**SPS: PROJECT PROMOTION**

- **RioZim**
  - Mine Development
  - Fuel Supply Business

- **SPS**
  - Power Station Development
  - Generation Business

- **EMC**
  - Network Development
  - Transmission and Trading Business

(50%)
Zimbabwe “PPA Market” (1 200 MW)
- Commercial, Industrial and Mining Consumers (✔)

SAPP and EAPP Markets (1 200 MW)
- East African Power Pool (400 MW) (✔)
- Namibia (200 - 400 MW) (✔)
- South Africa (400 - 600 MW) (✔)
- Katanga (150 – 200 MW) (?)
- Malawi (100 – 150 MW) (?)
- Mozambique (450 – 600 MW) (?)

SAPP Day Ahead Market (DAM) and Other Bilateral Contract Markets
### Commercial Parameters (USD Million)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total EPC Cost</td>
<td>1135</td>
</tr>
<tr>
<td>Financing Cost</td>
<td>440</td>
</tr>
<tr>
<td>Total CAPEX</td>
<td>1575</td>
</tr>
<tr>
<td>Installed Cost/kW</td>
<td>1125</td>
</tr>
<tr>
<td>Local Content</td>
<td>25%</td>
</tr>
<tr>
<td>Price (Levelized)</td>
<td><strong>USc 4.63/kWh</strong></td>
</tr>
</tbody>
</table>

### Financial Plan

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Structure</td>
<td>70/30</td>
</tr>
<tr>
<td>NP/ZESA Equity Share</td>
<td>80/20</td>
</tr>
<tr>
<td>Import Duties on Capital Items</td>
<td>Nil</td>
</tr>
<tr>
<td>Taxation Rate:</td>
<td></td>
</tr>
<tr>
<td>First 5 years</td>
<td>10%</td>
</tr>
<tr>
<td>-Thereafter</td>
<td>35%</td>
</tr>
</tbody>
</table>
Levelised Real Electricity Price Tornado
Change from Base Electricity Price of 4.63 US cents/kWh, Real (3plus 1 w)

- Availability +5%/5%
- Utilisation 5%/5%
- EPC Costs -/+10%
- US Inflation +/-0.5%
- Construction +/-6 months
- Fuel costs -/+1 US$/t
- Capacity +/-10MW
- O&M Costs +/-5%
- Zimbabwe Inflation +/-5%
- Loan Premium +/-0.25%
- Heat Rate -3%/+3%

US cents/kWh, real
Sengwa Colliery Company

Riozim

EMC

50%

THE DEVCO (SPS)

SPS is Established by a Shareholders Agreement, and a Joint-Project Development Agreement Between Riozim and EMC for BFS and IP

Funded by Nominal Share Budget Covering a Feasibility Study, EIA, SIA, Legal and Regulatory Permits, Consents, Licenses: - Towards a Bankable Feasibility Study – (BFS and IP)

50%

50%

Rio Tinto Plc

Principal Investor/Developer/Operator

Once the BFS is completed – the DEVCO is sold to the SPC (the new GENCO). Riozim And EMC to have a carried interest in the IPP Company to be determined via an independent valuation.

Public, Possibly Listed to Enable Raising of Capital - Bonds, etc.

SPS Project
SPS: Project Rationale

- Legal and Regulatory - Electricity Act 2002
- Institutional Infrastructure - ZERC
- Electricity Pricing Principles - Tariff Code
- SAPP Regional Markets - Bilateral and DAM
- Government Letter of Project Approval (***)
- SPS: (IPP) Generation License (***)
- SPS: Independent Transmission License (***)
- EMC: Retail Supply License / SAPP Registration
- Zimbabwe Grid Code / SAPP Book of Rules
SPS: Project Rationale

