

CNG for vehicles & Industries
from
Tembo Energies Ltd



INTRODUCTION:

Tanzania is blessed with abundant natural resources & discovery of natural gas is adding more colors to the future of our economy. As a sign of a growing economy, more vehicles are getting imported and used by Tanzanians , which results in huge importation fuel bill.

Tanzania can save billions of shillings annually when Natural Gas is made accessible to the vehicle users in the form of CNG. Moreover connecting industries will be a win-win situation for all the stakeholders involved in this value chain of Natural Gas.

ABOUT US – TEMBO ENERGIES LTD:

We, Tembo Energies, is a provider of complete CNG solution, which includes setting up of mother & daughter stations across our country, thus creating Natural Gas value chain accessible for all the stakeholders & end users like transport sector and industries.

For our CNG Projects, we have made tie-up with global leaders, so that the systems & equipments are Quality, easy to deploy and maintained by trained local talent & resources.

Creating a complete CNG based ECO-SYSTEM



Import & Supply of CNG Conversion Kits to authorized CNG conversion partners

Select & Train the Local Installation Team



How to Install CNG Kit in Car

CNG Conversion authorized Partners

CNG GAS STATION
Mother & Daughter stations



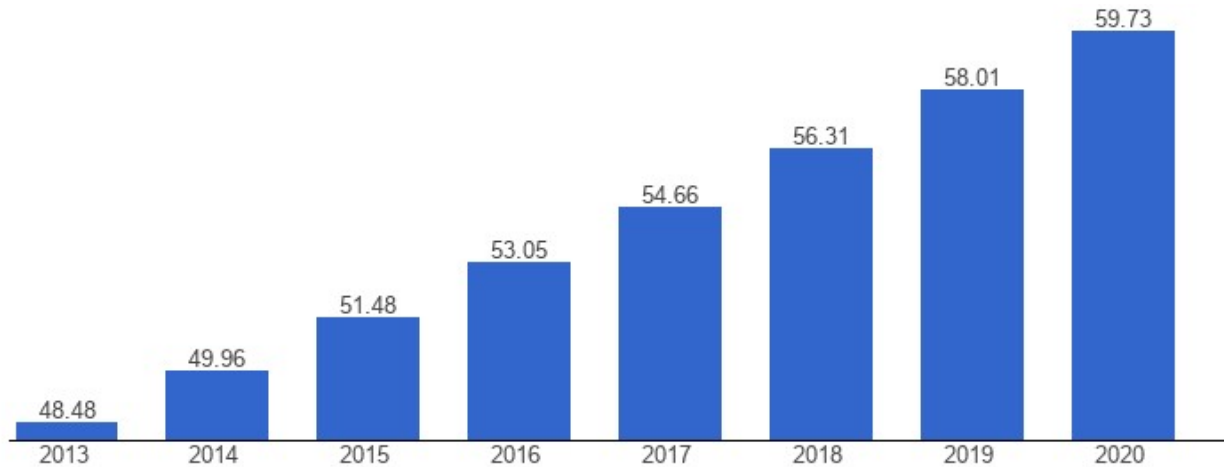
CNG Fuel Station

SUPPLY OF GAS TO RESELLERS USING SPECIAL VEHICLES

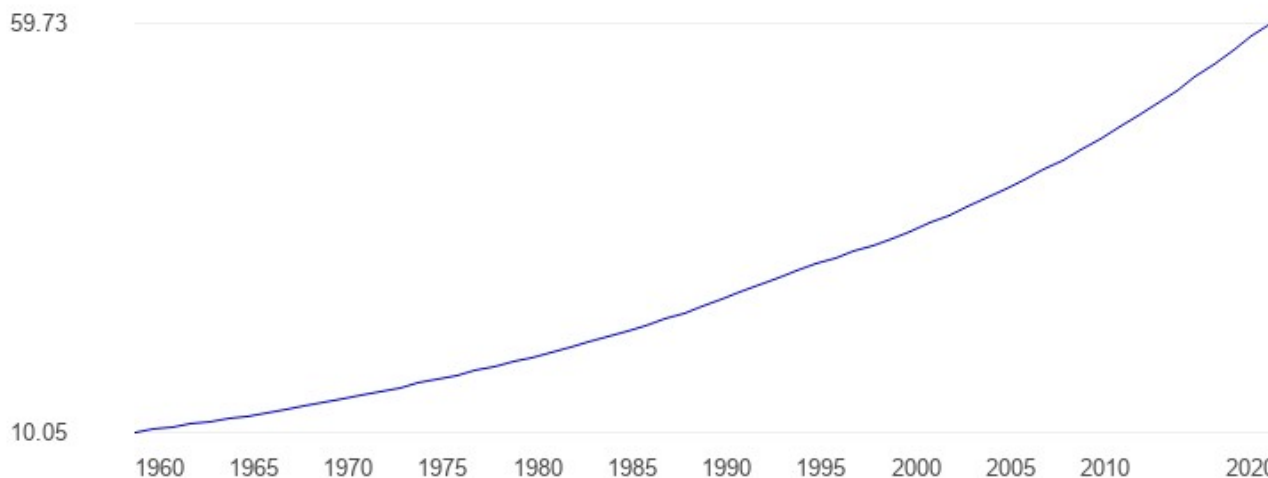


CNG Transportation

Tanzania – Population Growth



Longer historical series



Tanzania is a biggest country in East Africa in terms of land area and the **Population increased from 10M in the year 1960 to 60Million plus currently.**

Tanzania – Vehicle Statistics & Growth

Vehicle Category

START DATE 01-Jan-1996

END DATE 03-Apr-2020

Category	No of Vehicles
Agricultural Tractor	25,498
Agricultural Trailer	1,011
Construction Equipment	12,104
Heavy Load Vehicle(GVM > 3500Kg)	117,382
Heavy Passenger Vehicle(12 or more persons)	67,567
Light Load Vehicle (GVM 3500kg or Less)	112,066
Light Passenger Vehicle (Less than 12 persons)	667,926
Motor Tricycle	107,477
Motorcycle (less than 3 wheels)	1,629,733
Others	8,608
Trailer	48,939
Total:	2,798,311

