GI NOC SERIES

UAE GAS MARKET 2025

"from many to one..."

OVERVIEW

The United Arab Emirates is accelerating the modernization and integration of its natural gas system as domestic demand continues to rise, particularly across the Northern Emirates. Gas remains the UAE's dominant fuel for power generation, desalination, and industry, with national consumption projected to reach around 7.8 bcf/d in 2025. Rapid population growth, industrial expansion, and peak summer electricity loads are driving most of this increase. The Northern Emirates—Sharjah, Ras Al Khaimah, Fujairah, Ajman, and Umm Al Quwain—now form the fastest-growing demand corridor. Their expanding industrial zones, free-trade areas, and manufacturing clusters require reliable, cost-competitive gas supplies. This shift has positioned the region at the centre of the UAE's consolidation strategy.

To meet rising demand, the UAE is transitioning from fragmented emirate-level networks toward a fully integrated national gas grid. Key enablers include expanded inter-emirate pipeline links, such as the proposed RAKGAS Northern Emirates Gas Pipeline, and enhanced capacity along the Ruwais–Taweelah–Fujairah corridor. Sharjah's Moveyeid underground storage facility, now operating at increased capacity, has become the UAE's first strategic gas reserve and a major balancing asset for the entire Northern region. Commercial integration is also strengthening. Recent agreements—such as the 2025 Emirates Gas–UAQ Free Trade Zone MoU—demonstrate the shift toward unified, regulated gas services for industrial users. As ADNOC boosts domestic gas output and advances new LNG export capacity, the UAE is better positioned to optimise internal supply while reducing reliance on costly imports.

By 2025, the UAE's gas ecosystem is evolving into a more resilient, efficient, and interconnected market, with the Northern Emirates serving as both key demand centres and critical infrastructure hubs. This consolidation enhances energy security, supports industrial competitiveness, and strengthens the UAE's long-term role as a regional and global gas supplier.

Natural Gas Production & Economic Impact

The UAE's upstream gas strategy is anchored in Abu Dhabi's large conventional and sour-gas reservoirs, supported by targeted developments in the Northern Emirates.

ADNOC continues to expand production from mega-projects such as Shah, Hail & Ghasha and the wider unconventionals portfolio. These projects are designed to lift the UAE towards gas self-sufficiency and free up molecules for export. ADNOC Gas' Record Growth and Decarbonization (RGD) project, for which final investment decision was taken in 2025, aims to debottleneck existing assets and unlock new gas streams between 2025 and 2029. This supports both domestic demand growth and ADNOC's strategy of doubling LNG production capacity to around 15 mmtpa over the second half of the decade.

In parallel, the Northern Emirates have stepped up their own upstream contribution. Sharjah announced in late 2025 the discovery of its fifth onshore gas and condensate field at Al Hadiba, following rapid appraisal of the Hedebah-02 well. The find underlines SNOC's role as an active explorer and supports Sharjah's goal of greater gas self-reliance. Ras Al Khaimah, through RAKGAS and international partners, continues exploration onshore and offshore, building on earlier discoveries such as Block 5. Offshore Umm Al Quwain also remains an important gas-producing area, with decades of output underpinning supply into the northern grid.

Collectively, these developments strengthen the UAE's upstream base and provide the volumes required to feed a more integrated national gas grid in which the Northern Emirates are fully embedded.

Domestic Gas Consumption & Demand Centres

Demand growth is particularly pronounced in the Northern Emirates. Sharjah hosts one of the UAE's most industrialised clusters with large cement, ceramics, petrochemical and logistics hubs. Ras Al Khaimah and Fujairah have built strong positions in energy-intensive building materials and port-related industries, while Umm Al Quwain and Ajman are actively promoting industrial and free-zone development.

Gas demand in the UAE is dominated by power and water, followed by industry:

- Power and Desalination – Gas-fired plants supply the bulk of electricity across the federation and fuel a large share of desalination capacity. Even as solar, nuclear and other renewables grow, combined-cycle gas turbines remain the marginal source of generation, especially during peak summer demand.

- Industry – Aluminium smelting, steel, petrochemicals, cement and glass manufacturing rely heavily on competitively priced gas to maintain export competitiveness and supply rapidly growing local markets.

