



UNITED REPUBLIC OF TANZANIA MINISTRY OF ENERGY



Tanzania's Economic Outlook and Energy Development Potential in Tanzania

By:

Eng. Innocent G. Luoga

Commissioner for Electricity and Renewable Energy

31st January, 2024

5TH TANZANIA ENERGY COOPERATION SUMMIT





Outline

- 1. INTRODUCTION**
- 2. ENERGY SECTOR OVERVIEW**
- 3. NATIONAL ENERGY POLICIES**
- 4. ELECTRICITY SUB SECTOR**
- 5. ENERGY POTENTIALS AND OPPORTUNITIES**
- 6. PETROLEUM SUBSECTOR**
- 7. NATURAL GAS DISCOVERY**
- 8. CHALLENGES**
- 9. WHY INVEST IN TANZANIA**
- 10. CONCLUSION**



1. ENERGY SECTOR OVERVIEW



- Energy sector is a driving force behind economic development, and the energy sector stands as a pivotal enabler in this transformative journey.
- As the nation aspires to achieve sustainable economic growth and improve the living standards of its people, the modern energy supply to socio-economic activities is a paramount.
- Tanzania is endowed with diverse energy sources including biomass, natural gas, hydro, coal, geothermal, solar, wind and uranium, much of which is untapped.



2. NATIONAL ENERGY POLICIES AND IMPLEMENTATION STRATEGIES



National Energy Policy – 1992

- Emphasis:
 - Development and use of indigenous energy sources.
- Account for structural changes and market liberalization.

National Energy Policy (Update) – 2003

- Emphasis:
 - Market regulation and reforms.
 - Private sector participation.
 - Rural energy access.

National Energy Policy (Update) – 2015

- Emphasis:
 - Energy mix & energy efficiency.
 - Improving business environment for private sector.
 - Local participation.

The Ministry is ongoing with developing Policy Implementation Strategy

INSTITUTIONAL, LEGAL AND REGULATORY FRAME WORK



Institutions Under the Ministry of Energy

TANESCO: Responsible for electricity generation, transmission and distribution.

REA: Responsible for promotion and facilitation of access to modern energy services in rural areas.

TPDC: Responsible for all activities related to upstream, midstream and downstream petroleum.

EWURA: Responsible for regulating electricity, water and mid-downstream petroleum and natural gas activities.

PURA: Responsible for regulating upstream petroleum sector in the country.

PBPA: Responsible for coordination of bulk importation of the petroleum products in the country

TGDC: Responsible for geothermal exploration and development in the country.

GASCO: Responsible for Gas distribution in the country

TANOIL: Responsible for Oil distribution in the country

Other Guiding Instruments



National Energy Policy, 2015

To guide the sustainable development of the Energy Sector.



Electricity Act, 2008

- To attract substantial private sector participation in the development of the electricity.

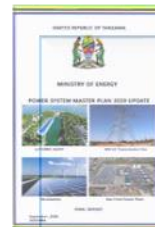


Electricity Supply Industry Reform Strategy and Roadmap 2014-2025.



REA Act, 2005

- Became operational in 2007 purposely for furthering rural electrification.



Power System Master Plan 2020 Update

- Outline project development to meet the short to long -term power demand.



Petroleum Act, 2015

- Guide the development of the petroleum sub-sector.



Model production Sharing Agreement, 2013

- Guides PSA negotiations for Exploration Blocks



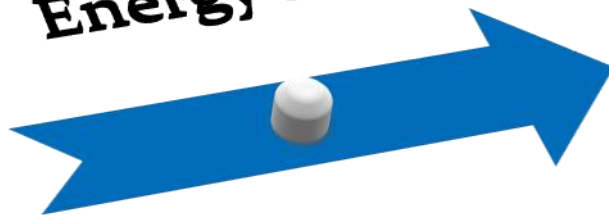
EWURA Act,
2001



To ensure regulatory oversight and promotion of private sector investment in the energy sector



