



SERGAS GROUP

DECARBONIZING LPG SUPPLY CHAINS

Together, Let's Shape a Cleaner Gas Industry. Every step we take today shapes our industry's future. Join us in paving the way for a cleaner, greener gas sector. Together, we can make a lasting impact on our environment.

Presented by:
Mohamed Damak
CEO, Sergas Group

COP28
UAE

GTU
Gulf Talents United











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ABOUT SERGAS GROUP

Established in 1988, SERGAS Group has been a pioneering force in the gas industry, dedicated to delivering safe and reliable gas solutions.

-  Design Engineering of Piping and Gas Systems
-  Engineering, Procurement and Construction of Gas Systems
-  Emergency, Operation and Maintenance of Gas Systems
-  Metering and Billing Management
-  Gas Transport and Distribution
-  Firefighting/ Fire Alarm Systems
-  Trading of Equipment for Oil, Gas and Water Industry
-  Cylinder Distribution

RESIDENTIAL

COMMERICAL

INDUSTRIAL





SERGAS GROUP: GAS SOLUTIONS & SUSTAINABILITY



Our focus points:

1 Expanding globally, specializing in LPG, NG and SNG Solutions

2 Eco-friendly LPG tanker transport

3 Sustainability and Decarbonization

4 Exploring Alternative Fuels and Renewable Energy Initiatives



CENTRAL GAS SYSTEMS

COMPONENTS

Storage Tank

Distribution System

Metered Supply to Customers

ADVANTAGES

Convenience and Safety



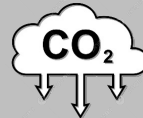
Convenience

Eliminates the need for manual handling and replacement of individual cylinders.

Safety

Equipped with automatic shutoff valves and pressure regulators, reducing the risk of gas leaks and associated hazards.

Reduced CO₂ Emissions



Delivery via tankers significantly lowers CO₂ emissions per kilogram of LPG compared to the transportation and distribution of individual cylinders.

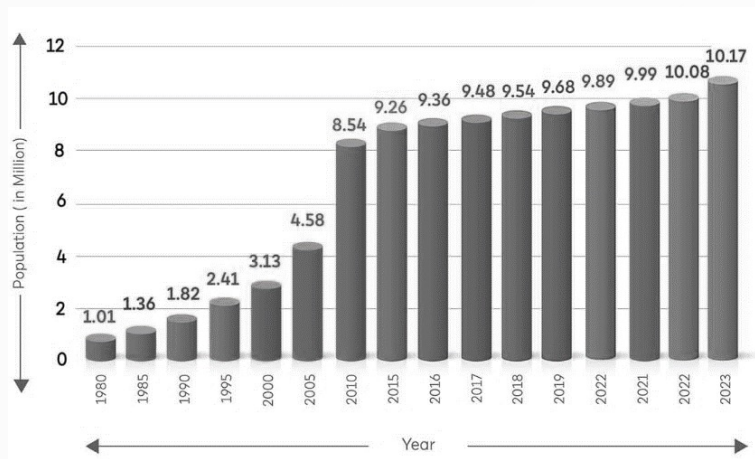
Improved Energy Accessibility



Fosters economic growth and enhances living conditions in regions where centralized gas systems provide reliable and continuous energy access

OUR MARKET STUDY

The United Arab Emirates has witnessed significant growth in its economy and population over the past four decades



Analyzing the landscape and trends of bulk gas demand is particularly important for stakeholders in making informed decisions regarding decarbonizing the industry.



