The expansion of the Saldanha Port to meet international growing iron ore demand

- Karl Socikwa, CEO of Transnet Port Terminals

4 June 2013
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TRANSNET STATE OWNED COMPANY LIMITED

SALDANHA IRON ORE TERMINAL

GROWING DEMAND FOR IRON ORE

YEAR ONE OF THE MARKET DEMAND STRATEGY

FROM 60 TO 82MT BY 2018/19
• 8 Commercial ports along 2943km of coastline
  • Revenue R8.4bn
  • Assets R56 bn
  • 3558 employees

• 16 Cargo Terminals operating across 7 SA ports
  • Revenue 7 bn
  • Assets R13.5 bn
  • 6 324 employees

• Support TFR for rolling stock and TPT for lifting equipment maintenance
  • Revenue 9.8 bn
  • Assets R8.6 bn
  • 13 020 employees

• 20 500 km of railway track
  • 182 million tons of freight
  • General freight & 2 heavy haul export lines
  • Revenue 22.2 bn
  • Assets R54.7 bn
  • 24 177 employees

• 18 billion litres of petroleum products and gas through 3 000 km of pipelines, mainly to Gauteng
  • Revenue 1.3 bn
  • Assets R20.1 bn
  • 600 employees

• R300 billion of capital investments over next 6 years
  • CSI in Education, Health, Sport, Arts & Agriculture
  • Property Management
SALDANHA IRON ORE TERMINAL

- Largest iron ore export facility in Africa.
- South Africa’s only dedicated iron ore terminal.
- Deepest and largest natural port in Southern Africa.
- Staggered loading and regular dual loading.

- 4 x 8000 tph stacker/reclaimers
- 2 x 8000 tph ship loaders
- 2 x 8000 tph tipplers
- 19 km conveyors

Projected Volumes

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>59.5</td>
</tr>
<tr>
<td>2014</td>
<td>62.3</td>
</tr>
<tr>
<td>2015</td>
<td>62.3</td>
</tr>
<tr>
<td>2016</td>
<td>62.3</td>
</tr>
<tr>
<td>2017</td>
<td>70.3</td>
</tr>
<tr>
<td>2018</td>
<td>78.3</td>
</tr>
<tr>
<td>2019</td>
<td>82.0</td>
</tr>
</tbody>
</table>
# Saldanha Break-Bulk Terminal

<table>
<thead>
<tr>
<th>Infrastructure</th>
<th>Number</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quays</td>
<td>1</td>
<td>Draft max, 13.5-14m, 3 berths, e.g. 201,202,203, Cape Size, Panamax (250m)</td>
</tr>
<tr>
<td>Stockyard O/head Cranes</td>
<td>8</td>
<td>Load Capacity=40/35tons</td>
</tr>
<tr>
<td>Forklifts</td>
<td>7</td>
<td>Load Capacity=12/42 tons</td>
</tr>
<tr>
<td>Spreaders</td>
<td>2</td>
<td>Load Capacity=40/40 tons</td>
</tr>
<tr>
<td>Tractors</td>
<td>14</td>
<td>Load Capacity=30/60 tons</td>
</tr>
<tr>
<td>Trailers</td>
<td>14</td>
<td>Load Capacity=30/60 tons</td>
</tr>
<tr>
<td>Hoppers</td>
<td>4</td>
<td>Capacity = 20tons</td>
</tr>
<tr>
<td>Ware houses</td>
<td>1</td>
<td>Primarily used for coil storage, fitted 4 off overhead cranes, load cap=36 tons/ 3 157m^2</td>
</tr>
<tr>
<td>Rail infrastructure</td>
<td>1</td>
<td>Rail Line split(3), connection to Salkor, potential CAPECOR</td>
</tr>
</tbody>
</table>
**SALDANHA IRON ORE PROCESS**

**Ore Offloading**
- 2 off Tandem, Dual Wagon, Rotary Tipplers
- Rate Capacity = 8000t/hr.
- Cycle Time = 90 seconds
- Fully Automated
- Supplemented dust extraction system
- Bag-house facility and air emissions control/recording
- Brake Wagons - Noise control

**Ore Stacking**
- 4 off bucket wheel type stacker-reclaimer combinations
- Semi-automated, operator controlled
- Rated capacity, SR 1-3 (Metso) and SR 4 (Sandvick) = 10 000t/hr.
- Covered conveyance system
- Supplemented, dust fogging and demisting sprays
- Coagulant treated

**Ore Stockpile**
- Stockpile capacity is 5.1 million tons
- Current provision, 13 ore grades
- Windrow & Conical Stacking Methodology
- MTS System - Support materials load/offload tracking
- Water/stockpile spraying system
- Conveyor belts: 25 (26km

**Ore Reclalm**
- 4 off bucket wheel type stacker-reclaimer combinations
- Semi-automated, operator controlled
- Rated capacity, SR 1-3 (Metso) and SR 4 (Sandvick) = 10 000t/hr.
- Covered conveyance system
- Supplemented, dust fogging and demisting sprays

