NERSA
Public Participation Process
Klipheuwel-Dassiesfontein Wind Energy Facility
March 1, 2012
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### Established South African Energy Producer

- Founded in 2003 with initial focus on cogeneration projects
- Founding team has deep expertise in South African energy engineering, operations and finance

### Renewable Power Focus

- In 2009, BioTherm shifted its focus towards the development of wind and solar power generation projects
- Extensive pipeline of wind generation projects
- Growing pipeline of solar projects

### Experienced Renewables Team

- Current team has over 35 years of wind and solar development and investment expertise with over 1,000MW developed and operational in international markets

### Strong Equity Partners & Senior Board in Place

- Equity: Denham Capital
- Chairperson is Allen Morgan, ex CEO of Eskom

### Projects in operation

- 4.2 MW byproduct methane cogeneration plant commissioned at PetroSA Mossel Bay plant
- Agricultural methane capture and destruction plant at largest piggery in South Africa
Klipheuwel-Dassiesfontein Wind Energy Facility
DASSIESKLIP WIND ENERGY FACILITY

- Located approximately 5 km west of Caledon in the Western Cape Province
- Expected Commissioning Date: **21 May 2013**
- Leased Area: approximately 602 hectares
- Planned Capacity: **27MW** (9 Wind turbines with a nameplate capacity of 3MW each)
- Project connects to existing 66kV line
- Calculated Capacity Factor (independent assessor): 37.3%
- Expected life of project: 20 years
Turbine Selection

- Sinovel SL3000/113 turbine
  - 3MW turbine
  - 100m hub height
  - 113m rotor diameter

- Sinovel is the currently the second largest wind turbine manufacturer in the world and has installed more than 7,000MW since 2004.
Klipheuwel/Dassiesfontein Wind Energy Facility was subject to the requirements of the Environmental Impact Assessment Regulations (EIA Regulations) of 2006.

A Scoping and EIA were required to be undertaken for this proposed project.

- Process was initiated in December 2009
  - It took one month to initiate this process.

- Began in March 2010
- Potential environmental issues identified
- Extent of studies within EIA Phase were defined
- Pro Active Avian and Bat Migration studies

- Addressed any identified potential environmental impacts and benefits (direct, indirect and cumulative impacts)
- Recommended mitigations were put forth
- EIA Phase took 8 months

- Issued on November 2010
  - Provided stakeholders with an opportunity to verify issues raised
  - To get to a final report took 3 months

- Final report was prepared and submitted to DEA in Jan 2011
- Incorporating issues and responses raised during public review

- Received on 27th June 2011
Grid Connection

Project grid info:
- Two 66kV feeder bays to be constructed at project substation which will interconnect directly into the existing 66kV Houhoek – Caledon line.
- The sub-station will be self-built by the project within the planned timeframe of 12 months.

Status with Eskom
- Cost Estimate Letter for the construction of works to connect a generator to the distribution or transmission line received on 14 October 2011
- IPP Preferred Bidder meeting held with Eskom on 11th January 2012. The following items confirmed
  - Cost estimate letter acceptance received
  - Budget quotation request received
  - Quotation fee paid and project released for Project Quotation
- Budget quote due from Eskom by end of March 2012
- Eskom timeframe letter within project COD schedule
- No issues anticipated
Operations & Maintenance Structure

• The Engineering, Procurement and Construction (EPC) Contract includes a minimum 5 year maintenance programme
• EPC contract guarantees a 97% turbine availability for the full facility (includes, substation, turbines and cables)
• EPC contract stipulates 24 hour turnaround on standard items and 48 hours on strategic equipment
• BioTherm O&M – will be responsible for daily operations
  – Already services the PetrsosA Waste Gas to Power Plant and Kanhym Methane Destruction Facility
  – BioTherm O&M has been in operation for 3 years
Socio-Economic & Enterprise Development

Overall Challenges in area:

- Migration of transient unskilled workers to the area
- High unemployment (~22%)
- Insufficient skill-levels amongst adults (shrinking agricultural sector)
- Poor access and availability of health services

Socio-Economic Development

- Contributions will represent 1.25% of the revenue from the project
- Based on a review of the Integrated Development Plan 2011, local economic strategy 2009 data available at SA Statistics and interviews held in the surrounding areas the focus of our efforts will be on creating facilities and services that will impact the following areas:
  - Economic related activities with focus on job creation
  - School development programs
  - Vocational training programs
  - Health services and facilities
  - Sports and recreation facilities

Enterprise Development

- Contributions will represent 0.25% of the revenue from the project
- Goal of the enterprise development worker, who will be hired for this site will include:
  - Providing access to finance for women owned enterprises & micro finance loans
  - Support and mentoring for start-up and expanding enterprises
  - Fostering local entrepreneurship business training for local business owners
Socio-Economic & Enterprise Development

Partnership:
• Project has partnered with the Ikamva Labantu Empowerment Trust and the Malibongwe Womens Development Trust, each are equity owners in the project.

Local Community Trust
• 5% ownership in the project and it will benefit all citizens within 50km radius (over 42,000 people) of the project

Training Programmes
• Project will select 3 candidates, from the local community, on a yearly basis to attend a 3-year NQF Level 4 Engineering for Renewable Energy programme
• Project will select 3 candidates, from the local community, on a yearly basis to attend an NQF Level 2 programme in Environmental monitoring.
• Over the life of the project we expect to train approximately 150 individuals between these two programmes
To Scale rendering

Before

After