

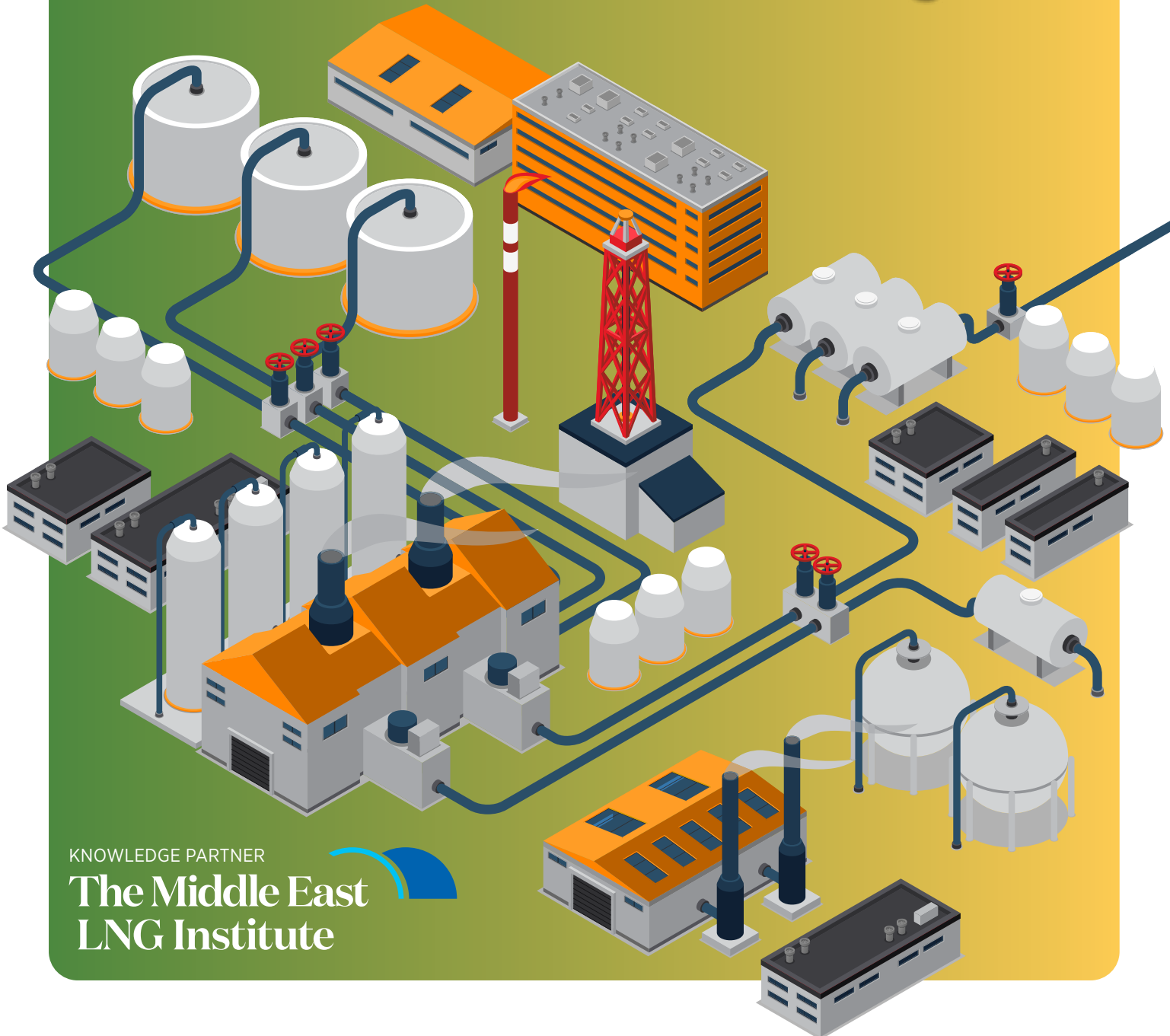


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Industry INSIGHTS

GAS STORAGE – TRANSITION FUEL

*How to Deliver Energy Security of Supply
When the Sun Doesn't Shine at Night?*



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The Middle East
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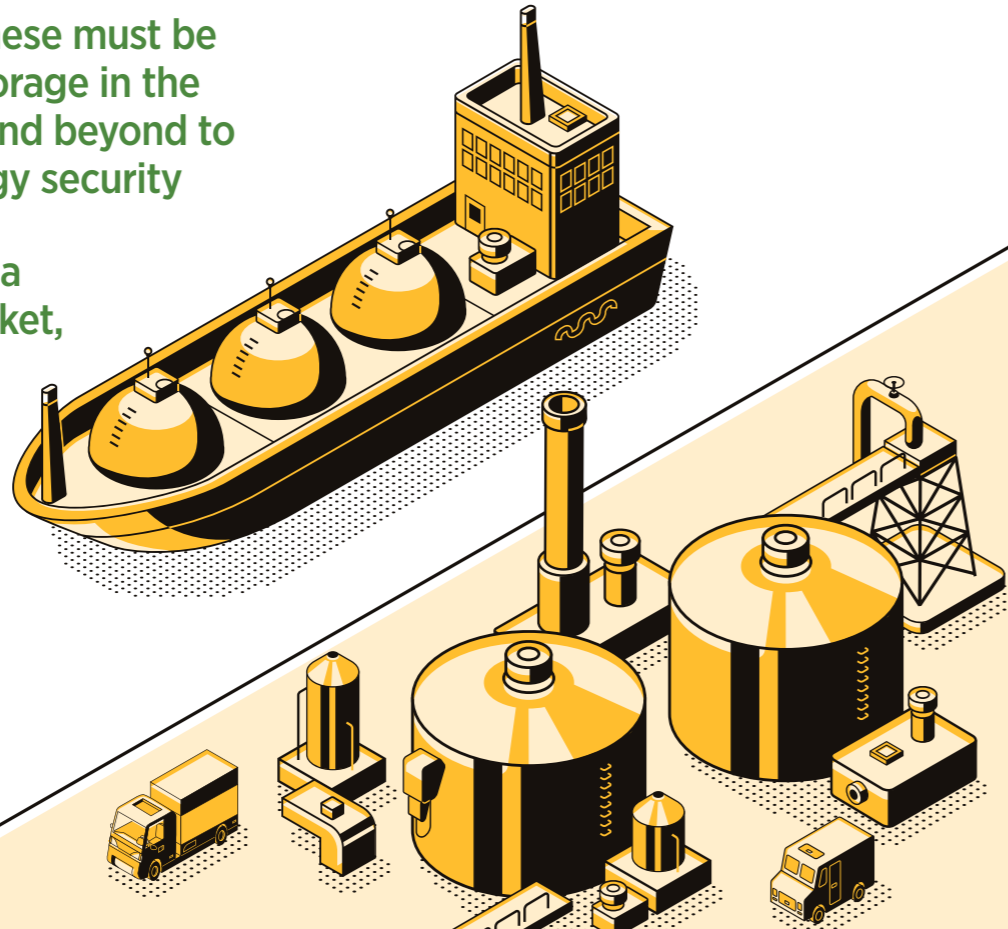


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GAS STORAGE IN THE MIDDLE EAST

What's Next?

Accessible and scalable: these must be the cornerstones of gas storage in the 2020s in the Middle East and beyond to simultaneously meet energy security and environmental goals. It is a tall order for what is a relatively new storage market, especially amid rising energy demand. The energy industry must identify smart, realistic and sustainable solutions – and quickly.



The global energy transition towards a lower carbon world – and greater ambiguity over how the energy basket will look – is gaining pace. In this journey, the