Ensuring Security of Supply for Namibia

Case Study Presentation to German-African Energy Forum

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Background/ Company Profile

- NamPower created in 1964 as a national power utility company, fully owned by Government, but operating under the Companies Act and on sound commercial principles
- Core business: generation, transmission and trading of electricity
- Market structure
  - Independent electricity regulator (Electricity Control Board - ECB)
  - Single Buyer (housed within NamPower)
- NamPower vigorously attempting to develop new generation capacity and expects to have surplus capacity by 2016.
- Generation expansion in Namibia is expected to be through a combination of NamPower balance sheet, IPP or PPP arrangements.

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Some Key Statistics

- Peak demand 511MW (Generic growth 3.5% per annum)
- Peak installed generation capacity 507MW, BUT
  - Ruacana run-of-the-river plant - capacity factor less than 50%
  - Van Eck coal plant - old, emissions high and very high imported coal costs. Rehabilitation to extend life time with 5 years has commenced
  - Anixas and Paratus HFO plants - operating costs high
- Average annual energy imports exceed 50%
- Step load (especially mines) depending on commodity market
- Namibia well interconnected with South Africa and Zambia
- Security of Supply a challenge until 2016 when new base load is commissioned

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Power Stations in Namibia

Ruacana
Hydro
Run-of-the-river

Van Eck
Coal fired
Emergency and Standby

Paratus and Anixas
Diesel & HFO
Emergency and Standby

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Namibian Transmission Backbone

Red – 400kV
Blue – 330 kV
Yellow - 220 kV
Brown – 350kV HVDC

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Recently completed projects: Hwange

- USD 40 million in exchange for a 150 MW PPA (effective 2008)
- A good example of regional cooperation that worked well to date
- Project declared “Power Deal of the Year“ - 2010 Africa Investors: Infrastructure Investment Awards
Recently completed projects: Caprivi Link

- 952km 350kV DC link, HVDC VSC technology
- Line capacity 600MW
- Mono-pole converters 300MW, expandable to 600MW bi-pole
- Investment of U$420 million, partially financed through a local bond and Euro105 million loan from EIB, KfW & AfD
- Completed June 2010 with official commissioning on 12 November 2010 by the four Heads of States (Namibia, Zambia, Zimbabwe & Botswana)
Recently completed projects: 4th Unit Ruacana

- Installation of the a 4th unit at Ruacana Hydro Power Station to increase capacity with 92 MW to 330 MW
- EPC contractor: Alstom (France) and Andritz (Austria)
- Project Cost U$100 million - €35 million loan from KfW
- Commercial operation March 2012
- Official inauguration May / June 2012
Anixas

- 22.5 MW HFO Emergency Diesel Generators at Walvis Bay
- Project cost U$50 million (of which U$33 million grant from Government)
- Design Philosophy to allow for future extensions
- COD July 2011 followed by official inauguration in November 2011
Salient Points on new Generation Projects

- **Kudu Gas-to-Power** — 800MW base load
  - Private sector involvement (PPP)
  - Currency mismatch between gas and electricity price the main commercial challenge
  - Secondary off-takers required – 400MW for Namibia
  - Government guarantees required

- **Erongo Coal** — 300MW base load
  - EIA scoping concluded, Full EIA by middle 2012
  - Busy with geo-technical drilling and EPC contractor pre-qualification
  - Envisage balance sheet financing

- **Baynes** — 600MW mid-merit load
  - Joint project between Angola and Namibia
  - ESEIA and Techno-economic studies completed

- **Wind 104MW and Solar PV max. 3x10MW** — negotiations ongoing

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Salient Points on new Transmission Projects

- **Zizabona**
  - Regional interconnector linking Zimbabwe, Zambia, Botswana and Namibia
  - JV project by the four utility companies through a SPV hosted by Namibia
  - Linked with implementation of Caprivi Link Phase 2
  - Round table investment conference in May 2012 in Johannesburg, RSA
  - Implementation as from 2012

- **Northern Namibia transmission upgrading (master plan)**
  - High demand growth in Northern Namibia
  - Upgrading of transmission backbone to 400kV
  - Estimated initial investment cost of approximately U$400 million
  - Provision for future integration with the Baynes Hydro power station and interconnection with Southern Angola

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Challenges

- **2012 – 2016 period**
  - Namibia largely dependent on energy imports
  - Energy and capacity deficiencies in neighbouring countries will have a marketed effect
  - Initiated short-term critical supply (STCS) project
  - Rely on regional PPAs

- **Period beyond 2016**
  - New base load in operation
  - Much less dependent on imports, more an economic trading decision

- **STCS**
  - Rehabilitation of existing plants
  - Wind and solar opportunities
  - Roll-out of additional HFO plant as well as leased LFO emergency generators
What can NamPower offer?

- As a credit worthy counter party
  - NamPower has an investment grade credit rating (Fitch)
  - NamPower has full backing and support from its key stakeholders: Government of the Republic of Namibia and electricity regulator (ECB)

- As a facilitator, transmission highway and regional trader
  - NamPower is a full member of the Southern African Power Pool (SAPP), playing a key role in regional project development
  - NamPower has a 600MW transmission connection to South Africa and a 300MW HVDC connection (Caprivi Link) to Zambia, which again is interconnected to DRC, Zimbabwe and Mozambique
  - Reinforcing transmission route to the West Coast

- As supplier:
  - Plans to increase generation capacity from 507MW to 900MW by 2016

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Conclusion

- The power supply situation in the country will remain challenging at least until 2015/2016 when a new base load power plant will be commissioned.

- The situation is firmly under control and NamPower is confident of successfully managing the immediate power supply challenges through the STCS project.

- Favourable policy, legislative and regulatory framework, in addition to the sound investment climate as well as peace and stability.

- Potential investors welcomed to join NamPower as joint venture equity partners or IPP developers to invest in the Namibian power sector.
End

Thank you