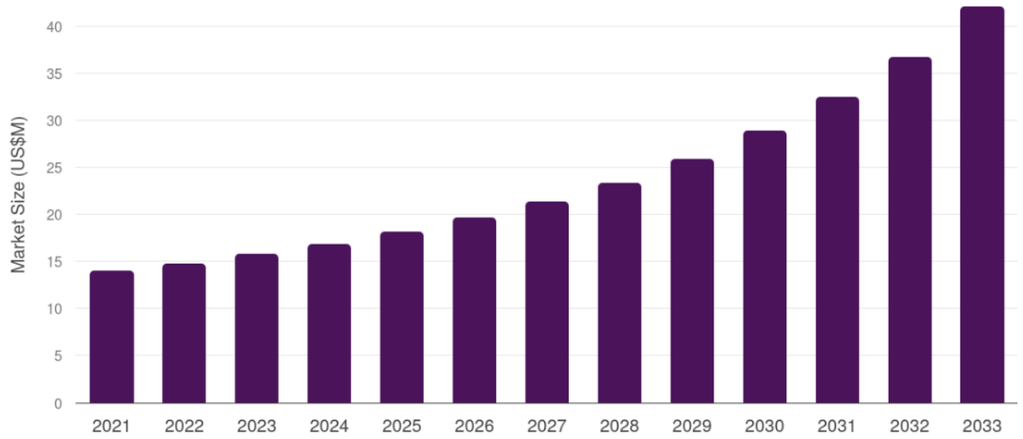
- Other Uses – Gas also supports commercial and residential demand, district cooling and a range of small and medium-sized enterprises.

From a gas-market perspective, this translates into:

- Rising base-load demand for power and desalination in the Northern Emirates, increasing their share of the federal grid's gas burn.

- Growing industrial offtake linked to new free zones, ports and logistics-adjacent facilities.

UAE fixed commercial gas detection market, 2021-2033



- Higher sensitivity to seasonal swings – particularly in Sharjah and UAQ – which motivates investment in flexible storage and pipeline capacity.

Without consolidation, this growth would have required each emirate to secure its own imports or contracts. Instead, the UAE is moving towards a more coherent, interconnected gas system in which supply, storage and transport can be optimised across the federation.

Consolidation in the Northern Emirates

The most tangible evidence of consolidation is found in the Northern Emirates themselves, where multiple projects are knitting together previously fragmented assets into a regional gas hub.

Sharjah as a Regional Gas Hub

SNOC operates the Sajaa assets in Sharjah – a cluster of onshore gas fields, a large processing complex, LPG and condensate storage terminals, and associated marine loading facilities. Over the past decade, Sajaa has evolved from a local production centre into a key junction for the Northern Emirates' gas network. A cornerstone of this evolution is SNOC's underground gas storage programme. The Moveyeid field, in operation as a storage site since 2017, saw completion of its second-phase expansion in 2024. With this milestone, SNOC entered full-scale storage operations, injecting surplus gas during low-demand winter months and withdrawing it during summer peaks. The facility now functions as a strategic energy-security asset for Sharjah and, increasingly, for the wider UAE.

By combining processing, storage, LPG logistics and pipeline interconnections at Sajaa, Sharjah is positioning itself as the balancing point for Northern Emirates gas flows. This reduces the need for each emirate to maintain its own high-cost reserve margins and enables a system-wide approach to reliability.

ADNOC GAS PIPELINE NETWORK

ADNOC operates an extensive pipeline network to distribute gas throughout the UAE. ADNOC's extensive pipeline network enables delivery of sales gas to customers across Abu Dhabi, Dubai and the Northern Emirates, meeting over 60% of UAE gas requirements.

Pipelines provide the safest, most efficient and environmentally friendly means of transporting large quantities of gas. The UAE's initial gas pipeline network system was designed and installed by ADNOC in 1978.

Since that time, ADNOC has invested to improve and extend these pipelines to all parts of the UAE.

Today, the +3,260km network is a vital component of the nation's core energy infrastructure – acting as a gas super-highway for the UAE – ensuring uninterrupted gas supply 24 hours a day, 365 days a year for power generation and water desalination, and direct to industrial customers that lie at the heart of the UAE's economic growth story.

In 2018, the Taweelah Gas Compression Plant was commissioned to ensure uninterrupted gas supplies to major Abu Dhabi industries and the Northern Emirates, and to support future growth. The project was completed under an extremely ambitious schedule of 16 months and without a single lost-time injury throughout the 6.8 million-man hours required to build the facility.