Energy Sector

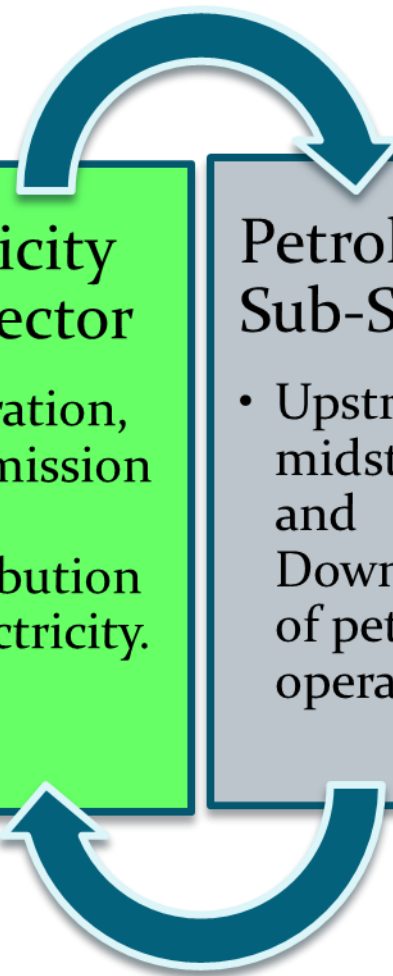


Electricity Sub-Sector

- Generation, transmission and Distribution of electricity.

Petroleum Sub-Sector

- Upstream, midstream and Downstream of petroleum operations.





ELECTRICITY SUB-SECTOR



Electricity Supply



Installed Capacity

The total country installed capacity is 1,938.35MW

Grid installed capacity is 1,899.05MW;

Off-grid installed capacity is 39.30MW

Demand

Current maximum demand as recorded in August 2023 is 1,482.80MW

The power demand is growing at a rate of 10–15% per year.

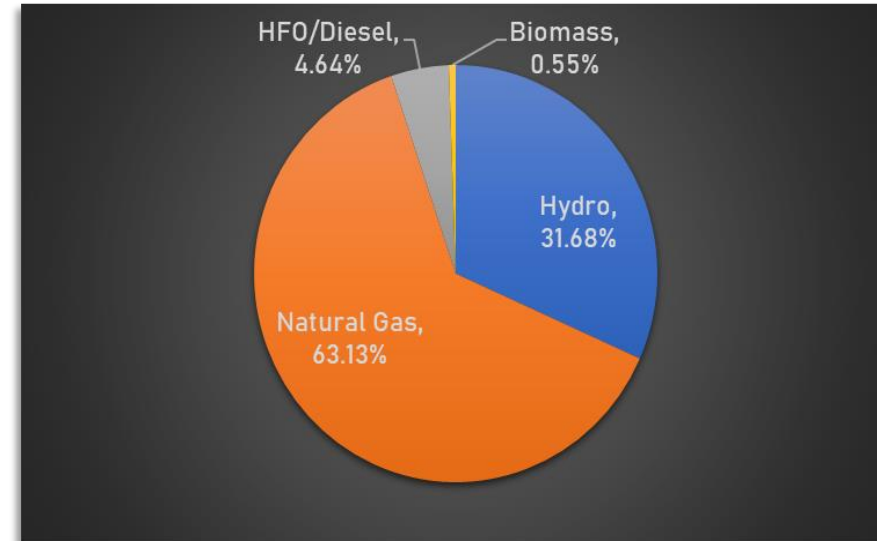
The Government's plan is to increase electricity generation to 5,000MW by 2025



