Eskom coal requirements

Fossil Fuel Foundation
Junior Coal Mining VenturesVII

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Johann Bester
GM Fuel Sourcing, Primary Energy Division
Eskom Holdings SOC Limited
Primary Energy Division has a mandate to ensure the security of supply of Eskom’s primary energy requirements in an effective and efficient manner.

Supplier Development & Localisation has a mandate to achieve maximum and sustainable local development impact through leveraging Eskom’s procurement spend in a manner that allows flexibility within the business in order to accommodate government local development initiatives and policies.
### Key performance area

<table>
<thead>
<tr>
<th>Skills development</th>
<th>Definition</th>
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<tbody>
<tr>
<td></td>
<td>• Increasing the skill base (number and skill level) of South African workers in areas relevant to the energy sector and where there is a national scarcity of skills</td>
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<table>
<thead>
<tr>
<th>Localisation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Country</td>
<td>• Utilisation of Eskom and suppliers’ spend to develop South African based suppliers relevant to the energy sector (focusing primarily on B-BBEE and Black Owned suppliers)</td>
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<tr>
<td>Province/Region</td>
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<tr>
<td>Site/Operation</td>
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<thead>
<tr>
<th>Industrialisation</th>
<th>Definition</th>
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<td></td>
<td>• Utilisation of Eskom and suppliers’ spend to foster the establishment of new competitive industries in the energy sector</td>
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<table>
<thead>
<tr>
<th>Employment and job creation</th>
<th>Definition</th>
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<td></td>
<td>• Creation of new jobs by suppliers as a direct result of Eskom business</td>
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<thead>
<tr>
<th>Supplier development / Enterprise Development</th>
<th>Definition</th>
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<td>• Providing a platform for SA-based suppliers to develop into national and international suppliers, through Capability &amp; Capacity &amp; Competitiveness development</td>
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</table>
• Manages the supply of ~130Mt of coal per annum

• Influences the cost and operational performance at 6 cost plus mines (~60Mt)

• Sources and contracts ~35Mt of short term coal supplies primarily from junior miners
Coal consumption will continue to show a steady increase over the next decade

NB:* reflects projection
ESKOM COAL SUPPLY

Coal Demand (Mtpa)

Includes only Eskom requirements

Based on a 50 year operational lifespan
Only 5 stations still in operation after 2040:
Currently sourcing 30% of coal on medium term contracts, which primarily are from junior miners (~35Mtpa).

The significant volumes of coal Eskom still needs to secure for the long term, provides an increasing opportunity for the Junior Mining coal sector to collaborate with each other as well as with Eskom to further develop the mining sector of South Africa and also improve the security of supply from the Mpumalanga and the Waterberg.
**KEY CONTRACTUAL REQUIREMENTS (1/4)**

**Eskom:**
- Will not contract with suppliers who operate illegally
- Wants to contract with owners of mining resources or value adding agents
- Will be entitled to conduct audits to assess compliance
- Will receive performance reports to monitor compliance

**Supplier:**
- Will comply to all relevant legislation
- Before contracting, will prove or provide warranties/undertakings that there is compliance to relevant legislation
- Will prove following documents
  - Mining Rights, EMP, IWUL
  - Tax clearance certificate
  - Employment Equity Plan
  - 3 year audited financial statements
  - B-BBEE certificate

- Eskom carries out environmental risk assessments of each source based on the legislative compliance to the relevant policies, acts and EMPR
- Any risks will be highlighted to the supplier with a request for assurance
- Eskom advises on the facilitation of mitigations to ensure security of supply
- No contracting with pre directives that have no mitigation plans
- An annexure in the contract covers the environmental liability
**Coal Qualities**

**Eskom:**
- Has security of supply as a main priority
- Would like to align supply of quantities with demand patterns
- Would like in-built flexibility in supply contracts
- To provide plans to rectify any shortfalls in off-take

**Supplier:**
- To provide warranties that there are sufficient coal reserves to meet contractual quantities
- To provide flexibility in supply where possible
- To provide plans to rectify any shortfalls in supply

**Coal Qualities**

**Eskom:**
- Has to ensure optimal performance of its coal-fired stations
- Out of specification qualities will have a detrimental impact on its coal fired power stations – load losses
- Coal quality is determined for each station
- Will sample/audit stockpiles prior to delivery
- Will test compliance to the **Coal Quality Management Procedure**

**Supplier:**
- Required to have pre-certified stockpiles
- Required to supply within contractual quality parameters
Contents of CQMP

CONTRACTUAL APPLICATION OF ANALYTICAL RESULTS
SAMPLING
  Sample identification and labelling
  Responsibilities
  Sample certification
TRANSPORT OF BULK SAMPLE TO THE NOMINATED LABORATORY
SAMPLE PREPARATION
  Sample preparation regime
  Sample preparation flow sheet
ANALYTICAL DETERMINATIONS
  Standard Methods
ANALYTICAL DIFFERENCES AND RESOLUTION
  Conditions for declaring disputes
  Limits for Analytical Differences
COAL QUALITY REPORTING
TECHNICAL AUDITS
  Laboratory Audits
  Sampling Audits
PRE-CERTIFIED STOCKPILE MANAGEMENT
TREATMENT OF OUT OF SPECIFICATION STOCKPILES
STOCKPILE MOISTURE MANAGEMENT
SAMPLE PREPARATION FLOWSHEET
SAMPLE PREPARATION FLOWSHEET
APPENDIX : THE GENERAL LOCATION OF THE PAYMENT SAMPLING PLANT
RELATION TO THE STOCKYARD LAYOUT.
APPENDIX : SPECIFICATIONS OF SAMPLING PLANT
APPENDIX : COAL QUALITY REPORT
ROLES AND RESPONSIBILITIES: OBSERVER AND ROVING SUPERVISOR
<table>
<thead>
<tr>
<th><strong>Eskom:</strong></th>
<th><strong>Supplier:</strong></th>
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</thead>
</table>
| • Coal cost is one of the largest cost drivers for Eskom  
• Coal cost directly impacts the cost of electricity  
• Prices will be based on efficient costs plus a risk adjusted fair return  
• Total cost of ownership to the power station will be considered  
• Will benchmark costs for the type of mining operation | • To provide technical mine information  
• To provide geological information related to its coal reserves |

