NERSA PUBLIC HEARING – September 2015
ZEERUST, BOKAMOSO & DE WILDT SOLAR PARKS
Agenda

- General Introduction
  - Introduction to SunEdison
  - Background to the Project
- Project structures
  - Ownership
  - O&M
  - EPC
- Technical Information
- Permitting Update
- Publication Information
- Project Finance and Funding Information
- Economic Development Information
- Value for Money
• Early to mid 2000s – demand increase catches up with generation capacity and as a consequence breakdowns have increased dramatically...

• ...and reserve margins are at a minimum (at times less than 8% vs NERSA-recommended 19%)

• Consequence: near daily LOAD SHEDDING / CURTAILMENT

• Solution: INCREASED ALLOTTMENT IN IPP WINDOWS

• New build necessary but lack of financial resources (Medupi, Kusile and Ingula initial cost close to R300 bn)

• Shift in the valuation of the asset base - from depreciated historical to depreciated replacement cost

• Intensive use of expensive fuel-fired plants

• EVER-ACCELERATING INCREASE IN PRICE / kWh; CAGR of 13.1% (2004 – 2014)

• RES IS BECOMING AN ATTRACTIVE VALUE PROPOSITION (CHEAPER AND MORE PREDICTABLE)
ESKOM's capacity can’t provide for high, growing demand for energy

Increased use of expensive diesel generators

ESKOM’s financial difficulties hinders needed expansion and maintenance

Increased Prices and decreased security of supply for consumers

Costly diesel increases ESKOM’s financial difficulties

Expansion of REIPPP Program

Alternatives to ESKOM become more appealing

S Africa's Sibanye Gold may spend USD 260m on solar capacity

Sibanye Gold aims for energy independence

Harmony Gold Plans Solar Power, Biofuels Plants in South Africa

RISK OF CARBON TAX: “The introduction of a carbon tax in 2016 will provide an additional tool to deal more sustainably with the current electricity shortage, while lowering the electricity levy” (Finance Minister, budget speech)
Round IV total allocation - **2,176 MW** (*)
  - Round IV extra allocation (June ‘15) – up to 1,085 MW

Round IV.5 – RFP for an additional **1,800 MW** from existing Bid Submissions (bid submission date: October 6)

Round V and forward will procure an additional **6,300 MW** from RE IPP’s (R.V RfP in Q2/3 2016)

Small IPP – announcement in Q3. Rumour is **120 MW**.

ESKOM capacity shortfall leads to 1.3x more capacity than what it has been allocated so far.

(*) Note: Solar and PV allocated in Round IV
SunEdison is proving to have the right pricing, and economic development strategy.

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Sponsor</th>
<th>Capacity (MWn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>De Wildt</td>
<td>SunEdison</td>
<td>50</td>
</tr>
<tr>
<td>Bokamoso</td>
<td>SunEdison</td>
<td>68</td>
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<tr>
<td>Zeerust</td>
<td>SunEdison</td>
<td>75</td>
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<tr>
<td>Greefspan 2</td>
<td>SunEdison</td>
<td>55</td>
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<tr>
<td>Waterloo</td>
<td>SunEdison</td>
<td>75</td>
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<td>Droogfontein 2</td>
<td>SunEdison</td>
<td>75</td>
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<tr>
<td>Subtotal SunEd</td>
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<td>398</td>
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<tr>
<td>Subtotal competitors</td>
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<td>415</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>813</td>
</tr>
</tbody>
</table>
Overview

SunEdison: Simplifying Solar

- **55 years experience** building the solar value chain and innovating the solar industry
- **Listed on the NYSE** (NYSE: SUNE) and a Fortune 1000 company
- **Global company = global reach:** present in more than 35 countries; manufacturing sites on 3 continents

**Unsurpassed track record in the industry:**
- 2.4GW of solar engineered, built, financed, constructed, and under O&M – more than 1,000 plants
- 3.6GW of solar capacity under management
- 1.1GW of wind capacity under operation
- Nearly 6 USD bn of innovative structured financing
- Successful IPO on the NASDAQ of YieldCo, Terraform Power (NASDAQ: TERP)
- Filing of S1 for Emerging Market YieldCo, Terraform Global
- Rapidity of execution: in 2010 built 70 MWp in 9 mths; in 2012 60MWp in 6 mths; in 2013 100MWp in 6 mths*

**Maximizing value while minimizing risk for clients:** from the mining industry (CAP, AMSA) to the retail sector (Kohl’s, Walmart), we deliver hassle-free energy and take care of feasibility, engineering, financing construction, operation and maintenance
Core Capabilities

Leadership in execution & performance

Innovation & Leadership

Leader in providing solar energy solutions
Integration of finance, hardware, services

