



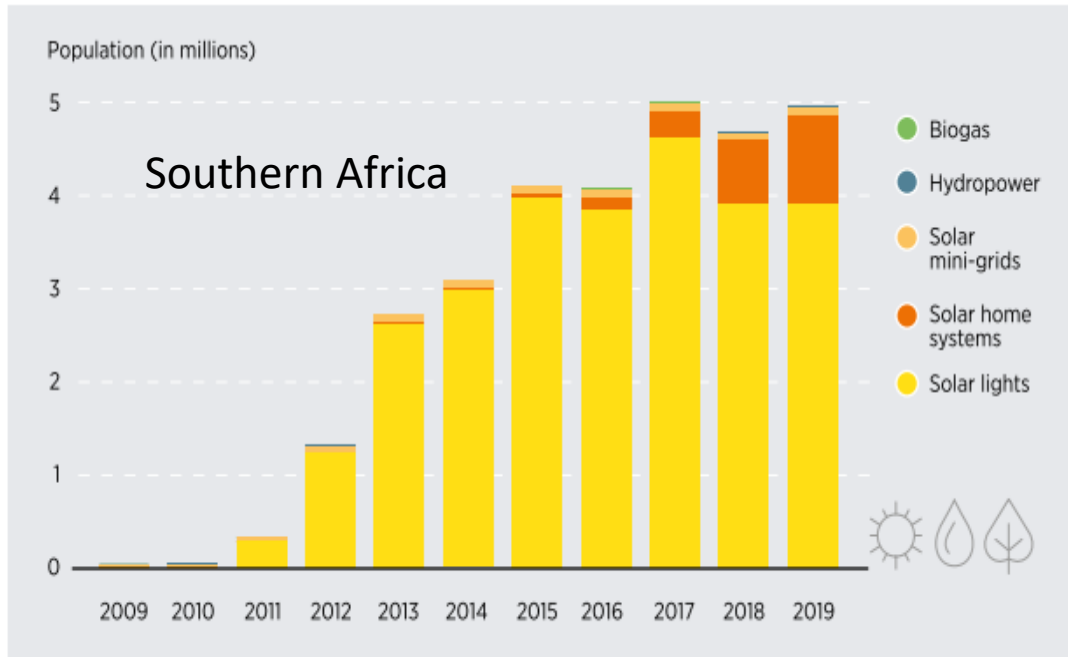
Strategies for accelerating biogas technology adoption in Namibia

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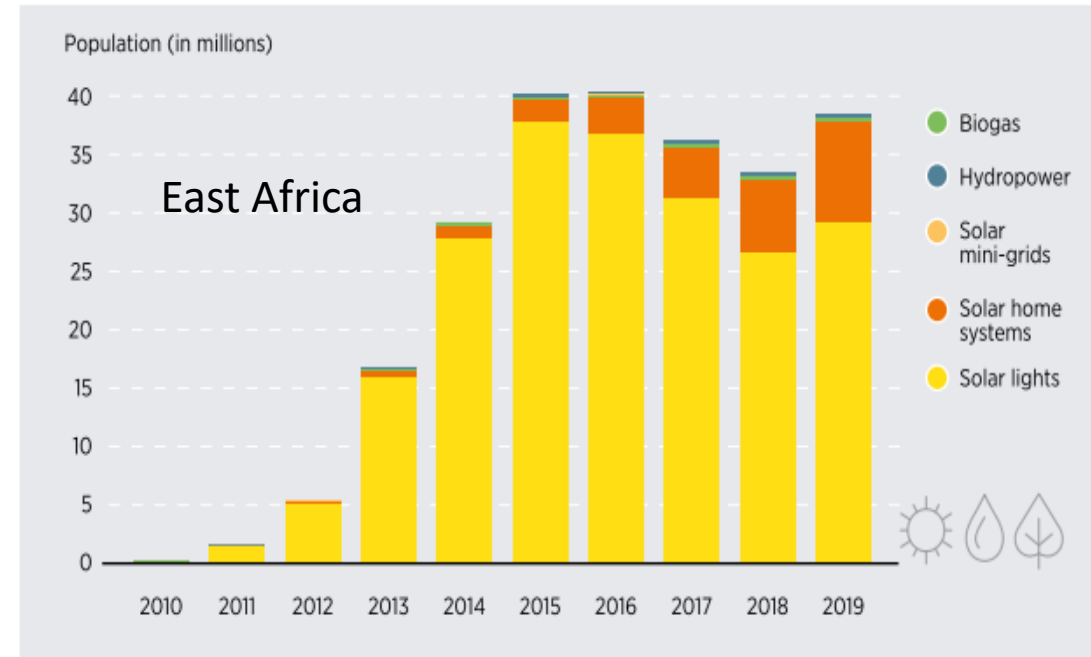


Problem Statement

Low uptake of renewables especially biogas technology in Southern Africa



Source: IRENA, 2021b.