Tanzania – Natural Gas & Major pipelines

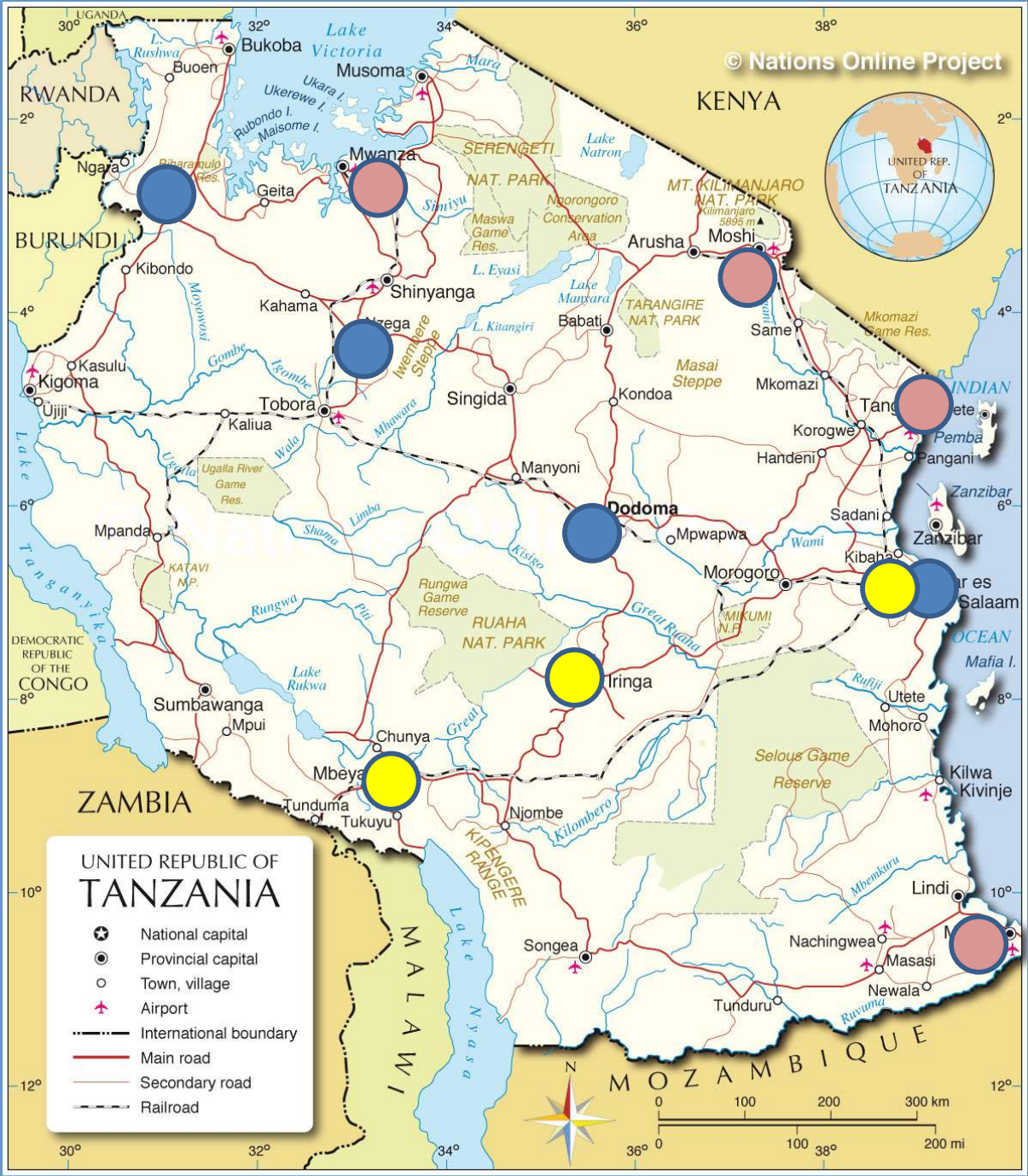


Tanzania has proven natural gas reserves of **57 trillion cubic feet**, with at least 49.5 trillion cubic feet of those reserves offshore in the Indian Ocean.

Two major pipelines in Tanzania & their details are as follows :

- 1) Gas is transported along a 25km, 12in pipeline from Songo Songo to the mainland, and from there along a 207km, 16in pipeline to Ubungu, Dar Es Salaam. (Green colour in the picture)
