NERSA Hearings
Amstilinx (RF) Proprietary Limited
Excelsior 32.5 MW Wind Energy Facility
9 September 2015
PRIVATE & CONFIDENTIAL
Presentation Outline

- Business Overview
- Project Information
  - Project Description
  - Project Location
  - Technical Information
  - Project Funding Structure
  - Project Progress to Date – Permits and Consents
  - Interested Parties & Stakeholder Consultations
- Economic development
  - Economic Development (“ED”) Industry Information
  - Economic Development (“ED”) Project Information
- Value for Money
- Project Milestones and COD
- Questions
Business Overview
BioTherm Energy (“BTE”) is one of the leading African renewable energy project developers with a focus on wind and solar power development

- BioTherm develops, finances, owns, and operates both wind and solar power plants to provide long-term clean electricity in South Africa (“RSA”) and Rest of Africa (“RoA”)
- Over 52MW of operational assets in South Africa, including a 4.2MW waste project

### BioTherm Snapshot

<table>
<thead>
<tr>
<th>South Africa Projects</th>
<th>South Africa Projects Approaching Financial Close</th>
<th>Rest of Africa successes</th>
<th>Over 5 GW under development</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 MW Klipheuwel Wind Project W. Cape</td>
<td>120MW Golden Valley Wind Project E. Cape</td>
<td>4 Solar PPAs Awarded Zambia</td>
<td>• Large sites throughout South Africa and Rest of Africa</td>
</tr>
<tr>
<td>11 MW Aries Solar Project N.Cape</td>
<td>45 MW Aggeneys Solar Project N. Cape</td>
<td>Winner of 32MW of Solar Projects Burkina Faso</td>
<td>• &gt;1,000 MWs fully permitted, bid ready in South Africa</td>
</tr>
<tr>
<td>11 MW Konkoonsies Solar Project N.Cape</td>
<td>86 MW Konkoonsies II Solar Project N.Cape</td>
<td>150MW solar PPA Nigeria</td>
<td>• &gt;250MWs of PPA’s in rest of Africa in the process of being secured</td>
</tr>
<tr>
<td>4.2MW PetroSA Waste Gas Project W.Cape</td>
<td>32 MW Excelsior Wind Project W.Cape</td>
<td>Shortlisted 30MW Wind Project Mozambique</td>
<td></td>
</tr>
</tbody>
</table>

- Over 52MW of operational assets in South Africa, including a 4.2MW waste project
- Over 5 GW under development
Project Locations South Africa

- 11 MW Konkoonsies Solar Project
- 11 MW Aries Solar Project
- 27 MW Kipheuwel Wind Project
- 4.2 MW PetroSA Waste Gas Project
BioTherm’s progress in Africa

- BioTherm is preferred bidder in the following countries:
  - Zambia: four solar projects (10MW), financial close by Q1 2016
  - Burkina Faso: 2 solar projects (32MW), financial close by Q1 2016
  - Mozambique: 1 wind project (30MW), financial close by Q1 2016

- BioTherm is also shortlisted as a finalist in the following countries:
  - Uganda: 2 solar projects (10MW)
  - Togo: 2 solar projects (10MW)
  - Sierra Leone: 1 solar project (50MW)

- Markets in which it is pursuing unsolicited bids:
  - Nigeria (150MW)
  - Ghana (200MW)
  - Ethiopia (100MW)
  - Botswana (100MW)
Experienced Management Team

- Local management team with international experience and strong focus on returns, as proven with the recent sale of operating assets
- CEO has a combination of an international renewables and private equity background
- 100+ years of management expertise in the development, construction and operations of power projects
- Cohesive team that has collectively worked together for last four years in the African renewable sector
- To date, secured 336MW of PPAs in South Africa and in process of securing over 250MW in the Rest of Africa
- Successfully managed the construction of the Round I projects, ahead of schedule and under budget
- Team provides a top tier, end to end development solution that it is leveraging to aggressively build out a robust development pipeline
- Focused on building a truly African independent power producer building world class, low cost, renewable power projects, while delivering private equity returns