The network will be further developed to increase connectivity, particularly to the Northern Emirates. ■

RAKGAS Northern Emirates Pipeline

Pipeline consolidation is advancing in parallel. RAKGAS has initiated development of the Northern Emirates Gas Pipeline, a proposed 140 km multi-stage line linking the existing Taweelah-Fujairah Pipeline to Ras Al Khaimah, with a key connection into the Sajaa gas storage hub in Sharjah. Front-end engineering and design (FEED) work was awarded in late 2023, with the project framed as a strategic enabler for reliable gas deliveries into Ras Al Khaimah and neighbouring emirates.

Once operational, the pipeline will:

• Create a direct high-capacity corridor from Abu Dhabi's gas system into Ras Al Khaimah, reducing the emirate's dependence on smaller legacy lines and diesel back-up.

• Integrate RAK industrial zones and power plants into the broader UAE gas grid, with Sajaa storage providing swing supply and contingency cover.

• Offer a platform for future tie-ins from offshore and onshore discoveries in RAK and neighbouring emirates.

The project illustrates how consolidation is shifting the Northern Emirates away from bilateral, emirate-by-emirate supply deals toward a shared network model.

Umm Al Quwain and Free-Zone Integration

Umm Al Quwain (UAQ) has long hosted an offshore gas field that feeds into the northern system. In 2025, the emirate's role in downstream gas distribution was reinforced when Emirates Gas, a subsidiary of ENOC, signed a Memorandum of Understanding with the UAQ Free Trade Zone Authority.

The agreement envisages comprehensive gas supply and related services to businesses operating in the free zone, supporting industrial growth while standardising safety and quality across users.

The MoU signals a broader trend in the Northern Emirates: industrial free zones are being directly integrated into federal-grade gas infrastructure and service frameworks, rather than relying on ad hoc LPG or fuel oil solutions. This deepens consolidation not only physically – via networks and terminals – but also commercially and regulatorily.

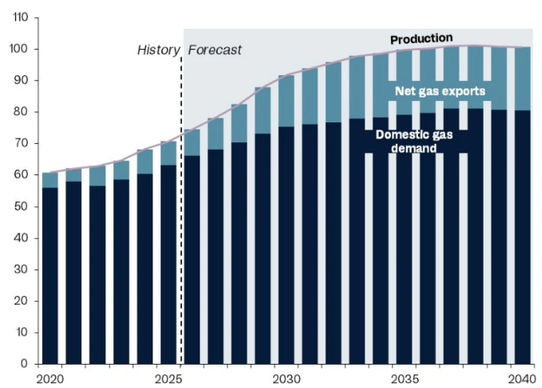
Cross-Emirate Synergies and Joint Ventures

Consolidation is further reinforced through joint ventures and shared exploration initiatives. SNOC, RAKGAS and international partners such as Eni have collaborated on exploration blocks spanning emirate boundaries, including Onshore Block 7 in Ras Al Khaimah. These partnerships align subsurface development, midstream capacity and market access, ensuring that new discoveries can be quickly tied into the regional network.

The result is a more unified Northern Emirates gas province in which upstream, midstream and downstream decisions are increasingly coordinated rather than pursued in isolation. its energy export portfolio, alongside its renewable energy ambitions, ensures that the UAE remains a key player in the evolving energy landscape, balancing economic growth with environmental responsibility.

Natural gas supply-demand balance in the Middle East

Billion cubic feet per day (Bcfd)



LNG Imports, Storage & Market Balancing

Imports arrive primarily through the Dolphin pipeline from Qatar and via LNG cargoes regasified at Floating Storage and Regasification Units (FSRUs) in Dubai and Abu Dhabi.

For the Northern Emirates, the key development is the shift from direct reliance on LNG or pipeline imports to greater use of shared storage and transmission assets:

• SNOC's Moveyeid underground storage provides strategic and seasonal balancing capacity for Sharjah and can support neighbouring emirates as interconnections expand.

• Proposed links such as the RAKGAS Northern Emirates Gas Pipeline will allow imported gas and ADNOC-supplied molecules to be optimally routed between Abu Dhabi, Fujairah, Sharjah and Ras Al Khaimah.