- 2) Mnazi Bay–Dar es Salaam is a 542km-long onshore pipeline project operated by TPDC. This gas pipeline, with a maximum diameter of 36 inches, starts at Mtwara (Tanzania) and ends in Dar es Salaam (Tanzania).(Marked in Red colour)

Our Proposed CNG/ LNG dispensing station at vital locations in TZ



Central Corridor
 DSM-DODOMA-NZEGA-NYAKANAZI

Trucks for Rwanda and Burundi using central corridor can be converted for CNG

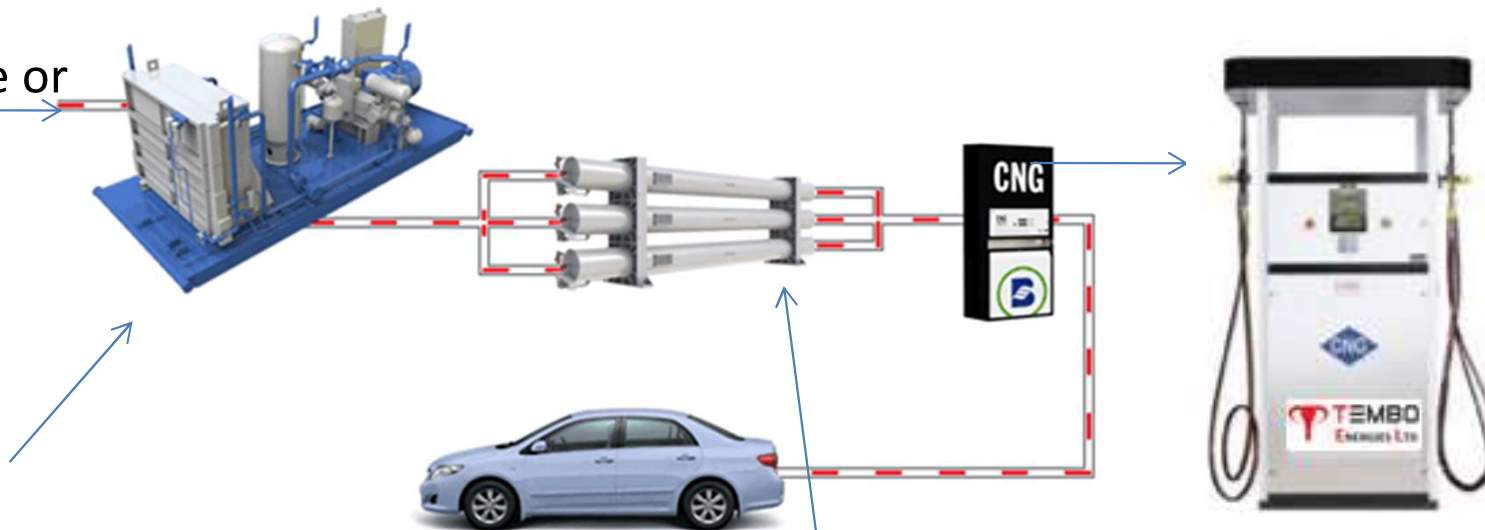
Southern Corridor
 DSM(4) – IRINGA - MBEYA

