

NHCC PROPOSAL

**SAFE.
CONVENIENT.
RELIABLE.**

IMPLEMENTED BY:
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**SAFE.
CONVENIENT.
RELIABLE.**



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FORWARD

As we stand on the brink of a transformative energy landscape, the importance of reliable and sustainable energy solutions cannot be overstated. The Centralized Gas System initiative is designed to meet the growing demand for efficient energy sources while addressing the pressing challenges of energy security and environmental sustainability.

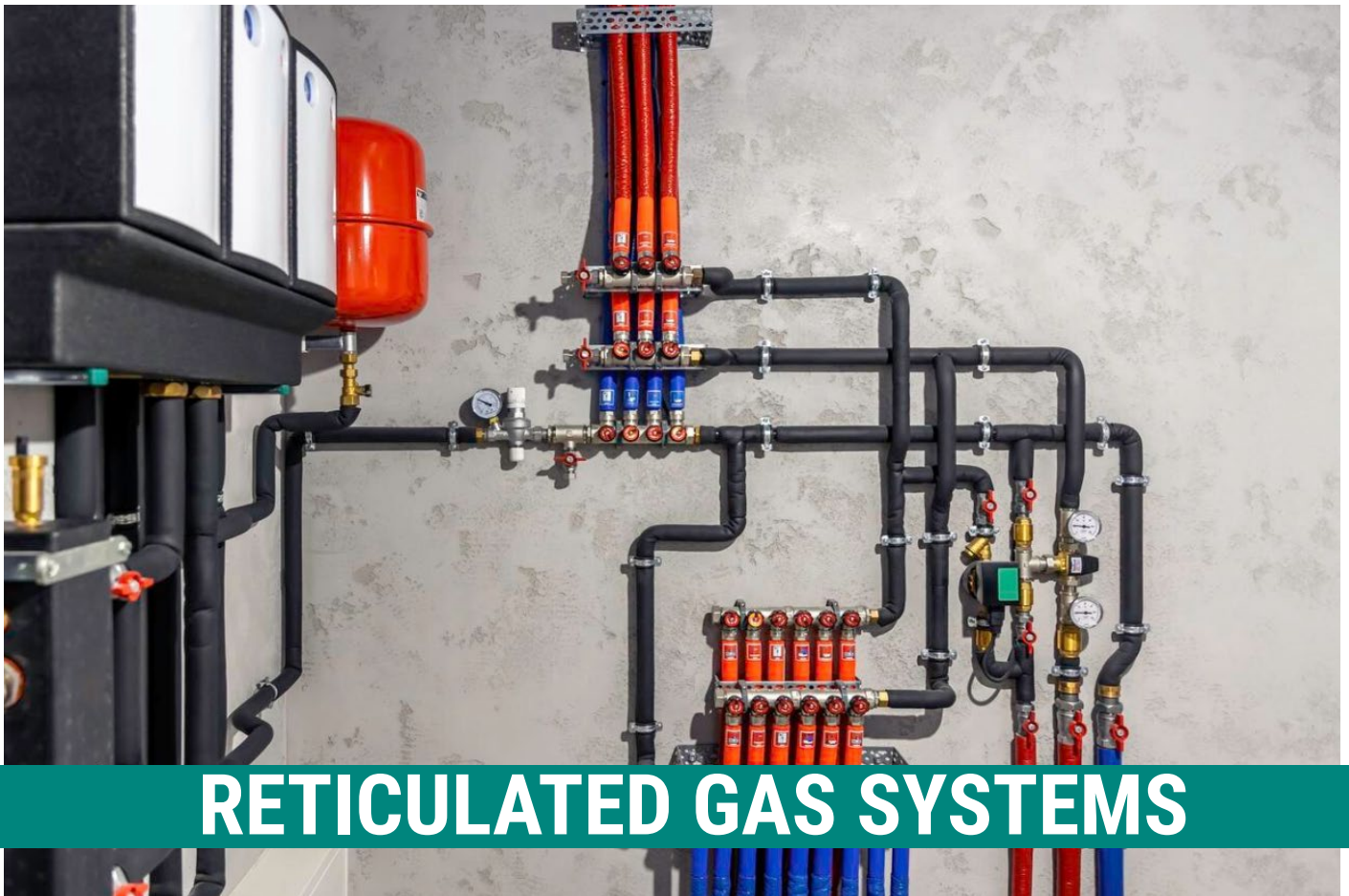
Our Families have faced familiar challenges such as; Caretakers failing to fix regulators on gas cylinders, running out of gas in the middle of preparing a meal, inviting strangers into our homes to help carry gas cylinders for refueling and the risk of trusting random delivery men to have the gas delivered. Its such shared problems that birthed reticulated gas solutions.