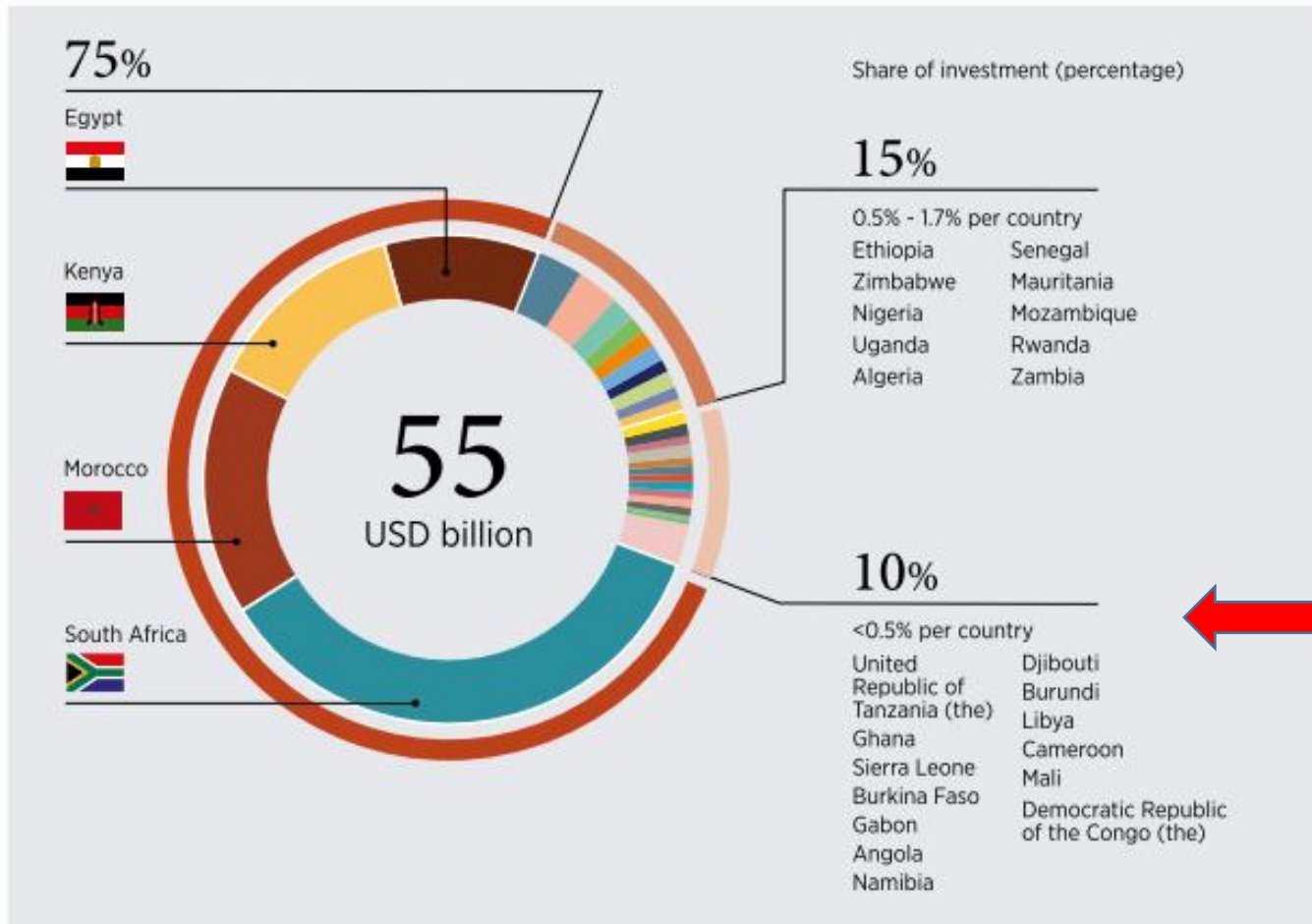


Source: IRENA, 2021b.