Other Locations
 TANGA-MOSHI-MTWARA-MWANZA



Mother Station - Layout for the fuel Station with NG inlet in pipeline

GAS INLET
From Pipeline or
Trucks



CNG Compressor



CNG Storage

Daughter Station - Layout of the fuel Station with CNG GAS delivery via trucks



GAS Delivery
from CNG trucks



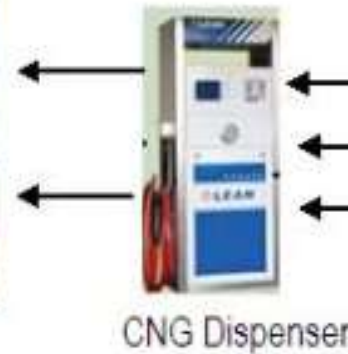
CNG Cascade



CNG compressor



CNG-Autos



CNG Storage Cylinders



CNG usage in different type of vehicles around the world Can be replicated in Tanzania

CNG Gas filling in Buses



CNG Gas filling in Cars



CNG Gas Used in Trucks



CNG Gas filling in Bajaj & Two wheelers





Current Status of CNG in TANZANIA

CNG STATION

Currently there is only one mother station located in Ubongo, Dar Es Salaam and one Daughter Station near Tazara. Tembo Energies is planning to open our 1st Private Mother station available for end users to access CNG on 24/7 basis.

CNG VECHICLES

There are more than five companies doing CNG vehicle conversion center in DSM & few hundred additional cars are getting converted to CNG every month. Lack of CNG fuel stations is discouraging the conversion process. We, Tembo Energies are addressing the basic challenge and working hard to make it accessible to potential end users.