By developing a centralized gas supply system, GASOL U LTD aims connect various supply sources, optimize distribution, and ultimately enhance accessibility for residential, commercial, and industrial users. We shall leverage cutting-edge technology and innovative practices to create a robust system that will reduce operational costs translating into cheaper prices, enhance safety and environmental stewardship.

Our commitment to stakeholder collaboration will ensure that this initiative aligns with the needs of local communities and industry partners. We recognize that the success of this project depends on our ability to engage with various stakeholders, fostering trust and cooperation throughout the process.

This proposal serves as a roadmap for our journey toward establishing a reliable, efficient, and environmentally friendly gas supply system. We invite you to explore the details within, as we work together to create smart Homes.





RETICULATED GAS SYSTEMS

Liquefied Petroleum Gas (LPG) is a heavier than air gaseous mixture of combustible gases. Its constituent gases are mainly Propane and Butane with a little of Pentane and a few other heavy gaseous hydrocarbons. LPG burns completely in air giving a clean bluish flame producing carbon dioxide and water vapor. Its use is friendly to the environment and LPG has proven to be an easy and safer option to use domestic energy source. Reticulated Gas systems have been widely used in America, Europe and Australia for the last 50 years and now increasingly offers South Africans an efficient alternative in gas usage. While electricity has become more reliable in recent times, prices have increased by 350% in the last 10 years and many homes have resorted to gas as source of energy. In Uganda the only mode of delivery is by prefilled canisters that are stored inside the house.

As a step in improving the safety of use of LPG in domestic facilities, LPG storage should be as remote as reasonable and centralized while only the gas vapors; which are of lower pressure and energy content, are distributed to end users through an engineered pipe network.

Domestic gas consumer reticulation systems have been in use in developed countries for more than 100 years. Domestic gas networking and distribution improves on the availability of gas to end users and also improves on safety and aesthetics of end user facilities as unsightly LPG cylinders are eliminated from use. Robust safety instrumentation and piping systems are essential features built in LPG reticulation systems which serve to prevent unintentional discharge of gas to the environment or end user facility.

GASOL seeks to introduce the latest innovations in gas reticulation through well-equipped safety systems and hassle-free operational equipment which ensure constant and safe delivery of gas to the consumer.



SAFETY FIRST APPROACH

Reticulated gas systems offer superior safety and mitigates many gas related risks by:

REDUCED RISK OF GAS CYLINDER HANDLING



Centralized systems eliminate the need to handle and transport gas cylinders, reducing the risk of accidents and injuries. The system also removes gas cylinders from the home creating space and removing all the risks involved.

The system is designed to provide a reliable and consistent gas supply, reducing the risk of gas shortages or interruptions.



SECURE GAS SUPPLY

LEAK DETECTION AND ALARM SYSTEMS



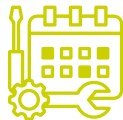
Centralized system will include leak detection and alarm systems, quickly identifying and alerting staff to potential gas leaks.

The system design will include emergency stop systems to shut off gas supply in emergency situations, such as fires or natural disasters.



ENHANCED SAFETY IN EMERGENCY SITUATIONS

REGULAR MAINTENANCE AND TESTING



As part of our operations, the system will be subject to regular maintenance and testing to ensure that the system operates safely and efficiently.

The system is designed and operated in conformity with international safety standards and regulations, ensuring a safe operating environment.



COMPLIANCE WITH SAFETY STANDARDS

REAL-TIME MONITORING AND CONTROL



By leveraging modern technology, the gas system will be equipped with real-time monitoring and control systems, allowing for swift response to any issues or potential safety hazards.

By implementing a centralized gas system, the estates will experience enhanced safety and a reduction in all gas related risks.



