مؤسسة نفط الشارقة الوطنية
SNOC

ADIPEC ROUNDTABLE INSIGHTS REPORT 2026

FROM SUPPLY TO SECURITY: How Can Gas Storage Strengthen Energy Resilience Under Pressure?



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FOREWORD

FROM SUPPLY TO SECURITY: Building Resilience Through Gas Storage

Khamis Al Mazrouei
Chief Executive Officer, Sharjah National Oil Corporation (SNOC)



Energy resilience depends on the decisions we make before disruption occurs. At SNOC, our responsibility is to provide reliable gas supply, supporting the communities, industries and essential services that depend on us.

Our investment in gas storage reflects that commitment. What began as a means of balancing seasonal demand has developed into an important source of security and flexibility. Through a gradual approach, we have built capabilities that help us respond when normal supply arrangements come under pressure.

The changing energy landscape requires us to think beyond production alone. Reliable supply also depends on access, connectivity and the ability to respond quickly when circumstances change. Storage must therefore form part of a broader system that combines diverse supply options with dependable infrastructure.

As the electricity mix evolves, gas storage can help manage fluctuations in demand while supporting the integration of other energy sources. Its value lies both in the reserves available and in our ability to deliver them when needed.

For Sharjah and the wider UAE, the priority is to build on this foundation through sustained investment and greater integration. A resilient energy system must provide practical options that protect essential services, sustain industrial activity and support economic growth. ■













From Supply to Security: Making Gas Storage Deliver Under Pressure

Gas storage can strengthen energy resilience by giving countries time to respond when supply is interrupted. But its effectiveness depends on how quickly gas can be delivered, who can access it and whether the surrounding infrastructure keeps working. This was the central message emerging from the SNOC roundtable: reserves become valuable when they can sustain electricity, water and industrial production under pressure.

For a region accustomed to producing and exporting gas, the discussion reflected a shift in thinking. Seasonal balancing remains important, particularly where summer cooling demand rises sharply. Recent disruptions, however, have widened the purpose of storage. A facility developed to manage differences between winter and summer consumption may now be expected to protect customers during an interruption lasting days, weeks or longer.

Those requirements demand different decisions. Covering maintenance or a brief pipeline outage is a more manageable task than replacing a major source of supply for several months. Before committing capital, governments and operators must define the risks they intend to cover. Otherwise, a substantial storage volume can create confidence without answering the practical question of how much demand it can support, and for how long.

Sharjah's experience offers a practical starting point. The roundtable described how SNOC developed storage incrementally in a depleted gas reservoir, using existing equipment and gradually building the gas inventory needed to make the facility operational. That approach allowed a project previously challenged by its economics to advance over several years. It also demonstrated why storage planning should begin before an emergency makes the need unavoidable.

The investment case must recognize the economic activity that reliable gas supply protects. Seasonal price differences and trading opportunities can help support commercial returns. Yet these measures alone miss the value of keeping factories operating, households supplied and essential services available. A realistic assessment should include the consequences of disruption alongside the costs of construction, stored gas and continuing operations.

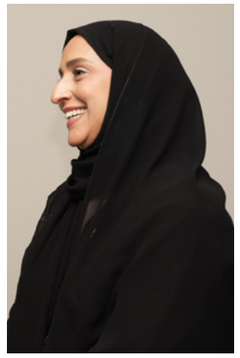
This does not remove the need for commercial discipline. Storage requires suitable geology, sufficient investment and a credible operating model. The roundtable highlighted the importance of matching development to local conditions and expanding progressively where possible. Public and private participants should examine how responsibilities and benefits can be shared so that essential security capacity has a sustainable financial foundation.

Connectivity is equally important. A reserve offers limited protection if gas cannot reach customers beyond a narrow network. Greater cooperation between emirates and across the Gulf could allow infrastructure and stored supplies to serve a wider market. Existing arrangements provide a foundation, but participants identified restrictions on pipeline access and fragmented commercial conditions as obstacles to more efficient use of the system.

