



REPUBLIC OF BOTSWANA  
MINISTRY OF MINERALS & ENERGY  
DEPARTMENT OF ENERGY

# MS. ANNE K. LEIPEGO

- Energy Statistician
- Speaker

## EXPERIENCES IN THE PRODUCTION OF LPG DATA: BOTSWANA CASE

### PRESENTATION



Seasoned energy statistician and thought leader with over 30 years of experience shaping Africa's energy landscape. She specializes in energy data analytics and strategic research.

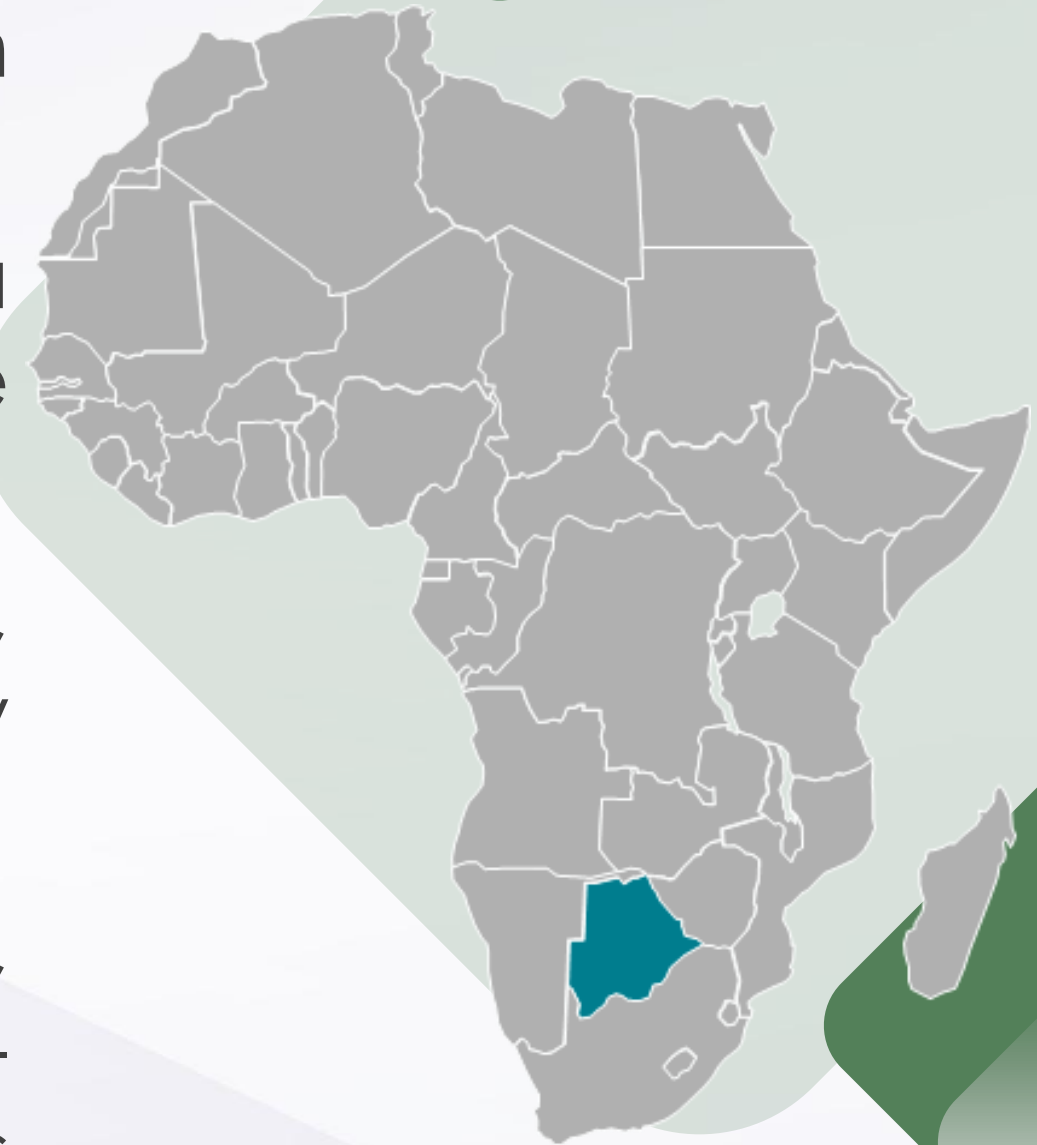
# PRESENTATION LAYOUT

- COUNTRY OVERVIEW
- ENERGY OVERVIEW
- BOTSWANA LPG MARKET BACKGROUND
- BOTSWANA LPG MARKET BACKGROUND:SWOT
- LPG DATA PRODUCTION (IMPORTS:2010-2024)
- LPG DATA PRODUCTION (H/H CONSUMPTION: 1981-2022)
- ACCESS TO CLEAN COOKING (DATA)
- CHALLENGES IN PRODUCTION OF LPG DATA
- GENERAL SUCCESSES AND OPPORTUNITIES
- CONCLUSION AND WAY-FORWARD



