EXHIBIT BB 8(b).1

1064 LOCOMOTIVE TRANSCATION

ALISTER OUEMAKOUA CHABI

JUDICIAL COMMISSION OF INQUIRY INTO ALLEGATIONS OF STATE CAPTURE, CORRUPTION AND FRAUD IN THE PUBLIC SECTOR INCLUDING ORGANS OF STATE

2nd floor, Hillside House
17 Empire Road,
Parktown
Johannesburg
2193
Tel: (010) 214-0651
Email:
inquiries@sastatecapture.org.za
Website: www.sastatecapture.org.za

INDEX: EXHIBIT BB 8(b).1

SUBMISSIONS TO THE ZONDO COMMISSION OF INQUIRY INTO STATE CAPTURE

1064 LOCOMOTIVE TRANSACTION

I the undersigned,

ALISTER OUEMAKOUA CHABI

do hereby make oath and say that:

1. **INTRODUCTION**

1.1 I am an adult male of full legal capacity. I am a founding member of ALL5 Holding Company Proprietary Limited ("ALL5").

1.2 The facts set out herein below fall within my personal knowledge, save where the contrary appears from the context. The facts are to best of my knowledge both true and correct.

1.3 ALL5 was appointed by Mncedisi Ndlovu & Sedumedi Attorneys ("MNS") as part of its investigations into the procurement irregularities in the acquisition of 1064 locomotives by Transnet SOC Limited ("Transnet"). The specific mandate of ALL5 was to assess the reasonableness and justifiability of the increase in the Estimated Total Costs ("ETC") on the acquisition of the 1064 locomotives. A copy of the appointment letter dated 17 May 2018 is attached marked Annexure "**AC1**".

Qualifications

1.4 I hold the following qualifications:

1.4.1 Bachelor of Economic Science from the University of the Witwatersrand;

1.4.2 Post Graduate Diploma in General Management (PGDip) from the University of Pretoria's business school, the Gordon Institute of Business Science (GIBS); and

1.4.3 Master of Business Administration (MBA), from the University of Pretoria's business school, the Gordon Institute of Business Science (GIBS);

1.5 I am a Technical member of the Actuarial Society of South Africa ("ASSA"), the body governing the actuarial profession in South Africa.

1.6 I am an Associate of the Institute and Faculty of Actuaries ("AFA") and Fellow of the Institute and Faculty of Actuaries ("FFA"). The Institute and Faculty of Actuaries ("IFoA"), is the UK's only chartered professional body dedicated to educating, developing and regulating actuaries internationally.

1.7 I am a Chartered Enterprise Risk Actuary ("CERA"), a global enterprise risk management credential accredited to me through the Institute and Faculty of Actuaries, as a member of the CERA Global Association.

Professional Experience

1.8 I am a qualified Actuary. I started my career in 2007 and my experience covers investments, short-term insurance, pensions, healthcare and enterprise risk management.

1.9 I have rendered actuarial services to both public and private sector clients, consulting to retirement fund Trustees on their:

1.9.1 investments: - formulating Investment policies, developing Investment strategies, and managing investment funds;

1.9.2 retirement benefits: - assessing the solvency of pension and provident schemes and opining on the appropriateness of the assets backing their schemes' liabilities; and

1.9.3 risk benefits: - pricing and reserving on their schemes' death and disability benefits.

1.10 More recently, the bulk of my time has been spent consulting to the Council for Medical Schemes, a statutory body regulating medical schemes in South Africa, as a Technical Expert and member of the Costing Committee and consulting to institutional clients, valuing retirement schemes benefits, opining on damages claims and valuing investment portfolios.

Actuarial Standards

1.11 The Institute and Faculty of Actuaries ("IFoA") sets and maintains ethical and professional standards that all members must adhere to. The aim of these standards is to build and promote confidence in the work of actuaries and in the actuarial profession. The standards relate to the duties and responsibilities of actuaries in their varied practice areas, and the review of work undertaken by actuaries.

1.12 I am in good standing with the IFoA and the work I have carried out adheres to the requirements of the following IFoA Actuarial Profession Standards ("APS"):

COA

1.12.1 APS X1 - which sets out to determine the standards applicable to actuarial work. It requires, subject to the relevant legal requirements, that all members comply with the Actuaries' Code and the relevant APSs. I have to the best of my ability complied with the principles of the Actuaries' Code, the applicable standards and the relevant legal requirements.

1.12.2 APS X2 - which sets out the responsibilities of all members in relation to the application of work review, which may include independent peer review, to promote the quality of actuarial work. I have considered whether to apply Work Review and have, to the extent that it is appropriate and proportionate, ensured that Work Review was applied. An independent peer review was carried out on the approach taken to modelling the various elements as well as the inputs and results obtained.

1.12.3 APS X3 – which sets out the principles for actuaries to apply when instructed as experts in relation to existing or contemplated legal proceedings. I have established clearly the nature and scope of my instruction. I also satisfied myself that the peer reviewers and me had the necessary level of knowledge and skill to fulfil the requirements of the instruction.

1.13 The Actuarial Society of South Africa ("ASSA") sets practice area specific Standards of Actuarial Practice ("SAP") that are mandatory for its members. The SAPs assist members in carrying out their professional responsibilities. They relate to the duties and responsibilities of actuaries in their varied areas of practice.

1.14 I am in good standing with ASSA and the work carried out adheres to the requirements of the ASSA Standards of Actuarial Practice SAP 901, which provides guidance to actuaries when performing actuarial services to give intended users confidence that:

1.14.1 actuarial services are carried out professionally and with due care;

1.14.2 the results are relevant to their needs, are presented clearly and understandably, and are complete; and

1.14.3 the assumptions and methodology (including, but not limited to, models and modelling techniques) used are disclosed appropriately.