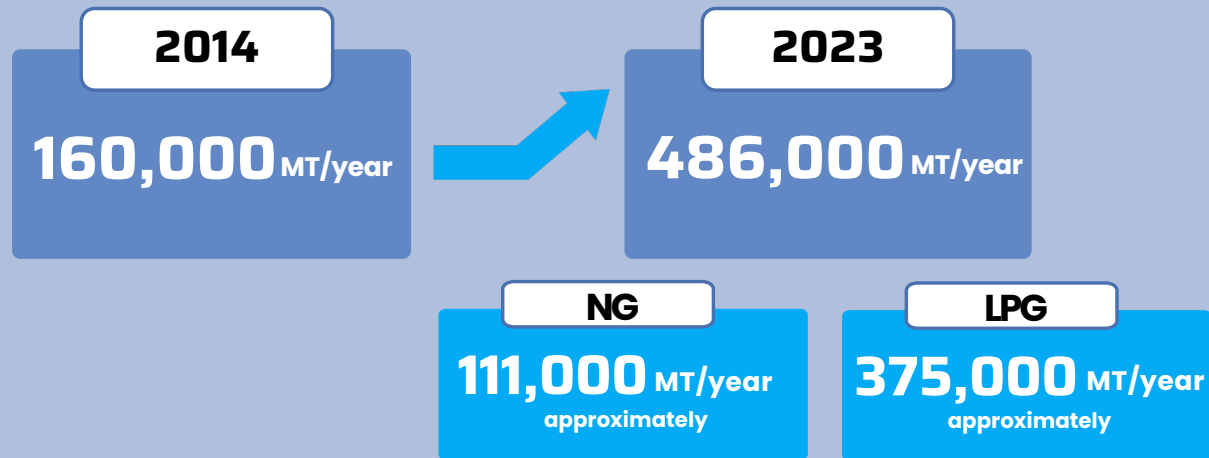


THE MARKET SEGMENTATION

THE BULK GAS MARKET IN THE UAE IS SEGMENTED BASED ON

- 1 Gas types (NG,LPG)
- 2 Consumer sectors (industrial, commercial, and residential)

THE ANNUAL TOTAL DEMAND



KEY TRENDS DRIVING BULK GAS DEMAND

POPULATION GROWTH

TOURISM

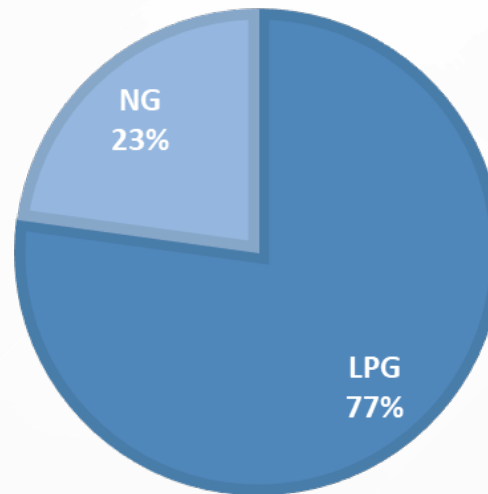
INDUSTRIALIZATION



THE TWO PRIMARY GAS TYPES UTILIZED IN THE UAE ARE NATURAL GAS (NG) AND LIQUEFIED PETROLEUM GAS (LPG).

The estimated supply chain in the UAE stands at

TYPE-WISE ANNUAL GAS DEMAND - 2023





There are plans to increase the utilization of centralized gas systems and promote NG usage throughout the UAE due to its numerous advantages. NG, being a cleaner-burning fossil fuel, emits fewer pollutants and greenhouse gases, making it a more environmentally friendly and sustainable energy solution.

Natural gas (NG) is cost-effective due to its abundance and lower production costs, reducing operational expenses. The well-established NG infrastructure ensures uninterrupted service. Given the prevalent use of LPG over NG, proactive measures to mitigate the carbonizing effects of LPG are crucial.





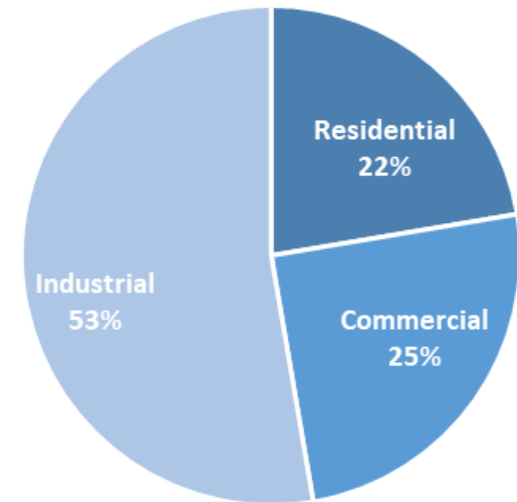
ANALYSIS OF LPG DEMAND AND SERGAS GROUP'S MARKET POSITION IN THE UAE



The total bulk LPG demand in the UAE, excluding LPG distributed in cylinders, currently stands at

