

RASHAL Energies

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Business Plan for CNG Charging Stations

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ENERGIES
Igniting Africa

Executive Summary:

The following business plan outlines the establishment and operation of a Compressed Natural Gas (CNG) charging station. The purpose of this business is to meet the growing demand for clean and sustainable transportation solutions. The CNG charging station will provide a convenient and reliable refueling option for CNG-powered vehicles, contributing to reduced emissions and a greener environment.

The proposed solution addresses the two barriers to wide-scale adoption of CNG: accessibility of fuelling stations and the initial cost of conversion. The former is addressed by building up this infrastructure and the latter by creating a commercializable financing solution that does not require a large up-front payment and makes a loan more affordable through use of carbon credits.

Investing in CNG infrastructure contributes to the overall development of energy infrastructure in Tanzania. This includes the construction of CNG stations, pipelines, storage facilities, and related equipment. Such infrastructure development can stimulate economic growth, create job opportunities, and attract further investments.

Tanzania's energy demand is increasing due to population growth, urbanization, and industrial development. Investing in CNG infrastructure can cater to the rising energy needs, particularly in the transportation and industrial sectors.

Company Description:

1.1 Parent Company (Rashal Energies):

- Founded in 2017 by Farhiya Warsame (CEO) and Abshir Gure (Director).
- Mission: To develop infrastructure and systems that meet the energy needs of rural communities to enhance sustainable growth.
- Operates 12 gas stations in rural Tanzania with over 120 employees.
- USD2m average monthly sales.
- Currently working with the Stanford University Seed program to increase the network of their gas stations and expand into provision of CNG for vehicles, LPG for clean cooking and electric charging stations. All of this leverages Rashal's pre-existing infrastructure, expertise in the Tanzanian energy sector and operational excellence.

1.2 Business Objectives:

- To establish and operate a CNG charging station that meets industry standards and safety regulations.
- To provide high-quality CNG refueling services for various types of vehicles, including passenger cars, taxis, delivery vans, and commercial fleets.
- To create a positive customer experience by offering convenient refueling options, reliable equipment, and excellent customer service.
- To drive demand for CNG vehicles, leading to development of ancillary services and infrastructure (for example vehicle conversion workshops).

1.3 Legal Structure: Our company has been registered at Brella since 14th June 2017. We are a Limited Liability Company (LLC). We have been operational over 5 years and our compliance is 100%. Our company secretary is Endoxa Lawyers and their contact is info@endoxagroup.co.tz.

Market Analysis:

2.1 Market Overview:

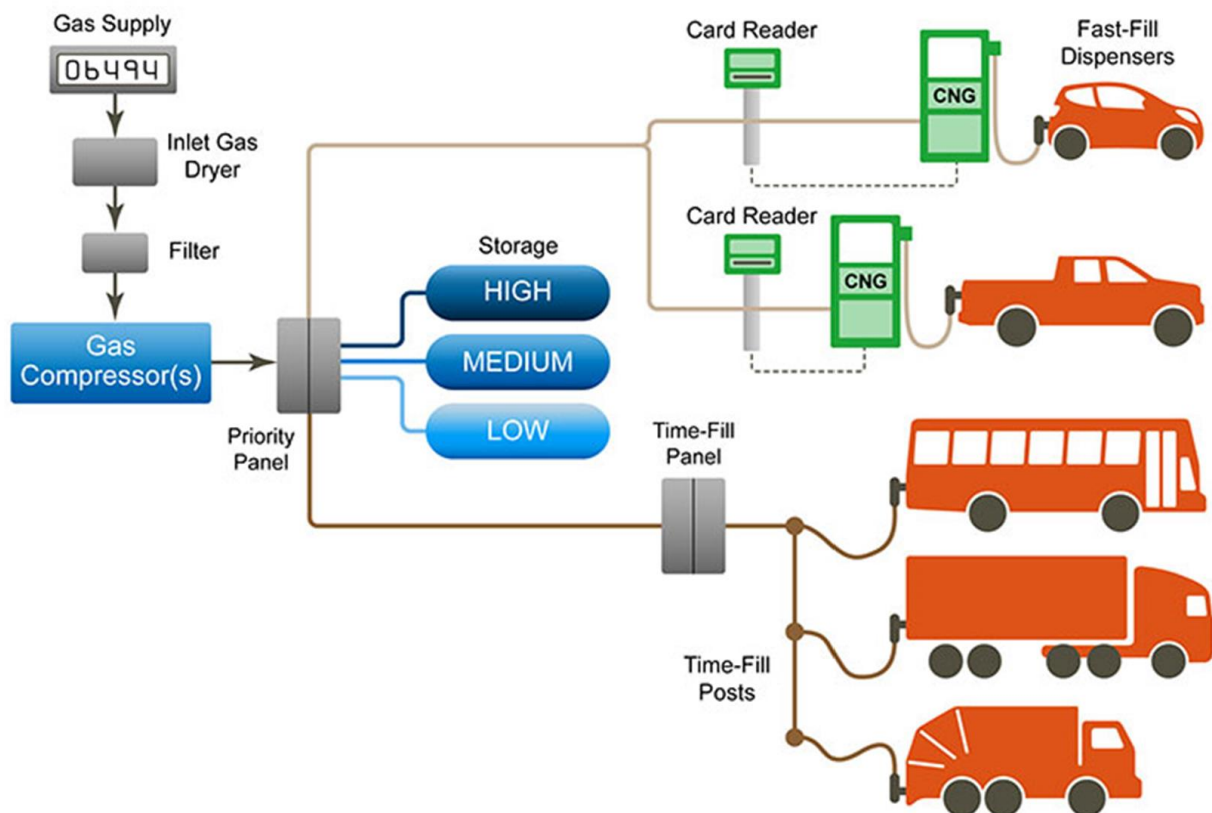
The market for CNG-powered vehicles is growing due to the increased emphasis on reducing emissions and transitioning to cleaner fuels. The demand for CNG charging stations is expected to rise, particularly in urban areas with a high concentration of vehicles. Businesses are increasingly going digital to break the cycle of escalating pollution and limit the usage of natural resources, which raises CO2 emissions in our environment.