# COUNTRY OVERVIEW

- ▶ Botswana has been a member of the African Union since 1966.
- ▶ Botswana covers an area of 581,000 km<sup>2</sup> with a population of 2,3 million people according to the 2022 National Population & Housing Census.
- ▶ Botswana is land-locked, surrounded by Namibia, Zimbabwe and South Africa and it is dominated by the Kalahari Desert in the west.
- ▶ Botswana's economy is reliant on diamonds, however, there are other minerals like copper-nickel, coal, soda ash, gold and semi-precious stones.



# ENERGY OVERVIEW

**Electricity Sub-Sector:** The country's installed capacity stands at 732 MW ( 600MW from Morupule A; 132MW Morupule B and 160 MW from two diesel peaking plants. Most of the electricity is generated from coal, and insignificant amounts from diesel and solar. The balance of electricity is imported from neighbouring states.

**Petroleum Fuels:** Botswana is totally reliant on imports of refined petroleum products (Petrol, Diesel, Paraffin, Aviation Fuels, LPG,). Most are imported from and through South Africa, and transported by mostly road.

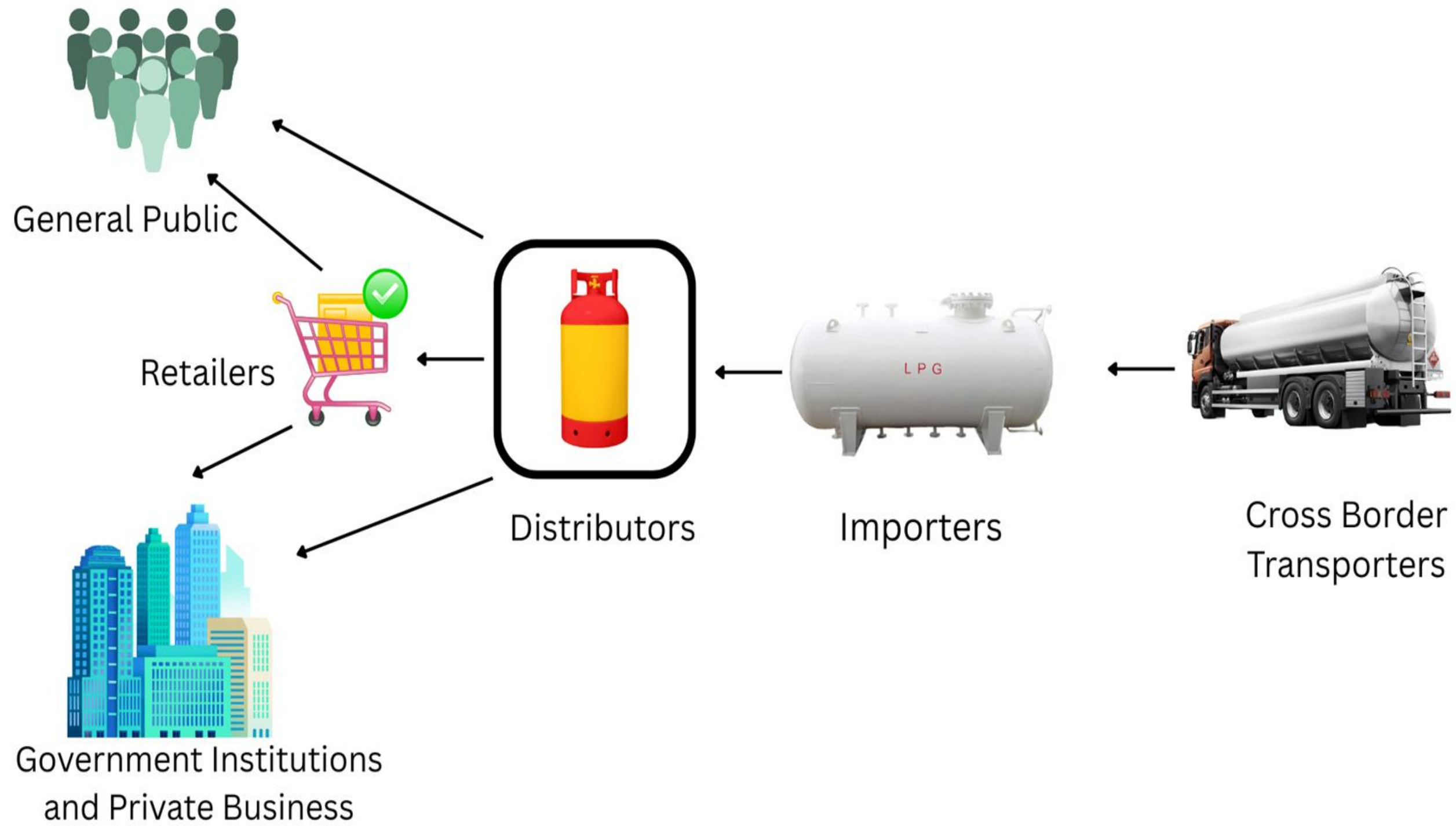
## ENERGY RESOURCE AVAILABILITY

- **Coal:** It is estimated at 212 billion tonnes and most goes for power generation whilst the balance is shared between exports and local industries.
- **Solar:** Botswana receives over 3200 hours of sunshine per year, with an average insolation on a flat surface of 21MJ/m<sup>2</sup>. This makes solar energy a promising renewable energy resources for Botswana.
- **Wind:** Although some areas experience reasonable wind speeds, wind potential has not yet been fully explored.
- **Biomass:** Theoretically, biomass potential is estimated at 32million GJ per year

# BOTSWANA LPG MARKET BACKGROUND

- i. Botswana operates a downstream LPG market and a small number of firms control the market ( 6 Suppliers and 9 Distributors).
- ii. LPG value chain consists of: Transporters/Importers; Distributors; Retailers and Users made up of Government Institutions, Private Users and General Public.
- iii. Almost all LPG is imported from South Africa by road **and rail** and limited amounts are imported from Saudi Arabia (Rus Tanura) and US Gulf Coast through South Africa.
- iv. On an annual basis, Botswana consumes on average 21,000,000 kilograms (21,000 tons) of LPG.
- v. Total storage capacity for LPG importers and distributors stands at 851,580 litres and 607,000 litres respectively.