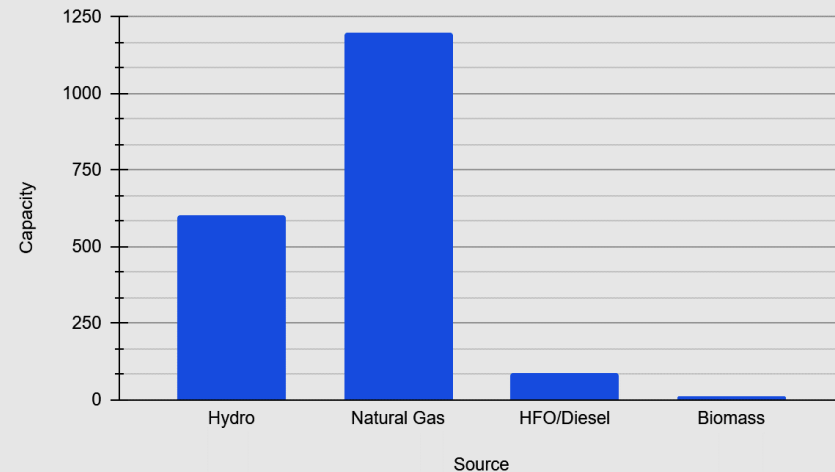
Electricity Supply



Source	Capacity	Ratio
Hydro	601.60	31.68%
Natural Gas	1,198.82	63.13%
HFO/Diesel	88.13	4.64%
Biomass	10.50	0.55%
Total	1,899.05	100%



Capacity vs. Source



Energy Potentials and Opportunities



RESOURCE	POTENTIAL	APPLICATION	EXPLANATIONS & COMMENTS
Large hydro	4,700 MW	Only 31% harnessed for power generation	Installed capacity is only 601.60 MW
Natural Gas	Enormous deposit	More than 57.54 Tcf discovery. 63% currently used for power generation and some domestic and transport applications	More explorations are ongoing Installed capacity is 1,198.83MW
Small hydro	1,500 MW	5% harnessed for power generation	Less than 500 MW has been exploited
Biomass	Woodland and agricultural residues	Electricity generation from biomass in the country is more than 35MW, some of which is grid-fed	Electricity is generated mainly from wood log and agricultural residues – from agro-based industries
Solar	200Wm ⁻²	>100MW electricity installed capacity	The average sunshine is more than 9 hours per day
Wind and Geothermal	Speed: 0.8 - 4.8 m/s Some area over 8m/s	Already > 5000 MW capacity is lined in the Power System Master Plan 2020 Update	Surveyed Potential sites: (Annual Average speed) <ul style="list-style-type: none"> • Makambako (Iringa): (8.9m/s) • Kititimo (Singida): (9.9m/s) • Mkumbara (Tanga): (4.9m/s) • Karatu (Manyara): (5.5m/s) • Gomvu (DSM): (4.3m/s)



Electrification Profile



Access to electricity in 2020

- Overall 78.4%
- Urban 99.6%
- Rural 69.8%



Connectivity rate in 2020

- Overall 37.7%
- Urban 73.2%
- Rural 24.5%



Connectivity target: 60% by 2025



Current electricity customer base is 4.32 million



Ongoing Projects



Julius Nyerere Hydropower project (JNHPP)

Project Commencement: 12th December, 2018.

Contractors: Arab Contractors & Elsewedy Electric

Project Cost: 6.558 Trillion

Consultant: TECU





Ongoing Projects



Generation projects

Kishapu Solar PV – 150MW: To be commissioned in November, 2024 (Phase I) and June, 2026 (Phase II)

Rusumo Hydropower Project (80MW) – 27MW per Country: To be commissioned in March, 2024

Malagarasi Hydropower project – 49.5MW: To be commissioned in August, 2028

Kakono Hydropower project – 87.8MW: To be commissioned in February, 2029





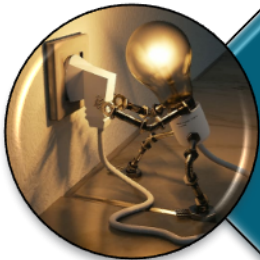
Transmission Projects



- 400kV JNHPP - Chalinze transmission line is at 99% completion and Chalinze substation is 86.5%.
- 400kV Kenya - Tanzania (Namanga – Arusha – Singida) transmission line: Overall progress is 99%.
- 400kV Iringa - Mbeya – Tunduma - Sumbawanga Transmission line (TAZA): Works mobilization ongoing
- 400kV Kigoma – Nyakanazi Transmission line: overall progress is 87%.
- Grid stabilization project (Gridi Imara) – 26 projects: Works ongoing at different stages.



