New Multi-Product Pipeline Project

Media Presentation
8 December 2010
Objectives of the Presentation

- To provide an update of the progress of the NMPP Project;
- Provide the revised cost estimate and delivery schedule;
- Update on action plans to ensure security of supply; and
- To provide an overview of processes put in place to mitigate against any further delays and cost increases

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Introduction and Project Overview

Mr Chris Wells
The Moerane Commission Report on fuel shortages in late 2005 noted, that additional pipeline capacity was "urgently required to supply the inland markets" and recommended that Petronet (now Transnet Pipelines) expedite the development of a new pipeline from Durban to Gauteng.

The DME in its strategic document entitled “The Energy Security Master Plan – Liquid Fuels (August 2007)”, states that: “When it comes to infrastructure investments in the South African liquid fuels sector, in the next 5 years, the single most important recommendation is the approval of a new appropriately sized, properly integrated pipeline, which should come on line in the 2nd quarter of 2010 at the latest.”
Overview of NMPP Project

The process to determine the final changes to cost and schedule has been completed and in line with our commitment to be totally transparent, Transnet would like to share with ALL STAKEHOLDERS, a full explanation of these changes:

- The revised estimate to complete the NMPP Project is R23.4bn with a high degree of confidence based on a definitive re-estimated cost.
- It should be noted, that only 38% of the projected cost has been spent to date.
- Given realistic timeframes and the necessary design changes, a project of this complexity and magnitude, is fair value.

- As per the application for the revised construction licence to NERSA, total project to be completed by 31 December 2013.

- The DJP does not have to be down-rated based on the results obtained from the expert analysis done and all critical areas identified will be addressed and/or repaired by 1 April 2011.
- However, as a contingency for security of supply, 10MI/week will be shed to rail (TFR) to ensure reliable and sustainable service.

- Project assurance and monitoring has been further improved and strengthened.

The NMPP Project is within benchmark norms, is fair value and Transnet is confident that the project will be delivered within the revised schedule and cost forecast.
Project Update

Areas to be covered:
- Project Progress
- Forecast cost and schedule
- Explanation of variances
- Benchmarking results
- Project delivery assurance

Mr Neville Eve
Progress as of 5 December 2010

- PL1 Welded 474.3 km (100%)
- PL1 Backfilled 459.1 km (95.1%)
- PL1 Re-instated 386.1 km (81.4%)
- PL1 Hydrotest km 313.7 km (56.5%)
- Durban Welded 70.0km (98.0%)
- Durban Backfilled 59.0km (81.3%)
- Durban Re-instated 11.5km (14.3%)
- Durban Hydrotest 0 km (0%)
Intermediate Phase Scope
• Planned 50%
• Actual 42%

Full Scope
• Planned 17.6%
• Actual 18.5%
NMPP Pump Stations Progress

Construction Progress
- Planned 35.5%
- Actual 37.5%
NMPP Project Progress Achievements

**Inland Pipelines**
Construction completed
- PL4 – ready for operations by the end of December
- PL2 & PL3 – RFC by mid December

**Mainline**
- Main River crossings complete (49)
- Major Wetland crossings complete (481) (95km)
- Land Acquisitions complete (1148 properties)
- All Environmental Approvals in place
- 550 km in the ground

**Pump Stations**
- Major equipment procured
  - On schedule
  - Excellent safety record

**Terminals**
- TM2 on schedule
- TM1 re-setup complete
  - Excellent safety record

This important strategic project is on track to meet the revised schedule
<table>
<thead>
<tr>
<th>Component</th>
<th>RFC</th>
<th>RFO</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL4 Inland Pipeline</td>
<td>1 Dec 2010</td>
<td>31 Dec 2010</td>
</tr>
<tr>
<td>PL2 &amp; 3 Inland Pipelines</td>
<td>18 Dec 2010</td>
<td>mid Jan 2011</td>
</tr>
<tr>
<td>PL1 24 inch Trunk Line and Inland Pump Stations (PS1, PS3, PS5)</td>
<td>30 Sept 2011</td>
<td>31 Dec 2011</td>
</tr>
<tr>
<td>Inland Terminal (TM2)</td>
<td>30 Sept 2012</td>
<td>31 Dec 2012</td>
</tr>
<tr>
<td>Coastal Terminal (TM1)</td>
<td>30 Sept 2013</td>
<td>31 Dec 2013</td>
</tr>
</tbody>
</table>
## NMPP Cost Changes: Context and Background