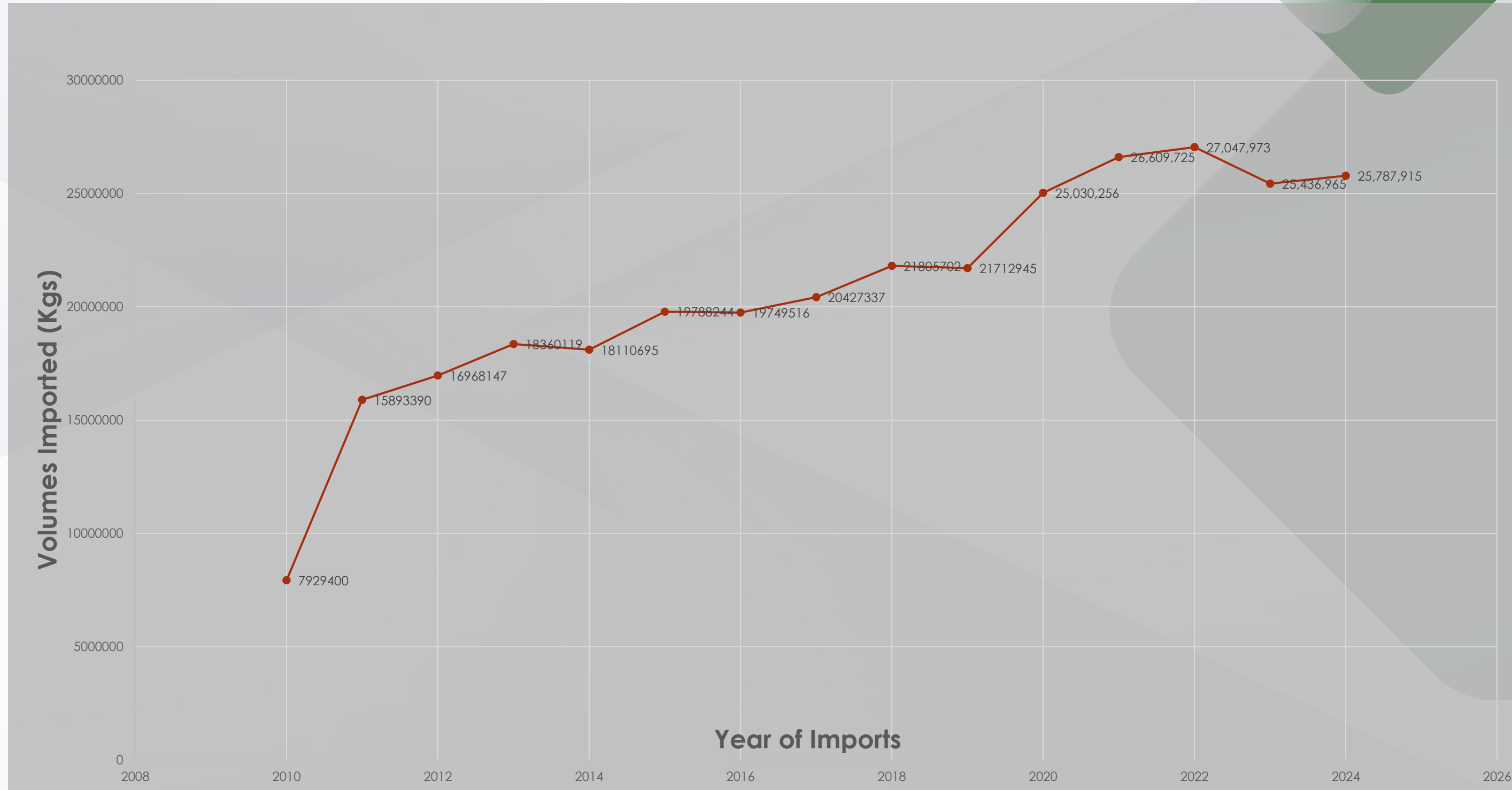
# LPG VALUE CHAIN - BOTSWANA



# BOTSWANA LPG MARKET BACKGROUND: SWOT

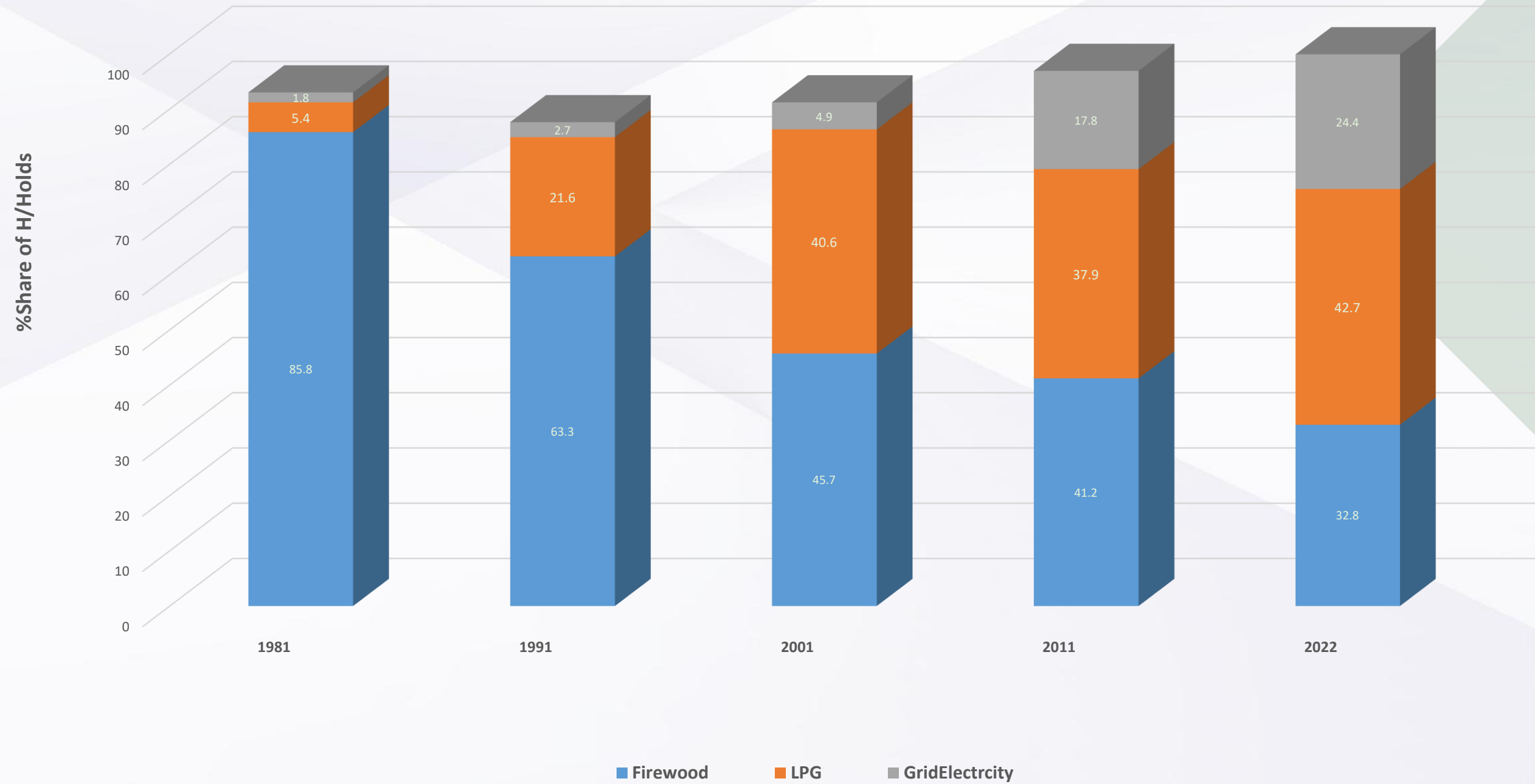
<b>STRENGTHS</b>	<b>WEAKNESSES</b>
Steady Supply of Gas Under Normal Circumstances	Inefficiently Structured Market
Noticeable Investment in gas infrastructure	Limited Competition at Supply & Distribution
	Market mostly Oligopolistic at Supply & Distribution
	Existence of Un-licenced Operators, Especially at Retail
	Price Discrimination
	Health and Safety Concerns
	Limited Investment in LPG Logistical Infrastructure
<b>OPPORTUNITIES</b>	<b>THREATS</b>
Establishment of an Energy Regulator	Heavy Reliance on One Source of Supply (RSA)
Increase of LPG use in some government institutions	Lack of Public Awareness on Safe Handling & Use of LPG
Approved National Energy Policy	Heavy Reliance on Road for Primary Transportation
	Volatility of International Oil Prices
	Lack of Appropriate Gas Quality Standards
	High and Unaffordable LPG Prices