Population served by off-grid renewable energy

Problem Statement

Namibia - trailing behind most Southern African countries in renewables investments



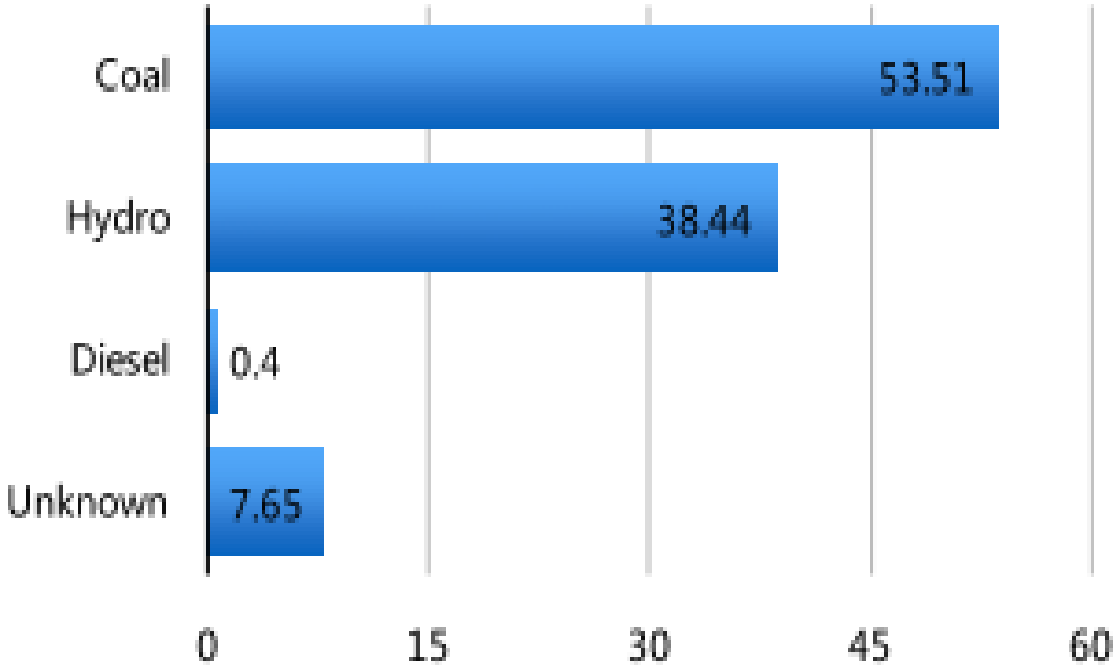
Top recipient countries for investments towards renewables 2010-2020

Namibia is the only Southern African country in this category

Source: Based on BNEF (2021c).

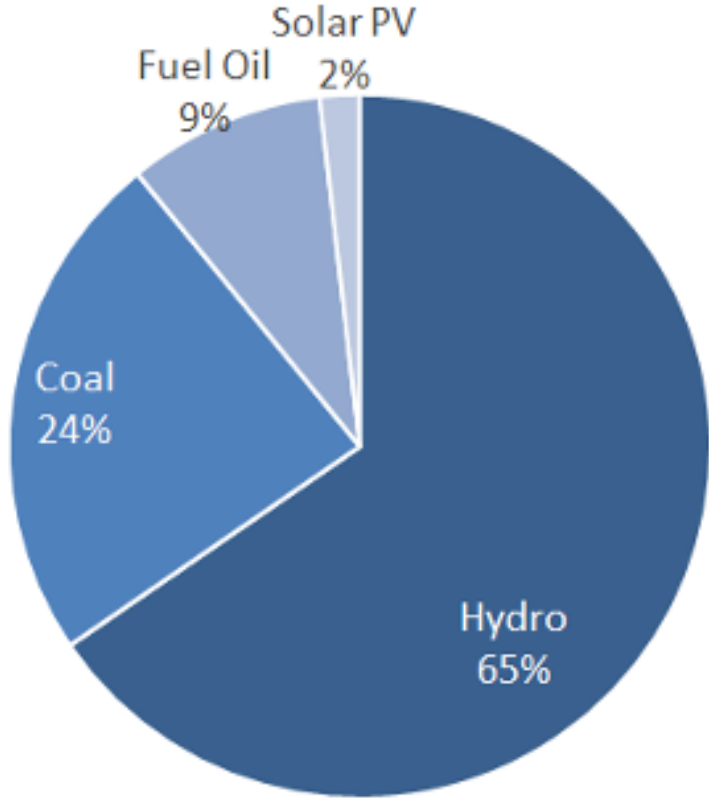
Note: BNEF data exclude investments in large hydropower (i.e. greater than 50 MW).