Bankable Leader

Unparalleled financial structuring capabilities
Finance: >$5b in project financing raised

For the Long Haul

O&M: 3GW and >1,200 plants monitored 24/7
Excelling in execution and performance

Experienced Partner

Expertise: >2.4GW interconnected across 1000+ operational sites
Long standing experience with solar PPAs with private sector

SunEdison has created a constellation of key capabilities to become a RES IPP and transform the power sector

on average, PV plants are over-performing at 105% of underwritten investment

PV plants we manage show an average 105% over-performance to drive customer' returns

Investor Performance Ratio (IPR) = actual energy production / expected energy production (the higher the better)
SunEdison Global Milestones

- **First** solar PPA (2003)
- **First** utility-scale solar project in USA (2007)
- **First** utility-scale solar project in Canada (2008)
- **First** solar ‘sale & leaseback’ agreement in USA (2009)
- **Largest** solar plant in Europe (70 MW in 2010)
- **Largest** solar PV plant in Bulgaria (60 MW in 2012)
- **Largest** solar plant in Latin America (100MW in 2014)
- **First** ‘merchant’ solar PV plant (50 MW in 2014)
SunEdison has recently begun its expansion into the wind energy industry in South Africa and has many other Wind Projects in the pipeline under the REIPPPP Programme and plans are in place to rapidly progress its wind presence in Southern Africa.

**Geographical Diversification***

### Plant Name | SA Province | Capacity | Technology | Development Stage
--- | --- | --- | --- | ---
Witkop Solar PV Plant | Limpopo | 33 MWp | Solar PV | Commercial Operation
Soutpan Solar PV Plant | Limpopo | 31 MWp | Solar PV | Commercial Operation
Boshof Solar PV Plant | Free State | 66 MWp | Solar PV | Commercial Operation

***List not comprehensive***
Local Projects in South Africa

**Capabilities**

**Track Record**

South African Projects

- **Witkop, Limpopo 30MW**
- **Soutpan, Limpopo 28MW**
- **Boshof, Free State 60MW**
- **Roscherville, Gauteng 400 KW**
Project Background

- **Location**: +- 3km South of Zeerust Town, North West Province
- **Technology**: Solar PV with single-axis tracker
- **Capacity**: 75 MW AC
- **Grid connection**: New 88kV s/station + 3km OHL to Zeerust 88kV Distribution substation
- **Expected COD**: 30 November 2017
Project Background

Site Location: Bokamoso Solar Park

- Location: Leeudoringstad, North West Province
- Technology: Solar PV with single-axis tracker
- Capacity: 63 MW AC
- Grid connection: New 132kV s/station + 132kV LILO into existing Eskom 132kV OHL
- Expected COD – 30 November 2017
Site Location: De Wildt Solar Park

- **Location**: 13km South East of Brits, North West Province
- **Technology**: Solar PV with single-axis tracker
- **Capacity**: 50 MW AC
- **Grid connection**: New 88kV s/station + LILO into existing De Wildt-Brits 88kV OHL
- **Expected COD**: 30 November 2017
Overview of Services provided by SunEdison

- **SunEdison O&M Entity** (Operations and Maintenance and Asset Management Entity)
- **SunEdison Green Power Southern Africa (Pty) Ltd** (Construction Entity)

**PROJECT COMPANY**

- Operations and maintenance services
- Engineering and construction
- Development and management services

- **SunEdison Energy Southern Africa (Pty) Ltd**
  (Development and Operations Entity)
Ownership Structure

Siyakhula Women’s Opportunity Trust 35%  
SunEdison 60%  
Local Community Trust 5%  

(Black Women and Women Enterprise Beneficiaries)  
(Black Beneficiaries from a 50km radius of Project)  

PROJECT COMPANY
SunEdison South Africa operations and maintenance service provider will provide O&M services to the Project Company.

Services to be provided include, but are not limited to:

- Day to day operations of the facility;
- Reporting;
- Scheduled and unscheduled maintenance;
- On-site and remote monitoring;
- Security;
- Health and safety services.
O&M Contractor Ownership Overview

SunEdison (60%) → Prime O&M Contractor – SunEdison O&M entity → BEE Entity (40%)
EPC Contractor Ownership Overview

- **SunEdison** 75%
- **BEE Entity** 25%

**Prime EPC Contractor –**
SunEdison Green Power (Pty) Ltd
### Project Schedule Zeerust, Bokamoso & De Wildt Solar Park as at bid submission: FC and dates subject to DOE

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<table>
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<tbody>
<tr>
<td><strong>Notice to Proceed</strong></td>
<td>15-Jan-15</td>
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<tr>
<td><strong>Interconnection</strong></td>
<td>28-Aug-17</td>
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<tr>
<td><strong>PV Plant Construction</strong></td>
<td>30-Nov-16</td>
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<td><strong>COD</strong></td>
<td>30-Nov-17</td>
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## Permitting