SAFETY GUIDELINES AND PROTOCOLS

Gasol Stations Limited undertakes to;

- Ensure that the gas tanks installed are buried underground according to the Uganda Petroleum facility Construction standard US 947-1:2011

This design has several advantages;

1. Eliminates the risk of fire and explosion at the storage site.
2. Ensures that the tanks are protected from external damage, accidents, vandalism, or natural disasters.
3. Reduces the risk of leaks or ruptures, enhancing overall safety for residents.
4. Minimal visual and environmental impact as they barely disrupt the landscape
5. Less likely to pose environmental hazards in case of leakage

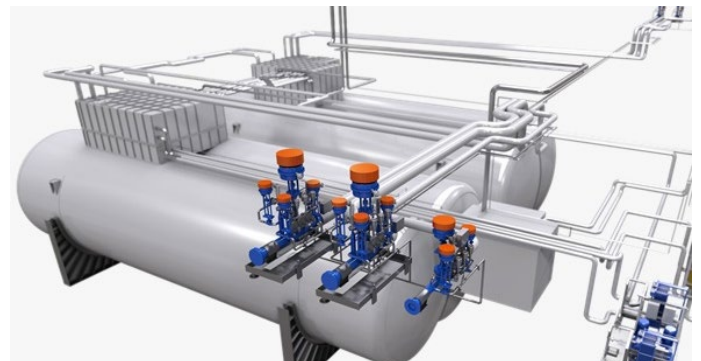
- As part of Gasol's Value proposition, the company will also install and service fire extinguishers on every block within the estate and at the tank installation site.
- Gasol will also demarcate designated fire assembly points and display emergency plans throughout the estate as required by the National standard US 947-1:2011.
- Gasol will install and maintain a gas monitoring system to ensure real time monitoring and control of the whole installation.

STORAGE

GASOL STATIONS U LTD is a limited liability company incorporated in Uganda as reticulated gas distribution company for residential and commercial purposes. The company intends to introduce reticulated gas systems to the Ugandan market. Our primary target is organized estates such as Sunset apartments Kiwatule (268 Units), National Housing Estates Namungoona (140 units), Royal Palms Butabika (250 units) and Bugolobi Flats (1000 Units)

The Reticulated Gas System (Piped Gas System) is an advanced network of pipes that supplies LPG to individual units from a centralized bulk storage such as a gas/cylinder bank facility. This ensures a steady supply of LPG to households in a safe and convenient manner. This is more efficient than the conventional gas cylinder systems currently available. This leads to a host of other benefits like saving on time, money and space in the household.

GASOL STATIONS U LTD is a limited liability company. The primary objective of implementing a centralized LPG gas system is to streamline the gas supply process by centralizing the storage and distribution of LPG. By moving away from individual gas cylinders to a centralized system, we aim to enhance safety measures, increase convenience, and reduce operational costs associated with gas management.



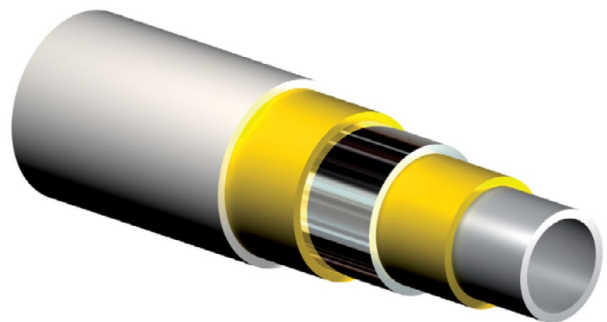
Overground Storage Tank

DELIVERY PROCESS

The gas is delivered through a series of multi-layered pipes to the customer's household. The Piped Gas System combines the advantages of metal and plastic pipes.

The aluminum core is diffusion-tight and prevents oxygen and other atmospheric from permeating into the pipe. The core compensates and reduces snap-back forces and heat expansion with changes in temperature.

The multi-layered pipes provide all the advantages of plastic pipes such as corrosion and scale resistance, chemical inertness, smooth surface for better flow properties, and are toxin-free.