2. MANDATE

2.1 The mandate from MNS in relation to the 1064 locomotives Transaction was as follows:

2.1.1 to assess the reasonability of the variables and assumptions used in modelling the 18 April 2013 Business Case ("***Review of the Business Case***");

2.1.2 to assess the accuracy of the ETC R38.6 billion ***("ETC of 38.6 Billion");***

2.1.3 to identify the reasons for the increase in ETC from R38.6 billion to R54.5 billion ***("Increase in ETC");***

2.1.3.1 to test the plausibility of the reasons put forward for the R15.9 billion increase in ETC; and

2.1.3.2 to opine on the reasonability of the increase in ETC.

2.2 In the course of investigating the 1064 Locomotive Transaction, it became apparent that Transnet also concluded the 100 Locomotives Transaction, on an urgent basis to mitigate against the delays occasioned in the 1064 Locomotives Transaction. As a result, MNS extended my mandate to include the following in relation to the 100 Locomotives Transaction:

2.2.1 to identify the reasons for the increase in ETC from R3.87 billion to R4.84 billion ("Increase in ETC");

2.2.2 to test the plausibility of the reasons put forward for the R969 million increase in ETC; and

2.2.3 to opine on the reasonability of the increase in ETC.

2.3 I will address each point in turn, starting with the finding/outcome from the investigation/assessment.

3. METHODOLOGY

3.1 During the investigations, ALL5 relied on the following documents that were provided to MNS by Transnet:

3.1.1 the various business cases on 1064 Locomotive Transaction;

3.1.2 Transnet Financial Risk Management Framework;

3.1.3 various Transnet WACC and Hurdle Rate polices;

3.1.4 BAFO letters;

3.1.5 Negotiations spreadsheets;

3.1.6 Cross-Functional Evaluation Team (Finance) report; and

3.1.7 Business Case Financial Model.

3.2 Information independently sourced to validate the Business Case from sources such as:

3.2.1 The South African Reserve Bank;

3.2.2 Johannesburg Stock Exchange;

3.2.3 Statistics South Africa;

3.2.4 Organisation for Economic Development and Co-operation;

3.2.5 US Bureau of Labour Statistics;

3.2.6 Federal Reserve Bank of Saint Louis; and

3.2.7 Thomson Reuters.

3.3 Benchmarking exercises conducted with industry players such as commercial banks, registered assets managers and brokers to test my own analysis and confirm the market prices on forex hedging at the time of concluding the Business Case and transactions.

4. SUMMARY OF FINDINGS

4.1 I concluded, from the investigations on the acquisition of the 1064 locomotives, that:

4.1.1 the variables and assumptions used to model the 18 April 2013 Business Case were reasonable;

4.1.2 the ETC of R38.6 billion included escalation and foreign currency exchange rate hedging costs and was an acceptable estimate for the total costs of acquiring the locomotives; and

4.1.3 the 41% increase in ETC, from R38.6 billion to R54.5 billion, was not, in its totality, justifiable:

4.1.3.1 an 18% increase in ETC (allowing for Transnet Engineering's scope cost of R2.6 billion) from R38.6 billion to R45.4 billion would have been acceptable.

4.1.3.2 if Transnet Engineering's scope cost of R2.6 billion is found to be irregular and unwarranted, an 11% increase in ETC, from R38.6 billion to R42.8 billion would then have been acceptable.

4.2 A detailed report of the above findings is contained in Chapter 4 of MNS' Volume 1 report, "The Procurement of Transnet's 1064 Locomotives", referred as Transnet -Ref- Bundle 04223 in the Commission's bundle.

5. THE 1064 FINANCIAL MODEL

5.1 The various Business Cases including the approved Business Case as at 25 April 2013, were underpinned by a financial model ("the Financial Model"). The contents of the approved Business Case relating to the Estimated Total Cost and profitability of the 1064 locomotives acquisition derive from the Financial Model. An appreciation of the mechanics of the Financial Model is therefore required to comprehensively review the Business Case.

5.2 The Financial Model informing the 1064 Business Case has been developed on a commonly used platform, Microsoft Office Excel ("Excel"). The Excel-based

COR

model ("Workbook") comprises 46 related worksheets, modelling various elements of the Business Case. A copy of the Business Case and the Financial Model is attached hereto marked Annexure **"AC2"** and **"AC3** (saved in the USB).

5.3 The following paragraphs reference the first worksheet of the Financial Model, titled "Bus case output". Bus case output contains results found in the Business Case and modelled from the additional worksheets in the Financial Model. The paragraph focus on the volumes to be transported by the 1064 locomotives and the expected revenue.

5.4 The table titled "Productivity MGTK (13/14 to 18/19)" [1] in Bus case output models "Required capacity", which is the volume in Million Gross Tonne Kilometre (MGTK) that is not transported each year owing to insufficient locomotives. This is done by netting off the volume that the existing fleet can transport from the Market Demand Strategy ("MDS") volumes – the market volumes available for transportation.

5.5 MDS required capacity: The MDS volumes derive from: Worksheet 6 titled "Volumes MDS output", where volumes broken down by commodity are modelled for each year; Worksheet 34 titled "Historic Input", from which the ratio of Gross Tonne Kilometre to Net Tonne Kilometre is obtained; and Worksheet 10 titled "Tariffs Data", from which the average kilometres travelled in each year are obtained.

5.6 Existing fleet capacity: The volumes from the existing fleet derive from Worksheet 4 titled "Loco efficiency MGTK", where the volumes to be transported by the existing locomotives each year, after allowing for the locomotives written-off, are modelled.

---

[1] *Annexure "AC2" Business Case dated 18 April 2013 page 29 Exhibit 16*

5.7 The volumes remaining to be transported each year have been used to determine the fleet required each year. The table titled "Fleet requirements (based on Fleet plan and existing fleet runout)" projects these cumulative fleet requirements and derives from W4 titled "Loco efficiency MGTK". From this table, it is observed that the number of locomotives required by 2019 is 1169. However, the request approved by the Board was for 1064 by 2019 as shown in the table titled "1064 Procurement (Request for Proposal delivery schedule)". The table titled "Shortfalls" shows the cumulative number of locomotives that will be required over and above those procured as part of the 1064 project to fully meet the MDS volumes.