**Price**

**Contract Price Adjustment**
**Eskom:**
- Logistics costs contribute significantly to the total cost of ownership.
- Sub-optimal logistics solutions have detrimental economic and social impacts.
- Preferred logistics solution – Conveyor, followed by Rail and then Road.
- Eskom is migrating from road to rail.
- Eskom will utilise rail for Power Stations with rail infrastructure in place.
- Contracts should be flexible enough to move between rail and road and between FCA & Delivered.

**Supplier:**
- Logistics suppliers should be made aware of legislative requirements regarding transportation.
- Must adhere to Road Transportation Management System standards.
- Must adhere to Road Rules service level agreement.
### ESKOM HAS A PORTFOLIO OF LONG, MEDIUM AND SHORT TERM COAL CONTRACTS

<table>
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<tr>
<th>Contract Type</th>
<th>Percentage</th>
<th>Details</th>
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<tbody>
<tr>
<td>Cost plus contracts</td>
<td>47%</td>
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<tr>
<td>Fixed price contracts with escalation</td>
<td>24%</td>
<td></td>
</tr>
<tr>
<td>Short/medium term contracts</td>
<td>29%</td>
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- **Cost plus contracts (47%)**
  - Both parties contribute capital
  - Eskom pays the supplier for the full operational costs and a pre-determined net return on its capital contribution
  - Any additional capital requirements and/or cost increases are for Eskom’s account
  - Coal reserves are dedicated to Eskom – ensures security of supply

- **Fixed price contracts with escalation (24%)**
  - Coal is sold to Eskom at a pre-determined price
  - The price is escalated annually by applying an escalation formula
  - The supplier incurs penalties for not meeting quality specifications
  - Coal reserves are not dedicated to Eskom
  - Eskom makes no capital contribution and theoretically has no exposure to new capital requirements or cost overruns

- **Short/medium term contracts (29%)**
  - Coal is sold to Eskom at a pre-determined price
  - The price is escalated annually by applying an escalation formula
  - The other criteria are similar to that of fixed price contracts

- Long term contracts (cost plus & fixed price) are contracts generally not less than 10 years in duration and often up to 40 years in duration, some with options to extend
- Short/medium term contracts are usually not more than 10 years in duration
**CALORIFIC VALUE RANGES**

<table>
<thead>
<tr>
<th>Power Station</th>
<th>Year Commissioned</th>
<th>CV Ranges</th>
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<tr>
<td>Lethabo</td>
<td>1986</td>
<td>18.3 MJ/kg – 21 MJ/kg</td>
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<tr>
<td>Kendal</td>
<td>1988</td>
<td></td>
</tr>
<tr>
<td>Matla</td>
<td>1979</td>
<td></td>
</tr>
<tr>
<td>Matimba</td>
<td>1987</td>
<td></td>
</tr>
<tr>
<td>Majuba</td>
<td>1996</td>
<td></td>
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<tr>
<td>Kriel</td>
<td>1976</td>
<td>&gt;21.5 MJ/kg</td>
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<tr>
<td>Hendrina</td>
<td>1971</td>
<td></td>
</tr>
<tr>
<td>Tutuka</td>
<td>1985</td>
<td></td>
</tr>
<tr>
<td>Duvha</td>
<td>1980</td>
<td></td>
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<tr>
<td>Arnot</td>
<td>1971</td>
<td></td>
</tr>
<tr>
<td>Camden*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Komati*</td>
<td></td>
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<tr>
<td>Grootvlei*</td>
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**Implications of different qualities:**
- Boilers are designed to burn particular qualities of coal
- It is not always possible to transfer coal between stations because of different quality requirements at each station
- Burning inappropriate qualities at stations can result in high plant inefficiency & increased maintenance requirements

- CV – Air Dried basis
- * Return to service power stations
OPPORTUNITIES IN THE WATERBERG

- Eskom requires 20Mtpa of coal from the Waterberg for the next 40 years from 2018
- Eskom has already secured up to 10Mtpa
- Request For Information to be issued in all major newspapers
  - Compulsory bidders clarification to be held at Megawatt Park
  - All tender information will be available at www.eskom.co.za
- Eskom engaging with Transnet for rail infrastructure upgrades
- Eskom engaging with the Department of Water Affairs for water infrastructure
- Contracting Principles for the Waterberg will include:
  - Green Mining Principles (beyond legislative compliance)
  - New parameters for coal quality management (automated systems)
- Key Coal Qualities for the Waterberg
  - > 21MJ/kg (air dried)
  - Ash < 30% (air dried)
  - Sulphur < 1.2% (air dried)
Thank you