

Ensuring Security of Supply for Namibia

Case Study Presentation
to
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Background/ Company Profile



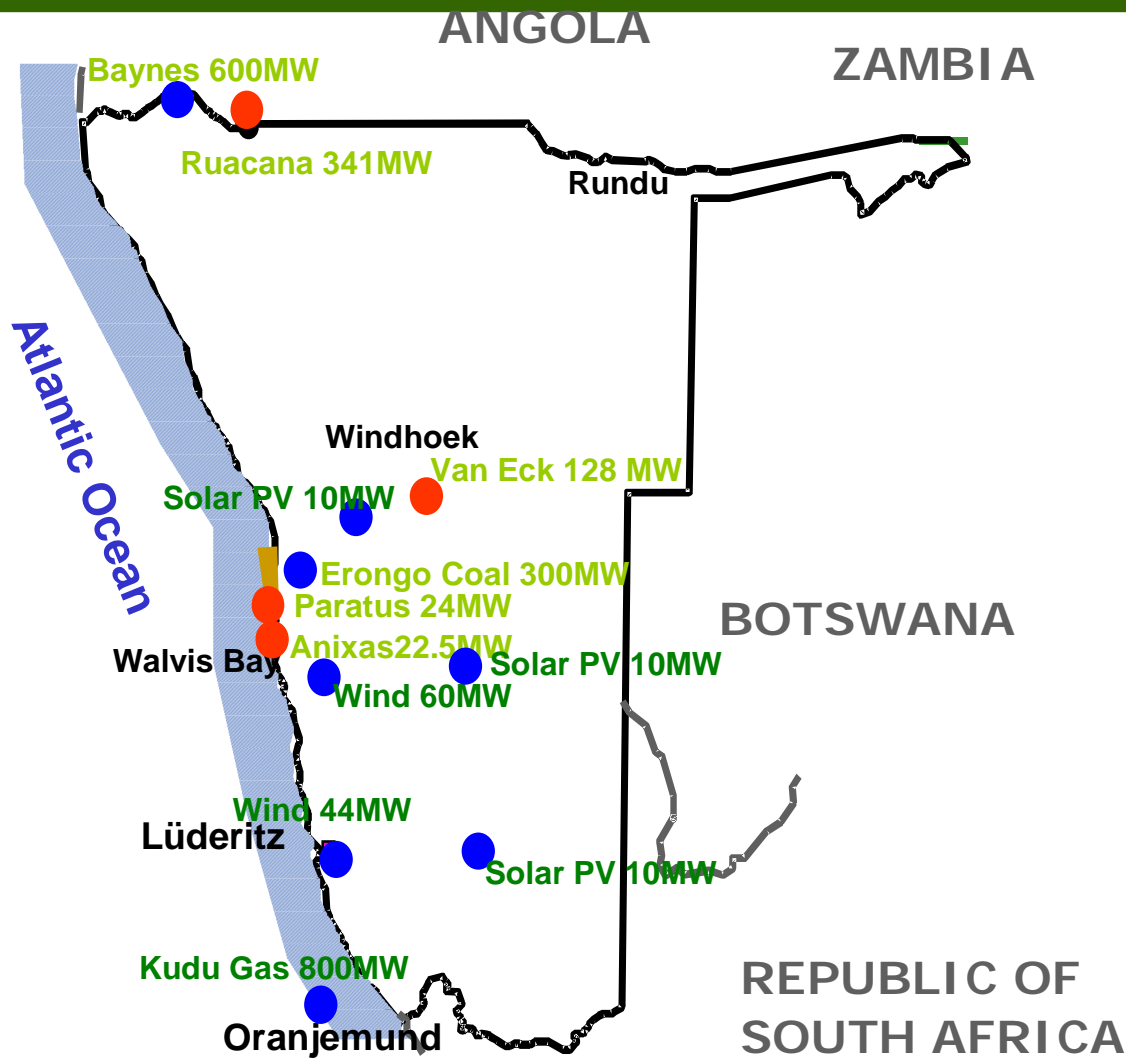
- ❑ NamPower created in 1964 as a national power utility company, fully owned by Government , but operating under the Companies Act and on sound commercial principles
- ❑ Core business: generation, transmission and trading of electricity
- ❑ Guiding Frameworks: Electricity Act of 2007 and Energy White Paper of 1998 (100 percent capacity and 75 percent energy by 2015)
- ❑ 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.