• As ADNOC's LNG export capacity grows later in the decade, the national system is expected to favour domestic self-sufficiency first, with surplus volumes channelled into long-term export contracts.

In this context, consolidation is not about eliminating imports overnight, but about ensuring that imported and domestically produced gas are managed as part of an integrated portfolio, with the Northern Emirates treated as core, not peripheral, demand centres.

Gas Exports & Global Market Presence

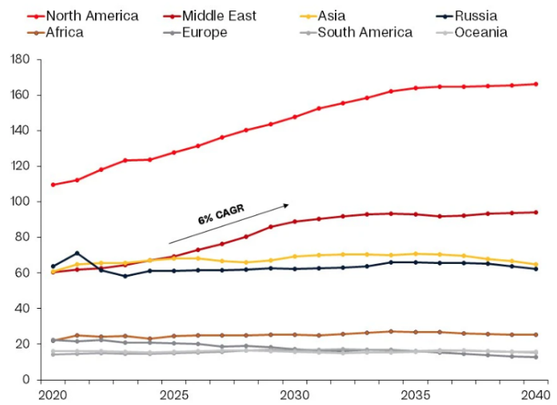
The UAE is steadily expanding its LNG export footprint in Asia and Europe. ADNOC Gas has signed multi-year supply agreements with buyers in Japan, India, China, Germany and other markets, underpinned by both existing offshore production and future capacity from projects such as Ruwais LNG.

For the Northern Emirates, export growth has two main implications:

• System Efficiency – By consolidating domestic demand and reducing technical losses through integrated pipelines and storage, more molecules can be freed for value-added export without compromising internal security of supply.

Global gas production by region

Billion cubic feet per day (Bcfd)



• Industrial Opportunity – Ports in Sharjah, Fujairah and Ras Al Khaimah are well positioned to host future LNG bunkering, small-scale LNG and gas-to-chemicals ventures that leverage export-oriented flows.

While Abu Dhabi will remain the principal source of LNG volumes, the Northern Emirates' infrastructure and port assets will increasingly determine how flexibly those volumes can be stored, trans-shipped and monetised

Sustainability, Hydrogen & the Energy Transition

Natural gas is central to the UAE's strategy of achieving net-zero emissions by 2050 while maintaining economic growth. ADNOC's major gas projects incorporate carbon capture and storage (CCS) to reduce operational emissions, and the company is studying low-carbon hydrogen pathways that could leverage its gas resource base.

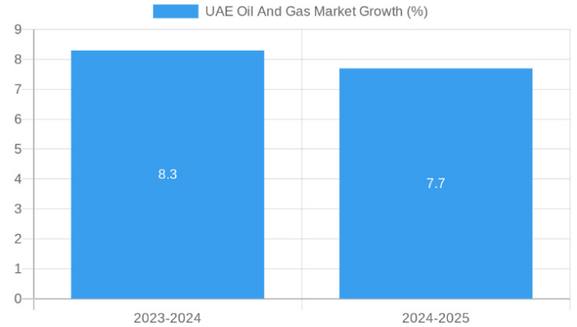
In the Northern Emirates, sustainability considerations are shaping project design and policy:

• SNOC's facilities increasingly integrate solar power, with the Sajaa solar plant reducing the carbon footprint of gas processing and storage operations.

• Industrial free zones in Sharjah, Ras Al Khaimah and UAQ are promoting energy-efficient technologies and considering future access to low-carbon fuels.

• Consolidated pipelines and storage reduce the need for diesel-fired back-up generation and inefficient trucked fuel supply, lowering both costs and emissions.

As renewable generation expands and nuclear power from the Barakah plant ramps up, the role of gas will gradually shift from pure baseload to flexible, peaking and balancing capacity. However, through at least the late 2020s, gas will remain indispensable to the Northern Emirates' power security and industrial competitiveness.



Strategic Outlook 2025–2030 for the Northern Emirates

Looking ahead, several themes will define gas consumption and consolidation in the Northern Emirates:

1. Deepening Network Integration

Further inter-emirate pipelines, capacity expansions on existing lines and additional connections into storage hubs like Sajaa will hard-wire the Northern Emirates into the national grid. This will reduce supply risk and provide greater flexibility in dispatching gas to high-value uses.