237,000 MT/year
approximately

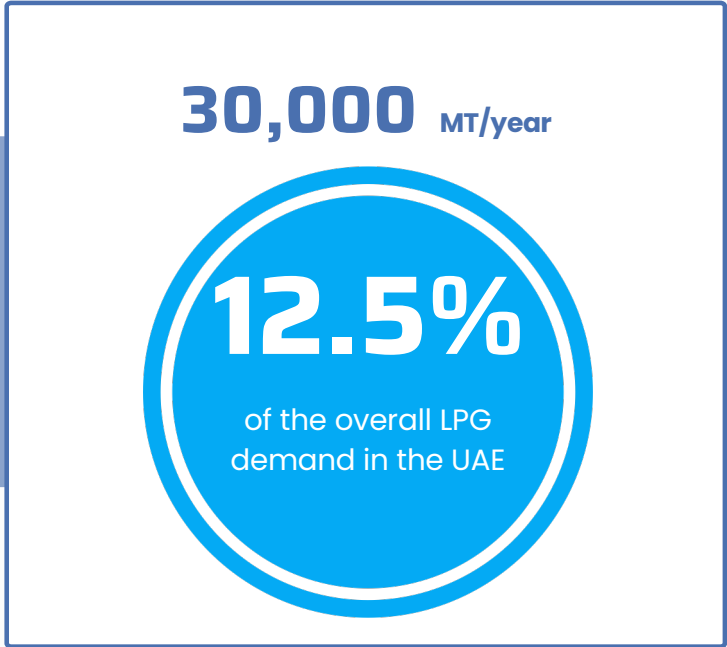
Annual Demand of LPG in UAE (2023) -
Segment-wise - Excluding Cylinders





ANALYSIS OF LPG DEMAND AND SERGAS GROUP'S MARKET POSITION IN THE UAE

Within the gas market, Sergas Group holds a notable position by supplying LPG annually in 2023





DECARBONIZING THE LPG MARKET IN THE UAE: OVERCOMING CHALLENGES AND PROMOTING SUSTAINABLE SOLUTIONS

DECARBONIZING THE UAE'S LPG MARKET IS A PRIORITY, INVOLVING STRATEGIC SOLUTIONS TO ADDRESS KEY CHALLENGES.

- 1** Upgrading and expanding gas distribution infrastructure is crucial for **efficient supply**.
- 2** **Environmental concerns** call for investments in cleaner technologies as well as centralized LPG systems, with the aim of reducing carbon emissions associated with the transportation of LPG.
- 3** **Competition from sustainable energy alternatives** requires emphasizing LPG's benefits, promoting its eco-friendliness, and advocating for centralized systems to foster a low-carbon future.



CO₂ EMISSIONS COMPARISON

CO₂

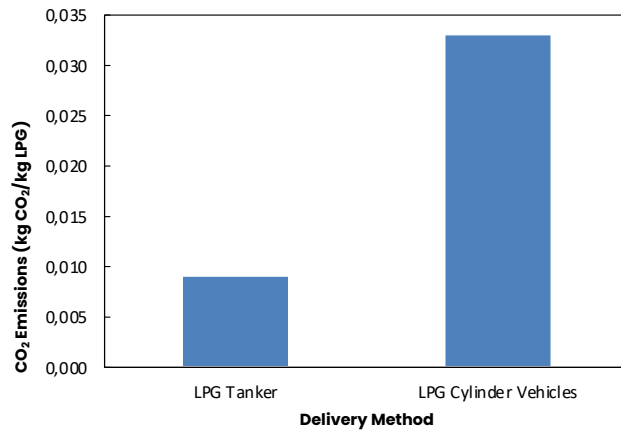
Emissions per kg of LPG delivered using 15,000 L Tanker : 0.009 kg CO₂/kg of LPG

