

AUTOGAS IN NIGERIA

What is it?

PART 1: TECHNICAL

Autogas Users



Petrol Vehicles



Tricycles
4 stroke engine only



Petrol Generators
4 stroke engine only



Vans & Lorries

Types of Gas

There are two types of autogas



CNG

Compressed Natural Gas
(NIS 929:2017)

Predominantly methane gas (90%+).
Stored and transported as pressurised gas at 250Bar



LNG

Liquefied Natural Gas
(NIS 1020:2018)

Predominantly methane gas (90%+).
Stored and transported as a liquid at minus 163°C



LPG AUTOGAS

(DNIS EN 689)

Predominantly propane gas (75%+).
Stored and transported as a liquid.



LPG BUTANE

(NIS 555:2020)

Predominantly butane gas (95%+).
Stored and transported as a liquid.
Burns hot in engines.



LPG PROPANE

(NIS 555:2020)

Predominantly propane gas (95%+).
Stored and transported as a liquid.



LPG COOKING GAS

(NIS 555:2020)

Predominantly butane. Stored and transported as a liquid. Can have up to 50% unsaturated hydrocarbons, which can form plastics.



May form plastic in engine



Stored as a liquid



Pressurised



Burns hotter in engine



Stored as a gas



Cryogenic

Developed by: Nigeria LPGas Association (NLPGA); Nigeria Gas Association (NGA); Lagos Chamber of Commerce & Industry (LCCI) LPG Group; and, Association of Local Distributors of Gas (ALDG).
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Association of Local
Distributors of Gas
Limited By Guarantee

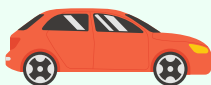


AUTOGAS IN NIGERIA

What is it?

PART 2: PRACTICAL

Autogas Users



Petrol Vehicles



Tricycles 4 stroke engine only



Petrol Generators 4 stroke engine only



Vans & Lorries

| | Petrol Vehicles | Tricycles 4 stroke engine only | Petrol Generators 4 stroke engine only | Vans & Lorries |
|-------------------------------|--|-----------------------------------|---|----------------|
| CNG | ✓ | ✓ | ✗ | ✓ |
| LNG | ✓ | ✓ | ✗ | ✓ |
| PROPANE | ✓ | ✓ | ✓ | ✗ |
| AUTOGAS LPG | ✓ | ✓ | ✓ | ✗ |
| BUTANE | ✗ <i>May only be used under specific authorization by the vehicle OEM. Not recommended.</i> | ✓ | ✓ | ✗ |
| DOMESTIC LPG (Cooking gas) | ✗ <i>Not recommended for Internal Combustion Engine (ICE) due to the likelihood in future of refinery product with unsaturated hydrocarbons (olefins) coming into the pool of Domestic LPG. Unsaturated hydrocarbons (olefins) will polymerize in ICEs leading to damage.</i> | ✗ | ✗ | ✗ |



Suitable



Suitable but...



Not Suitable

AUTOGAS IN NIGERIA

What is it?

PART 3: COMMERCIAL

Autogas Users



Petrol Vehicles



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Vans & Lorries

TYPICAL CONVERSION COST

₦300k - ₦400k

₦100k - ₦200k

₦90k

₦18m*

AUTOGAS SAVINGS

₦40/km
or
40%

₦10 - ₦15/km
or
50% - 75%

₦500/Hr
or
50%

₦360/km

TIME TO RECOVER

9 - 12
months

3 - 4
months

150 - 200
hrs

12
months

* This is the cost differential between a gas engine truck and a diesel engine truck

AUTOGAS IN NIGERIA

What is it?

PART 4: PROPOSED PALLIATIVES

Autogas Users



Petrol Vehicles



Tricycles
4 stroke engine only



Petrol Generators
4 stroke engine only



Vans & Lorries

SIZE

**1.6 litre
engine
Max**

**All 4
stroke**

**All 4
stroke**

All

TARGET

1 million

2 million

5 million

All

**PALLIATIVE
INCENTIVE**

₦200k

₦100k

₦50k

**Duty, levy
and VAT
waiver for
36 month
window**

VALUE

₦200bn

₦200bn

₦250bn

**₦150bn
estimated**