5.8 The table titled "New GFB Diesel Locomotive plan" shows the planned delivery schedule for the 465 Diesel locomotives. Likewise, the table tiled "New GFB Electric Locomotive plan" shows the planned delivery schedule for the 599 Electric locomotives. Both these tables derive from W9 titled "Supplier Procurement Calc".

5.9 Beneath these tables, I have a table titled "Supplier production capacity (Locomotives per month)" detailing the number of locomotives that will be manufactured each month in each of the respective years by type of locomotive. This table derives from Worksheet 18 titled "Data List" where the number of locomotives to be procured each month is computed. Eight Diesel locomotives will be manufactured each month over the delivery period. Five Electric locomotives will be manufactured in the year ending March 2015. The number of Electric locomotives to be manufactured each month will then progress to 11 and then 12 in the year ending March 2019.

5.10 The table titled "Existing fleet GFB at 2013/14" (Exhibit 15 in BC) models the total volumes, by type of locomotive, to be transported over the year ending

CGA

March 2014. For example; 75 locomotives of type 6E, each carrying on average 33 million gross tonne kilometres of goods a year, are expected to transport a total of 2 507 million gross tonne kilometres of goods over the year ending March 2014. This table derives from Worksheet15 titled "GFB Productivity per loco", which contains the monthly gross tonne kilometre from April 2010 to March 2013 by type of locomotive, and W4 titled "Loco efficiency MGTK", which models the total gross tonne kilometre by type of locomotive over the years 2014 to 2050.

5.11 The table titled "GFB Tariff Average (R/NetTonKm)"[2] contains the Rand tariffs expected per net tonne kilometre in each year. This table derives from Worsheet10 titled "Tariffs Data" where Rand-based tariffs are projected from 2014 to 2015. The Rand tariffs are used to compute the revenue expected each year.

5.12 The table titled "Volumes (Net tons)"[3] models the expected MDS volumes, the volumes to be met by the existing fleet, the additional volumes to be met by the 1064 locomotives, and the volumes still to be met after allowing for the existing fleet and the additional 1064 locomotives. These volumes are in million tonnes.

5.13 The rest of the tables in "Bus case output" relate to the revenue and cashflow modelling of the Business Case and derive from Worksheet 2 titled "NPV". These are discussed in Section 7 "Variables making up Revenue and Costs, as per the Business Case".

---

[2] *Annexure "AC2" Business Case dated 18 April 2013 page 30 Exhibit 18*

[3] *Annexure "AC2" Business Case dated 18 April 2013 page 30 Exhibit 17*

(I) REVIEW OF THE BUSINESS CASE

6. MEASURES APPLIED IN APPRAISING THE BUSINESS CASE

6.1 The Financial Model "AC3" served several purposes, some of which may be summarised as follows:

6.1.1 assess the profitability of the project, expressed in Net Present Value terms;

6.1.2 determine the Total Cost of Ownership of the 1064 Locomotives – of which the ETC forms part; and

6.1.3 assess the risks associated with the project.

6.2 In my assessments, I sought to validate the mechanics of the Financial Model in meeting the above objectives and to assess the appropriateness and reasonability of the Model assumptions. It is our view that the Model served its intended purposes.

6.3 The determination of the appropriateness of the number of locomotives required to meet the MDS, which would have entailed an assessment of the strategy in question, was beyond our mandate. I therefore conducted all analyses on the basis that 1064 Locomotives were required.

6.4 The main measure used to appraise the Business Case was the Net Present Value ("NPV"). The NPV represents the profit one expects to realise from the project in current money terms, allowing for the risks associated with the project. In this instance, current refers to April 2013. Some risks would have been accounted for as part of the cashflows, i.e. insurance costs. Secondary (and residual) risks would have been captured in what is called the Risk Discount

Rate (RDR). Transnet used Transnet Freight Rail's "Greenfields" project hurdle rate as a Risk Discount Rate.

6.5 The hurdle rate is the minimum return that shareholders would want from a project in order to consider investing in the project. This rate would normally be driven by the cost of the capital to shareholders, – the rate of interest on borrowed shareholder funds or the opportunity cost to the shareholders (which is the rate of interest the shareholders can earn by investing the funds elsewhere).

6.6 The Risk Discount Rate, however, is more specific to the project and is derived from a detailed assessment of the project's inherent risks. It incorporates the likelihood of the cashflows from the project turning out worse than envisaged. The riskier the project is deemed to be, the higher the Risk Discount Rate. The RDR can therefore be higher or lower than the HR.

6.7 ETC is the second measure used in the appraisal of the project. The project was profitable at an ETC of R38.6 bn. ETC is the sum of the direct/immediate costs associated with the purchase of the locomotives over the delivery period of seven (7) years. These costs include inflation costs and currency costs. ETC speaks purely to costs and does not consider revenue (and therefore profits). It is not an appropriate measure to use in deciding whether to invest in a project hence, the need to also consider the Net Present Value of the project. Whereas ETC was determined over 7 years (the predicted delivery period), the NPV was computed over a 36-year period (foreseeable life of the project).

6.8 In order to determine the financial viability of the 1064 Locomotives Transaction, I will now address each of the following:

6.8.1 the variables making up the Revenue and Costs in the Business Case;

6.8.2 the Net Present Value of the R2.7 billion as stipulated in the Business Case; and

6.8.3 the reasonability of the assumptions in relation to the ETC.