Emissions per kg of LPG delivered using cylinder vehicles: 0.033 kg CO₂/kg of LPG

1:4 Ratio

Comparison of CO₂ Emissions for LPG Transportation using Tankers and Cylinder Vehicles

LPG Delivery Efficiency and Emissions Comparison



15,000 L
(6,375 kg)
Tanker



X 580 – 11 kg Cylinders
X 290 – 22 kg Cylinders



4 Cylinder
Delivery
Vehicles

150 cylinders per Vehicle
75 cylinders per Vehicle



EMISSIONS REDUCTION ANALYSIS

Comparison of CO₂ Emissions: Tanker vs. Cylinder Delivery Vehicles

	Total CO ₂ emissions (kg CO ₂)	Total CO ₂ emissions by Cylinders Delivery Vehicles (kg CO ₂)	Emission Reduction (kg CO ₂)	Percentage Emissions Reduction
15,000 L Tanker	57	210	153	72%
UAE Scale	1,002,510	3,675,870	2,673,360	

When using tanker fleets for LPG delivery

CO₂ emissions produced is

72% less

compared to the emissions generated by using the traditional cylinder delivery method

Tankers account for

Only 27%

of the CO₂ emissions generated by cylinder delivery method alone

Given an annual UAE demand for Bulk LPG in residential and commercial sectors to be 112,000 MT/year:

Equivalent to **8,000,000 Cylinders**
Annually

An annual reduction

of approximately

2,700 MT

of CO₂ emissions

Achieved by using tankers instead of cylinders for LPG delivery

This highlights the positive environmental impact of using tankers as a means of LPG transportation, showcasing their efficiency and contribution to reducing overall carbon emissions.



OUR STRATEGIES TO REDUCE CARBON FOOTPRINT

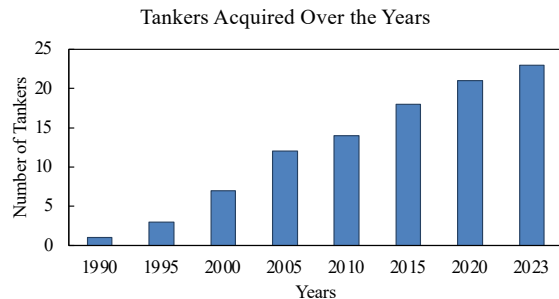
To minimize carbon footprint and work towards sustainable operations, we highlight below the implementation of several strategic initiatives. These initiatives are underpinned by our commitment to quality, honesty, and fairness, values we have upheld since our establishment in 1988.

Optimizing Transportation and Fleet Efficiency

Our emissions reduction efforts focus on:

- Investing in a larger number, modern, fuel-efficient and well maintained tankers.
- Efficient route planning using tracking and monitoring systems.

Total Number of Tankers: 23



Transitioning to Low-Emission Vehicles

We are actively working towards transitioning our fleet to low-emission vehicles, including hybrid options and exploring alternative fuels, to further reduce our reliance on fossil fuels and lower our carbon emissions.

Promoting Smart Metering

We are supplying and advocating for implementing smart metering systems to monitor gas consumption remotely. These measures reduce our environmental impact by reducing the need for physical meter readers.