2. Storage and Seasonal Balancing

Underground storage in Moveyeid and potential future sites will be critical for managing summer peak demand, particularly as air-conditioning loads grow and electrification deepens. Additional above-ground LNG and LPG storage around northern ports will complement this capability.

3. Industrial Cluster Growth

New industrial and free-zone projects in Sharjah, Fujairah, RAK and UAQ will drive incremental gas demand. Consolidated supply contracts and shared infrastructure will be essential to meeting this demand at competitive prices.

4. Demand-Side Efficiency

Federal and emirate-level initiatives to improve power-plant efficiency, reduce network losses and introduce more efficient cooling technologies will help moderate the growth rate of gas consumption without constraining economic expansion.

5. Role in Regional Trade

As the UAE's LNG export capacity grows, the Northern Emirates may evolve into key nodes for regional gas trading, small-scale LNG distribution and marine bunkering, leveraging their strategic coastal locations and expanding port infrastructure.

Overall, the trajectory for 2025–2030 is one of higher, but more efficiently managed, gas consumption in the Northern Emirates, underpinned by a progressively more consolidated and resilient gas system. ■

How can national governments and producers ensure stable, affordable, and equitable access to LPG within domestic markets: UAE CASE STUDY?

Securing a domestic LPG market begins with coordination, not competition, among national players. The UAE's system, built around ADNOC, ENOC, EMARAT, and SNF, shows how collective responsibility ensures seamless supply even in emergencies. Unified logistics, shared trucking fleets, and contingency planning allow gas to reach every Emirate regardless of crisis or climate event.

This collaboration underpins business continuity. Instead of parallel networks, integrated operators share storage depots, transport fleets, and safety protocols, avoiding duplication and enabling rapid disaster response. The result is not just efficiency but resilience: a national energy system that maintains stability amid volatility.

Transparency is another hallmark of success. In the UAE, LPG pricing remains market based and largely unsubsidized, ensuring healthy competition without distorting investment decisions. Marginal price variation across regions promotes fairness and fiscal discipline while incentivizing efficiency and innovation among suppliers. In short, open markets and collective responsibility can coexist when framed within a coherent national energy security policy.

Safety modernization is equally critical. Transitioning from legacy metal cylinders to advanced composite designs has reduced explosion risks and extended product life cycles. These lighter, corrosion resistant containers are safer to transport and easier to monitor, particularly in restaurants and households where visibility of gas levels matters. Technology has transformed what used to be a weak point in domestic distribution into a benchmark for safety and reliability.

Infrastructure, Innovation, and Policy Stability

Infrastructure is the backbone of national energy security. A domestic LPG market cannot thrive without the physical capacity to receive, store, and distribute product. Investments in modern terminals, truck loading racks, and regional depots ensure supply even during demand spikes or import interruptions. For new entrants, this principle is fundamental: build the foundation before expanding the footprint.

But infrastructure alone is not enough. Long term policy stability provides the confidence investors need to finance refineries, storage, and bottling plants that often take a decade to deliver returns. Frequent regulatory changes erode trust, while transparent multi year roadmaps allow both public and private stakeholders to plan investments aligned with national goals.

Integrated government oversight helps maintain quality and fairness across the system. Regulators must enforce unified safety standards and transparent auditing while allowing private distributors room to innovate. Clear governance protects consumers and investors alike.

Domestic refining capacity also plays a decisive role. Regions without refineries, such as Fujairah, face higher import costs and exposure to supply shocks. Linking refining, bottling, and distribution within one ecosystem reduces risk and keeps household energy affordable.

Equally vital are logistics. Well maintained roads, efficient ports, and modern transport fleets determine how safely and cost effectively LPG reaches end users. Every broken road or outdated port terminal adds risk and cost to the value chain. Investing in these assets strengthens both the economy and national resilience.

Security and maintenance must be prioritized alongside expansion. Pipelines and depots should incorporate modern surveillance, drones, and AI monitoring to prevent leaks, theft, or sabotage. Preventive maintenance and rapid response teams turn infrastructure from a potential liability into a national asset.

Innovation sustains this progress. Encouraging R&D in digital metering, composite materials, and smart valves can create new efficiencies, improve safety, and build domestic technical capability. Governments that support startups and university industry partnerships turn the LPG sector into a test bed for advanced engineering and sustainability solutions.