7. VARIABLES MAKING UP REVENUE AND COSTS, AS PER THE BUSINESS CASE

Revenue

7.1 The modelled revenues, making up the income in the determination of the NPV of the project, are made up of the following elements:

7.1.1 Volumes;

7.1.2 Distance; and

7.1.3 Tariff

Volumes

7.2 The volumes modelled were the incremental volumes from the 1064 Locomotives. These incremental volumes are tabulated in Worksheet 1 titled "Bus case output" in the table titled "Volumes (Net tons)" and labelled "1064 Locomotives". It is observed that these volumes start at 1 million tons per kilometre and progress to 77 million tons per kilometre. The "NPV" worksheet, Worksheet1, in row 16, details the incremental volumes by year from 2014 to 2049. These incremental volumes peak at 89 million tons per kilometre, as more locomotives are procured, and fall to 5 million tons per kilometre, as locomotives are written off.

Distance

7.3 The distance to be travelled per year is modelled in row 18 of Worksheet 2 ("NPV"). These figures derive from Worksheet 10 ("Tariffs Data"), which models the average distance travelled each year, and Worksheet 34 ("Historic Input"), the worksheet includes the historical financial statements of the Transnet Group.

Tariff

7.4 This element relates to the Rand-based tariff that Transnet expected to receive per ton per kilometre. Row 17 of Worksheet 1 ("NPV") details these tariffs by year from 2014 to 2051. A Rand tariff per tonne per kilometre of 0.42 was used for 2014. This tariff was escalated at an average rate of 6.84% per year between 2014 to 2020. Thereafter a fixed escalation rate of 6% per year was used to 2049. The tariff figures in Worksheet1 ("NPV") derive from Worksheet10 ("Tariffs Data") and W34 ("Historic Input").

Costs

7.5 The modelled costs, in the determination of the NPV of the project, comprise of the following sub-categories of costs:

7.5.1 Total Cost of Ownership;

7.5.2 Wagon Costs;

7.5.3 Infrastructure Costs;

7.5.4 Overhead Costs; and

7.5.5 Tax.

GOA

Total Cost of Ownership

7.6 The elements comprising the Total Cost of Ownership (TCO), in order of magnitude, are as follows:

(a) *Initial Capital Outlay (Acquisition Costs)*

7.6.2 These represent the costs associated with the purchase of the diesel and electric locomotives. The components of Acquisition Costs include:

7.6.2.1 base price of the locomotives;

7.6.2.2 localisation premium;

7.6.2.3 currency hedging costs;

7.6.2.4 escalations (inflation); and

7.6.2.5 contingencies.

7.6.3 Acquisition Costs for each year were calculated as the product/multiplication of the number of locomotives expected each year and the Rand price for each locomotive (R25.2 million for a diesel locomotive and R33.9 million for an electric locomotive, in 2014). Ninety percent (90%) of the Acquisition Costs was paid on delivery. The remaining ten percent (10%) was retained on delivery and paid four months after delivery.

7.6.4 An assumption of 50% for the local content and 50% for the foreign content was made in the modelling. The Rand price for the local component in 2014 was computed by first taking the product/multiplication of:

7.6.4.1 the Dollar price of a locomotive in 2014 (US $2.6 million for the diesel and US $3.5 million for electric locomotives);

7.6.4.2 the percentage of local content of 50%; and

7.6.4.3 the forward Rand/Dollar exchange rate in 2014, as obtained from Transnet's Treasury department.

7.6.5 A localisation premium of 2% was then added to the result of the above.

7.6.6 The Rand price for the local component in the years starting 2015 was computed by adjusting the 2014 Rand price, computed as per the explanation given above, for South African Producer Price Inflation ("PPI").

7.6.7 The Rand price for the foreign component of the assumed acquisitions costs of the locomotives in 2014 was computed by taking the product/multiplication of:

7.6.7.1 the Dollar price of a locomotive in 2014 (US $2.6 million for the diesel and US $3.5 million for electric locomotives);

7.6.7.2 the percentage of foreign content of 50%; and

7.6.7.3 the forward Rand/Dollar exchange rate in 2014, as obtained from Transnet's Treasury department.

7.6.8 The Rand price for the foreign component in the years starting 2015 was computed by adjusting the 2014 Rand price of the foreign component, computed as per the explanation given above, by taking the product/multiplication of:

COA

7.6.8.1 the Dollar price of a locomotive in 2014 (US $2.6 million for the diesel and US $3.5 million for electric locomotives), adjusted for United States (US) inflation of 2.2% for 2015 and 2.3% for each year thereafter;

7.6.8.2 the percentage of local content of 50%; and

7.6.8.3 the forward Rand/Dollar exchange rate in years starting 2015, as obtained from Transnet's Treasury department.

7.6.9 The US Consumer Price Inflation (CPI) is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services (U.S. Bureau of Labor Statistics, 2018).

7.6.10 The tables below provide an extract of the Forward Rand/USD exchange rates used in the modelling of the Business Case variables.

Spot rate on 18 April 2013	9.1285

	2014	2015	2016	2017	2018	2019
Forward rates	9.5854	10.042	10.523	11.004	11.481	11.984

(b) *Personnel Costs*

7.6.11 Personnel costs were taken to represent labour costs such as the costs of the locomotive drivers. Yearly increases ranging between 6% and 7.5% (and averaging 6.73%) have been used in the projecting Personnel costs from 2015 to 2049.

(c) *Fuel Costs*

7.6.12 Fuel Costs were taken to represent the fuel costs of operating the locomotives. Yearly increases in fuel costs ranged from 5.55% to 5.95%, with an average yearly increase of 5.91%, over the years 2014 to 2049.

(d) *Maintenance Costs*

7.6.13 Maintenance Costs were taken to represent the costs of maintaining the locomotives and are assumed to include costs such as the servicing costs of the locomotives. They are computed by taking the product/multiplication of:

7.6.13.1 the US Dollar servicing costs for each locomotive, adjusted for US Inflation each year;

7.6.13.2 the cumulative number of locomotives in each year; and

7.6.13.3 a forecast of the Rand/Dollar exchange rate in years starting 2014, as obtained from Global Insight, as per the table below.

