

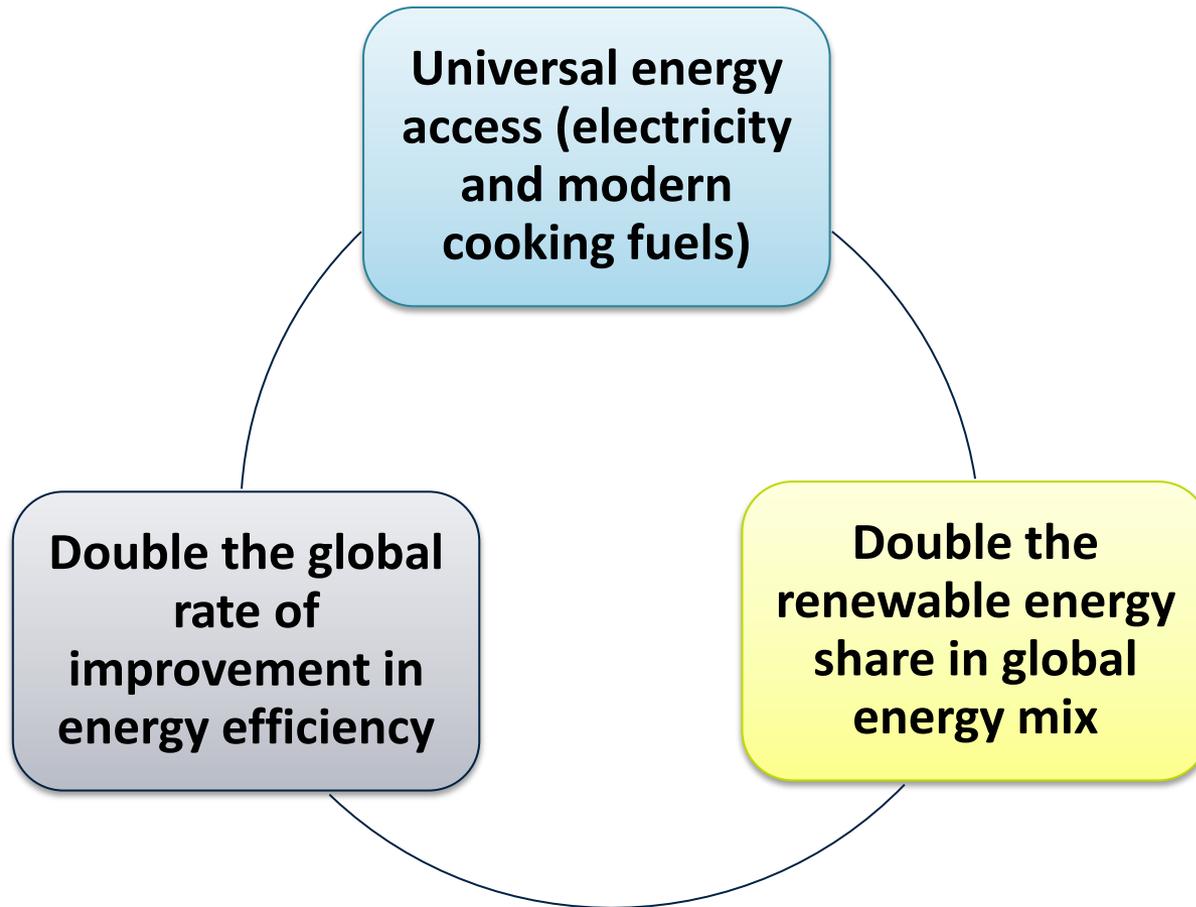


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# Energy for all – Technological contributions from gas in Sub Saharan Africa

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# UN Sustainable Energy for All: Three Goals



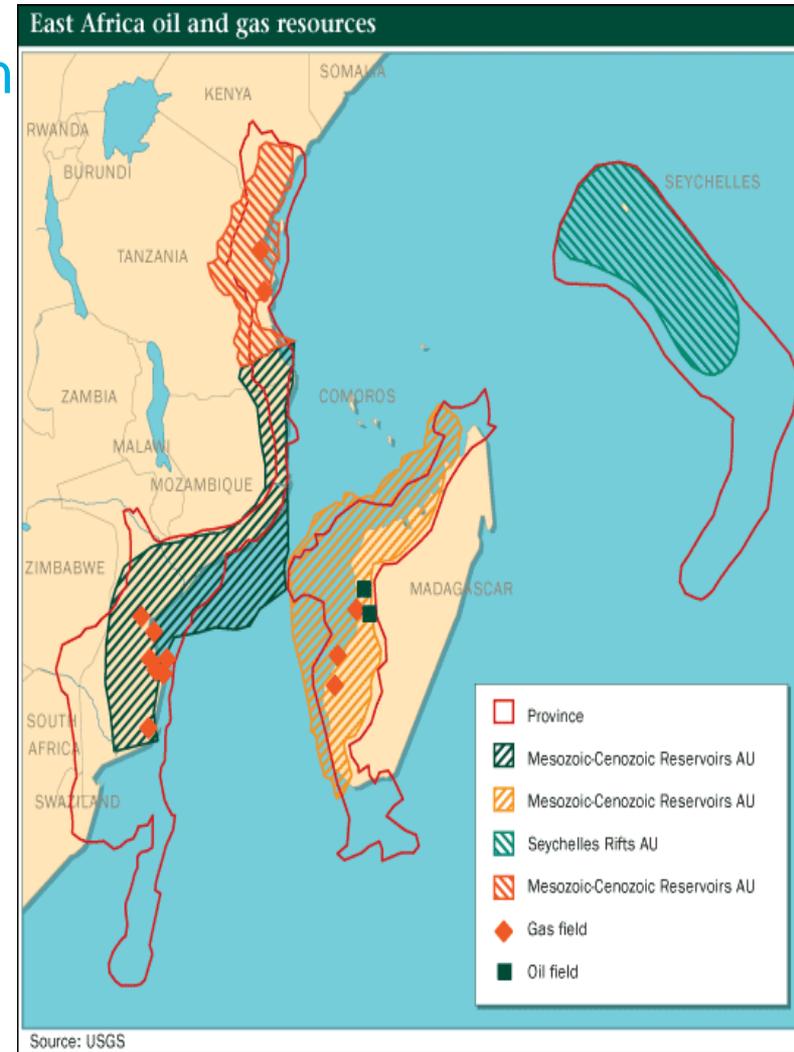
# Acting on the Vision: Africa's Power Shortage