**Ore Loading**
- 2 Off extended boom shiploaders
- 4 operating modes, viz., single load, staggered loading, dual loading and direct loading
- Rated capacity - 10 000t/hr.
- Inline product sampling
- Covered conveyor systems
- Dust suppression system, online dosing and moisture analysis and control
- Dual Berths, Max draft 21m
IRON ORE EXPORT VOLUMES (MT)
### Top 10 Producers of Iron Ore

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Production (million metric tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>China</td>
<td>900*</td>
</tr>
<tr>
<td>2</td>
<td>Australia</td>
<td>420</td>
</tr>
<tr>
<td>3</td>
<td>Brazil</td>
<td>370</td>
</tr>
<tr>
<td>4</td>
<td>India</td>
<td>260</td>
</tr>
<tr>
<td>5</td>
<td>Russia</td>
<td>100</td>
</tr>
<tr>
<td>6</td>
<td>Ukraine</td>
<td>72</td>
</tr>
<tr>
<td>7</td>
<td>South Africa</td>
<td>55</td>
</tr>
<tr>
<td>8</td>
<td>United States</td>
<td>49</td>
</tr>
<tr>
<td>9</td>
<td>Canada</td>
<td>35</td>
</tr>
<tr>
<td>10</td>
<td>Iran</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Other countries</td>
<td>235</td>
</tr>
<tr>
<td></td>
<td>Total world</td>
<td>2400</td>
</tr>
</tbody>
</table>

* Estimated iron ore production in million metric tons for 2010 according to U.S. Geological Survey
The position of South Africa’s ports system enables it to access to South-South trade, Far East trade, Europe & USA, East & West Africa regional trade.

Shortest Trade Route between Shanghai and Santos is via South Africa 11,270nm = **22 days** @ 21 knots
via Panama Canal13,130nm = 26 days + transit fee
via Suez Canal 13,590nm = 27 days + transit fee
AFRICA

- SOUTHERN AFRICA’S ROLE IS TO ENABLE REGIONAL INTEGRATION

Source: Team analysis
AFRICA
- THE AU HAS IDENTIFIED 14 CORRIDORS AS THE MAIN AFRICAN CORRIDORS THAT NEEDS DEVELOPMENT

1. Kenitra-Casablanca Corridor
2. Greater Cairo Region
3. The Dakar-Touba corridor (Touba-Mbacké)
4. The Greater Ibadan-Lagos-Accra (GILA) urban corridor
5. The great Haoussa-Yoruba-Anshanti city triangle (GHAYA-CT)
6. The Emerging Luanda-N’Djamena corridor
7. The Kampala-Entebbe corridor
8. Nairobi metropolitan region
9. Walvis Bay corridor
11. The Maputo-Gauteng development corridor
12. Durban development corridor
13. Beira corridor
14. Maputo-Limpopo corridor

Source: E&Y Report – Time for Africa
Objective:

- Expansion of iron ore export capacity to 60mtpa

Status:

- Desalination (RO) plant in Port and Eskom sub-station at loop 18
- Rail triangles at Salkor and Erts yards, road surfacing at Salkor North and various alterations and additions in the port terminal.

### Key Milestones

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion of RO Plant</td>
<td>✔️</td>
</tr>
<tr>
<td>Commissioning of Eskom sub-station, TFS and Postmasburg TSS</td>
<td>✔️</td>
</tr>
<tr>
<td>Installation of upgraded shiploader chutes</td>
<td>✔️</td>
</tr>
<tr>
<td>Completion of Salkor Yard works</td>
<td>✔️</td>
</tr>
</tbody>
</table>

### Capex for the past 5 Years

<table>
<thead>
<tr>
<th>Year</th>
<th>SAL MPT</th>
<th>IOT</th>
<th>TOTAL</th>
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</thead>
<tbody>
<tr>
<td>2009</td>
<td>2.31</td>
<td>427.33</td>
<td>429.65</td>
</tr>
<tr>
<td>2010</td>
<td>9.27</td>
<td>438.02</td>
<td>447.29</td>
</tr>
<tr>
<td>2011</td>
<td>0.26</td>
<td>219.20</td>
<td>219.45</td>
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<tr>
<td>2012</td>
<td>0.18</td>
<td>90.20</td>
<td>90.38</td>
</tr>
<tr>
<td>2013</td>
<td>4.41</td>
<td>100.25</td>
<td>104.66</td>
</tr>
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</table>

2009 – R256m on phase 1b incl. dust mitigation, R63m on phase 1c
2010 – R68m on phase 1a, R102m on phase 1b and 283m on phase 1c
2011 – R130m on phase 1b and R79m on phase 1c
2012 – R44m on phase 1c and R22m on the Krupp ship loader refurb
2013 – R57m on phase 1c and R25m on the conveyor project
MARKET DEMAND STRATEGY (MDS)
Total Transnet ZAR300bn, TPT ZAR33bn
2012/13 - 2018/19, peaking to ZAR9.5bn in 2016/17