Confidential
The BioTherm Team
Project Information
Excelsior WEF Project Description

- **Project size**
  - Contracted Capacity - 31.9 MW
  - Nameplate capacity - 32.5 MW

- **Land**
  - The project area is approximately 2400 hectares proposed over three farms namely;
    - Remaining portion of the Farm Uitkyk No. 434;
    - Portion 6 of the Farm Excelsior No. 432;
    - Farm Die Kop “Aangrensende” Farm Vryheid No. 435
  - Land’s main utilization is sheep grazing and the cultivation of cereal crops

- **Location**
  - Located approximately 30 km southwest of Swellendam in the Western Cape
  - The Site lies 12 km south of the Eskom 132kV Vryheid substation
  - Site access is via the R319
Project Location

Excelsior Wind (32.5MW)

Project Infrastructure
- Development Area
  - 13 x GW 109/2500 Turbine Layout
- Excelsior reference mast
- Point of Connection, Facility metering, System Metering
- Excelsior 132kV Facility Substation (Proposed)
- Site Access Point
- Excelsior-Vryheid 132kV (Proposed)
- Internal Roads and Cables (proposed)

Existing Infrastructure
- Vryheid 132kV Distribution Substation
- Breitdorp-Vryheid 1 66kV
- Existing Roads

Farm Portions
- Farm 432 Portion 6 (Excelsior)
- Farm 434/RE (Lithbyk)
- Farm 435/RE (Die Kop)
- Farm 438 Portion 1 (Klaas Kaefer Heuwel)

Locality Description:
- Swellendam Local Municipality (WC034)
- District: 23
- Magisterial District: DC3 (Overberg)

UTM - Zone 34 World Geodetic 1984 (WGS84)
- Easting: 431126 m
- Northing: 6214651 m
Technical Information

- **Energy Analysis**
  - Net energy production (20 year, P50)- 115.8 GWh
  - Net capacity factor (20 year, P50)- 40.7%

- **Technology**
  - Permanent Magnet Generator
  - Gearless Directly Driven (DD) by a 3-blade rotor
  - Synchronous generator with full power converter
  - Number of turbines- 13
  - GW 109/2500, 2.5 MW, 90.0m hub height

- **Grid Connection**
  - Sub-Station: On site Excelsior Substation connecting to Vryheid Substation
  - Connection Voltage: 132kV line

- **Transportation**
  - Initial transportation studies demonstrate no infrastructure upgrades are necessary
Project Progress to Date – Permits and Consents

- Appropriate progress has been made in obtaining all necessary consents and permits
- Permits and Consents received to date include but are not limited to the following:
  - Unconditional Rights to lease the site - 25 year notarial lease
  - Environmental Authorisations received allow for construction and operation of the Wind Energy Facility
  - South African Civil Aviation Authority consent,
  - Confirmation of water availability and usage rights
  - Confirmation from the Office of the Regional Lands Claims Commission
  - Land Use Planning Approval (Rezoning approval) in terms of LUPO, 15 of 1985
  - Subdivision of Agricultural Land Act (“SALA”), 70 of 1970
  - Eskom servitudes crossings consent from Western Cape Operating Unit
  - Heritage Approval
Interested Parties & Stakeholder Consultations

- Stakeholder engagement was conducted through newspaper adverts and local library
- Documents were placed in the Swellendam Library
- Newspaper adverts were placed in Die Burger and Suid-Kaap
- No objections were received
Economic Development
## Economic Development (“ED”) Industry Information