Multi-layered Pipes



Overground Piping



UnderGround Piping

PRESSURE CONTROL SYSTEMS

The gas is delivered through a series of multi-layered pipes to the customer's household. The Piped Gas System combines the advantages of metal and plastic pipes.

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Pressure control Valves and Shut-off Valves

METERING

By using a prepaid meter, the customer can pay for the units desired. Through our state-of-the-art metering systems, the customer is able to monitor gas usage anywhere on their phone. Through partnerships and integrations with Telcom companies and banks, customers will be able to purchase tokens from as low as 5,000 Uganda shillings.



Prepaid Meter and CUI

ADVANTAGES OF THE RETICULATED GAS SYSTEM

- Uninterrupted gas supply – running 24/7
- Value addition - adds to the property value of the apartment.
- Economical - Pay on consumption
- Aesthetic appeal – Declutters the usage area in addition to no floor damage by the cylinder.
- Convenience – No refilling required by the individual unit.
- Safety - No delivery persons gaining entry to the unit. No gas cylinders in living quarters.
- Zero Maintenance - Comprehensive maintenance contract includes periodic inspection and monitoring for nominal changes.
- Transparency - Every connection is equipped with a meter in the house to record consumption.
- Save Money - Piped gas supply is less expensive when compared to traditional cylinders.
- Quality - Installation and commissioning adhering to I.S.6044 standards.
- Service on Call - Dedicated technicians accessible through customer care lines
- Safe and Secure - Eliminates the risk of fire hazard caused by leakage due to improper fitting of gas regulator after removing the seal cap or leakage of (unchecked / expired) LPG cylinders





STAKEHOLDER AND COLLABORATIVE ANALYSIS

The following are some of the stakeholders and the collaborative arrangements that Gasol has partnered with to ensure the product comes to fruition. Ministry of Energy.

	STAKEHOLDER	ROLES
1	Ministry of Energy and Mineral Development	General supervision and licensing. Also, in the process of developing the regulations.
2	National Environment Management Authority (NEMA)	In charge of environmental protection and carrying out environmental impact assessment of the projects
3	National Housing and Construction company / Estate's Management	In charge of the estates and will give the final permission for the projects to proceed
4	Communities in estates	These are our customers and main user of the product.
5	Uganda National Bureau of Standards	A government agency in charge of developing and certification of standards of quality and quantity



REGULATIONS AND STANDARDS ANALYSIS

Uganda is in the process of formulating and implementing policies and standards to guide reticulated gas systems. Gasol has adopted internationally recognized standards and is working with ISO certified suppliers to ensure that the systems conform with required standards.

Some of the standards and regulations are listed below;

	REQUIREMENT	AUTHORITY	STANDARD	ORIGIN
1	EIA Certificate (per site)	NEMA	NEMA Regulations	Local
2	Construction Permits	Local Authorities	Building codes and safety regulations	Local
3	LPG Operations License	Ministry of Energy and mineral Development	Petroleum Supply Act, 2003/ LPG regulations (Under development)	Local
4	Weights and Measures (General) Regulations	Uganda National bureau of Standards guidelines	UNBS ISO 9000:2015	Local
5	LPG standards	International standards to be Adopted	National Fire and Rescue Authority Regulations	Local
			ISO 10239 for LPG Equipment	Adopted
			NFPA 58 for LPG safety codes	Adopted
			ISO 9001 for Quality management	Adopted
			API 510 for inspection, Repair and alteration of pressure vessels	Adopted
			ISO 19880 for gaseous fuels-filling stations	Adopted
ISO 1120 - for gas cylinders	Adopted			