- Sengwa Concession / 50 Year Mining Title
- 535 MMT Minable Reserves
- Project Location and Market Access
- Public Policy and Economic Reforms (***)
- Improved Investment Incentives
- Economic Recovery and Power Demand
- Direct Interest in both PPAs and Equity from Mining Houses and Industrial Firms
<table>
<thead>
<tr>
<th>Name of Project</th>
<th>Number of Units</th>
<th>In-service Date</th>
<th>Estimated Project Cost US$ Million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hwange 7 &amp; 8 Expansion</td>
<td>2x300 MW</td>
<td>2015</td>
<td>1080</td>
</tr>
<tr>
<td>Kariba South Extension</td>
<td>2x150 MW</td>
<td>2015</td>
<td>400</td>
</tr>
<tr>
<td>Lupane Gas Turbines</td>
<td>2x150 MW</td>
<td>2015</td>
<td>465</td>
</tr>
<tr>
<td>Gokwe North Power Station (Sengwa Power Station)</td>
<td>1x320 MW, 1x320 MW, 1x320 MW, 1x320 MW</td>
<td>2017, 2018, 2019, 2022</td>
<td>3300</td>
</tr>
<tr>
<td>Batoka Gorge Hydro Electric Scheme (Zimbabwe-Zambia)</td>
<td>1x200 MW, 1x200 MW, 1x200 MW, 1x200 MW</td>
<td>2024, 2026, 2028, 2029</td>
<td>2700</td>
</tr>
<tr>
<td><strong>Discounted Cost in US$ Million</strong></td>
<td></td>
<td></td>
<td><strong>4 385 Million</strong></td>
</tr>
</tbody>
</table>
SPS: Maximum Demand Projections for Different Scenarios

- High Case
- Base Case
- Low Case

System Maximum Demand (MW)

- 1995
- 2001
- 2007
- 2013
- 2019
- 2025
- 2030
### Project Cost Benchmarks

ESKOM-NERSA (IPP) Cost Benchmarks for 2008 Mid-Term Power Purchase Program (ESKOM LRMC PRICE FOR NEXT BASE-LOAD PLANT)

<table>
<thead>
<tr>
<th>Project Parameters</th>
<th>Units</th>
<th>Low Range</th>
<th>Mid Range</th>
<th>High Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPEX</td>
<td>US$/kW</td>
<td>1400</td>
<td>1700</td>
<td>2000</td>
</tr>
<tr>
<td>Owners Development Cost</td>
<td>%Capex</td>
<td>10%</td>
<td>12.5%</td>
<td>15%</td>
</tr>
<tr>
<td>Levelized Coal Price</td>
<td>R/Ton</td>
<td>110</td>
<td>130</td>
<td>150</td>
</tr>
<tr>
<td>O&amp;M Cost (+De-Sox)</td>
<td>R/MWh</td>
<td>30</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>Discount Rate</td>
<td>%</td>
<td>5%</td>
<td>7.5%</td>
<td>10%</td>
</tr>
<tr>
<td>Future Average Power Price [LRMC]</td>
<td>Rc/Unit</td>
<td>Rc35</td>
<td>Rc42.5</td>
<td>Rc50</td>
</tr>
</tbody>
</table>
Phase 1: SPS to Build 1 200 MW Capacity for the Local “PPA Market” by End-2014;

- Target Debt to Equity Ratio 70:30; (85:15)
- Estimated Capex: US$ 2.04 Billion;
- Required Equity: US$ 612 Million; (US$306M)
- IPP Syndicate to Fund Project Equity;
- DFIs and ECAs to fund Project Debt (*)
# Local Content of “Hwange Stage 2” Project Expenditures

<table>
<thead>
<tr>
<th>Contract Types</th>
<th>% Local</th>
<th>% Base Contract Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical</td>
<td>24.9</td>
<td>56.4</td>
</tr>
<tr>
<td>Electrical + C&amp;I</td>
<td>45.2</td>
<td>7.1</td>
</tr>
<tr>
<td>Civil &amp; Structural</td>
<td>90.1</td>
<td>22.1</td>
</tr>
<tr>
<td>Transmission</td>
<td>71.0</td>
<td>14.4</td>
</tr>
<tr>
<td>% Base (EPC) Contract Price</td>
<td>47.4</td>
<td></td>
</tr>
<tr>
<td>% Project Total</td>
<td>30.4</td>
<td>100</td>
</tr>
</tbody>
</table>
# Financial Results of the “Base Case” Scenario