Promoting CNG / LNG Ready Vehicles for the market

ISUZU



NISSAN



BAJAJ



HONDA



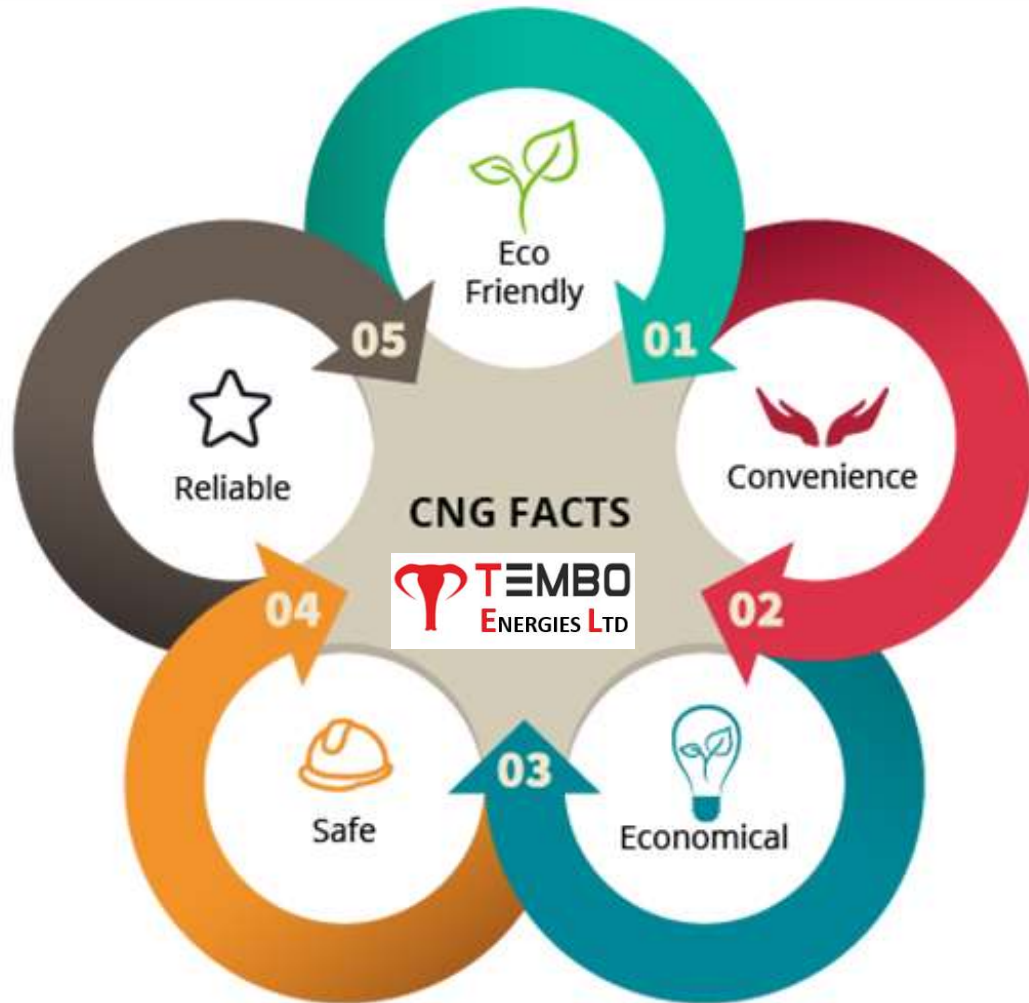
SUZUKI



FORD



Why we need to Promote CNG usage



Compressed Natural Gas (CNG)

An important national wealth yet to be made accessible to Tanzanians for their growth

Our VISION

TEMBO ENERGIES LIMITED, with a vision to make **CNG** easily accessible to Tanzanians for their growth.

STRONG BUSINESS BACKGROUND WITH YEARS OF EXPERIENCE

Aptus Solutions Limited is an IT company in business **for 22 years**. In the last 13 years, it has been licensed by TCRA as an ISP. Among its popular brands are Gofiber, Maisha Broadband and Maisha Host.

The common & major shareholders of **Tembo Energies Ltd** are major shareholders in **APTUS SOLUTIONS LIMITED**.

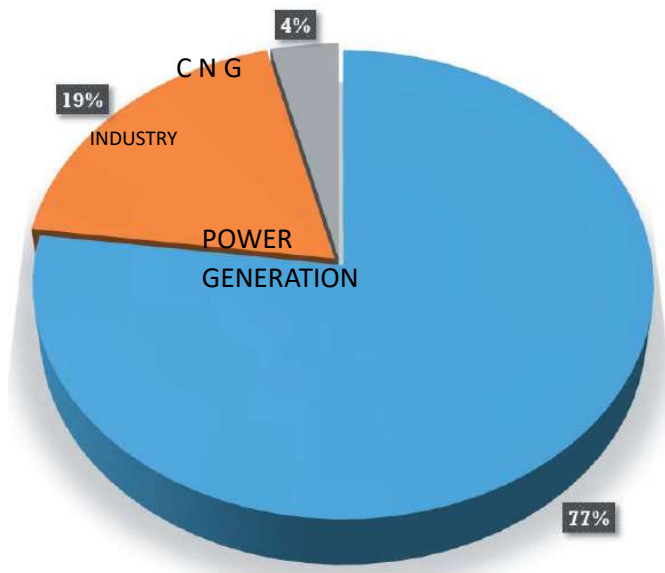
NATURAL GAS STATUS IN TANZANIA

Tanzania is blessed with God-given Natural Gas reserves which was found in the year 1974. However Major activities such as power generation started after three decades, songas started in 2004, later on followed by connecting more than 40 plus companies to GAS pipeline infrastructure.

To serve CNG (Compressed Natural Gas) currently only one mother station is in Ubungo, Dar Es Salaam along with one daughter station in TAZARA. Currently CNG conversion for vehicles are done by more than five companies.

With the support from private sector, EWURA & TBS created an authorized network of individual inspectors who can check and validate the quality of installation carried out.

USAGE OF GAS IN TZ (Power 77% : IND 19% : CNG 4%)



Pipeline length Details

S/N	Service Provider Name	Pipeline Length(km)	Number of valve stations	Contribution to total pipeline length (%)
1.	TPDC	533	16	67.3
2.	Songas	232	8	29.3
3.	Maurel Prom (M&P)	27.5	1	3.4
	Total	792	25	100

CNG DEMAND & CNG CONVERSION

There is huge drive to connect more industries who are away from the pipeline using CNG delivery trucks (virtual pipeline). Approximately 200 or more small vehicles are being converted on an average monthly basis.

With majority of them being long commuters or Uber/Taxi drivers, they drive a min of 100kms a day (10kgs of gas daily, and 300kgs of gas monthly per vehicle). This means every month we are creating a demand of 60,000kgs/month.