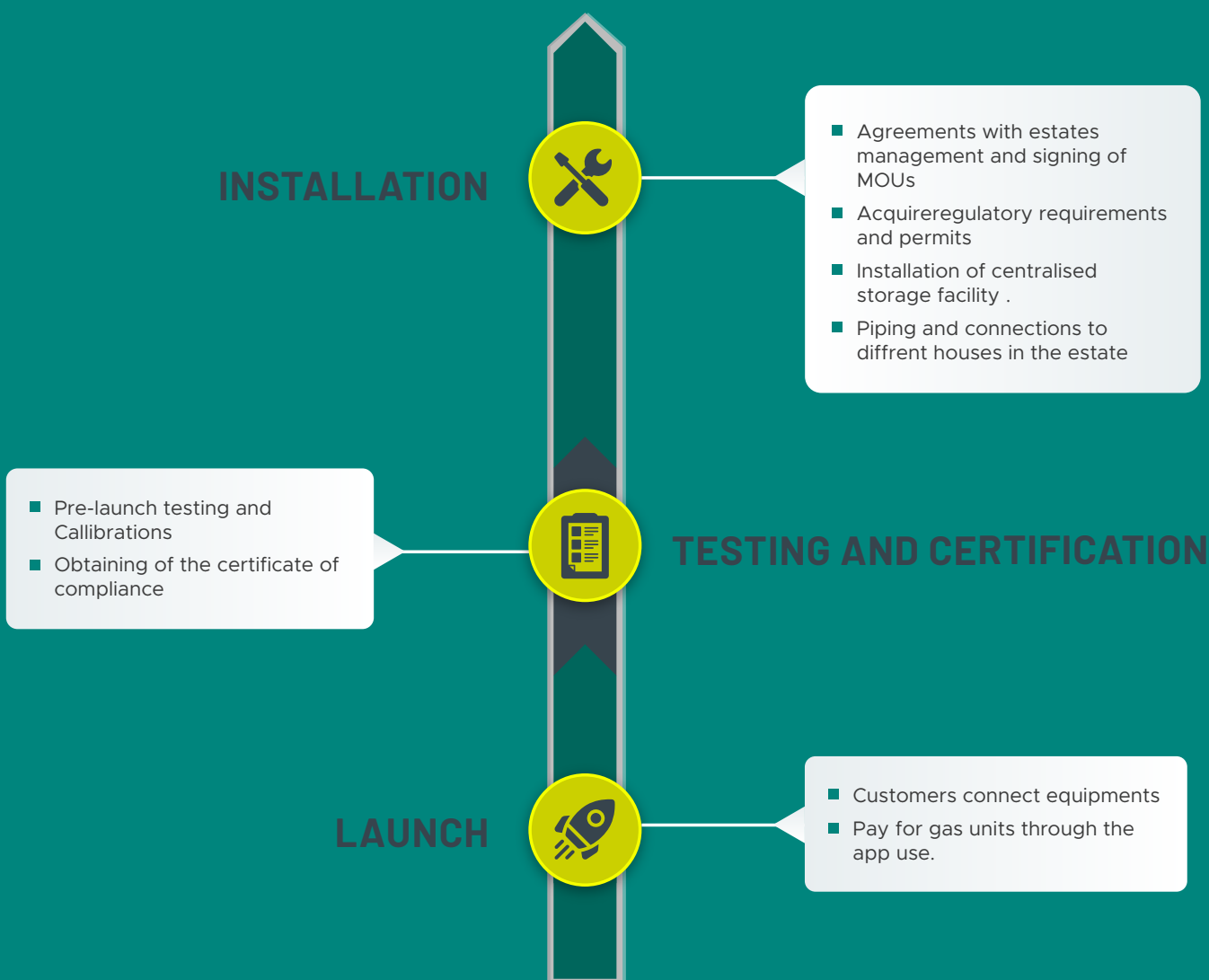


PROJECT TIMELINE

Installation Period: The installation of the centralized gas system across the 500 housing units is estimated to take 4-6 months from the commencement date.

GASOL is committed to providing a high-quality, safe, and efficient LPG supply solution for NHCC's estates. We believe that the proposed financial structure offers a fair and mutually beneficial partnership.

This financial proposal presents a comprehensive, sustainable, and mutually beneficial plan for implementing a Reticulated Gas System at the NHCC estates. By ensuring transparent pricing, fair revenue sharing, and long-term contract stability, GASOL Stations and NHCC can work together to provide safe, efficient, and affordable energy solutions for the residents





UGANDA'S ENERGY OUTLOOK

Uganda is richly endowed with abundant energy resources, which are fairly distributed throughout the country. These include hydropower, biomass, solar, geothermal, peat and fossil fuels. The energy resource potential of the country includes an estimated 2,000 MW of hydro power, 450 MW of geothermal, 1,650 MW of biomass cogeneration, 460 million tons of biomass standing stock with a sustainable annual yield of 50 million tons, an average of 5.1 kWh/m² of solar energy, and about 250 Metric tons of peat (800 MW). In addition, petroleum in an estimated amount of 6.5 billion barrels, of which 1.4 billion barrels are recoverable, has been discovered in the western part of the country. The overall renewable energy power generation potential is estimated to be 5,300 MW. The country is still heavily reliant on biomass as a source of energy with renewable sources accounting for only 22% in 2020.

