South African Mainstream Renewable Power Droogfontein Pty Ltd

Presented to:
NERSA
Postmansburg Town Hall, Postmansburg

Date: 6 March 2012
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Mainstream Renewable Power is a leading global renewable energy developer with a portfolio of over 15,000MW of wind and solar projects across eight countries.

Mainstream South Africa, a Joint Venture with Genesis Eco Energy has been active since 2009 developing over 4,000MW of wind and solar projects in the Eastern, Northern and Western Capes.

In December 2011, a consortium led by Mainstream was awarded preferred bidder status by the Department of Energy in South Africa to deliver 138MW of wind energy and 100MW of solar PV into commercial operation by 2014.

This partnership is unique and teams the local knowledge, development skills and relationships of Genesis Eco-Energy with the core global strengths of Mainstream Renewable Power. These global strengths are in the areas of finance, engineering and procurement where Mainstream has a strong track record in delivering large-scale renewable energy plants around the world.
Background to Project

- Location: 12 km outside Kimberley within the Sol Plaatje municipal area in the Northern Cape
- Landowner: Droogfontein Communal Property Association (CPA)
- A land lease and option was signed between Mainstream and the CPA in April of 2010, with the full backing of the CPA.
- The Project will cover an estimated 100 Hectares. The land is currently used for grazing.
- Mainstream approached the Municipality in September of 2009
- Mainstream SA Presented to the Sol Plaatje Municipality - Executive Committee Decision was taken to support the Mainstream solar project
- 50 MW of PV
- Won Preferred Bidder status from DoE in first round of licensing for Renewable Energy IPPs
Proposed area for development on site
Site positioning
Visual – Example of PV project in the EU
Project status - Energy analysis

- Excellent solar resource measured on-site since August 2010 and fully verified by GL Garrad Hassan
- 20.4% capacity factor
- 10 years of solar data taken from the following three sources: Metenorm v6.1, PVGIS and NASA SSE.
- High quality data from a dedicated on-site station measuring for almost one year.
- Solar resource and energy yield assessment carried out by GL Garrad Hassan and independently verified by Poyry.
- P50 global irradiation on an inclined plane calculated to be 2,357 kWh/m²/year.
Environmental approval

- EIA started July 2010
- Environmental Authorisation received in November 2011.
- Conducted to World Bank Equator Principles.
- Confirmation that no water use license is needed (DWA)
Technology choices

PV Module - Over 2,000MW of solar modules have been installed globally by Suntech.
- Excellent track record in terms of durability and availability.
- Fully compliant with IEC/EN 61215 and IEC/EN 61730.
- Complies with Protection Class II Grid requirement.

Solar Inverter
- Over 200MW of SINVERT Inverters have been installed by Siemens and are operating in over 20 countries.
- Excellent performance and reliability due to the unique Master-slave concept used in the SINVERT.
- High peak energy conversion efficiency of 98.7%.
- Demonstrated Technical Availability of over 95% for 12 consecutive months of operation.
- Comply with IEC standards.
Pre construction and construction

Pre construction (Dec 2011 – June 2012)
- Concluding as part of Financial close.
- Owners engineers appointed – detailed design being concluded
- EPC appointed
- Grid connection and agreement to be finalised
- PPA to be signed at FC

Construction Phase
(July 2012 to Dec 2013)
- Construction to start in Last quarter of 2012
- COD end 2013
The Road Ahead

- Preferred bidders status awarded: December 2011.
- Financial close: June 2012.

**Activities:**

- **Development**
  - Land Use: May 2012
  - Environment: May 2012
  - Planning: May 2012

- **Financial Close**
  - PPA Finalised (DoE): April 2012
  - License Application (NERSA): May 2012
  - Final Grid Quote accepted (Eskom): May 2012
  - Contracts Signed: June 2012

- **Construction**: July 2012

- **Commercial Operation**: Oct 2013
Structure of project and financing

- 40% South African owned.
- 40% Black South African owned.
- Thebe Investment Corporation is Broad Based BEE partner.
- Two black-owned Engineering firms are actively engaged in project delivery.
- Local Community Trust shareholding in the Project Company.
- Local CPA shareholding in the Project Company.
- Fully underwritten Senior Debt by Absa Capital.
## Value to SA