<table>
<thead>
<tr>
<th>Onshore Wind *</th>
<th>Bid Window 4</th>
<th>Bid Window 3</th>
<th>Bid Window 2</th>
<th>Bid Window 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWs</td>
<td>676</td>
<td>787</td>
<td>563</td>
<td>634</td>
</tr>
<tr>
<td><strong>Job Creation: Construction (Citizens)</strong></td>
<td>2 831</td>
<td>2 612</td>
<td>1 787</td>
<td>1 810</td>
</tr>
<tr>
<td><strong>Job Creation: Operations (Citizens)</strong></td>
<td>8 161</td>
<td>8 506</td>
<td>2 238</td>
<td>2 461</td>
</tr>
<tr>
<td>Jobs/MW</td>
<td>16.26</td>
<td>14.13</td>
<td>7.15</td>
<td>6.74</td>
</tr>
<tr>
<td>Total Project Costs (ZAR Millions)</td>
<td>R 13 466</td>
<td>R 16 969</td>
<td>R 10 897</td>
<td>R 13 312</td>
</tr>
<tr>
<td>Local Content Value (ZAR Millions)</td>
<td>R 5 146</td>
<td>R 6 283</td>
<td>R 4 817</td>
<td>R 2 727</td>
</tr>
<tr>
<td>Local Content %</td>
<td>44.60%</td>
<td>46.90%</td>
<td>48.10%</td>
<td>27.40%</td>
</tr>
<tr>
<td>Fully Indexed Price (Ave. Rand/MWh, Base Apr '14)</td>
<td>R 619</td>
<td>R 782</td>
<td>R 1 069</td>
<td>R 1 363</td>
</tr>
</tbody>
</table>

- Numbers are based on initial R4 Preferred Bidder project announcement (thus excluding additional allocation). Of these, three Onshore Wind projects are located within the Eastern Cape and the remaining two are located in the Northern Cape.

** 1 Job = 12 RSA Citizen person-months, 1 RSA Citizen person-month = 160 working hours
Economic Development ("ED")
Project Information

- Consideration of economic landscape within the region, was a critical element in setting ED commitments.
- All ED thresholds set by DoE were well exceeded by Project.
- Local content commitment designed to stimulate South African economy by localising manufacturing processes within South Africa.
- Increasing the Local and Black RSA employment was essential to the strategy design in improving and maximising job creation commitments.
- Employment opportunities during both construction & operations maximised within Bid Window 4 - Jobs/MW moved from 6.74 to 16.26 for Onshore Wind projects.
Economic Development ("ED")

Project Information

- **Black ownership in Project:**
  - Local community will own 12.5% of Project equity – **2.5x higher than DoE target of 5%**
  - Local community trust to be created, with key Objects identified to be Education, Economic Empowerment of Black Women and Sustainable Rural Development

- Unlocking opportunities to increase the procurement from Women Owned Vendors remains high on Project’s & Renewable Energy industry’s agenda

- Enterprise Development ("EnD") and Socio-Economic Development ("SED") commitments made by the Project exceeded Adjusted Targets set by the DoE.

- The EnD and SED funds are to be additional resources, over and above Local community ownership, that will assist the communities in improving their living and economic conditions

The Project intends on working with all relevant stakeholders within the region, including other Renewable Energy projects, in order to successfully implement and execute meaningful & sustainable ED solutions that will change communities’ lives.
Project’s Value for Money

- The Socio-economic development and enterprise development activities of the project will deliver Value for Money to the Government as the project is deeply committed to truly broad-based Black economic empowerment.

- Project will
  - Aim to alleviate some of the pressure on State coffers in terms of what it can achieve at both a local and national level
  - Meet the energy security using cost competitive solutions to create diversity in our energy mix
  - Act as a catalyst for local manufacturing and ensuring, that over the medium term, South Africa becomes the gateway to Africa for renewable energy component manufacturing
  - An opportunity to develop a market for Independent Power Producers to contribute to an energy balance that is economically, socially and environmentally sound
Project Milestones and COD

- Preferred bidder awarded: 10 April 2015
- NERSA application submission: 24 June 2015
- Financial Close expected date: Q1 2016
- Project execution start: April 2016
- Commercial operation: October 2017
Questions