Addressing those barriers requires agreements on access, pricing, standards and emergency cooperation. Physical pipelines are only part of the answer. Countries and operators also need confidence that the arrangements governing them will hold when supply becomes scarce. The political challenges surrounding international pipelines underline the importance of building that trust alongside the infrastructure.













The changing electricity mix strengthens the case for flexibility. Nuclear and solar generation diversify supply, while gas remains important for meeting fluctuations in demand. Managing those swings entirely through production can be inefficient. Storage, flexible generation and batteries can work together, with each serving different operating needs. Planning them together would better reflect how electricity systems are evolving.

Floating storage and regasification units can add useful emergency options, especially where import infrastructure must be established quickly. Their inventories, however, provide relatively short cover and depend on continuing LNG deliveries. They should therefore be assessed against the disruption being addressed. An option suited to a brief interruption may offer little protection when shipping itself is constrained for an extended period.

Producers also have a stake in storage beyond their own borders. Supporting reserves in customer markets could help maintain reliable deliveries and strengthen long-term commercial relationships. Domestically, storage can help preserve production continuity when export flows are interrupted. These possibilities deserve consideration, particularly where importing countries face financing constraints, although developing and filling facilities remains a substantial undertaking.

Ultimately, resilience depends on performance. Stored volume must be supported by dependable wells, compressors, pipelines and safety systems. Operators need to know that gas can be withdrawn at the required rate when demand rises or another supply source fails. Maintenance, inspection and asset integrity therefore belong at the center of any storage strategy.

The answer to the roundtable's critical question is to build storage as part of a connected, flexible energy system. Define the disruption, develop suitable reserves, value the services they protect and ensure customers can access them. That requires decisions today whose value extends beyond today's market. Sharjah's experience shows the importance of patient investment. The wider regional task is to extend that preparedness through cooperation, so that gas storage provides usable options when pressure arrives and dependable support for essential economic activity. ■

Gas Storage is Only as Secure as Its Accessibility

Dr. Valentina Dedi
Associate Director – Economics, Consulting, KBR

Gas storage can strengthen energy resilience, but we first need to define the pressure we are preparing to withstand. An interruption to shipping, damage to infrastructure and rising domestic demand present different challenges. Each requires a different assessment of what storage can deliver.

Recent experience has highlighted the importance of access. Having gas available, producing it or holding it in storage does not automatically ensure that it can reach consumers. Critical infrastructure can itself become a target, including the facilities intended to provide protection against disruption.

The investment question is equally important. Building storage is only one part of the cost. Maintaining it, deciding how much gas to hold and determining how long those reserves should last all require careful consideration. A reserve designed for a brief interruption serves a different purpose from one expected to cover months of disruption.

We must also consider future demand. Ambitions for industrial development, data centers and hydrogen could place different pressures on regional energy systems. Planning for that growth requires a broader perspective than responding to the latest crisis.

Regional cooperation offers possibilities, but comparisons with Europe need context. There are lessons to learn, alongside differences that should shape local decisions. Greater clarity about existing storage volumes would also help inform the discussion.



Ultimately, resilience means retaining options when circumstances change. Storage should be assessed within that wider objective, with attention to access, duration, cost and the demand it serves. The priority is ensuring those options remain available when they are needed most. ■

Soundings

RENEWABLES EXPAND GAS STORAGE'S ROLE

"Renewable electricity generation adds another role for gas storage: balancing the differences between day and night for solar power, and between periods with and without wind. Our model indicates that more renewables create a need for more gas and more storage. In Europe, where domestic gas production cannot meet requirements, imports and storage remain important parts of the system supporting those changing patterns of electricity generation across the wider market."

Reinhard Oswald
Senior Vice President Energy UAE/KRI, OMV



Top 9 Insights

Strengthening Gas Security Across Production, Trade & Consumption



Ali Houjeij
Managing Director & Partner, BCG

1 LNG Gas Rerouting Constraints
LNG depends on liquefaction facilities, suitable vessels and receiving terminals. This infrastructure dependence limits the options for redirecting supply when established export routes are disrupted.

2 Recovery Extends Beyond Repairs
Restoring LNG flows requires more than repairing production facilities. Safe shipping routes, insurance availability and shipowners' confidence must also recover, potentially prolonging disruption.