**Zeerust Solar Park**

<table>
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<tr>
<th>Main Permit</th>
<th>Status</th>
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<tbody>
<tr>
<td>Environmental Authorization</td>
<td>Obtained</td>
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<tr>
<td>No objection - Civil Aviation</td>
<td>Obtained</td>
</tr>
<tr>
<td>Subdivision of Agricultural Land</td>
<td>In process of obtaining</td>
</tr>
<tr>
<td>South African Heritage Resources</td>
<td>Obtained</td>
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<tr>
<td>No objection - Section 53</td>
<td>Obtained</td>
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<tr>
<td>Rezoning</td>
<td>Obtained</td>
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<tr>
<td>Main Permit</td>
<td>Status</td>
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<td>Main Permit</td>
<td>Status</td>
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<tr>
<td>-------------------------------------------</td>
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<tr>
<td>Environmental Authorization</td>
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<tr>
<td>No objection - Civil Aviation</td>
<td>Obtained</td>
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<tr>
<td>Subdivision of Agricultural Land</td>
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• Notice for Generation License application published in two different newspapers.
• No objections were received.
• Notice for Generation License application published in two different newspapers.
• No objections were received.
• Notice for Generation License application published in two different newspapers.
• First Notice published in English - Platinum Weekly 24 July 2015.
• Second Notice published in Afrikaans - Brits Pos 31 July 2015
• Objection from MR J L VAN RENSBURG and MRS J H VAN RENSBURG.
Project Finance and Funding Structure

- **Lender**
  - 70-80% of project cost

- **Equity providers**
  - SunEdison
  - Siyakhula Women's Opportunity Trust
  - Local Community Trust
  - 20-30% of project cost

**Project Company**
Total funding requirements covered through –
  • long term debt;
  • and equity.

Long term debt will be approximately 70-80% of the total project cost.

The long term debt will be –
  • non-recourse project finance; and
  • provided by one of the leading South African banks.

Equity will represent 20-30% of the total project costs

Equity provided by the shareholders –
  • SunEdison;
  • Siyakhula Women's Opportunity Trust; and
  • the Local Community Trust.
- Community assessment exercise have been conducted - insight on socio-economic development needs in the region.
- Compliance with all elements on the economic development -
  - Job creation (commitment to female employment, skills development & transference of skills)
  - Ownership (local community)
  - Local content (preferential procurement),
  - Black top management
  - Enterprise Development
  - Socio-Economic Development
- **Job creation (high)**
  - commitment to female employment
  - skills development & transference of skills
  - South Africa local skilled & unskilled employment (including from local communities)

- **Local content (preferential procurement)**
  - Local economy boost (retail, transport, real estate & hospitality economic sector – additional job creation / income generation)

- **Ownership in Project Company (including Local Community)**
  - Shareholding by the local community (Trust to be created) – beneficiaries: black people within 50km radius of Project Site
  - Siyakhula Women’s Opportunity Trust (SWOT) shareholder – beneficiaries: black women & black women owned enterprises (trust objective - skills development, education initiatives & general support to black women that compliment national initiatives).
Job creation (low)
- Employment reduce drastically as focus is on Enterprise development
- Commitment to female employment and women owned enterprises

Socio-Economic Development
- Commitment to use a % of revenue towards strategic initiatives including –
  - education,
  - early childhood development; and
  - health services
- Further socio-economic needs analysis to inform spend on socio-economic development initiatives.

Enterprise Development
- Commitment to use a % of revenue towards strategic enterprise development initiatives throughout the province over 20 years
- Assisting existing enterprises, or start-up enterprises
- Assisting in agricultural and Greenfields initiative development
Economic Development

Local Content: Local business development - Enterprise Development

Socio-Economic Development: Education
• CO2 Reduction and Provision of Electricity
  – Expected Generation: sufficient to power about 55,000 average SA households annually
  – Prevention of greenhouse gases of up 115,000 tonnes a year

• Competitive Tariffs
  – Competitive Tariffs: Round 4 produced record low tariffs with clean energy competitive to other forms of generation
  – Optimized cost: Global best practice to secure best in class capital and operational expenditures matched to competitive long term financing

• Job Creation
  – Sustainable job creation focused on the local community

• Local Content and Preferential Procurement
  – Project sources locally to the degree possible to encourage industrialization and focuses on buying from BBBEE contributors

• Socio-Economic Development and Enterprise Development
  – Percentage of Revenue dedicated to SED and ED over the project lifetime

• Quality
  – Proven and Reliable Technology
  – IPP with significant track record: SunEdison is the largest renewable energy developer in the world with a focus on solar PV