# LPG DATA PRODUCTION (IMPORTS :2010-2024)



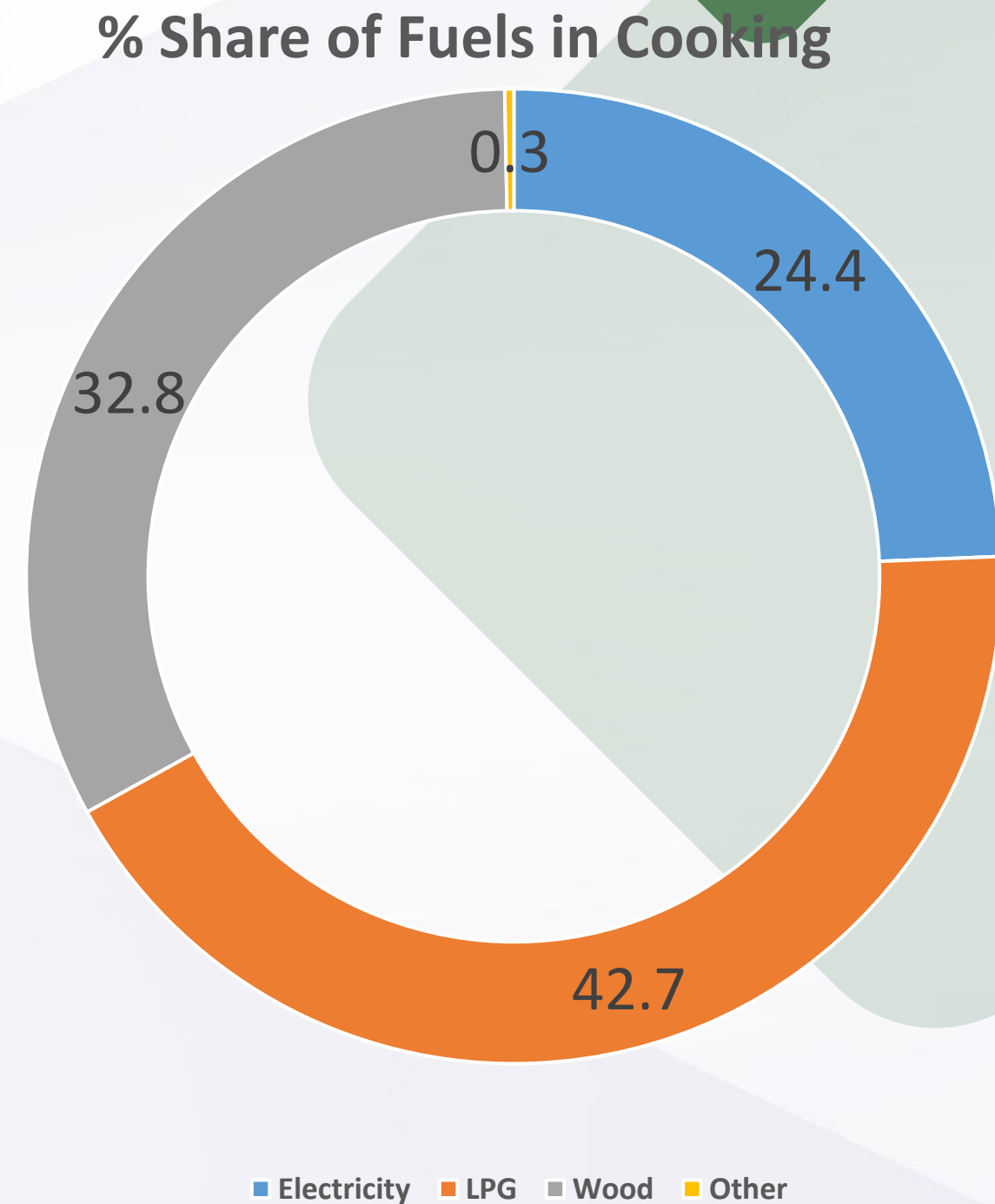
# LPG DATA PRODUCTION(H/HOLDS CONSUMPTION :1981-2022)