<table>
<thead>
<tr>
<th>Date</th>
<th>Feb ‘08</th>
<th>Feb ‘09</th>
<th>Nov ‘09</th>
<th>Nov ‘10</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETC</td>
<td>R11.1bn</td>
<td>R12.67bn</td>
<td>R15.4bn</td>
<td>R23.4bn</td>
</tr>
<tr>
<td>Basis of Estimate</td>
<td>• Bottom-up detail analysis</td>
<td>• Forecast off Feb 08 base</td>
<td>• Forecast off Nov 08 base</td>
<td>• Detail bottom-up analysis (re-based)</td>
</tr>
<tr>
<td>Risks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Aggressive timelines</td>
<td>• Optimistic timelines</td>
<td>• Optimistic timelines</td>
<td>• Realistic timelines</td>
<td></td>
</tr>
<tr>
<td>• Full FEL3 Front End Engineering Design (FEED)</td>
<td>• Substantial Engineering Changes (terminals &amp; facilities)</td>
<td>• Engineering changes (TM1)</td>
<td>• Validated detail engineering progress</td>
<td></td>
</tr>
<tr>
<td>• Risks largely unknown</td>
<td>• Definition reduced to FEL 2 (pre-FEED)</td>
<td>• Full FEL 3 not achieved</td>
<td>• Full FEL 3 achieved</td>
<td></td>
</tr>
<tr>
<td>Comments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Demand / Schedule Driven</td>
<td>• Opportunity missed to re-estimate project</td>
<td>• Re-estimate Opportunity missed</td>
<td>• High level of confidence/credibility of estimated cost and schedule</td>
<td></td>
</tr>
<tr>
<td>• Pre-engineering changes Impact</td>
<td>• Scope definition reduced</td>
<td>• Incomplete engineering progress data</td>
<td>• Project re-structured</td>
<td></td>
</tr>
<tr>
<td>• Scope defined</td>
<td></td>
<td></td>
<td>• Integrated EPCM &amp; Owners team</td>
<td></td>
</tr>
<tr>
<td>• Optimistic EPCM costs / strategy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Review of NMPP Estimation process followed

- Bottom-up re-estimation process provides a high level of confidence in the cost estimates for both Transnet and AWP
- Performed a detailed analysis of all related cost elements and estimates
- Reconstructed the revised estimate
- Performed a detailed risk analysis of all revised cost elements
- The re-estimate was undertaken:
  - By an international team of experienced corporate estimators
  - In conjunction with Transnet’s Team
  - With peer review assurance by Global & Regional experts

Revised estimate provides a high level of confidence that the forecast final cost target will be achieved.
### Analysis of Increase in ETC (R billion)

<table>
<thead>
<tr>
<th></th>
<th>Feb 2009</th>
<th>ETC 2009 (P50)</th>
<th>Nov (P50)</th>
<th>Revised AWP ETC (P50)</th>
<th>Risk Adjustment</th>
<th>Transnet ETC (P50)</th>
<th>Risk Adjustment to P70</th>
<th>EPCM Risk</th>
<th>Final ETC (All risks) (P70)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost increase</td>
<td>11.1</td>
<td>4.3</td>
<td>6.5</td>
<td>21.9</td>
<td>0.7</td>
<td>22.6</td>
<td>0.3</td>
<td>0.5</td>
<td>23.4</td>
</tr>
</tbody>
</table>

Revised ETC (P70) a fair reflection of cost based on detail reviews and benchmarks.
Summary of Cost and Schedule Movements

Movement in Schedule & Budget from February 2008 Board (R11,137bn) to November 2010 Board (R23,4bn)

- **R15.4bn**
  - Driven by regulatory and engineering design requirements

- **R10,844bn**
  - Appears reasonable and conservative when compared to the validation of the AWP re-estimate+

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* Driven by regulatory and engineering design requirements
## Detail reasons for increase: Pipeline