Power distribution projects



Urban electrification programs.



Rural electrification programs – REA III project:

- Densification
- Hamlet Electrification
- Grid extension
- Peri-urban
- Off-grid (renewable energies)



Achievements: 11,079 (89.94%) out of 12,318 villages were electrified by October, 2023.



Target: All villages being electrified by June, 2024.

NATIONAL CLEAN COOKING STRATEGY



Clean cooking is a specific agenda that is prominent in the plans and strategies of Governments worldwide.



Importance of this agenda is driven due to the increase in environmental degradation and climate change, as well as health effects resulting from the use of unclean cooking solutions.



The Government is developing the National Clean Cooking Strategy (2023-2033) that provides the country with the direction towards the use of clean cooking solutions.



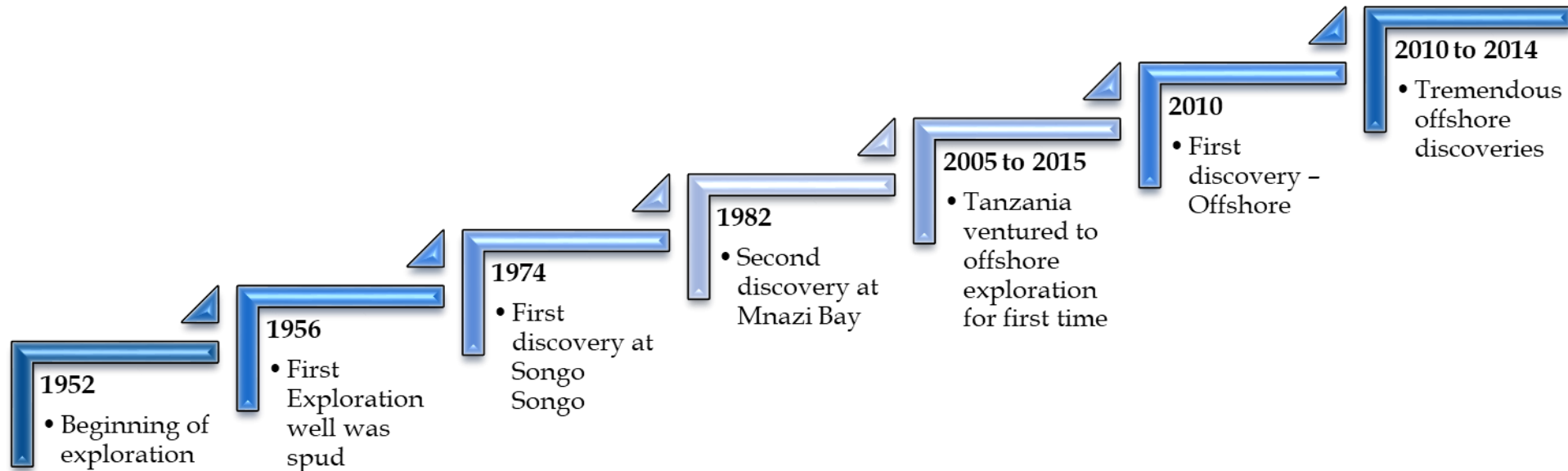
Clean cooking energy fosters industrialization by reducing health hazards associated with traditional cooking methods hence improving workforce productivity.