CNG STATION CHALLENGE

However, due to huge investment cost in setting up new CNG station combined with the technology complication such as non-availability of Compressors on time is posing as huge challenge for the growth of this sector.

We strongly believe in investing & operating few mother & daughter station combinations, which will create a strong growth trajectory in this sector and motivate other players to join with us. Since the demand is so huge, even ten or more companies operating simultaneously can't meet all the supply requirements.

HEAVY VEHICLE CONVERSION & DIESEL BLENDING

Heavy vehicles conversions are done in two ways, one is to convert fully to CNG from Diesel and the second one is "Dual fuel" which uses diesel blending technology added to trucks to save their fuel cost. Dangote, a leading cement manufacturer in Tanzania, opted for deploying Diesel blending system for more than 250 vehicles out of their 600 units. Their overall saving in the fuel cost is in the range of 25% to 30% which is quite substantial from a transporters point of view.

For trucks, a fully converted CNG vehicle will give them 400kms to 600Kms range depending on the size of CNG tanks added. If blended with diesel it can give them a saving of 25% to 30% range.

COST SAVING CALCULATIONS

On an average, heavy vehicle carrying container or bulk cargo from mines to port run 400 kms a day or 12,000 kms per month approximately. Below mentioned calculation of cost savings for both the options.

Mileage :

- Diesel = 2.5 kms per liter average
- CNG = Minimum 15 - 20 % efficiency
with average 2.8 - 3 kms per kilo CNG
- Dual = Diesel Dual blend Saving 25%

Price :

- Diesel = 2850 TSHS per Litre
- CNG = 1550 TSHS Per Kg

Monthly Costings & Savings per heavy vehicle:

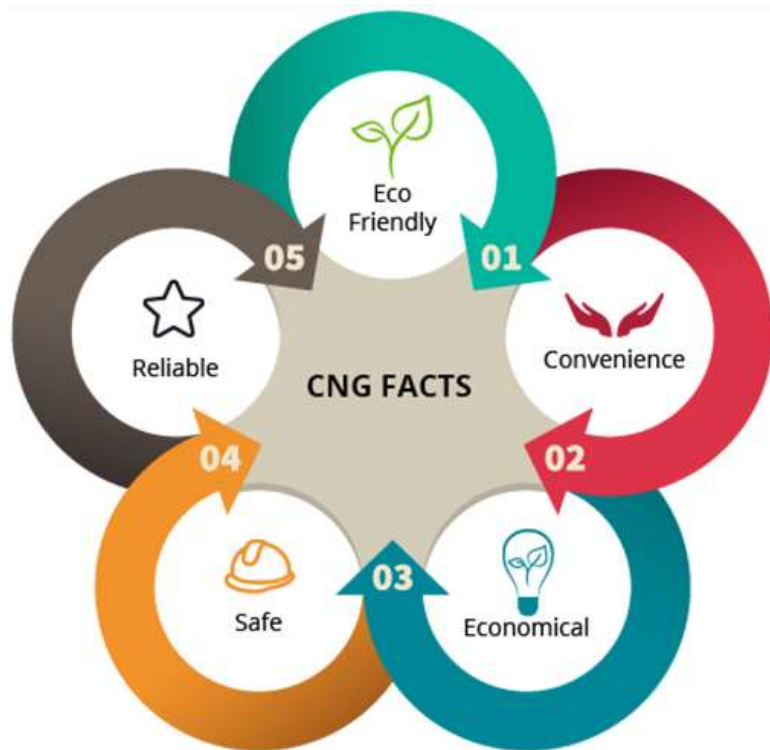
Diesel = 12,000 kms/2.5Kms per lt=4,800lts*Tshs 2850
 = TSHS 13,680,000 PM

CNG = 12,000 kms/2.8 kms per kg=4,285kgs*Tshs 1550
 = TSHS 6,641,750 PM

(Savings 106 % **which is 7m per month** compared to Diesel)

Dual = Dual cost with diesel and CNG is TSHS
 TSHS 10,944,000 **(25% savings - 2.7M per month)**

ADVANTAGES OF CNG



AVAILABILITY OF GAS IN TANZANIA

As of June 2022, the government has estimated the amount of total recoverable gas in the country to be at 57.54 trillion cubic feet. (1,630 billion cubic meters).

Equinor operates block 2 in Tanzania & estimated to hold more than 20 trillion cubic feet of gas. Shell operates block 1 and block 4 in Tanzania & these blocks have total estimated recoverable gas reserves of 16 trillion cubic feet.

