



SADC Regional Electricity Investment Conference & Exhibition

More Of The Regional Electricity Power Comes
From Coal – Can Coal Supply Keep Pace With
Power Demand Accelerating Across SADC ?

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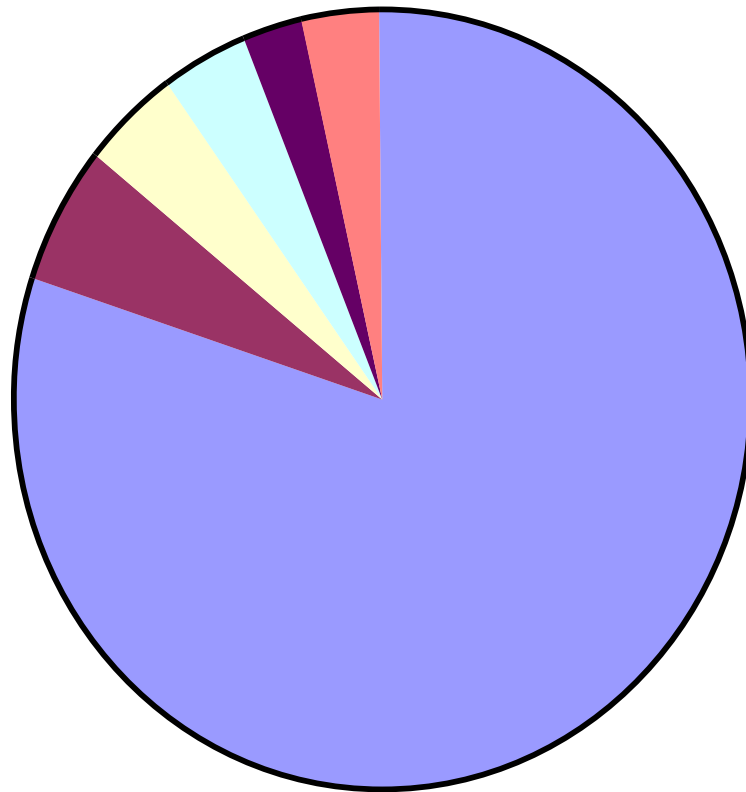
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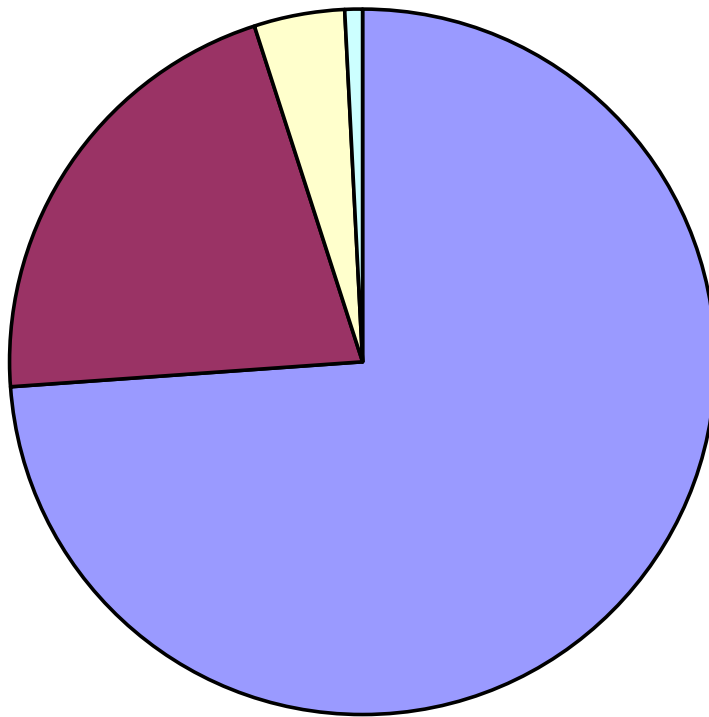
- 1. SAPP INSTALLED CAPACITIES**
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 - 3. CLEAN COAL TECHNOLOGY AND ENVIRONMENTAL ISSUES**
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Generation Distribution by Country



- 80.3% South Africa
- 5.3% Mozambique
- 3.9% Zambia
- 3.8% Zimbabwe
- 2.8% DRC
- 3.9% Rest

Generation Mix



■ Thermal	74%
■ Hydro	21%
■ Nuclear	4.1%
■ Gas/Diesel	0.9%

Environmental Issues

- It is a fact that coal will continue to be a key source of energy for electricity generation well into the future (CSFTA).
- Coal is abundant resource in the region (thermal contributes 74% of electricity).
- Coal- fired generation provides reliable source of power.
- Fuel supply is less vulnerable.

Environmental issues contd

- Environmental impacts of coal-based production in particular, are serious in terms of human health and well-being.
- Regional projects' have to be evaluated based on emission limits for e.g. World Bank and European Community (EC) for funding purposes.

Environmental issues contd



- Complete picture of building & operating coal fired power plant consist of:
 - Direct impacts (emissions, residuals, land use) from power plant or end use and,
 - Indirect impacts from upstream fuel extraction, processing and transport

Coal impacts



- Key properties of coal relating to environmental impacts are:
 - Moisture
 - Ash
 - Sulphur
 - Nitrogen
 - Methane (during coal mining)

Clean Coal Technologies



- Environmental concerns of coal-fired power generation can be addressed through cleaner coal technologies (CCTs).
- CCTs are technologies that improve environmental acceptability of coal extraction, preparation & utilisation.

CCTs (cont..)

- CCTs improve acceptability of coal generated power in two ways
 - By reducing quantities of NO_x, sulphur dioxide and particulate emissions to atmosphere.
 - By increasing efficiency of converting coal into electricity so that less NO_x, SO₂, CO₂ and particulates are produced per unit of electricity

CCTs (cont..)

- Technologies that reduce quantities of emissions include Low-NO_x burners, Flue –Gas Desulphurisation and Electrostatic Precipitators.
- Technologies that increase efficiency of conversion identified through out coal chain from coal preparation, handling, CBM utilisation, & coal gasification to power generation conventional technologies

CHALLENGES FOR THE REGION



- Environmental issues are inseparable from energy – related activities.
- Need to satisfy energy demands to stimulate economic growth and improve quality of life while enhancing environmental quality, human health and safety, and global sustainability

Challenges (cont..)

- There is urgent need to invest in power generation projects considering the regional power shortage.
- At the same time, region is susceptible to drought, so there is need to maximise use of coal deposits.
- Stringent emission limits of EC, World Bank and other ICP's.

Challenges (cont..)

- Advanced clean coal technologies have financial barrier.
- Given the region's low standard of living, countries cannot afford to incur additional costs (incremental costs) to alleviate global warming and other global environmental concerns.
- Take advantage of economies of scale

CONCLUSION

- With the availability of cleaner coal technologies to mitigate environmental impacts, coal-fired power generation will continue to contribute significantly for decades to come in the electricity generation.
- There is need to promote installation of advanced coal-fired technologies in the region.



THANK YOU