via Europe. More storage is required to satisfy demand.  | Permitting and building necessary infrastructure for LNG takes time and is often opposed by the public.   |
| Biofuels                 | ↑                             | The requirements for blending biofuels with conventional ones are expected to increase. Advanced biofuels are preferred.  | The US and Brazil are the largest producers of biofuels, but domestic policy support determines adoption.   | Blending is essential in the decarbonization of transport.  | Blending is an intermediate solution.   |
| Hydrogen                 | ↑                             | European ports are aiming to become hydrogen hubs. Most hydrogen will either be imported via pipelines in a compressed form or by using different energy carriers.  | Large-scale domestic production of green hydrogen is likely in e.g. North Africa and the Middle East, where low-cost solar electricity can be easily generated.   | Proactivity and investments in innovation and pilot projects are beneficial.  | Lack of action could prevent companies from gaining a sustainable license to operate.   |
| Electricity storage      | ↑                             | Large-scale battery storage is still in an early development phase.   | Large-scale battery storage is still in an early development phase.   |   |   |
| Carbon storage           | ↑                             | Carbon storage is still in an early development phase.  | Carbon storage is still in an early development phase.  |   |   |
| Chemicals                | ↑                             | The European chemical industry loses competitive advantage to China and other low-cost producers.   | China, Saudi Arabia, Russia diversify their downstream services and become more active in chemical production.  | Chemical facilities could become important in hydrogen storage through ammonia or methanol. Investing in low-carbon and circular techniques could re-establish European production. | Technological advancement is required for the chemical industry to start using new feedstock and energy sources.  |
| Edible oils              | ↑                             | The European edible oil market is expanding.  | Sustainability concerns make the production of palm or rapeseed oil less desirable.   | No disruptive change is foreseen in the mid-term and long-term.   |   |



|                          |   |   |   |   |   |
|--------------------------|---|---|---|---|---|
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Table 2. Examples of liquids stored by tank storage companies



| Energy products   | Chemicals   | Edible oils   |
|---|---|---|
| <ul style="list-style-type: none"> <li>• Crude oil</li> <li>• Fuel oil</li> <li>• Gasoil/ Diesel</li> <li>• Gasoline</li> <li>• Jet kerosene</li> <li>• Naphtha</li> <li>• Liquid petroleum gas (LPG)</li> <li>• Liquid natural gas (LNG)</li> <li>• Bioethanol</li> <li>• Biodiesel</li> </ul> | <ul style="list-style-type: none"> <li>• Specialty Chemicals</li> <li>• Intermediate Chemicals</li> <li>• Base Chemicals</li> <li>• Specialty Greases</li> <li>• Lube oils</li> </ul> | <ul style="list-style-type: none"> <li>• Soybean oil</li> <li>• Palm oil</li> <li>• Rapeseed oil</li> <li>• Sunflower oil</li> <li>• Specialty Blended oil</li> <li>• Molasses</li> </ul> |



The coming decades will bring important challenges for tank storage. The European Green Deal<sup>13</sup> and Fit for 55 package<sup>14</sup> set clear goals for what Europe should look like in 2030 and up to 2050. Like many other participants in energy supply chains, storage companies must shift their focus from conventional fuels to renewable and low-carbon energy carriers. Technological innovations in hydrogen storage, e-fuels, biofuels or flow batteries in the next 10 to 15 years could create significant opportunities for the tank storage sector to take on an important role in the energy transition.

Broader geopolitical developments present European leaders with dilemmas. Discouraging domestic fossil fuel production but failing to reduce consumption and to introduce realistic alternatives will leave European countries more reliant on Saudi Arabia or the United Arab Emirates (UAE) for energy security of supply. China’s control over entire supply chains for green technologies inhibits Europe’s strategic autonomous goals. The path to carbon neutrality is characterized by the changing pre-existing dependency relations, as Europe will become import dependent on North Africa, South America and the Middle East for hydrogen. If left unaddressed, the uneven level playing field between European and foreign companies could leave EU industrial actors at a great disadvantage.

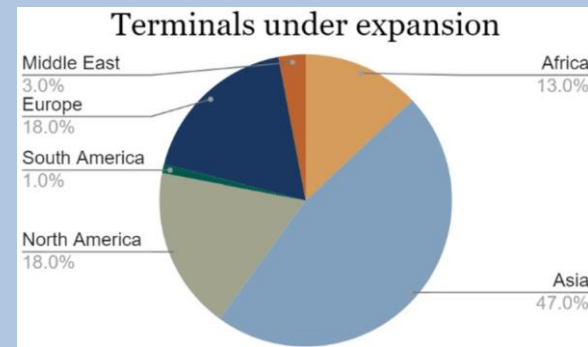
To mitigate such issues, European policymakers should act in close cooperation with tank storage companies and other players along energy supply chains. With the appropriate investments in innovation, resilience and adaptation, tank storage can be a part of the solution to next decades’ transformation. This report provides a mid-term outlook of the future energy system and the associated geopolitical and technological challenges.

<sup>13</sup> “A European Green Deal”, European Commission, [https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal\\_en](https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en).