PETROLEUM SUB-SECTOR



Hydrocarbon Exploration in Tanzania



1952 to Date			
96 wells drilled	52 dry wells	44 discoveries and appraisal wells	57.54 TCF of natural gas discovered



1952 to 2015
26 PSAs were Signed



Natural Gas Discovery



3 Discoveries have been Developed (Songo Songo, Mnazi Bay and Kiliwani)

1 Discovery under application for development licenses (Ntorya)

Mambakofi: 2015 (0.16 TCF)

Mkuranga: 2007 (0.2 TCF)

Kiliwani: 2008 (0.07 TCF)

Songo Songo: 1974 (2.5 TCF)

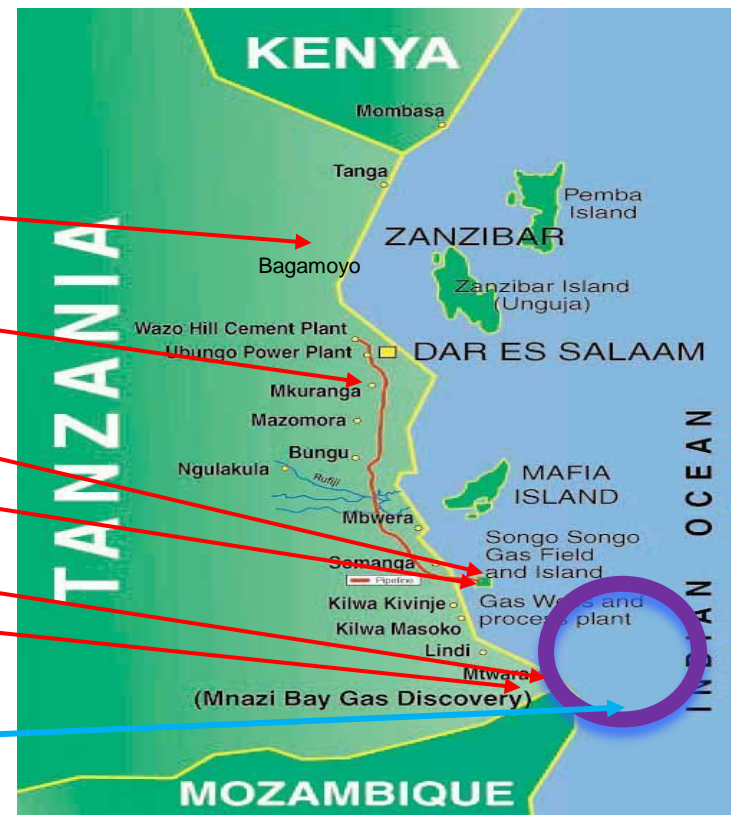
Mnazi Bay: 1982 (5 TCF)

Ntorya 2012 (0.178 TCF)