Inclusive Growth and Governance for a Secure Market

Infrastructure and innovation mean little without good governance. Corruption, political turnover, or inconsistent regulation can undo decades of progress. Transparent procurement processes, independent audits, and stable leadership attract foreign capital while ensuring that every dirham or dollar invested actually strengthens capacity on the ground.

Financial partnerships can share the burden of infrastructure development. Public private models allow governments to provide land, guarantees, or concessional finance, while private companies manage operations and risk. This balance accelerates modernization of bottling plants and transport fleets, transforming LPG from a commodity into a national service.

Subsidy reform must be gradual and targeted. Mature economies can phase out subsidies, but emerging ones need mechanisms that protect low income households without distorting markets. Smart card systems or digital vouchers can make LPG affordable while maintaining fiscal health. Over time, these reforms cultivate a financially sustainable energy market.

Affordability also depends on consumer purchasing power. Pay as you go metering, micro cylinder programs, and mobile payments bring clean cooking to millions who would otherwise rely on biomass. These inclusive financial models reduce indoor pollution, improve health, and align with global sustainability goals.

Professionalizing the workforce underpins every reform. Trained and certified drivers, technicians, and installers ensure consistent service and safety. Partnerships between technical colleges and energy companies can produce a skilled labor pipeline, fostering national employment and operational excellence.

Ultimately, securing a domestic LPG market requires embedding it within a broader national energy resilience strategy. Integrating LPG with renewables, CNG, and future hydrogen solutions creates flexibility and reduces exposure to any single source. This diversified approach future proofs energy security while supporting global decarbonization commitments.

Conclusion: From Energy Access to Energy Assurance

Building a secure domestic LPG market is not just about distribution; it is about trust, foresight, and inclusion. The UAE's experience illustrates how transparent pricing, unified safety standards, and coordinated logistics create a stable, investor friendly, and consumer safe ecosystem.

Every country aspiring to strengthen its domestic market must align policy, infrastructure, and governance. The path forward lies in balancing open market principles with social equity, replacing fragmentation with unity, and transforming LPG from a product of convenience into an instrument of national resilience.

The lesson is clear: energy security begins at home, with the systems, institutions, and people who keep the flame burning safely, affordably, and sustainably from port to plate. ■

Top 5 Recommendations

1. Establish Unified National Standards for Infrastructure and Safety
Standardizing infrastructure, facilities, and safety protocols across the supply chain from midstream loading to downstream distribution is essential. Countries should adopt unified national codes for cylinder specifications, pressure standards, and pipeline safety to prevent fragmentation and accidents, ensuring seamless distribution and interoperability across regions.

2. Ensure Government Policy Stability and Long Term Regulatory Vision
Stable and transparent policies are critical for investor confidence and infrastructure development. Governments must institutionalize energy frameworks that survive political transitions, ensuring continuity in pricing, subsidies, and supply governance. Policy consistency builds trust and sustains domestic energy security even amid political change.

3. Expand Business Continuity Partnerships Among National Distributors
Coordinated partnerships among domestic LPG distributors are key to ensuring uninterrupted supply. Joint contingency planning and shared storage infrastructure guarantee national coverage during disruptions such as floods or disasters, ensuring resilience and equitable service delivery.

4. Modernize Consumer Infrastructure with Composite Cylinders and Smart Safety Systems
Replacing outdated metal cylinders with composite, transparent, and corrosion resistant alternatives enhances safety and consumer confidence. These lighter cylinders reduce explosion risks and allow users to monitor gas levels visually, improving efficiency and household safety. Gradual nationwide replacement programs can raise safety standards while maintaining affordability.

5. Mobilize International Financing to Support Domestic Subsidy Gaps
Many developing economies lack fiscal space to subsidize LPG for low income consumers. Governments should leverage international financial institutions and climate linked funding to bridge affordability gaps. Blended finance models can support infrastructure expansion, stabilize domestic pricing, and encourage equitable access without overwhelming national budgets.

In summary:
Securing and serving domestic LPG markets requires unified standards, regulatory stability, cooperative national logistics, modernized consumer infrastructure, and innovative financing partnerships — a five point framework that ensures safe, affordable, and resilient national LPG delivery systems.

Source: Insights were harvested from a workshop hosted by ENOC at the 13th Fujairah Energy Markets Forum on Oct. 1st, 2025, where 100 LPG market stakeholders participated in a 3-hour curated brainstorming session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