	2014	2015	2016	2017	2018	2019

Global Insight	8.6239	8.892	8.5264	8.5866	8.8944	9.2007

7.6.14 It is worth noting that the Global Insight foreign currency exchange rates are not forward rates but forecast rates.

(e) *Emissions Costs*

Emissions Costs were computed by taking the product/multiplication of:

7.6.15 the Rand costs of the cost of emissions for each locomotive each year; and

7.6.16 the cumulative number of locomotives in each year.

(f) *Insurance Costs*

7.6.17 Insurance costs were computed by taking the product/multiplication of:

7.6.17.1 the Rand costs of insuring each locomotive each year; and

7.6.17.2 the cumulative number of locomotives in each year.

7.6.18 The cost of ensuring each locomotive increased each year by 6%.

Wagon Costs

7.7 Approximately 16 500 wagons were required to operationalise the 1064 Locomotives. Wagon Costs are costs of purchasing and operating these wagons. They were computed for each year from 2014 to 2019. Row 44 of W2 ("NPV") details these costs which derive from W26 ("SUMMARY Year 13_14 updated"). The present value of these costs came to R12.5 billion.

Infrastructure Costs

7.8 Infrastructure Costs comprised expansionary and replacement Infrastructure costs and relate to the expansion and maintenance of railway networks. These costs are given for each of the years 2014 to 2019. They are reflected in row 49 of W2 ("NPV") and derive from W45 ("Infrastructure"). The Business Case notes that these have been allocated as per the 2013 Corporate Plan. The present value of these costs came to R18.5 billion.

Overhead costs

7.9 The overhead costs estimated were based on the 2010/2011 income statement value of R7.9 billion. These overhead costs were projected using South African CPI for each of the years 2014 to 2049. The ratio of the 1064 locomotives volumes (Incremental volumes) to the MDS volumes was then used to determine the overhead costs associated with the 1064 project. Row 53 of W2 ("NPV") details these costs by year. The present value of these costs came to R23.9 billion.

Tax costs

7.10 Tax costs over the projection period, 2014 to 2049, were computed at a rate of 28% per year on the net cashflows. The net cashflows were adjusted by amortising the capital costs of the locomotives and wagons over 5 years and the capital costs relating to Infrastructure spend over 30 years before computing the tax costs. Row 57 of W2 ("NPV") details the yearly tax costs after amortising locomotive, wagon and infrastructure costs. The present value of these costs came to R7.7 billion.

8. NET PRESENT VALUE OF R2.7 BN AS PER THE BUSINESS CASE

8.1 Having discussed the components making up revenue and costs, I now consider the quantum of these elements as at April 2013, being their Present Value (PV) when the Business Case was approved. As mentioned earlier, the Risk Discount Rate was equal to the Hurdle Rate at 18.56%.

8.2 The Net Present Value of the project, which is the PV of the revenue expected from the project net of the Present Value of expected costs, was R2.7 bn. The project was profitable, albeit thinly so, when we consider that this was only 2.5% of a revenue of R109bn. The costs to the project were enormous with the ETC making up 47% of the Total Cost of Ownership ("TCO") and 20% of all costs (TCO, Wagon, Infrastructure, etc).

8.3 The sensitivity of the Net Present Value to change in the Risk Discount Rate demonstrates that the risk of the project turning unprofitable was material. The Risk Discount Rate, representing the downside risk of the envisaged cashflows not materialising, at 18.6% resulted in a profit or NPV of R2.7 bn. The NPV increases exponentially as the RDR falls. This is apparent in the increasing differences with each 1% drop in the RDR. There would be a R7.9bn increase in NPV when the RDR falls from 13.6% to 12.6% compared to a R6.6 bn increase when the RDR falls from 14.6% to 13.6%.

8.4 An increase in the Risk Discounted Rate to 19.6%, indicating an increase in the perceived riskiness of the project, would have resulted in nil expected profits. This would be the case if revenues were for some reason delayed or reduced (owing to, for example, locomotives not being delivered timeously or the volumes from the MDS not materialising) or costs were increased (owing to, for example, tax rates increasing beyond 28% or fuel costs increasing by more than expected) or brought forward (shortening the delivery schedule)

AOA

9. REASONABILITY OF ASSUMPTIONS IN RESPECT OF ETC

I now discuss the assumptions to some of the variables dealt with in preceding sections. These are: Local and Foreign Inflation, Local Content, Forex hedging, and the hurdle rate. These variables are key to the determination of the ETC and the NPV.

Local Inflation

9.1 Several components of the locomotives were to be acquired locally. Local Inflation indices would therefore have been appropriate. The South African ("SA") Producer Price Index was used to model the prices of the components of the locomotives to be sourced locally. The Business Case assumed SA PPI ranging from 5.3% to 5.9% (averaging 5.7%). SA PPI over the 5-year period preceding April 2013 was 3.6% (5.6% over the 10-year period). The assumptions made were higher than the rates observed historically. The assumptions made also lie closer to the upper bound of the Monetary Policy Committee's targeted range of 3% to 6%. Local Inflation assumptions were therefore considered to be reasonable.

Foreign inflation

9.2 For the components of the locomotives to be purchased abroad, an assumption of 2.3% for the change in prices (Inflation) was held right through. Consumer Price Inflation ("CPI") as opposed to Producer Price Inflation was used. These are quite comparable as can be seen from the high and positive correlation between the two inflation curves. The long-term CPI rate in the US of 3.3% was higher than the PPI rate at 3.0%. It can therefore be said that projections based on CPI were conservative.