<table>
<thead>
<tr>
<th>Reason</th>
<th>R billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Escalation in steel prices and quantity (increase in world steel prices, increase in pipe wall thickness, transport cost)</td>
<td>1.522</td>
</tr>
<tr>
<td>• Inland Lines Compensation Events (delays due to EIA, pipe supply, servitude availability, move-grounds, field joint coating development)</td>
<td>0.342</td>
</tr>
<tr>
<td>• Trunkline revised scope after Stage 1 validation (number of valves, valve chambers, 29km longer pipe trunkline, end of line, cathodic protection, crossings)</td>
<td>0.8</td>
</tr>
<tr>
<td>• Weather, additional hydrotesting, production (actual welding production 61% of estimate and actual laying of pipe 72% of estimate); escalation</td>
<td>0.4</td>
</tr>
<tr>
<td>• Growth / Other</td>
<td>0.064</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3.128</strong></td>
</tr>
</tbody>
</table>
### Detail reasons for increase: Pump Stations

<table>
<thead>
<tr>
<th>Reason</th>
<th>R billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Additional Pump Station PS3</td>
<td>0.133</td>
</tr>
<tr>
<td>• Addition of 2 metering stations PS7 &amp; PS8</td>
<td>0.059</td>
</tr>
<tr>
<td>• HV Electrical Supply and Sub Stations</td>
<td>0.081</td>
</tr>
<tr>
<td>• Spill basin; acoustic pump housing; blast proofing</td>
<td></td>
</tr>
<tr>
<td>buildings incl. doors; building growth; paving</td>
<td></td>
</tr>
<tr>
<td>embankments; bulk earthworks; internal surfacing;</td>
<td>0.083</td>
</tr>
<tr>
<td>piping class change; additional diesel storage tanks;</td>
<td></td>
</tr>
<tr>
<td>fence specification; extended construction period;</td>
<td></td>
</tr>
<tr>
<td>additional isolation valves</td>
<td></td>
</tr>
<tr>
<td>• Power Generators</td>
<td>0.177</td>
</tr>
<tr>
<td>• Growth / Other</td>
<td>0.017</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>0.550</strong></td>
</tr>
</tbody>
</table>
Engineering, Procurement and Construction Management Forecast

- Total EPCM forecast is R2.88bn
- EPCM forecast is 13% of forecast total installed cost
- Home office services (engineering, procurement, project management) is 9.4% of forecast total installed cost
- Field services is 3.6% of forecast total installed cost

<table>
<thead>
<tr>
<th></th>
<th>EPCM FORECAST</th>
<th>INDEPENDANT PROJECT ANALYSIS (IPA) TABULATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total EPCM</td>
<td>13%</td>
<td>22.3%</td>
</tr>
<tr>
<td>Home office Services</td>
<td>9.4%</td>
<td>18%</td>
</tr>
<tr>
<td>Construction management</td>
<td>3.6%</td>
<td>4.3%</td>
</tr>
</tbody>
</table>

*Note 1 – Based on process plant, includes Front End Engineering Design

EPCM cost within acceptable levels compared to industry benchmark
Other concurrent issues, which typically are resolved prior to emergence from FEED, would contributed to the overall delay, including:

1. Servitude Acquisition Delays
2. Environmental Impact Assessment
3. Extensive Scope Changes Post Feed (From Feb-08)
Benchmarking: Methodology

- Turner & Townsend, an independent international benchmarking authority, has undertaken a review of the NMPP Project in comparison to other global pipeline projects.
- Source data - Joint Independent Performance (JIP) Forum database. 700 facilities and USD 300 billion projects value
- Experts - piping and fuel distribution experts (Australia & USA) - external & internal
- Projects - Previous completed piping projects benchmarked by Turner and Townsend

Pipelines (20 projects)
- Comparator data, normalised to RSA conditions (escalation/productivity etc.)
- Initially 34 pipelines reviewed - 20 from Asia/Australia/USA chosen as comparators
- Ranging from 170 – 1141km
- Similar terrain
- 50 year lifespan

Pump Stations & Terminals (7 projects)
- Unique, fit for purpose design and therefore no common basis for benchmarking
- Converted component data to common basis
- Review of market related rates per component

Benchmark Value
- R15.971bn out of R17.673bn (81%) excluding Owner’s Cost, Sunken Costs, MAC
- Total project cost R21.98bn (excluding owner’s cost for comparability) used for the benchmarking exercise

Projects compared are commercial pipelines - the NMPP Project includes legacy project allowances commensurate with national security of supply responsibility
Benchmarking: Pipeline