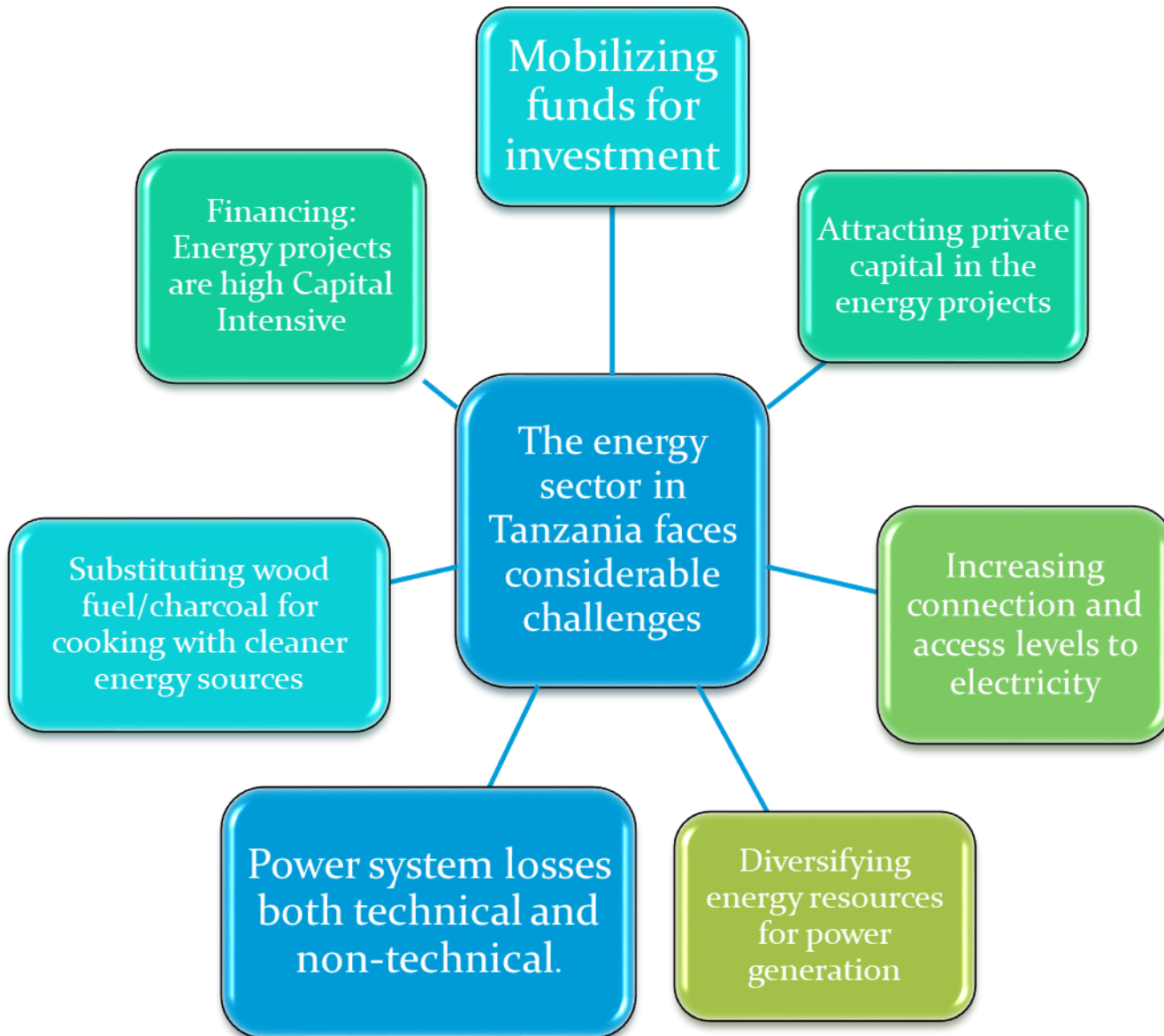
Total GIIP Onshore = 10.46 TCF

Total GIIP Offshore (2010-15): 47.08 TCF

TOTAL GIIP (2023): 57.54TCF



7. CHALLENGES IN ENERGY SECTOR





8. WHY INVEST IN TANZANIA



Peace & Political Stability

- ✓ Multiparty Democracy
- ✓ Good governance
- ✓ Stable post-election
- ✓ No civil wars



Economic Stability

High growth
Low inflation
Resilient economy



Rich Natural Resources

Arable Land,
Natural gas,
Extractives,
Tourist Destinations,
Labour force



Strategic Location

*Serves 6 LLC
*3 major Port
*3 International Airports



9. CONCLUDING REMARKS



- ❑ Tanzania's energy sector emerges as a powerful enabler, providing the essential foundation for economic growth and development.
- ❑ The energy sector is intricately linked to national security, and a holistic approach is necessary to address the economic, geopolitical, and environmental challenges associated with energy use.
- ❑ A resilient and diversified energy infrastructure, coupled with strategic policy decisions, will ensure a energy security as well as national security.
- ❑ The energy sector is not just powering industries but also paving the way for a brighter and more prosperous future for the nation and its people.



THANK YOU