9.3 However, a lower rate of 2.3% was used in the projections. When projecting economic variables, experience should not be considered in isolation to the

prevailing economic conditions and applicable policies. Following the 2008 Financial Crisis, the United States, and other First-World countries, entered a period of Quantitative and Interest Rate Easing with the objective of boosting economic growth. The Economic Indicators used to monitor the effectiveness of these policies were unemployment rates and inflation rates. The objective in the US was to lower the unemployment rate to 6.5% and to raise the Inflation rate to 2%. US CPI and PPI were 1.5% and 1.3% respectively over the 5-year period preceding April 2013. The assumption of 2.3% for US Inflation was therefore conservative and reasonable.

Local Content

9.4 I consider the impact of the Local Content assumptions on the validity of the Business Case. An assumption of 50% for Local Content and 50% for Foreign Content was made in modelling the Business Case.

9.5 Allowing for the correct Local and Foreign Content percentages does not invalidate the Business Case or change our findings and as such the original assumption, which slightly overstated the ETC, was considered reasonable.

9.6 Taking an extreme view and assuming a 60/40 split for Local/Foreign across diesel and electric locomotives would have resulted in a 0.12% drop in the ETC. This drop in ETC, as would be expected, would have translated into a 0.4% increase in the Net Present Value, from R2.739 bn to R2.75 bn.

Forex hedging

9.7 I did not take issue with the way foreign currency exchange risk was allowed for in the Model. Forward rates were applied, removing the need to take a view on what the foreign currency exchange rates (forex) would be going forward. The upside and downside risk exposure to fluctuations in forex was hedged. This was

in line with clause 15 of Transnet Financial Risk Management Framework 2013 - Foreign Exchange Risk Policy. I will explore this in a bit more detail in later paragraphs.

Hurdle rate

9.8 The Transnet Group Weighted Average Cost of Capital (WACC) and Hurdle Rates (HR) Policy, created May 2012 and effective June 2012, outlines the approach used to determine hurdle rates for different categories of Transnet projects. Hurdle rates, in the WACC and HR policy, were distinguished between "Greenfields" and "Brownfields" projects. A WACC of 12.56% per year was computed for TFR assuming:

9.8.1 Debt (after tax) would cost 7.31% per year and equity would cost 16.85% per year, and

9.8.2 Debt and Equity would be split 45% and 55% respectively.

9.9 Based on research of over 160 companies internationally, a hurdle rate of 18.56% was arrived at for Greenfields projects such as the 1064 project. Greenfields projects are defined as completely new to Transnet, incorporating higher than normal business risks (and include projects over R100 million). This represents a 6% margin over TFR's WACC of 12.56%. The approach used was sound, being research-based, and consistent with that used in prior years. The hurdle rate of 18.56% was considered reasonable and therefore acceptable.

9.10 In principle, the determination of a Risk Discount Rate should follow a detailed risk assessment of the specific project under consideration. However, given that this was a Greenfields project for Transnet, implying very little information would have been available, the use of the hurdle rate to discount the expected

COA

cashflows was acceptable. The variables and assumptions used to model the 18 April 2013 Business Case were reasonable.

(II) THE ESTIMATED TOTAL COSTS OF R38.6 BN

9.11 The second part of the mandate required an in-depth analysis of the portion of the Total Cost of Ownership (TCO) relating to the acquisition of the locomotives, otherwise known as the ETC. The ETC made up 47% of the Total Cost of Ownership and 20% of the project's entire costs. It required a breakdown of the ETC, determining the variables and the extent to which these variables were included.

9.12 These variables included escalation and forex hedging costs. They made up a significant portion of the reasons later put forward for an increase in the ETC. Under this heading I will briefly consider: The Original Deliver Schedule; the Escalation Costs; The Comparison of Foreign Currency Forward Rate; and the Forward Rate versus the Forecasted Rates.

9.13 The finding was that the ETC included foreign currency exchange hedging and escalations costs, and R38.6 bn (R36.368bn excluding contingency reserves) was a reliable estimate for the costs of acquiring the locomotives.

Original Delivery Schedule

9.14 The Business Case was premised on a 7-year delivery schedule. The first delivery was expected in April 2013. The procurement of electric locomotives was envisaged to start exactly 1 year from the delivery of the first diesel locomotive, April 2013. The last delivery was expected in March 2019 and was for electric locomotives. This schedule becomes important when considering the increase in ETC.

9.15 The Business Case contemplated a four (4) months testing period for all locomotives after which they will be operational.90% of the price of the

locomotive was payable on delivery and the remaining 10% payable after the four months testing period.

Breakdown of R38.6 bn etc

9.16 The model proposes a 2013 price for electric and diesel locomotives and projects these prices over the delivery period taking into account the escalation and forex hedging costs. A copy of the worksheet computing the rand price per locomotive in each of the years,2013 to 2023, is attached hereto marked Annexure **"AC4"** This Annexure is titled in the Financial Model.

9.17 The ETC is made up of various components: the locomotive price; the escalation costs; the forex hedging costs; contingencies I have analysed the Financial Model and have arrived at a quantum for each of these costs per locomotive type.

9.18 The locomotive price is what a (fit-for-purpose/operational) locomotive would have cost Transnet in April 2013. It is important to note that the locomotive prices include a localisation premium of 2% on the local portion of the locomotives, to reflect the additional cost of acquiring components from suppliers locally. This is expected as not all locally manufactured goods will have all their inputs manufactured locally.

9.19 The total price of diesel locomotives as R11,147bn and that of electric locomotives as R19.329bn giving a total locomotive price of R30.476bn.

9.20 I arrived at these figures by taking the locomotive unit price by type (diesel R2.6m[4] and electric R3.5m) multiply by the spot rate (9.1285)[5].This equals R23.7341m as per diesel locomotive as at 18 April 2013.To this price I added

[4] *Annexure "AC2" Business Case dated 18 April 2013 page 31*

[5] *Annexure "AC2" Business Case dated 18 April 2013 page 38 Exhibit 28*

localisation premium of 2%[6] to local component which is 50% of the unit price (R23.7341 multiply by 1.01%).This equates to R23.971441m per locomotive as at 18 April 2013.The latter figure is multiplied by 465 and this equals to 11,146.72. I have rounded of to 11.147.A similar exercise is undertaken in electric.