Equinor and Shell, together with Ophir Energy, Exxon Mobil, and Pavilion Energy, are planning to build the LNG plant in the country's south-east Lindi region and expected to be operational in the year 2029 - 2030.

SUMMARY

Our next vertical integration is to enter the Truck conversion market, currently agreements are set in place with world's leading suppliers and have begun pilot/testing.

We strongly believe in the CNG business, very promising as long as we own the mother station, which will allow us to have mobile stations & daughter stations (in various areas). It will help us to promote local conversions and usage of CNG within that area (including urban cities like Dodoma, Morogoro & Tanga) before we embark on further areas like Mwanza, Mbeya, Arusha etc.

TEMBO ENERGIES LTD

CASH FLOW PROJECTIONS

Drawn by:

Capens Financial Consultancy

P.O.Box 79796.

Dar Es Salaam.

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TEMBO ENERGIES LIMITED

TWELVE MONTHS CASH FLOW PROJECTIONS

PREAMBLE

This document is strictly for information only and projections have been compiled by the consultant, CPA Philbert R. Sebastian with close corporation of the senior management for illustrative purposes and do not constitute actual forecasts.

1.0. STATEMENT OF PURPOSE

This document is drawn for the purpose of seeking Term Bank Loan / Equipment purchase facility for setting up a CNG Mother station in Dar Es Salaam. The facility will be exclusively used to finance & purchase of equipment costs, which will lead to expedient and efficiency services delivery to potential clients.

About the Business

TEMBO ENERGIES LTD incorporated in May 2023 Under Section 128 of the Companies Act, as amended in 2002.

The Business has office & CNG Station space located at Plot No.58/2, NELSON MANDELA ROAD, Dar Es Salaam. (Mabibo Area, Mwongozo Mtaa, Makuburi Ward in Ubungo Municipality). The principal business activity is to supply CNG (Compressed Natural Gas) to individual and corporate clients whereby they can use the same for their vehicle or for industrial purposes.

The business registered in May 2023 considering the fact & market analysis showing huge demand for Natural gas among individual and corporate clients.

The management is confident that the estimated sales figures will be achieved for the projected period of next 12 months.

2.0. TWELVE MONTHS CASH FLOW PROJECTION PROJECTIONS

The business is carried by producing CNG from the Natural Gas pipeline connected to our proposed compressors and other related machineries. Our service is selling of CNG in kilograms to the potential industrial, corporate transporters and individual clients.

Presented below are twelve (12) months sales projections for the 2024 period.

Financial Assumptions

➤ Sales revenue Assumptions

Expected sales /turnover:

- Average daily Production in Kgs will be in the range of 15,000 kgs to 19,000 Kgs.
- Initial daily sales will be in the range of 10,000 Kgs on an average
- In three months' time the average daily sales will reach 15,000 Kgs per day
- Each kg current selling price is TSHS 1550
- Our Natural Gas buying price Per Kg is TSHS 1000 (approximately)
- Operations Cost per Kg is TSHS 170
- Labour Cost per kg is TSHS 30
- Average net profit before taxes per Kg is TSHS 350
- Average Monthly Sales for the first 3 months = TSHS 465,000,000
- Average monthly profit from the Sale for the first 3 months = TSHS 105,000,000
- Sales Cycle = 30 days
- Other New potential clients = Average increment 5% per month

➤ **Operating cost assumptions**

Operational costs : Average 10% to 12% of total sales is opex cost

Payroll costs : 3% of total sales

Insurance Cost : 1% of total Sales

Corporate tax : 30% of sales after operational costs and interest

Approximate sales for Twelve months forecast

Months	CNG Sales in KGS	Increment
1	300,000	5%
2	315,000	5%
3	330,750	5%
4	347,288	5%
5	364,652	5%
6	382,884	5%
7	402,029	5%
8	422,130	5%
9	443,237	5%
10	465,398	5%
11	488,668	5%
12	513,102	5%
Total CNG	4,775,138	Expected sales

Attached Sheets are for additional reference as follows

- A. Start-up Expenses summary**
- B. Cost of goods sold – Calculation**
- C. Twelve months Sales revenue projection**
- D. Cash Flow Forecast one year**
- E. Approximate - Loan Monthly repayment Schedule**

Start-Up Expenses Year I (Starting Balance Sheet)