3 Storage Protects Production Continuity
Domestic storage can help producers maintain operations when exports are interrupted. Avoiding shutdowns matters because large gas facilities cannot be switched off and restarted easily.

4 Consumers Need Supply Buffers
Stored gas gives consumers protection when external deliveries are interrupted. It complements diversified supply sources by providing access to gas when supply chains cannot deliver as planned.

5 Exports and Reserves Can Coexist
Ali highlighted the United States as an example of expanding LNG exports while maintaining domestic gas inventories. Export growth need not come at the expense of domestic supply preparedness.

6 Gas Scarcity Can Favor Coal
High LNG prices and unreliable access could encourage some countries to increase coal use. The economics depend on existing infrastructure and the cost of obtaining alternative fuels.

7 Build on GCC Interconnection
The GCC electricity interconnector already supports emergency supply sharing. Its potential could extend further into electricity trading and coordinated use of regional capacity.

8 Value Security in Investment
Storage economics should include the value of protecting industrial production, household energy and water supply. Price arbitrage alone does not capture the economic benefits of maintaining essential services.

9 Floating Solutions Have Limits
Floating storage and regasification units offer temporary emergency support, but involve substantial costs and require regular LNG replenishment. Their limited inventories make them unsuitable for prolonged supply interruptions. ■

Soundings

STORAGE PROTECTS INDUSTRIES WITHOUT ALTERNATIVES

"Gas storage supports the power and water supplies we need, but it also protects industries that do not have alternatives. Glass manufacturers and other industrial users cannot simply switch fuels when gas becomes unavailable. Our arrangements with SNOC put us in a positive position before the conflict. Having that backup was critical, and the expansion of storage provides additional value for customers whose operations depend on continued access to gas."



Kim Bendfeld
Chief Commercial Officer, RAKGAS



ENERGY RESILIENCE REQUIRES INVESTMENT

"Energy resilience requires us to make investment decisions in a world where uncertainty is becoming harder to manage. For an industry built on substantial capital commitments and long planning horizons, frequent changes in priorities create challenges. Over recent years, the conversation has moved between sustainability, renewables, hydrogen and energy security. Each matters. But investment strategies need to account for their relationship and the continuing demand for different energy sources. Abrupt shifts can leave companies having to rebuild capabilities and reconsider decisions made only a few years earlier."

Dr. Waddah S. Ghanem Al Hashmi
Honorary Chairman of the Energy Institute - Middle East and Senior Director of Logistics and Marine Assurance, ENOC

Soundings

DIVERSE OPTIONS STRENGTHEN ENERGY RESILIENCE

"Sharjah did not wait for war to recognize the importance of resilience. We have focused on it for years because diverse options are always necessary. Whether there is too much gas or too little, gas storage, diverse energy supplies and power connections provide alternatives. Those options support both resilience and economics. When disruption arrives at the wrong moment, being without an alternative can cost far more than preparing for it in advance."

Hatem Al Mosa
Secretary General, Sharjah Energy Council



Top 9 Insights

Gas Storage's Growing Role in Regional Energy Security

Robin Mills
CEO, Qamar Energy



1 Storage Becomes Strategic
Gas storage is evolving from a commercial tool for seasonal balancing into a strategic reserve. Regional disruptions have highlighted its importance in maintaining supply when normal production or imports are interrupted.

2 Disruption Duration Determines Requirements
Covering a brief technical outage requires a different storage strategy from replacing supply for months. Governments must define the disruptions they want to withstand before deciding capacity and investment.

3 Routine Interruptions Matter Too
Storage can protect electricity supply during maintenance and pipeline connections, alongside emergencies. Without a buffer, even routine infrastructure work can interrupt power to consumers.

4 Gas Remains Essential
Nuclear and solar are changing gas's role rather than removing its importance. Gas increasingly provides flexible generation, meeting demand swings that other sources cannot fully accommodate.

5 Production Flexibility Has Limits
Constantly adjusting gas production to match demand is inefficient, particularly for unconventional resources. Storage allows more consistent production while helping the system respond to changing consumption.