According to the 2019/2020 Nation House Hold survey, 73% of households in Uganda used firewood for cooking while 21% used charcoal. Combined, biomass fuels (firewood and charcoal) constitute the main fuel for cooking 94 percent of the households. All the other sources of energy for cooking (electricity, kerosene, gas, etc.) accounted for only six percent. There were variations by residence whereby 97 percent of households in rural areas used biomass fuels compared to 86% of households in urban areas. The majority of households in urban areas used charcoal for cooking (57%) compared to households in rural areas (9%). Across all the sub-regions the majority of households used biomass fuels.

UGANDA'S ANNUAL ENERGY POTENTIAL



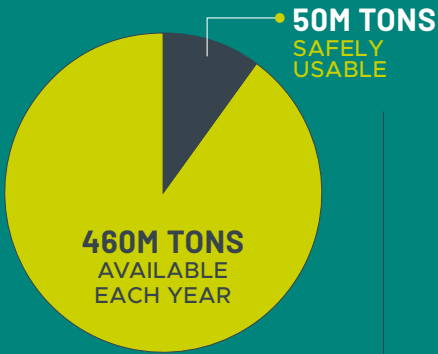
HYDROPOWER
2,000 MW



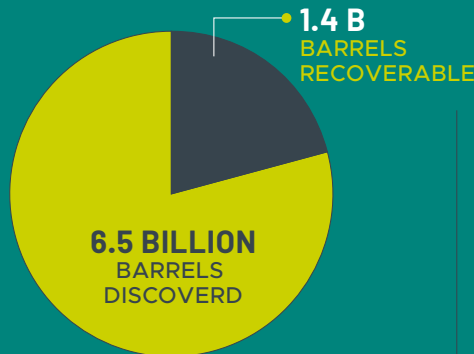
GEOHERMAL ENERGY
2,000 MW



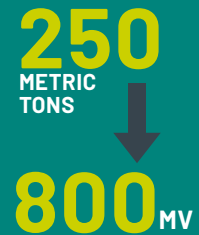
BIOMASS COGENERATION
2,000 MW



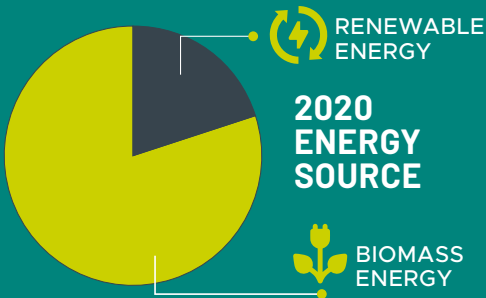
BIOMASS STOCK



PETROLEUM



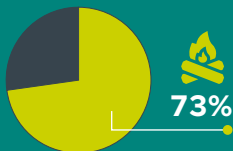
PEAT



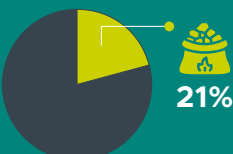
UGANDA CAN
GENERATE
5300 MV
RENEWABLE
ENERGY

HOUSEHOLD ENERGY USE 2019/2020 SURVEY

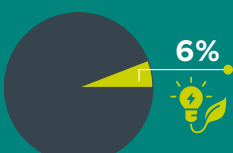
FIREWOOD



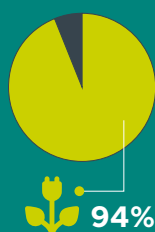
CHARCOAL



OTHER FUELS

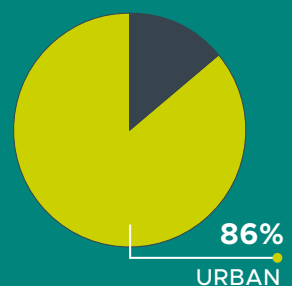
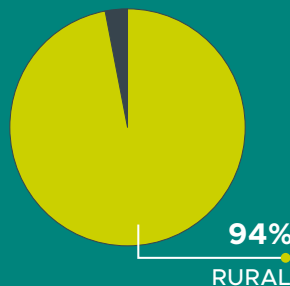