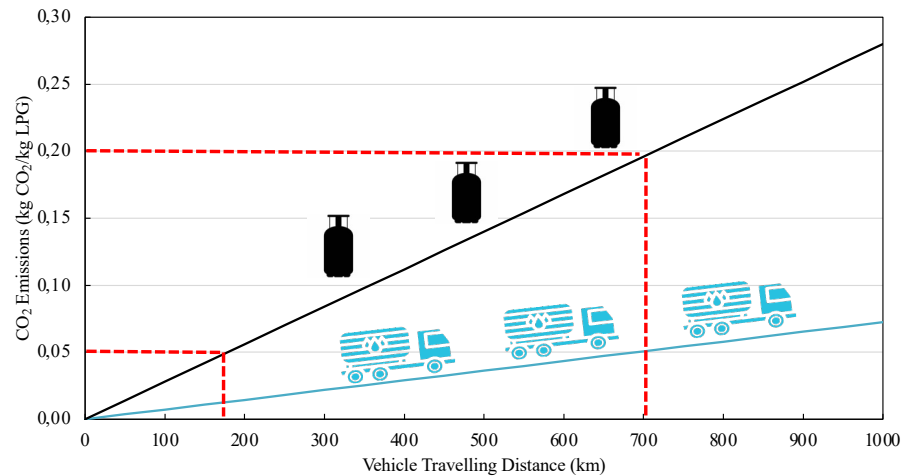
Exploring Alternative Fuels and Renewable Energy Initiatives

We are dedicated to researching and developing alternative fuel strategies and renewable energy initiatives to align with the UAE's carbon reduction strategy. This includes investigating the use of renewable energy sources for our operations and exploring innovative ways to integrate them into our delivery systems.

ENERGY ACCESS AND INFRASTRUCTURE DEVELOPMENT IN REMOTE REGIONS

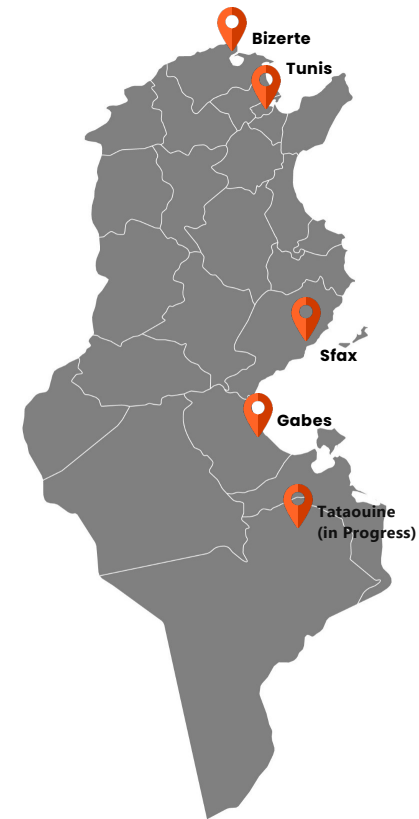
Implementing central gas systems and proper infrastructure, including miniature filling stations, is vital to significantly reduce the carbon footprint in underdeveloped areas.

CO₂ Emissions per kg of LPG Delivered by Tankers and Cylinder Delivery Trucks across Varying Distances



Using tankers for LPG delivery reduces emissions compared to cylinder vehicles, with emissions doubling when the transportation distance is doubled.

In Tunisia, remote areas frequently depend on LPG cylinder deliveries because of the remote locations of central filling stations.



To cut CO₂ emissions

It's crucial to strategically position miniature cylinder filling stations in these remote regions to minimize the distance traveled by cylinder vehicles and reduce CO₂ emissions.



CONCLUSIONS & RECOMMENDATIONS

Key Recommendations:

1. Minimize the usage of Cylinders

- Replace gas cylinder usage by centralized gas systems where possible.

2. Increase the number of Cylinder Filling Plants

- To minimize the distance travelled by Cylinder Delivery Vehicles.

3. Transition to Low-Emission Vehicles:

- Replace older, less efficient vehicles with low-emission options.

4. Optimize Transportation Routes:

- Plan fuel-efficient routes using advanced tracking and monitoring systems to minimize fuel consumption, reducing emissions and operational costs.

5. Embrace Smart Metering Systems:

- Implement smart metering technology to reduce the deployment of physical meter readers.

6. Exploring and implementing alternative fuels on a wider scale such as Natural Gas and Liquefied Natural Gas



LNG Advantages

Reduce carbon emissions by 30%



Cost efficiency, as the fuel cost can be reduced by up to 25% compared to traditional fossil fuels like diesel





THANK YOU