- Review included 550km of 24” and 160km of 16”
- Percentage below indicates how the NMPP pipeline compares to the comparator norm
  - Construction: -9%
  - Materials: +14%
  - Overall: -13.4%

Pipelines Only, excluding Main Automation Contract: Total Cost per Km

Increases - R million

<table>
<thead>
<tr>
<th></th>
<th>Steel price</th>
<th>Location</th>
<th>Pipeline Coating</th>
<th>Transport</th>
<th>Field Coating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increases</td>
<td>69</td>
<td>50</td>
<td>110</td>
<td>22</td>
<td>67</td>
</tr>
</tbody>
</table>

Variances

NMPP -13.4%
Benchmarking: Pump Stations (on the basis of KW/R)

Pump stations (7 projects)
- Review of market conditions, favourable 75% of rates reviewed (earthwork, excavation, concrete, formwork, steel, rebar and pumps)
- Normalised rates from both Gauteng & KwaZulu Natal
- Comparison of pump station components against norms

Result
- Tendered rates compare very favourably to prevailing market conditions at the time:

<table>
<thead>
<tr>
<th>Item</th>
<th>NMPP</th>
<th>Comparator</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearing and grubbing</td>
<td>m²</td>
<td>R 2.10</td>
<td>R 7.80</td>
</tr>
<tr>
<td>Excavation</td>
<td>m³</td>
<td>R 19.30</td>
<td>R35.40</td>
</tr>
<tr>
<td>Concrete 30mpa</td>
<td>m³</td>
<td>R 989</td>
<td>R1055</td>
</tr>
<tr>
<td>Rebar</td>
<td>ton</td>
<td>R7941</td>
<td>R9190</td>
</tr>
</tbody>
</table>

- Costs are above norm (Based on KW/R comparison)
- Reasons for variances: (legacy allowances & time related costs)
  - Security, explosion resistant control room and electrical substations (R80 million)
  - NKP (R70 million)
  - Generators/Diesel storage (R180 million)
  - Additional standby pumps (R147 million)
  - Escalation (R75 million)
  - Sound proofing (R28 million)
  - 50 year flood basin (75mpa concrete) (R10 million)
• Detailed and thorough re-baselining exercise is complete with full involvement of the EPCM service provider and Transnet teams
• The delivery team has been substantially strengthened, together with greater collaboration, integration and alignment and a new leadership team is in place
• Reporting is accurate and reflects current performance
• Enhanced governance and controls along with updated project processes, systems and tools implemented
• Rigorous change management control has been implemented
• Engineering production management process enhanced, engineering review completed and peer reviews undertaken

Transnet is confident that the NMPP Project has been structured for success and will be delivered to meet the revised cost and schedule commitments
Security of Supply

Mr Charl Möller
Way Forward and Action Plan: DJP

- An intelligent pigging exercise has been done which shows that the DJP will not need to be down-rated as was initially anticipated.
- A rigorous maintenance and repair programme will however continue, to ensure the integrity of the DJP.
- As a mitigating strategy, Transnet is planning to move 10MI/week to rail and this will enable additional volumes to move from road to the DJP.

Whilst technically the down-rating initially expected is not required, Transnet from a contingency perspective will place 10MI/w on rail.
Conclusion and Way Forward

Mr Chris Wells
In Closing

- NMPP is a key strategic investment for South Africa to secure the supply of petroleum products to the market over long term.

- In-depth reviews and benchmarking indicates that:
  - Scope and engineering changes to the project were necessary and justified to ensure that the project meets the set objectives;
  - Latest cost estimates of project is a fair reflection of the total costs of an asset of this nature, complexity and magnitude.

- Transnet is committed to roll out the investment in line with the licence agreement and timelines agreed with the Regulator.

- Security of supply will remain a critical deliverable throughout the construction and commissioning phase of the project and will be robustly monitored.

- The impact of the additional costs will not have a material impact on the pump price of fuel and based on our current assessment, is estimated to be less than 5 cents per litre.

- All stakeholders will be fully briefed, including SAPIA, DoE, DPE and the media.

Outcome of NMPP Project

Competitive and world class multi-product pipeline that will secure the supply of petroleum products to the inland market safely, cost effectively and in an environmentally friendly manner.