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<th>Unit</th>
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<tr>
<td>Electricity Produced</td>
<td>50MW</td>
<td>MWh/Year</td>
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<tr>
<td>89352</td>
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<tr>
<td>Number of Houses</td>
<td>3723</td>
<td>No/Year</td>
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<tr>
<td>CO₂ Saved</td>
<td>86492</td>
<td>Tonnes/Year</td>
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<td>H₂O Saved</td>
<td>185</td>
<td>ML/Year</td>
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The creation of decent jobs is central to this project, and of all the Renewable Energies, which can be transferred within the Northern Cape and beyond.

- Ave 67 people employed, peaking at 200.

- Many Indirect jobs are also foreseen and we anticipate that more jobs will be created than just the jobs directly on the project, because of such a dynamic new project in our area. The types of extra jobs and enterprises that will be spin offs of the project are B and Bs, buses, tourists, agricultural, security, amongst others.

- Capacitating of local companies (where applicable) in the renewable energy space also creates decent jobs.

- Investment of approximately 1.2 Billion Rand
Local Economic Development Benefits

**Operation**

20 – 30 yrs

- CPA ownership
- Development Trust ownership in project
- Revenue for ED support
- Revenue for SED support
- Permanent Jobs
- Enterprise development
- Support to emerging farmers
- Rental Income to CPA
- Local services
- Stability of grid
- Tourism
- 40% South African owned.
- 40% Black South African owned

**Construction**

12 months

- Temporary Jobs
- Mobile Manufacturing of frames on site
- Security
- Site Maintenance
- Accommodation
- Panel cleaning
- Fencing
- Catering

**Development**

- Local spend
- Support to local projects – math and Science
- Exposure
Socio-Economic Development

- Commitment of a % of annual gross revenue over 20 years and confirmed in our Implementation Agreement that is a condition of our license and PPA
- Socio-Eco Development commitment focus areas eg’s:
  - **Education**: Maths and Science education
    - 14 bursaries to SAJ
    - FET college in Galashewa support
  - **Primary Health care**: Medical testing of students, eye and dental care
  - **Infrastructure**: Water purification for farm workers
  - CPA Veggie garden

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<th>Description</th>
<th>Threshold</th>
<th>Target</th>
<th>Response</th>
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<tbody>
<tr>
<td>Socio-Economic Development Contributions</td>
<td>1%</td>
<td>1.5%</td>
<td>1.1%</td>
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<tr>
<td>Adjusted Socio-Economic Development Contributions</td>
<td>1%</td>
<td>1.5%</td>
<td>1.485%</td>
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All thresholds exceeded

<mainstream renewable power south africa

A joint venture with genesis eco-energy
Enterprise Development

- Commitment of a % of annual gross revenue over 20 years and confirmed in our Implementation Agreement that is a condition of our license and PPA
- Business Development and Entrepreneur Programme
- Tourism Enterprise Development - TEP
- Agriculture and Enterprise Development
  - Support CPA with Chicken Run and farming initiatives
  - Brewery and Barley initiative
- Renewable Energy Enterprise Development Plan Components
  - PV Frame bending and punching mobile manufacturing facility;
  - Create a Black Women Owned PV panel maintenance company;
  - Expansion of existing Small Black Enterprise Security Company;
  - Create a Small Black Enterprise for Land Maintenance;
  - Partner with a Small Black Enterprise for Catering Services.

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<th>Response</th>
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<td>Enterprise Development</td>
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<tr>
<td>Development Contributions</td>
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<tr>
<td>Adjusted Enterprise Development</td>
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<td>0.54%</td>
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The Trust a shareholding in the Droogfontein Project. Funding for the Trust will be provided by the DBSA under their financing terms.

The dividends will provide consistent funding and investment to local entrepreneurs and into social projects across key areas of

- Land Reform Initiatives
- Enterprise Development
- Energy
- Education
- Healthcare

Governance: 1 trustee now. A Board of Trustees will be established in due course using best practice governance principles.

Beneficiaries of the project will be within a 50 KM radius of the project.
Questions?

Thank you
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