<table>
<thead>
<tr>
<th></th>
<th>SPS Project “Base Case” Scenario</th>
<th>Africa Power Industry “Best Practice” Thresholds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shareholder Equity Return (IRR%)</td>
<td>23.69%</td>
<td>&gt;18%</td>
</tr>
<tr>
<td>Shareholder Equity Payback Period (Years)</td>
<td>6.13</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Debt Service Coverage Ratio (Minimum)</td>
<td>1.58</td>
<td>&gt;1.25</td>
</tr>
</tbody>
</table>
## Financial Results (Scenarios(1))

Capital Investment = 1700 US$/kW       Tariff (Current) = 6 USc/kWh
Plant Capacity = 1200 MW          Grace Period = 3 years
Plant Load Factor = 85%            Term of Debt = +12 years
Debt/Equity Ratio = 80/20         **Scenario 2 is the Base Case**

<table>
<thead>
<tr>
<th>KEY VARIABLES</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Price (US$/Ton)</td>
<td>10</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Availability (%)</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Interest Rate (%)</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>KEY RESULTS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRR (%)</td>
<td>25.01%</td>
<td>23.69%</td>
<td>22.35%</td>
</tr>
<tr>
<td>Debt Service Cover Ratio</td>
<td>1.64</td>
<td>1.58</td>
<td>1.53</td>
</tr>
<tr>
<td>Equity Payback Period (Years)</td>
<td>5.83</td>
<td>6.13</td>
<td>6.46</td>
</tr>
</tbody>
</table>
# Financial Results (Scenarios 2)

<table>
<thead>
<tr>
<th>Capital Investment</th>
<th>1 700 US$/kW</th>
<th>Tariff (Current)</th>
<th>6 USc/kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Capacity</td>
<td>1 200 MW</td>
<td>Grace Period</td>
<td>3 years</td>
</tr>
<tr>
<td>Plant Load Factor</td>
<td>85%</td>
<td>Term of Debt</td>
<td>+12 years</td>
</tr>
<tr>
<td>Debt/Equity Ratio</td>
<td>80/20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Scenario 5 is the Base Case*

<table>
<thead>
<tr>
<th>Key Variables</th>
<th>Scenario 4</th>
<th>Scenario 5</th>
<th>Scenario 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Price (US$/Ton)</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Availability (%)</td>
<td>85.7</td>
<td>90</td>
<td>94.5</td>
</tr>
<tr>
<td>Interest Rate (%)</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Key Results</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Shareholder IRR (%)</td>
<td>20.41%</td>
<td>23.39%</td>
<td>27.26%</td>
</tr>
<tr>
<td>Debt Service Cover Ratio</td>
<td>1.43</td>
<td>1.58</td>
<td>1.75</td>
</tr>
<tr>
<td>Equity Payback Period (Years)</td>
<td>7.02</td>
<td>6.13</td>
<td>5.41</td>
</tr>
</tbody>
</table>
Levelised Real Electricity IRR Tornado
Change from **Base Case Shareholder IRR** of 23.69 %

Percentage Change, real

-4.00%  -3.00%  -2.00%  -1.00%  0.00%  1.00%  2.00%  3.00%  4.00%

- Availability +/- 5%
- Interest Rate +/- 300bps
- EPC Costs +/- 10%
- Fuel Cost +/- 5US$/Mt
- O&M Cost +/- 5%
- Capacity +/- 5%
- Inflation Rate +/- 10%
Levelised Real Electricity Minimum DSCR Tornado
Change from Base Case DSCR of 1.58 times
Unit Change, real

<table>
<thead>
<tr>
<th>Variable</th>
<th>-0.20</th>
<th>-0.15</th>
<th>-0.10</th>
<th>-0.05</th>
<th>0.00</th>
<th>0.05</th>
<th>0.10</th>
<th>0.15</th>
<th>0.20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest Rate +/- 300 bps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability +/- 5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPC Costs +/- 10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Cost +/- 5 US$/t</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O&amp;M Cost +/- 5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity +/- 5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Rate +/- 10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SPS: Sensitivity Analysis (3)