Sishen - Saldanha
Export iron ore ZAR28.6bn
Port Terminals: ZAR5.82bn

Cape Town
Port Terminals: ZAR465ml

Eastern Cape
Port Terminals: ZAR6.7bn

Richards Bay corridor
Export coal line ZAR32.1bn
Port Terminals: ZAR12.4bn

Durban
Multi Product Pipeline ZAR9.4bn
Port Terminals: ZAR7.4bn

Boom-time Ends
Global recession
Market Demand Strategy
TPT R33bn 7yr Investment Plan

<table>
<thead>
<tr>
<th>Year</th>
<th>Sishen-Saldanha</th>
<th>Cape Town</th>
<th>Eastern Cape</th>
<th>Richards Bay corridor</th>
<th>Durban</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008/09</td>
<td>3200</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009/10</td>
<td>2337</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010/11</td>
<td>913</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011/12</td>
<td>1137</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012/13</td>
<td>2551</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2013/14</td>
<td>4138</td>
<td></td>
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<td></td>
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<tr>
<td>2014/15</td>
<td>3492</td>
<td></td>
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<td>2015/16</td>
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<td>2016/17</td>
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<td>2017/18</td>
<td>2812</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2018/19</td>
<td>2670</td>
<td></td>
<td></td>
<td></td>
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</tr>
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</table>
Transnet will spend R28.6-billion on the Sishen-Saldanha iron-ore corridor between 2012/13 and 2018/19.

The investment in the rail corridor and the port should raise the capacity of the export channel, which traverses the Northern Cape and Western Cape provinces, by 57%, from 53-million tons to 83-million tons over the seven-year period.

The MDS also include a plan to raise domestic iron-ore volumes by 134%, from 7.7-million tons last year, to 18-million tons by the end of the seven-year period.
**FROM 60 TO 82MT BY 2018/19**

**Initial Bulk Terminal Operations, 1976**
- Targeted capacity = 27mtpa
- 1 tippler, 2 stacker Reclaimers, 2 ship loaders

**Bulk Terminal Expansion, Phase 1A**
- Capacity - 45mtpa
- Completed June 2005
- 2 tipplers, 3 stacker Reclaimers, 2 ship loaders

**Bulk Terminal Expansion, Phase 1B**
- Capacity - 55mtpa
- Completed May 2009
- Improvement on phase 1B

**Bulk Terminal Expansion, Phase 1C**
- Capacity = 60mtpa
- Completed July 2012
- 2 tipplers, 4 stacker Reclaimers, 2 ship loaders

**Port Expansion, Phase 2A**
- FEL 2 in progress
- Targeted commissioning 2018 onward
- Targeted capacity = 82mtpa
- 3 tipplers, 6 stacker Reclaimers, 3 ship loaders

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**Project 2012/13 Budget R m 2013/14 Projected R m 2014/15 Projected R m 2015/16 Projected R m 2016/17 Projected R m 2017/18 Projected R m 2018/19 Projected R m 7y Plan Total R m**

| Iron Ore Expansion (60 to 80mtpa) | 20 | 205 | 1 200 | 1 950 | 900 | 4 275 |
**Objective:**

- **Expand Iron ore export capacity to ~ 82mtpa**

**Status:**

- FEL 2 report has been completed in collaboration with mining industry, still requiring refinement by Transnet.
- TNPA and TFR Capics have approved funding for the FEL3 stage, TPT Capic approval still pending.

**Preliminary Scope**

- Construction of a new berth at Port, 2 new SRs, 1 tippler, 1 shiploader
- Extension of rail loops to accommodate 360 wagon trains
- Construction of a new Eskom substation and Track Feeder Station
- Acquisition of locos and rolling stock

**Next Steps**

- Finalise go-forward berth location via ship motion and navigational simulations
- Confirm rail expansion concepts with TFR
- Issue tender for FEL3 design and initiate Environmental Impact Assessment (EIA)

<table>
<thead>
<tr>
<th>Milestones</th>
<th>Forecast Finish</th>
<th>Status</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEL 2 phase – Confirm go-forward port and rail options</td>
<td>27Apr 2012</td>
<td>X</td>
<td>Confirm rail expansion concept</td>
</tr>
<tr>
<td>BC and funding approval for FEL-3</td>
<td>10 May 2013</td>
<td>X</td>
<td>TPT approval pending</td>
</tr>
<tr>
<td>Environmental Authorisation</td>
<td>31 July 2014</td>
<td>X</td>
<td>24 months allowed for EIA process</td>
</tr>
<tr>
<td>Engineering(FEL3) &amp; Procurement</td>
<td>30 Sep 2014</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Commissioning</td>
<td>30 Nov 2017</td>
<td>X</td>
<td>48 Months const. &amp; comm.</td>
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</table>