CNG offers compelling cost reductions, being a cheaper fuel alternative. The benefits of such are commonly known to individuals and institutions alike, but the missing infrastructure and affordability of converting vehicles create a barrier to wide-scale adoption. By removing these challenges, we expect demand to be high.

2.2 Target Market:

- Fleet operators: Companies with large vehicle fleets, such as logistics, transportation, and delivery services.
- Public transportation: CNG may be used as a fuel for various types of vehicles due to its environmental benefits and cost-effectiveness, such as taxi, uber companies, bus operators, and ride-sharing services.
- Individual vehicle owners: Eco-conscious individuals who have converted their vehicles to CNG or plan to do so.
- Individual “heavy-users” of vehicles: e.g. taxi and rideshare drivers where incremental savings on fuel make a large difference
- Manufacturing Facilities: Industries such as cement, ceramics, glass, textiles, and food processing may use CNG for various processes, including heating, drying, and powering equipment.
- Institutional Users: Educational institutions, government buildings, and other institutional facilities may use CNG for their energy needs.

The adoption of CNG by industrial, commercial, and transportation users contributes to energy diversification, environmental sustainability, and the promotion of cleaner energy alternatives.



Products and Services:

3.1 CNG Charging Station:

- Installation of CNG refueling infrastructure, including compressors, dispensers, storage tanks, and safety systems.
- Multiple fueling points to accommodate simultaneous refueling.
- Compliance with safety standards and regulations for the storage and handling of CNG, providing safe customer access.

3.2 Support for CNG vehicle conversions:

- MOUs with auto workshops doing such CNG vehicle conversions
- Affordable pre-financing of vehicle conversions through partnership with banks providing micro loans and carbon credits.

3.3 Additional Services:

- Maintenance and repair services for CNG vehicles and refueling equipment.
- 24/7 customer support and assistance.
- App that integrates payment for fuel, monitoring of financial savings and offsetting of pre-financing for conversion.

Marketing and Sales:

4.1 Marketing Strategies:

- Targeted digital marketing campaigns to reach fleet operators, taxi companies, and individual vehicle owners.
- Partnerships with vehicle dealerships, local businesses, and organizations to promote the use of CNG and the availability of the charging station.
- Participating in industry events, trade shows, and conferences to increase visibility and build relationships.

4.2 Sales Forecast: The sales forecast will be based on market research, anticipated demand, and growth projections. Factors such as the number of CNG vehicles in the area, fuel consumption rates, and customer adoption rates will be considered to estimate revenue. See attachment for details.

Operations:

5.1 Location:

- We have identified our location in Mbagala that will serve as mother station. Details are as provided in the application.

5.2 Infrastructure and Equipment:

Ensure that the necessary infrastructure and equipment are in place, including:

- Compressors: Install appropriate compressors capable of compressing natural gas to the desired pressure for vehicle refueling.
- Storage Systems: Use high-pressure storage cylinders or cascades to store compressed natural gas safely.
- Dispensing Equipment: Install proper dispensers with appropriate flowrate and safety features to facilitate efficient and safe refueling.
- Pipelines and Piping: Construct and maintain a network of pipelines and piping systems.
- Development of a reliable power supply system and backup generators to ensure uninterrupted operations.
- Implementation of safety protocols and measures to handle and store CNG safely.