Company Name: Tembo Energies Ltd

Fixed Assets	Amount	Depreciation (years)	Notes
Real Estate-Buildings	100,000	10	
Equipment	550,000	20 years	Compressors 20 years
Installation, Pipeline and Fixtures	24,000	12	
Electricals, Transformer and Genset	95,000	12	
Duty, clearing & VAT etc	75,000	5	
Total Fixed Assets	\$ 844,000		

Operating Capital	Amount	Notes
Pre-Opening Salaries and Wages	10,000	
Prepaid Insurance Premiums	2,000	
Legal and Accounting Fees	2,000	
Rent Deposits	12,000	payable 6 months
Utility Deposits	2,000	
Supplies to be purchased	50,000	
Advertising and Promotions	5,000	
Licenses	5,000	
Working Capital (Cash On Hand)	10,000	
Total Operating Capital	\$ 98,000	
Total Required Funds	\$ 942,000	

COGS Calculator

Company Name: TEMBO ENERGIES LTD

Variable Costs of Products	
Timeframe:	Monthly
Product :	CNG
Raw materials Purchase cost from PANAFRICA / TPDC	1,000
Labor used to produce product	30
Production expenses (Electricity, Maintance and Spares etc)	170
Total Product Expenses to produce per KG of CNG	1200
Number Units Sold in timeframe used	300,000
Cost of Goods Sold	360,000,000

Sales Forecast Year I

Company Name: TEMBO ENERGIES LTD

With a Monthly sales Growth of 5% average

Product Lines	Units	Sales Price Per Unit	COGS Per Unit	Margin Per Unit
CNG GAS SALES IN KGS	Kgs	1550	1200	350

Product Lines	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual Totals	Category Breakdown
CNG GAS SALES IN KGS														
Kgs Sold	300,000	315,000	330,750	347,288	364,652	382,884	402,029	422,130	443,237	465,398	488,668	513,102	4,775,138	
Total Sales in TSHS	465,000,000	488,250,000	512,662,500	538,295,625	565,210,406	593,470,927	623,144,473	654,301,697	687,016,781	721,367,620	757,436,001	795,307,802	7,401,463,832	100.0%
Total COGS	360,000,000	378,000,000	396,900,000	416,745,000	437,582,250	459,461,363	482,434,431	506,556,152	531,883,960	558,478,158	586,402,066	615,722,169	5,730,165,547	77.4%
Total Margin in TSHS	105,000,000	110,250,000	115,762,500	121,550,625	127,628,156	134,009,564	140,710,042	147,745,544	155,132,822	162,889,463	171,033,936	179,585,633	1,671,298,285	22.6%

Cash Flow Forecast Year I

Company Name: TEMBO ENERGIES LTD

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Total in TSHS
Cash Inflows													
CNG Sales in KGS	300,000	315,000	330,750	347,288	364,652	382,884	402,029	422,130	443,237	465,398	488,668	513,102	4,775,138
Total Sales Value in TSHS	465,000,000	488,250,000	512,662,500	538,295,625	565,210,406	593,470,927	623,144,473	654,301,697	687,016,781	721,367,620	757,436,001	795,307,802	7,401,463,832
Total Cash Inflows	465,000,000	488,250,000	512,662,500	538,295,625	565,210,406	593,470,927	623,144,473	654,301,697	687,016,781	721,367,620	757,436,001	795,307,802	7,401,463,832
Cash Outflows													
Cost of Goods Sold (COST + OPEX+PAYROLL INCLUDED)	360,000,000	378,000,000	396,900,000	416,745,000	437,582,250	459,461,363	482,434,431	506,556,152	531,883,960	558,478,158	586,402,066	615,722,169	5,730,165,547
Loan Payments	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	360,000,000
Total Cash Outflows	390,000,000	408,000,000	426,900,000	446,745,000	467,582,250	489,461,363	512,434,431	536,556,152	561,883,960	588,478,158	616,402,066	645,722,169	6,090,165,547
Net Cash Before Taxes	75,000,000	80,250,000	85,762,500	91,550,625	97,628,156	104,009,564	110,710,042	117,745,544	125,132,822	132,889,463	141,033,936	149,585,633	1,311,298,285
Taxes 30%	22,500,000	24,075,000	25,728,750	27,465,188	29,288,447	31,202,869	33,213,013	35,323,663	37,539,846	39,866,839	42,310,181	44,875,690	393,389,485
Net Profit after Taxes TSHS	52,500,000	56,175,000	60,033,750	64,085,438	68,339,709	72,806,695	77,497,030	82,421,881	87,592,975	93,022,624	98,723,755	104,709,943	917,908,799