6 Suppliers Could Finance Storage
Suppliers such as Qatar could explore financing storage in customer markets. This could strengthen delivery reliability, make their gas more attractive and support long-term customer relationships.

7 Regional Connectivity Remains Underdeveloped
The Gulf's substantial gas resources have not produced a pipeline network comparable to Europe's. Greater connectivity requires progress on political cooperation, regulation, technical standards and commercial pricing.

8 Cross-Border Pipelines Require Trust
Multi-country pipelines face political challenges that increase with each border. Infrastructure plans depend on durable relationships between suppliers, transit countries and customers, alongside technical and commercial feasibility.

9 Floating Storage Offers Limited Cover
Floating LNG terminals provide a relatively quick import option, but their storage covers days to a few weeks. They cannot provide the prolonged protection available from larger underground reserves. ■

TOP 10 Recommendations

Strengthening Gas Storage & Regional Energy Resilience



1 Treat Storage as Strategic Infrastructure

Embed gas storage in national energy security planning alongside its commercial role in balancing seasonal demand. Assess how reserves can sustain essential services during supply interruptions, and establish a development pathway before a crisis occurs. Producing countries should recognize that substantial domestic resources do not eliminate the need for preparedness.

2 Strengthen Regional Energy Connectivity

Connect storage facilities more effectively with gas pipelines and electricity networks across emirates and neighboring countries. Build on existing cooperation to share available supply and capacity. Greater integration can extend the benefits of individual facilities, support customers beyond their immediate markets and improve resilience across the wider regional energy system.

3 Improve Infrastructure Access and Rules

Develop clearer arrangements for access to pipelines, transmission networks and storage facilities. Address fragmented operating conditions through compatible standards, transparent transport charges and workable commercial agreements. Infrastructure owners and regulators should enable more flexible movements of energy so that existing assets can support a broader range of users during disruptions.

4 Value the Economics of Security

Include the economic value of uninterrupted electricity, water and industrial production when assessing storage investments. Seasonal trading margins alone cannot capture the benefits of avoiding disruption. Evaluate security benefits alongside construction costs, operating expenses and gas inventory requirements, while maintaining commercial discipline and a credible financial model for each project.

5 Develop Storage in Practical Stages

Assess suitable depleted reservoirs and available equipment before committing to large developments. Where conditions permit, begin with manageable investment and expand progressively as inventory, demand and operational capability grow. Sharjah's experience demonstrates the value of a gradual approach that recognizes geological requirements, financing constraints and the time needed for development.

6 Match Reserves to Disruption Scenarios

Define whether storage must cover routine maintenance, brief outages, seasonal peaks or prolonged supply losses. Set capacity and withdrawal requirements accordingly, considering the customers and services that depend on gas. Planning should distinguish stored volume from usable supply and recognize that longer disruptions require different investment and infrastructure decisions altogether.

7 Plan Gas and Electricity Together

Coordinate gas storage development with nuclear generation, solar expansion, batteries and flexible power plants. Assess seasonal demand and changing electricity generation patterns together. Storage should help gas provide reliable flexibility without forcing inefficient production swings, while complementary technologies address different timescales and operating requirements across the wider national energy system.

8 Preserve Multiple Supply Options

Maintain diverse supply sources, import routes, storage arrangements and energy connections even when domestic production grows. Net exporter status should not remove access to alternative supplies. Evaluate floating LNG facilities as supplementary emergency options, recognizing their limited inventories, continuing delivery requirements and different role from longer duration underground gas storage.

9 Make Deliverability and Reliability Central

Assess storage security through withdrawal capability, operational flexibility and asset reliability alongside total capacity. Maintain wells, compressors, pipelines and safety systems throughout their operating lives. Strengthen cooperation with testing, inspection and certification providers so that technical performance supports dependable gas delivery when customers face peak demand or unexpected supply interruptions.

10 Build Partnerships for Sustainable Investment

Bring governments, operators, suppliers, customers and investors together to develop workable storage financing and operating arrangements. Explore public and private participation and supplier involvement in customer markets. Align investment with actual demand, local conditions and security needs, recognizing that developing and filling underground storage requires sustained commitment over many years. ■


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