**COMBINED
BIOMASS**

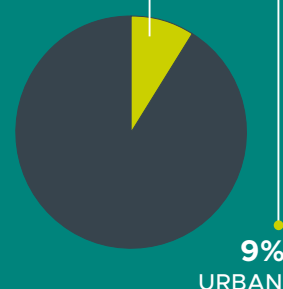
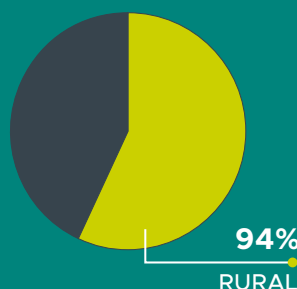


URBAN VS. RURAL

BIOMASS ENERGY



CHARCOAL



About Us

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The Reticulated Gas System (Piped Gas System) is an advanced network of pipes that supplies LPG to individual units from a centralized bulk storage such as a gas/cylinder bank facility. This ensures a steady supply of LPG to households in a safe and convenient manner. This is more efficient than the conventional gas cylinder systems currently available. This leads to a host of other benefits like saving on time, money and space in the household.

The primary objective of implementing a centralized LPG gas system is to streamline the gas supply process by centralizing the storage and distribution of LPG. By moving away from individual gas cylinders to a centralized system, we aim to enhance safety measures, increase convenience, and reduce operational costs associated with gas management.

Some of the benefits the system will deliver to our customers are;



Convenience

Continuous Supply:

Reticulated systems provide a continuous gas supply, eliminating the need to manually replace or refill cylinders.

No Handling Required:

Users don't have to deal with heavy and cumbersome gas cylinders, as the gas is supplied directly through a pipeline.



Safety

Reduced Handling Risks:

There's no need to transport and handle gas cylinders, which reduces the risk of accidents, such as gas leaks or explosions.

Leak Detection Systems:

Advanced reticulated systems often include leak detection and automatic shut-off mechanisms, enhancing safety.



Centralized Storage:

Gas is stored in a secure, centralized location, minimizing the risk of gas-related incidents in residential or commercial spaces. These advantages make reticulated gas systems a superior option for residential and commercial energy needs compared to traditional gas cylinders.



Cost Efficiency

Bulk Purchase Savings:

Gas is purchased in bulk, often at discounted rates, leading to overall cost savings for consumers.

No Cylinder Rental Costs:

Users do not need to rent or purchase gas cylinders, reducing associated costs.

Pay-as-You-Use:

Reticulated systems use prepaid metering, allowing users to pay only for the gas they consume.



Aesthetic and Space Efficiency

No Cylinder Clutter:

Reticulated systems eliminate the need for bulky cylinders, freeing up space in kitchens or utility areas.

Improved Aesthetics:

With no visible cylinders, the space looks cleaner and more organized.



Environmental Impact

Reduced Waste:

The system reduces the need for disposable gas cylinders, which can create waste and environmental hazards.

Energy Efficiency:

Reticulated systems are designed to optimize gas flow and pressure, leading to more efficient energy use.



Reliability

24/7 Availability:

Reticulated systems provide a reliable gas supply at all times, reducing the risk of running out of gas unexpectedly.

No Delivery Delays:

Users are not dependent on delivery schedules for gas refills, as the gas is supplied directly through pipelines.



Enhanced Property Value

Value Addition:

Properties with reticulated gas systems are often more attractive to buyers or renters, as they offer a modern and efficient energy solution.

These advantages make reticulated gas systems a superior option for residential and commercial energy needs compared to traditional gas cylinders.