H/H Main Source of Energy for Cooking (1981-2022)



# ACCESS TO CLEAN COOKING: DATA

- According to the National Energy Use Survey (NEUS:2022/23):
- LPG is the main source of energy for cooking at a share of 42.7%;
- Electricity stood at a share of 24.4%.
- Firewood stood at a share of 32.8%
- Cities and Towns use electricity and LPG as the main sources of cooking whilst the rest of the country (rural areas) rely on firewood.



# CHALLENGES IN PRODUCING LPG DATA

- Petroleum Products Consumption data, including LPG is not available within the Department; (excluding H/H Consumption)
- Technical difficulties in conducting Business Surveys (Plans to do benchmarking)
- Reluctance of LPG Companies to give out data (lack of trust);
- No Statutory Instrument which binds LPG companies to provide data to the Department;
- The Department of Energy does not have an Energy Information System as yet;
- Lack of Skills/Shortage of Staff

# GENERAL SUCCESSES AND OPPORTUNITIES

- The establishment of Botswana Energy Regulatory Authority (BERA), 2016/17;
- The LPG Market Study. BERA, May 2021.
- Development of the BERA (Liquefied Petroleum Gas Operations) Regulations, 2022 – S.I. No. 116 of 2022 which are being implemented.
- Adoption and Approval of some Petroleum and LPG Standards (including but not limited to: test methods for metallic hoses; safety aspects of appliances; handling, storage, distribution, maintenance; industrial installations and design & construction etc.).
- The NEUS 2022/23 : Which assisted with baseline data on crucial issues like: Electricity Access; Access to Clean Cooking data; Penetration of RE Technologies, to mention but a few.
- Deterrent of LPG Cylinder exports by BERA (Press Release-19 August 2022)

## CONCLUSION AND WAY-FORWARD

The Department of Energy acknowledges that there are still challenges with production of LPG data and a lot is still to be done.

The Department plans to:

- Conduct an Energy Use Survey covering Businesses;
- Establish an Energy Information System(EIS); however, funds have not been sourced as yet for these two activities.

# THANK YOU

Anne has led key national initiatives including Botswana's National Energy Use Survey. She has represented Botswana in major global forums, serving as National Focal Person for the African Union's establishment of the National Energy Information System; SDG 7 Project and the World Bank/Economic Consulting Associates' National Electrification Assessment.

Anne is a published author and speaker on energy matters and gender leadership in extractives.

She holds a Masters degree in Economics from the University of East Anglia and a Bachelors Degree in Statistics and Economics from the University of Botswana, and currently works on contract basis for the Ministry of Minerals and Energy.



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