- Installed capacity in 48 Sub-Saharan countries at 80 GW – without South Africa, 30 GW; same as Norway
- With exception of South Africa, consumption is around 1% of OECD countries
- Only 31% of population with access to electricity – lowest in the world
- Under business as usual, universal access to electricity in Africa is within a horizon of 50 years

# Africa's Natural Gas Resource Base

- 359 TCF: total estimated discovered natural gas resources in Sub-Saharan Africa
- Discoveries in East Africa have rekindled interest in gas to address power shortage
- Significant gas reserves in Nigeria, Mozambique and Tanzania
- Domestic use of gas for power is low
- Flaring of gas is significant: approximately 20 bcm/yr (mostly in Nigeria and Angola)
- What is preventing more gas-fired power?



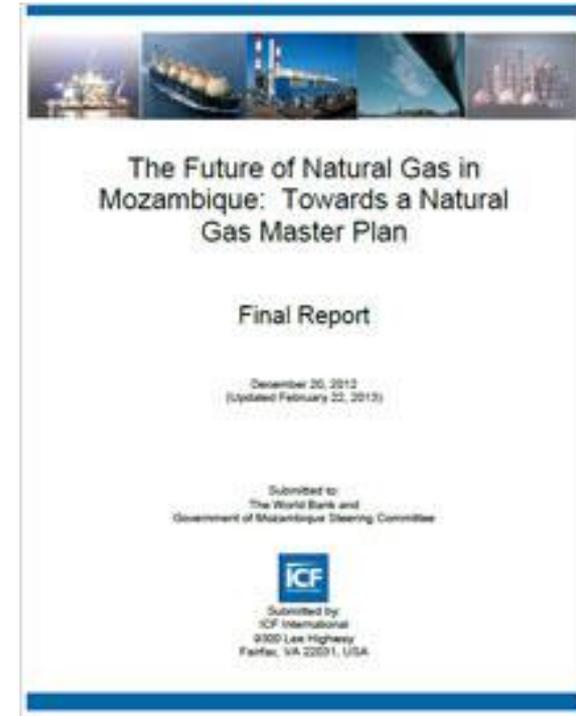
# Role of Gas Master Planning

- Developing countries producing gas master plans (GMP) to guide public policy and investment, enabling widespread use of gas for economic development
- GMPs are dynamic roadmaps, identifying:
  - Vision
  - Objectives
  - Strategic plans
  - Policies
  - Implementation action plans



# Example: Mozambique GMP

- Major poverty, educational, infrastructure, geography, governance challenges
- Significant stakeholder involvement
- Vision developed with guidance from Government Steering Committee comprised of senior officers from various Ministries



# Example: Mozambique GMP Outcomes

- Create decision framework to trade-off strategic options
- Create hierarchy for government decisions; prioritize decisions critical to gas sector development
- To deal with uncertainty, initiate new studies, follow through on obtaining more information
- Focus on strategic analysis of policies, institutions, regulations; not just technical details
- Government must actively plan for GMP decisions implementation
- Implement a public communications strategy
- Mega projects are strategic anchors and should be selected using market-based approach

# Roles for Gas Addressing Africa's Power Needs

- Gas is not a panacea for power deficits: competition with other generation options and trade-offs between domestic utilization and export
- Economic analysis suggest three primary roles for competitive expansion of gas-fired power in SSA:
  - Replacing liquid fuels, such as HFO and diesel, but contingent on how liquid-fired generation is used and where gas supply originates
  - Displacing coal with gas, when fuels priced at international levels or where opportunity cost of gas is low
  - Addressing short-term power deficits and mitigating risks in hydropower implementation, building on flexibility of gas-fired power plants
- Policies need to be conducive and consistent



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**Thank you**

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