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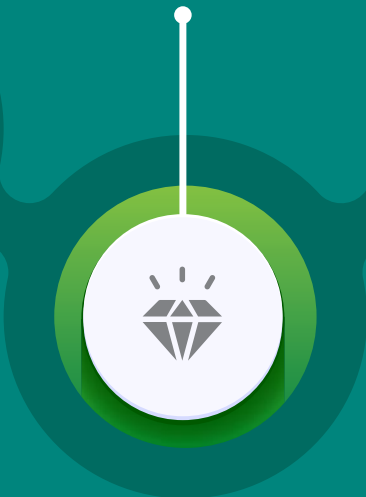
To Lead the Transition to Clean Energy

OUR VISION



- Customer Centric
- Safety
- Convenience
- Reliability

OUR VALUES



To Provide Efficient Energy Solutions through Liquefied Petroleum Gas (LPG) in a Sustainable Manner

OUR MISSION



VALUE PROPOSITION

To provide convenient energy solutions to our clients through reticulated gas systems by;

- Providing access to round the clock gas
- Generating savings of up to 20% on domestic cooking and heating costs
- No access or set up costs





MEET THE TEAM



NAME Nyerinde Mark

ROLE Managing Director

EDUCATION BACKGROUND

Masters In Business Administration, Bachelors Degree In Economics, Member Of Project Management Institute, Certified Public Accountant (CPA), ACI Treasury Certification.

PROFESSIONAL EXPERIENCE

Track Record In Bank Operations, Financial Reporting, Treasury Operations, Transformation Project Management, With A 5 Year Leadership Track Record In Driving Digital Transformation, FinTech Business And Behavior Change.



NAME Ssenteza Edward

ROLE Executive Director and Director Operations

EDUCATION BACKGROUND

MBA from Makerere University Business School and a certificate in project management from Uganda management institute.

PROFESSIONAL EXPERIENCE

Edward brings 12 years of experience in operations and project implementation. He is the Director and Project Manager for Broadway logistics where is in charge of project implementation and contract management.

His wealth of experience will be instrumental in driving operations excellence, ensuring safety and customer centric approaches, and implementing innovative strategies that promote efficiency.



NAME Tusiime Owen

ROLE Director Finance and Administration

EDUCATION BACKGROUND

Owen’s strategic acumen is complemented by his academic qualifications, including an MBA with a specialization in Strategic Planning, CPA (Uganda), and ACCA (UK) certifications. His Lean Six Sigma Green Belt and Prince 2 Accreditation further demonstrate his deep understanding of business strategy and operations

PROFESSIONAL EXPERIENCE

Owen Tusiime Serves as our Director Finance and Administration at GASOL Stations limited. Owen Tusiime is a distinguished Finance, Strategy, and Operations leader with over 14 years of experience driving financial growth and operational efficiency within multinational banking institutions. As a seasoned executive with a proven track record in business leadership, strategic planning, financial management, risk management, and stakeholder relationship management. Owen’s extensive career includes significant roles such as Executive Director and Chief Financial Officer at Ecobank Uganda, where he has played a pivotal role in enhancing the bank’s financial stability but also positioned it for sustained growth, through resilient drive for organizational success.



NAME Cuthbert Atwongeire

ROLE Director Finance and Administration

EDUCATION BACKGROUND

With a Master’s Degree in Accounting and Finance from Victoria University, Melbourne, Australia, Cuthbert possesses a strong foundation in financial management and economic principles.

PROFESSIONAL EXPERIENCE

Cuthbert is a seasoned economist with a proven track record in analyzing economic trends and informing strategic decision-making. His expertise lies in leveraging data-driven insights to drive sustainable growth and innovation.

His experience at the Ministry of ICT and National Guidance in Uganda has equipped him with a deep understanding of the local economic landscape and the challenges and opportunities facing businesses operating in the region.

Cuthbert’s passion for economic development and his commitment to sustainability make him a valuable asset to Gasol stations (U) Ltd through driving growth and innovation.



NAME Mugabi Raymond

ROLE Project Engineer

EDUCATION BACKGROUND

Raymond is a trained engineer with a bachelor of engineering in civil and building engineering, a master of science in construction management, post graduate diploma in project planning and management and a certificate in contract law and management from Joshua west(pty) South Africa.

PROFESSIONAL EXPERIENCE

Raymond is a registered engineer with 14 years of experience gained from a number of projects such as; Head of quality audit, URA tower, Consultant material engineer KCCA and ILISO consulting Engineer, among others.



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