<sup>14</sup> European Commission, “Fit for 55: Delivering the EU’s 2030 Climate Target on the Way to Climate Neutrality,” COM(2021) 550, <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52021DC0550&from=EN>.

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Figure 4. Terminals under expansion per region  
Data from Insights Global, 2021

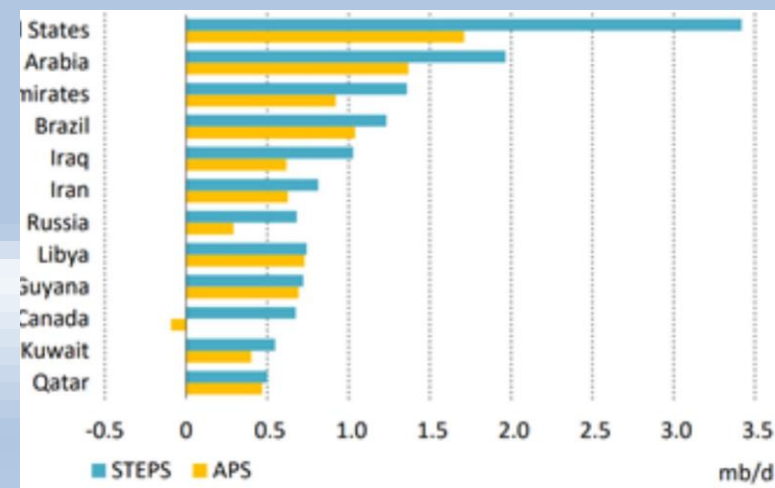


of its second SPR expansion phase.<sup>94</sup> Figure 4 shows that 47% of the global expansion of tank terminals is taking place in Asia. A notable example is Oriental Energy, which increased its storage capacity in Ningbo, China by 500%.<sup>95</sup>

#### 4.1.2. Oil supply: massive investments in the Middle East

The majority of additional oil supply until 2030 is set to come from the Middle East. Iraq, Iran, Saudi Arabia, and the United Arab Emirates (UAE) are four of the six producers expected to add most to their current production - next to the US and Brazil (Figure 5).

Figure 5. Expected changes in oil supply in the Stated Policies Scenario (STEPS) and the Announced Pledges Scenario (APS) of the IEA  
From the World Energy Outlook 2021, 219



<sup>94</sup> Oceana Zhou and Eric Yep, 'Analysis: China Puts Iranian Crude into Strategic Petroleum Reserves in June', SP Global, 30 July 2019, <https://www.spglobal.com/platts/en/market-insights/latest-news/oil/073019-analysis-china-puts-iranian-crude-into-strategic-petroleum-reserves-in-june>.

<sup>95</sup> Jacob van den Berge, "Global Tank Storage Assets" (Insights Global, 2020), 6.



## 6.1. Threats

Five threats are identified as the main concerns of tank storage companies in the mid-term, summarized in [Figure 13](#).

Figure 13. Threats affecting the European tank storage sector up to 2030



### Leadership and personnel mindset

Apart from physical assets and financial aspects like investments and infrastructure, the energy transition requires human capital. The uncertainty dominating the next decades can discourage managers and employees from developing ambitious goals or concrete long-term strategies. While tank storage companies are well versed in the oil industry, new energy products will bring about new challenges in terms of their physical characteristics, handling requirements, and international markets. The know-how, experience, and network of oil companies are useful in supporting change, but the coming decades will be learning curves for all actors involved. It is essential that employees are willing to learn, adapt and change their working habits in order to facilitate change.

### Public opinion

The lack of transparency of the tank storage sector damages the public image of the sector. For years storage companies have provided key services in the energy and manufacturing supply chains, supporting Europe's economic development, industrial production, and securing emergency stocks. Being a service sector, public relations have not been necessary and thus, lacked for many companies. Now, tank storage is associated with the old

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Figure 14. Opportunities for the European tank storage sector up to 2030



### Leveraging existing infrastructure

To a certain extent, storage companies already have some of the needed infrastructure for certain low-carbon energy carriers. On the one hand, existing fossil fuel facilities can be re-used for alternative fuels (specifically e-fuels) with minimal modifications.<sup>211</sup> Even if the tank itself cannot be used for storing an alternative product, it is likely that at least some of the surrounding facilities might be fit for purpose and therefore the required investment to overhaul infrastructure is minimized. On the other hand, many companies already have facilities to store methanol or ammonia, which are two of the main contenders to become dominant hydrogen carriers in the next years. Storage companies have been involved in blending biofuels with road transport or aviation fuels for years already, therefore having not only the infrastructural capacity but also the knowledge to handle such products. It is largely the lack of price competitiveness of new fuels over conventional ones that inhibits demand and prevents storage companies from selling it. The role that storage companies already have in decarbonization should not be underestimated. Rather, they should explain and emphasize the fact that a large part of the infrastructure can rapidly be overhauled to respond to new demand.

<sup>211</sup> Cerny et al., 'Implications of the Energy Transition for the European Storage, Fuel Supply and Distribution Infrastructure', 7.

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