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# Replacing Coal with Cleaner Natural Gas in Southern Africa – The Equity Dimension

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# Outline of Presentation

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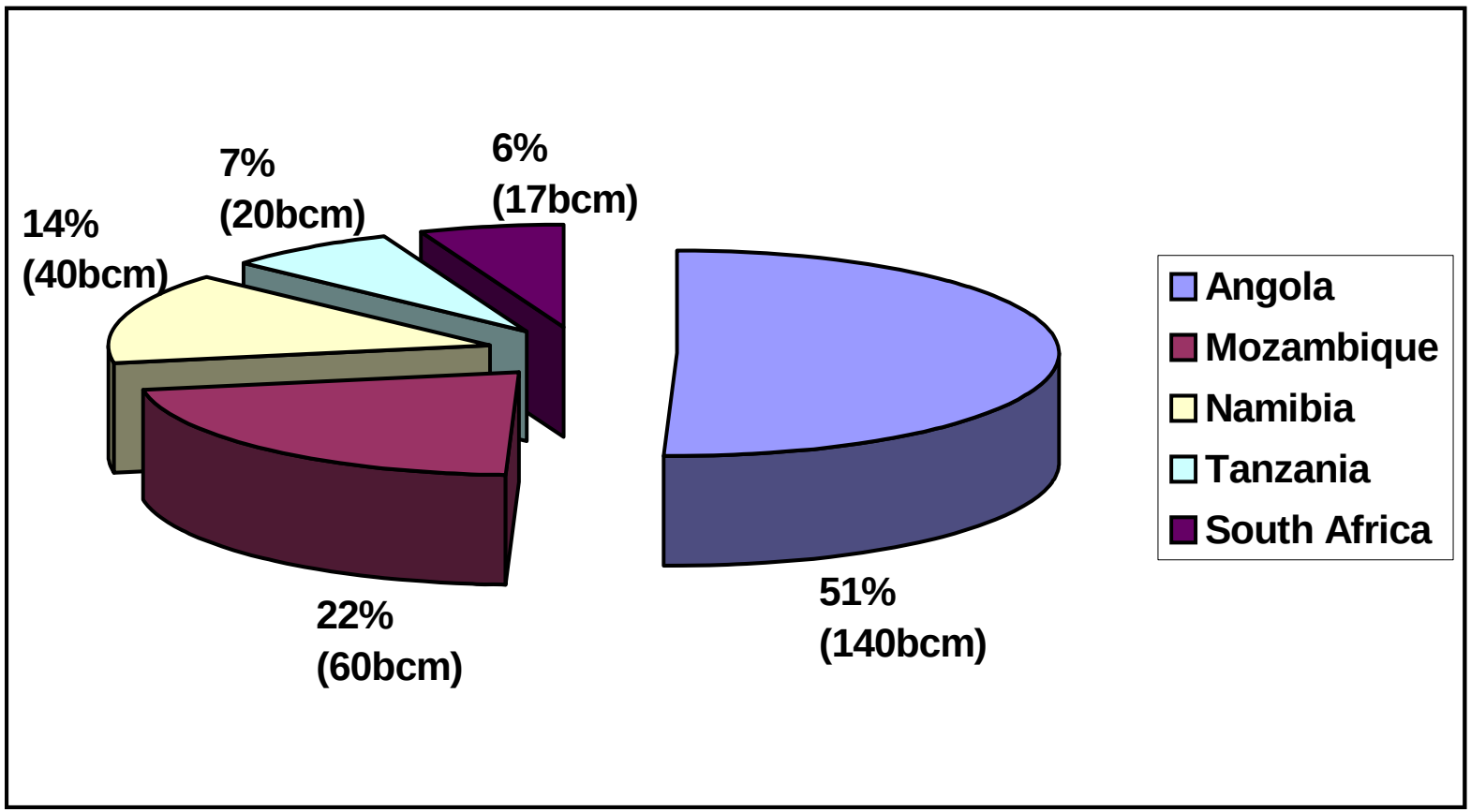
- Energy Sector Reforms in Southern Africa
- Imperatives of the Natural Gas Industry in the Region
- Key Requirements for the Substitution of Natural Gas for Coal and Oil
- Potential Uses of Natural Gas as a Substitute for Coal and Oil in the Region
- Significance of the Substitution
- Issue of Barriers
- CDM Issues
- Global Optimism about the Role of NG in the Energy Mix
- Conclusions and Recommendations

# Energy Carriers of Considerable Quantities in Southern Africa

- Coal
- Crude oil
- Natural Gas
- Hydro
- Biomass
- Solar

# Proven Natural Gas Reserves in Southern Africa



# Energy Sector Reforms in Southern Africa

- Energy reforms in the region provide the underpinnings of a vibrant future gas industry.
- The reforms are increasingly leading to the distinction between public policies and private investment and operation.
- The reforms introduce certain imperatives in the form of strengthening capabilities on environmental sustainability and gender equality.
- Several meetings held between government officials of South Africa and their counterparts in Namibia and Mozambique, prior to the drafting of the Gas Bill in South Africa, attest to the seriousness of efforts made to harmonise energy policies and legislation in the region.