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

Power Stations in Namibia

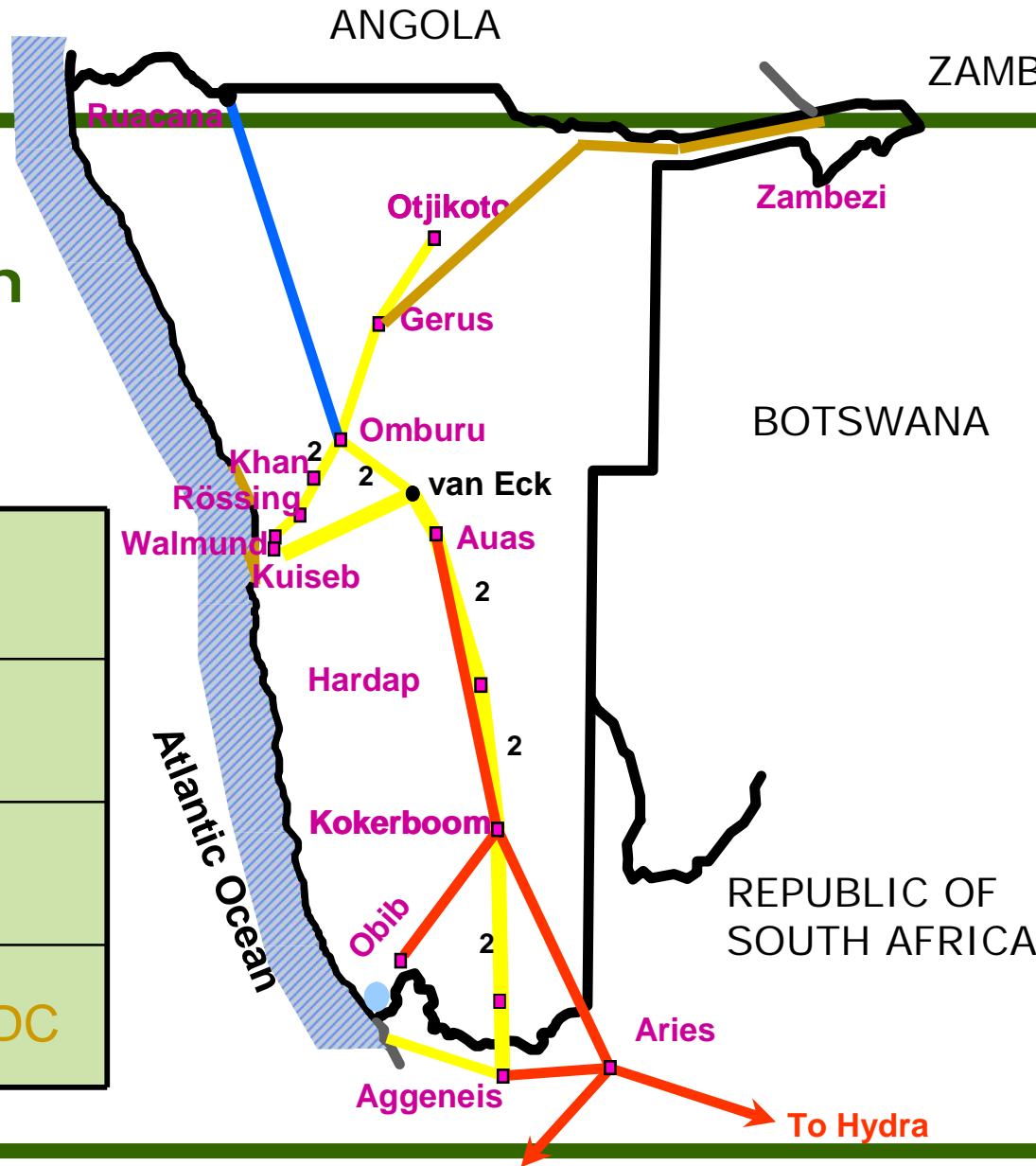


Ruacana
Hydro
Run-of-the-river
Van Eck
Coal fired
Emergency and Standby
Paratus and Anixas
Diesel & HFO
Emergency and Standby
● Existing Power Stations
● Planned Power Stations



Namibian Transmission Back bone

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



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

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

Challenges



❑ 2012 – 2016 period

- Namibia largely dependant 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 dependant 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 high way 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

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
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End



Thank you