face of gas is changing. What was historically considered part of the fossil fuel clan is increasingly viewed as a global energy bridge, between fossil fuels and renewables. Coined the 'greenest fossil fuel', gas is seen as a fundamental building block of the energy basket up to 2050, at least. In the last decade especially, the cousin of the Middle East's favourite child, black gold, has fast moved into the spotlight. Rising energy demand in the Middle East, home to 40% of the world's natural gas reserves that have long been underutilized, means it is expanding its role as both a gas importer and exporter. Natural gas output will rise by 396 billion cubic meters (Bcm) to 1056

#1

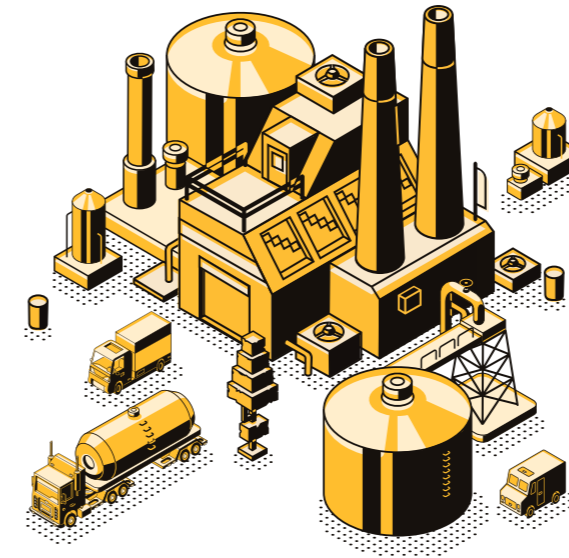
Gas is the world's fastest growing fuel source. It's high time to strategically store it to bolster flexibility, competitiveness and energy security.

2nd

The Middle East will be the world's second largest gas producer up to 2040, representing 20% of global production, detailed BP Outlook.