9.21 Escalation costs are synonymous with Inflation costs. Earlier on, in my discussions on variables and assumptions, I explained how prices of locally sourced components would be affected by local inflationary forces as measured by South African (SA) Producer Price Inflation, and how prices of components sourced abroad would be affected by foreign Inflationary forces, in this instance US CPI;

9.22 The last two entries on AC4 under the headings "SA PPI" and "US inflation" reflect the escalation costs as measured by the SA PPI and US CPI respectively.

9.23 The ETC was R38,6bn as it is apparent from the calculations above. The total locomotive price for all the locomotives incl. the 2% localisation premium is 30.476. AC4 informs us that both SA PPI and US CPI and forex were taken into consideration at the rates set out AC4. Contingencies were also taken into consideration (to be dealt with later). On AC4 I applied in the place of the forward curve, the spot rate as at 18 April 2013 across the delivery period. This exercise removed all hedging costs. Then I assumed the inflation rate of 0% for both SA PPI and US CPI across the delivery period. In addition, I did not provide for contingencies. The net result of this exercise allowing for the 2% localisation

[6] *Annexure "AC4" under the heading localisation premium*

premium, is the total locomotive price of R30.476bn. I arrive at the SA PPI of R1,821 bn (R388m for diesel and R1.432m for electric).

9.24 Annexure AC4 has however provided for annual SA PPI rates over the delivery period. Allowing for these rates per annum in the financial model results in total loco price including SA PPI costs of R32.297bn. it is important to note that the SA PPI rates are applied purely to the local component of the locomotive price. The result is a SA PPI adjusted cost of R32,297bn. The difference between R32.297bn and R30.476 is R1,821bn which reflects the SA PPI.

9.25 I conducted a similar exercise to determine the US CPI cost as R713m.11.4.5 after adding the US CPI cost the new total cost is R33,010bn. 11.4.5 In summary the computation of escalation costs was based on a straightforward application of the assumed Local and Foreign Inflation rates over the 7-year delivery period. The extent to which these were allowed for was discussed earlier under variables and assumptions. Escalation costs totalled R2.5bn, with the local cost, at R1.8bn, being materially higher than the foreign cost, at R0.7bn. This is a result of assumed local inflation being significantly higher than assumed foreign inflation.

9.26 Forex hedging, at the risk of over-simplifying the term, is putting a boundary between the forex and the party seeking protection from the risk, in this case Transnet. One of the reasons Transnet sought this type of protection is that it did not want to pay more than budgeted for goods sourced from abroad because of a depreciation in the Rand. The hedge or protection can be partial, offering protection only in instances where the Rand depreciates, or full, offering protection in instances where the Rand appreciates or depreciates. Transnet's policy on FX risk is the latter. This protection comes at a cost and is obtained via

LOA

a third-party agreement where the third-party guarantees a certain exchange rate in the future, regardless of the prevailing exchange rate in the future:

9.26.1 the spot rate in 18 April 2013 was 9.1285; and

9.26.2 Annexure **AC4** under the heading FX futures (ZAR/USD) (scenario) that reflect the forward rate for the period 2013/2014 to 2022 /2223.

9.27 I applied the hedging to the foreign component of the loco price and the US CPI price. I calculated the hedging costs over the period to be R3,358bn. I arrived at this figure by applying annual Transnet Treasury curve hedged rates to the foreign component of the total loco price as adjusted by the US CPI.

9.28 Contingencies are reserves set internally to protect against risks that might not have been allowed for explicitly in the cashflows through some form of insurance or in the Risk Discount Rate. They are generally set at 5% of a capital project's costs. It is not uncommon for Greenfields projects, which are grassroots projects that an entity has no experience in, to attract a contingency reserve of 10% of capital costs. Contingencies, at R2.2bn, made up 7.4% of the capital costs of the locomotives.

9.29 The contingency figure is arrived at by subtracting the total loco price as adjusted by the SA PPI and US CPI escalation costs and forex hedging costs from the total price of R38.600bn.

Comparison of Transnet and The Market Foreign Currency and Forward Rates

9.30 For the purposes of this exercise, I have used the Bloomberg foreign currency forward rates. Bloomberg is a data repository used by analysts, traders, investors and fund managers all over the world. Through its terminals, the public can access information on financial instruments such as commodities, stocks,

bonds, currencies, etc. Alternatives to Bloomberg include Thomson Reuters, S&P Global and FactSet. Having demonstrated that allowance was made for movements in the Rand/USD exchange rate, I now evidence that these rates were FX forward rates (FX hedge rates).

9.31 The vertical axis plots the exchange rate, how many Rands are needed per United States US) Dollar. The horizontal axis plots the years of interest, 2014 to 2020, the delivery/procurement period. The blue bars represent the rates I have just observed being used in the modelling of the Business Case. The red bars represent the forward/hedge rates as obtained from Bloomberg (allowing for third-party costs).

9.32 The third-party costs are an average of the costs that would have been levied by two of the largest banks in South Africa to hedge the FX risks and are based on the exact foreign currency cash outflows that Transnet expected in each of the years. These costs are significantly less than 1% of the transaction, averaging 0.35%.

9.33 The determination of the forward rates is scientific and dependent on the level of interest rates in the two countries of interest, in this case South Africa and the US. JIBAR (the Johannesburg Interbank Average Rate) is used for South Africa and LIBOR (the London Interbank Offered Rate) is used for the US. The forward rates are not influenced by the third-party and would therefore be similar wherever they are obtained from.