# Imperatives of The Natural Gas Industry in the Region

- The reforms being pursued by SADC are in the form of:

- Strengthening energy strategy formulation
- Increased focus on environmental sustainability,
- Involvement by local communities, and
- Gender equality.

# Potential Uses of Natural Gas as a Substitute for Oil and Coal

- Generation of electricity
- Production of synfuels
- Industrial use – thermal, reduction and non-energy

# Significance of Substituting Coal & Oil with Natural Gas in SADC

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- **Economic**
  - **Risks affecting investments (political/technical and commercial)**
  - **Rent (The difference in the total costs of winning, transmission and distribution and the revenues derived thereof)**
- **Social**
  - **Potential to reduce dependence on biomass by reticulation (off transmission lines)**
  - **The issue of equity**
- **Environmental**
  - **More environmental benign than oil and coal**
  - **Need for SEA or EIA on gas transmission lines and associated infrastructure due to impact on flora and fauna**

# The Issue of Barriers

- **Environmental Management**

- **Lack of effective long-term policies**
- **Weak institutional capacity to be addressed**
- ***Polluter pays* principle to be introduced to complement advocacy**
- **Need for Environmental Ombudsman**

# Key Requirements for the Substitution of Coal & Oil with Natural Gas

- New fossil fuel-fired power plants in the region should use natural gas and existing ones retrofitted with gas turbines into the mode of combined-cycle gas turbines
- Incentives, through investor friendly policies, need to be put in place by the governments in the SADC region, to promote the use of natural gas
- The introduction of gas-powered vehicles, in lieu of the prevalent gasoline and diesel usage in cars.
- Exploration efforts for gas need to be enhanced
- The use of gas for the promotion of small and medium scale industries in areas near pipelines

# CDM ISSUES

- More enthusiasm shown by countries in the sub-region to CDM than AIJ
- The potential registration of NG projects for the procurement of carbon credits
- The benefit of increasing the revenue stream of NG projects through monetising carbon credits
- Potential debt redemption by monetised carbon credits
- Abatement in global climate change

# Global Optimism about the Role of Natural Gas in the Energy Mix

- **The International Energy Outlook postulates that natural gas remains the fastest growing component of primary global energy consumption**
- **Over the period 1997-2020, gas utilisation is projected to more than double, reaching 167 tcf.**
- **The forecast within this period is that gas share of the total energy consumption is bound to increase from 22% in 1997 to 29% in 2020**
- **As expected, the largest increment in electricity generation as a % of total increment in energy used for electricity generation is attributable to natural gas; and is 41% for the same period of the forecast.**
- **The IEO 2000 states that:**

  ***"…natural gas is becoming the fuel of choice among industrialised countries for new power generation. Gas-fired power plants run more efficiently than other fossil fuel generators; and natural gas as the least carbon intensive of the fossil fuels, is an attractive alternative to coal or oil for electricity generation and industrial use".***

# Conclusions and Recommendations

- There is harmonisation of gas policies under the auspices of the regional body, SADC.
- Natural gas has relatively environmentally benign characteristics.
- Natural gas projects should not only focus on industry and commerce, but also on supplying communities along the pipeline routes. This would promote equity and minimize their dependence on fuelwood and other polluting fossil fuels.
- Incentives, through investor friendly policies, need to be put in place by the governments in the SADC region, to promote the industrial use of natural gas.
- Exploration efforts for oil and gas need to be enhanced. If more gas resources are found in the region, prices to the consumers and end-users would be reduced.
- Regional economic integration, under the auspices of SADC, should enhance the use of natural gas with the creation of favourable conditions for the provision of transnational infrastructure
- New fossil fuel-fired power plants in the region should use natural gas. Consideration should be given to retrofitting existing coal-fired power plants with gas turbines to operate in the mode of combined-cycle gas turbines

# The End

**Thank You!**