Bcm by 2040, BP Outlook detailed. And LNG exports will almost double to 227 Bcm, making the region the largest LNG exporter, with gas pipeline exports tripling. The region is also expected to import 36 Bcm of LNG by 2040.

“This question encapsulates the biggest challenge: what is the supply-demand balance for gas storage in the Middle East in the 2020s? Such a simple question, yet no one has the answer – and likely won't for a while.”



SMART CHOICE

Clearly, working out storage solutions to maximize security and flexibility of this coveted asset is critical. The Middle East must keep pace and sharpen its competitive edge in what is a strategic focus worldwide. The global gas and oil storage service market size is poised to grow by \$1.25bn during 2019-2023, according to a report by Technavio, progressing at a compound annual growth rate (CAGR) of over 2% during the forecast period.

The rise of renewables does not mean the fall of fossil fuels. Firstly, it will take decades for renewables to capture a dominant portion of the energy basket. The share of non-fossil fuels in the Middle East's primary energy demand mix increases from 1% in 2017 to just 13% in 2040, half of the world's average (27%), according to BP Outlook. And secondly, renewable energy is intermittent, so demand for gas storage could rise as renewable deployment means the Middle East faces an even larger swing in terms of fluctuations i.e. meeting growing energy demand when the sun is not shining, and the wind is not blowing. In the UAE alone, the non-industrial

Snapshot: Middle East and India

India's current motivation for gas storage is largely price arbitrage between seasons and competitiveness in the international market. That need will evolve into using gas storage as a balancing aid, as the number of renewable energy projects increases. Gas currently accounts for approximately 6% of the country's energy basket, with plans to increase it to 15%. As a price sensitive market, there can be hesitation when it comes to investing in gas storage assets in India. Still, infrastructure builds are underway, potentially including cross country pipelines that could reach 25,000km – half the circumference of the earth – by 2022. This major step towards gas security must be supported by more gas storage facilities in the 2020s, either at home or in neighboring nations. India's gas consumption hubs lie largely in its western regions, which is nearby, in maritime terms, to Arabia. Strategically, expanding gas storage on the eastern side of the Middle Eastern continent could help quickly cater to a major demand market. India will be home to the world's biggest population from 2030, according to the UN, of 1.5bn people.

60%

In Europe, gas storage provided 60% of the daily peak demand the very cold winter days two years ago. This illustrates on efficiency and crucially, the security, of an established storage system.

2020

Sharjah is developing a facility with the capacity to receive and release gas at a rate of 200mn cfd, with limited functionality of the reservoir by late-2020 and initial flow rates at around 50mn cfd.

33%

One third of the water produced from seawater desalination in the Middle East today is from membrane-based desalination, which relies heavily on electricity produced using natural gas, according to the International Energy Agency (IEA). With the Middle East and North Africa (MENA) being the world's most water-stressed region, gas storage requirements will also increasingly need to support desalination.

“Liberalized markets and pricing mechanisms are not prerequisites for establishing a stronger gas storage ecosystem in the Middle East. But they certainly don't do any harm. They will be a natural stepping stone in the evolution of gas storage in the Middle East – likely in the 2020s.”

demand during the summer months is triple the winter demand, triggering huge swings on supply-demand dynamics.

GETTING ORGANIZED

Liberalized markets and pricing mechanisms are not prerequisites for establishing a stronger gas storage ecosystem in the Middle East. In Europe, there have been liberalized markets for roughly two decades; yet the first gas storage facilities were built five decades ago. Equally, there's little doubt that both – liberalized markets and pricing mechanisms – would support the momentum of growth in the wider gas ecosystem and be highly appealing for some investors eyeing gas storage projects.

KEY TAKEAWAYS:

- **PROFIT MATTERS:** Gas storage must be a moneymaking business; not subsidized by the wider value chain, which already faces strain.
- **EVOLVE MARKET STRUCTURE:** More gas storage could encourage market liberalization and price benchmarks.
- **GEOGRAPHY COUNTS:** One rule for gas storage does not suit all. The strategic and commercial values will differ worldwide, and the industry must educate investors on their needs, while investors must stay open-minded. Proximity and connectivity are very important.
- **DEFINE VALUE STREAMS:** There's strategic value and there's commercial value; decision-makers must understand the difference. This will become clearer in the 2020s as supply-demand needs evolve in the global energy transition.
- **BOLSTER INFRASTRUCTURE:** Gas storage must enable supplies to be easily and quickly accessible to demand centers, which includes revisiting conversations around building more regional pipelines. This also extends to thinking more innovatively to broaden gas storage horizons, such as leveraging salt caverns. ■

**This content was harvested from a roundtable discussion of more than 40 high-level energy stakeholders in the Middle East on the sidelines of ADIPEC in Abu Dhabi, UAE, in mid-November. The event, organized by Gulf Intelligence, was held under the Chatham House Rule. Any further use of this material must cite this document.*

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