Levelised Real Electricity Payback Period Tornado
Change from Base Case Equity Payback Period of 6.13 years

Change in years, real

-1.00  -0.80  -0.60  -0.40  -0.20  0.00  0.20  0.40  0.60  0.80  1.00

Interest Rate +/- 300bps
Availability +/- 5%
EPC Costs +/-10%
Fuel Cost +/-5US$/t
O&M Cost +/-5%
Capacity +/-5%
Inflation Rate +/-10%
Risk Matrix

Legal and Regulatory Risk
- Force Majeure
- Trading System
- Change in law
- Inflation and Monetary Policy
- Interest Rate
- Currency Exchange and Repatriation Policy

Business and Economic Risk
- Market Demand And Power Price
- Operation and Maintenance Cost
- Transition and Trading
- Fuel Supply Reliability
- Fuel Price Escalation
- Interest Rates and Exchange Rates

Construction Period Risk
- Project-Quality & Performance
- Permitting Consents and Approvals
- Construction Cost Over-run Risk
- Completion Risk
- Program Over-run Risk

Operation Risk
- Majeure Events
- Environmental And Emissions Compliance
- O&M Costs Escalation
- O&M Performance
- Load Factor
- Plant and Equipment Breakdown
- Political Force Majeure Events
- Permits and Licences
Legal-Regulatory-Environmental Risk (Investor-Lender Perceptions)

“Africa Country Risk”

- Changes in Law (As and When)
- Changes in Policy (Frequently Retrogressive)
- Integrity of Administration of Public Policy (Rule of Law)
- Ad Hoc Pricing Interventions (Arbitrary Criteria & Measures)
- Weak Regulatory Infrastructure & Systems (Permitting Risk)
- Security of Property Rights (A Huge Concern)
- An Overhang of Expropriation and Nationalization
- Skewed Dispute Resolution and Compensation Systems
- Currency, Monetary and Exchange Policies
“Africa Country Risk”

- It is possible to **Ring-fence** and **Quarantine** IPP Projects from the primary elements of legal and regulatory risk through a **Special “IPP” Statutory Instrument** that has the “Authority of Parliament”

- It is possible to design and develop a **Dispute Resolution Process and Procedure** that has clear provisions for realistic compensation, and that can be executed through a “**Neutral Jurisdiction**” We can agree on **Allocation & Pricing** of LRE Risk?

- There is a **ONE STOP Investment Centre**: It is possible to have a “**ONE STEP**” Statutory Instrument for IPP Investments?
Project Risk Origination

Investor
- Equity
- Dividends

Lenders
- Debt
- Loan Repayments

SPS

PROJECT RISK
-↑ EPC Cost
-↑ O&M Cost
-↑ Cost
-↓ Revenue
-↓ Production
-↓ Receipts (*)
Mitigation Measures for Load Factor Risk:
- A Diligent Market Survey with an Independent PPA Risk Review (Identify “Derivative” Risks)
- **Enforceable** Take-or-Pay Clause in the PPA
- Arrange to Sell Unused “Energy” to ZESA
- Trade Excess “Capacity” on SAPP DAM Market
- Customer DSM and Energy Efficiency Services
- Procure PPA “Payment Risk Insurance” Cover
RISK (ii): Customer Usage Load Factor and PPA Risk Mitigation

**SPC:** (GENCO) Generates and Sells Electricity to the Electricity Market Operator (“EMO”)

**EMO:** (TRADECO) is the Bulk Power Purchaser; Transmission and Trading Company for Both the SPC Generation and the SAPP Imports.

**Primary Markets:**
Large Commercial, Mining and Industrial Companies

**Secondary Markets:**
“SAPP Markets and ZESA Capacity Deficit Market”

**PPA Payment Risk Insurance Guarantee**

**3 x Months Cash Cover Prime Bank Guarantees**

**PPA Risk Premium**
Insurance Underwriters
END
Thank You