5.3 Staffing:

- We are liaising with Dar es Salaam Institute of Technology to provide the following:
 1. Staff Training: Ensure that station operators and personnel receive proper training on CNG safety procedures, emergency response protocols, and equipment operation.
 2. Qualified technicians and operators to manage the day-to-day operations of the charging station.
- Other services like the below will be part of Rashal Energies:
 3. Customer service representatives provide assistance and support to customers.
 4. Administrative personnel for billing, record-keeping, and compliance.

5.4 Safety Measures:

Implement safety measures to mitigate risks associated with CNG, including:

- Ventilation and Gas Detection Systems: Install proper ventilation systems and gas detection equipment to ensure adequate air circulation and early detection of gas leaks.
- Fire Suppression Systems: Incorporate fire suppression systems, such as fire extinguishers, automatic sprinklers, and flame detectors, to minimize fire hazards.
- Emergency Shutdown Systems: Install emergency shutdown systems that can quickly stop the flow of natural gas in the event of an emergency.
- Safety Signage: Display clear and visible safety signage to inform users about safety protocols and procedures.

5.4 Partnerships:

- Workshops: Sign MOUs with vehicle conversion workshops to enable customer access to such infrastructure, further creating incentives for the establishment of such services.
- Banks: Partner with a bank to provide affordable micro-loans to customers at appropriate time horizons and to do credit checks.
- Organizations: Sell carbon credits to e.g. a large corporate to partially pay back the vehicle conversion loan on the customers' behalf.

Financial Projections:

6.1 Startup Costs: \$4m

- Land is already acquired and owned which is registered for a petrol station which now we are switching to CNG.
- Costs related to equipment purchase, installation, and infrastructure development.
- Marketing and promotional expenses.
- Legal, licensing, and permit fees.

6.2 Revenue Streams: TZS 300m per month expected, our projections is attached.

We anticipate to acquire:

- Revenue from CNG refueling services based on the volume of gas dispensed (estimated vehicles and trucks per day: 500-600).
- Further service center vehicle conversion income.
- Additional revenue from maintenance and repair services.

6.3 Operating Expenses: TZS 22m per month expected

- Employee salaries and benefits.
- Utilities, including electricity and gas supply.
- Maintenance and repair costs.
- Administrative expenses, including insurance and licenses.

Risks and Challenges:

7.1 Regulatory Compliance:

- Regulatory and Compliance Risks: Changes in regulations or safety standards related to CNG refueling stations could impact operations and require costly modifications or upgrades.
- Ensure compliance with local, regional, and national regulations related to CNG refueling stations, safety standards, environmental requirements, and licensing.

7.2 Market Competition:

- As the demand for CNG charging stations increases, competition from existing and new players in the market is likely to intensify.
- Analyze the competitive landscape and develop strategies to differentiate the charging

7.3 Financing and Cash Flow:

- Please find the relevant documents attached.

7.4 Our Supplier has done over 3,000 stations in China and has the expertise to handle:

- Availability and reliability of suppliers for equipment, spare parts, and CNG supply can impact operations.
- Establish strong relationships with trusted suppliers and having contingency plans for potential supply disruptions or quality issues. We have signed a support agreement for 10 years.

7.5 Security and Safety:

- Handling and storing CNG safely is crucial to prevent accidents or incidents.
- Implementing strict safety protocols, training employees on proper handling procedures, and regularly inspecting equipment for safety compliance are essential. It is important to address security concerns, such as unauthorized access to the facility, by implementing appropriate security measures.
- We have a DIT certified technical graduate to handle these aspects.

7.6 Environmental Considerations:

- While CNG is a cleaner alternative to conventional fuels, there are still environmental considerations to manage.
- Proper disposal of waste materials, adherence to environmental regulations, and minimizing emissions during operations should be prioritized to maintain a positive environmental impact.

It is important to conduct a comprehensive risk assessment, develop contingency plans, and continuously monitor and mitigate potential risks and challenges to ensure the success and sustainability of the CNG charging station business.

We expect to switch vehicles and save emissions to help our country environmentally. Conversion rates of CNG are 1 mol of CO₂, compared to 6 mol of CO₂ for Petrol or Diesel.

Conclusion:

The establishment of a CNG charging station presents a significant opportunity to cater to the growing demand for clean and sustainable transportation solutions. By providing convenient and reliable CNG refueling services, the business can contribute to reducing emissions, promoting environmental sustainability, and meeting the needs of various customer segments. The comprehensive business plan outlined above provides a solid foundation for successfully launching and operating a CNG charging station.