Electricity in Namibia



Kgabi (2016) <http://dx.doi.org/10.4236/jpee.2016.43003>

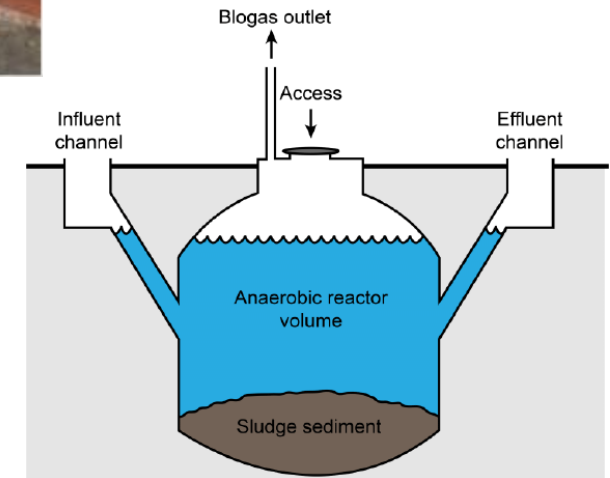
Namibia Installed Energy Capacity



National Renewable Energy Policy (Namibia) (2017)

Why pushing for Biogas technology

- Affordable flexible power
- Pollution abatement
- Reduce time waste in wood collection
- Reduces deforestation
- Improves standards of living in rural areas
- Reduces global warming
- Produces enriched biofertiliser
- Cleaner /Safer fuel compared to wood



Aim/Objectives - Methodology

To outline strategies that can be adopted to promote wider implementation of biogas technology in SSA. Namibian case study.

Employ the PESTLE and SWOT analysis

Sources

journal articles, government reports, development agent reports. Media publications

SWOT

Strengths

Weaknesses

Opportunities

Threats

PESTLE

Political

Economic

Sociological

Technological

Legal

Environmental

Results & Discussion

P – Democracy. Stable politics.

E – Stable economy. Upper middle income country. Investor friendly policies.

S – Many cultures and religions. High unemployment among youths. Inequalities exist between men and women. Rural versus Urban lifestyles.

T – Medium scale engineering companies can be sourced. Advanced technologies imported for large scale operations.

L – Judiciary system. Respect of the constitution and rule of law.

E – Environmental Management Act. Department of Environmental Affairs – EIAs for all projects. Waste collection by Municipalities.

Results & Discussion

Barriers to biogas implementation – Threats & Weaknesses

Threat/Weakness	Strategic Action Needed	By Who
Rapid urbanization	Create employment in rural areas by setting up biogas cooperatives	NGOs, Government
Droughts/Water stress in some parts	Pool resources to drill boreholes and implement water harvesting systems	Individuals, Donor support
Fires from mismanaged encroacher bush	Educate people on fire suppression and management systems such as fire guards	Government, All stakeholders
Lack of biogas digester feedstocks	Incentivize countrywide cattle breeding programs	All Stakeholders
Low participation of women in economic activities and self development	Women who normally remain in rural areas and suffer the fuelwood cooking challenges must be included in awareness and educational programmes about biogas	NGOs, Village Leaders
Inadequate treatment of this subject in policies	Biogas must be given adequate attention just like other energy sources discussed in the policy to promote its uptake.	Legislators and Policy makers

Results & Discussion

Driving forces and Pull Factors for biogas implementation – Strength & Opportunities

Strength/Opportunity	Action Required	By Who
Lots of untreated manure in private farms	Build digesters and extract value	Farmers, Industrialists, Municipalities
Available funding for Green Energy projects	Investors need to prepare bankable proposals and apply for these	Large Scale Investors, Entrepreneurs
An active growing urban population that needs food and energy	Build digesters to acquire cheaper biofertiliser and replace synthetic fertilizer. Bottle biogas for urban dwellers	Entrepreneurs
Increasing level of literacy in the youths	Promote research and innovation centres in Universities to address issues of importing expensive technologies	Government
An already active biomass industry	Lessons derived from the Namibia's active participation in encroacher bush activities can be extended to the biogas industry	All Stakeholders

Conclusions & Recommendations

There are lots of opportunities and threats around implementing biogas systems in Namibia. All stakeholders need to participate to promote growth of this industry.

Key Stakeholders are:

- Government – Drive the policies and provide funds, rebates,
- Universities – Provide research and lab services, short courses for awareness
- NGOs and Development Agents – Funding, Gender and Social incl sustainability and Inclusion aspects in implementation of projects
- Private sector – Invest
- Farmers – Participate and develop passion
- Rural Community and Youth - Participate

Way Forward



Lets all come out from our cubicles and start engaging on promoting biogas systems uptake in Namibia

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