9.34 The rates used by Transnet's Treasury division and those that would have been obtained from the market are similar. It is my view that Foreign Currency hedging was allowed for in the Business Case. (Own emphasis)

Forward Rates vs Forecasted Rates

9.35 Forecasted rates, obtained from Global Insight, were also used in appraising the Business Case. The forecasted rates should not be confused with the forward rates. The forecasted rates were used in the projection of maintenance costs, which did not form part of the ETC Forecasted rates provide a view on what the foreign currency exchange rates are likely to be in the future. They generally vary between providers because they involve assumptions. Unlike forward rates, they do not offer protection from fluctuations in the foreign currency exchange rates.

9.36 Maintenance costs made up 8% of the Total Cost of Ownership (R44bn) and only 3% of the total cost of the project (R106bn).

9.37 The forecasted rates show an appreciation in the Rand against the Dollar in some years unlike the forward rates which showed a depreciation of the Rand against the Dollar in all years. As such, the use of these forecasted rates would have resulted in a materially lower ETC and exposed Transnet to fluctuations in the foreign currency.

Audit trail – Stepwise validation of ETC of R38.6bn using Model

9.38 The worksheets in the financial model that are relevant to the ETC of 38.6bn are the following

9.38.1 Main control input (W3);

9.38.2 T.C.O Locos Capex (W11);

9.38.3 NPV (W2);

9.38.4 Treasury curve hedged rates (W49);

9.38.5 USD Inflation (W21); and

Worksheet 3 (labelled "Main control input").

9.39 This worksheet computes the ETC of R38.6bn and references the NPV of R2.7 bn. It also computes the volumes and revenue shortfalls arising from acquiring a sub-optimal number of locomotives (1064 procured vs 1396 required). The worksheet also contains key technical inputs on delivery start date and operation start date, the number of locomotives to be delivered each month, and the total number of locomotives to be delivered over the delivery period analysed by locomotive type (diesel/electric). Key financial inputs are also contained on this worksheet and include the Risk Discount Rate, the Internal Rate of Return, the Local Content, and the Localisation Premium.

Worksheet 11 (labelled "T.C.O Locos Capex")

9.40 Worksheet 11 computes the ZAR locomotive price in each year starting 2013 and ending 2022. It contains certain key financial inputs such as SA PPI, US CPI and Foreign Currency Forward rates. The worksheet also references inputs on the Localisation premium and the Local Content.

Worksheet 2 (labelled "NPV")

9.41 Worksheet 2 aggregates the outputs from various worksheets in the Model and is concerned with determining whether there is a Business Case for the acquisition of 1064 locomotives. This worksheet computes the Net Present value of the project. It also computes the Present Value of the revenue expected over a 36-year period starting 2014 and ending 2049. It also computes the outgo expected over the same period, including ETC which makes up 20% of the total outgo. Worksheet 3 references Worksheet 2 when calling in the ETC and NPV of the project.

Worksheet 49 (labelled "Treasury curve hedged rates")

9.42 Worksheet 49 is a data sheet containing the forward ZAR/USD exchange rates from 2013 to 2022. W11 references from W49 in computing the ZAR locomotive prices.

Worksheet 21 (labelled "USD Inflation")

9.43 Worksheet 21 is also a data sheet containing projections of US CPI from 2012 to 2052. Worksheet11 references Worksheet 21 for the escalation of the foreign component of the locomotive price.

9.44 The validation of R38.6bn assesses the:

9.44.1 appropriateness and relevance of the variables included;

9.44.2 reasonability of the assumptions made; and

9.44.3 approach to modelling the ETC.

9.45 The variables identified, were the locomotive price, the localisation premium, the Local and Foreign Inflation rates, the FX forward rates and the contingencies. The relevance and appropriateness of these variables have already been discussed. It was determined that they were relevant in computing the ETC.

9.46 The assumptions to these variables were also considered It was concluded that they were reasonable for purposes of projecting the all-inclusive locomotive price. It was also found that the contingency rate was between the industry range and therefore reasonable. A proper analysis of the worksheet demonstrate that all variables were taken into consideration in arriving in the ETC of R38.6bn and that no relevant variable was ignored in this computation of the ETC.

COA

(III) THE INCREASE IN ESTIMATED TOTAL COST FROM R38.6 BILLION TO R54.5 BILLION

9.47 On 23 May 2014, the Transnet Group Chief Executive ("the GCE") approved a memorandum to the Transnet Board of Directors ("the Board"), a copy of the memorandum dated 23 May 2014 is attached hereto marked Annexure **"AC5".** The purpose of this memorandum ("the Memorandum") was to: a) note the reasons for the increase in ETC and b) request an approval for a R15.9bn increase in ETC. The Memorandum provides reasons for the R15.9bn increase in ETC on the basis that the initial ETC of R38.6bn excluded the:

9.47.1 Costs of changes in economic conditions, economic conditions being forex and inflation, between April 2013 and March 2014;

9.47.2 Cost of hedging for foreign exchange movements;

9.47.3 Cost of future inflationary escalations; and

9.47.4 Cost of additional scope for Transnet Engineering (TE).

9.48 I showed, earlier, that the R38.6 billion allowed for:

9.48.1 Cost of changes in economic conditions (forex and inflation) between April 2013 and March 2014;

9.48.2 Cost of hedging for foreign exchange movements from April 2013 to the end of the delivery period; and

9.48.3 Cost of future inflationary escalations from April 2013 to the end of the delivery period.

9.49 The cost of the additional scope for Transnet Engineering was, however, not allowed for in the Business Case.

9.50 A material change occurred to the delivery schedule. Whereas the Business Case was predicated on a 7-year delivery schedule, the memorandum was based on a shortened delivery schedule of 4 years. The arguments in support of this revision in the delivery schedule were not provided in the memorandum and are not discussed in this statement. For the purpose of my mandate, this change is relevant only insofar as it impact the ETC .

9.51 This section of the statement addresses item III of ALL5's mandate in relation to acquisition of the 1064 Locomotives from MNS. This part of the mandate required ALL5 to identify the reasons put forward for the increase in ETC from R38.6bn to R54.5bn, test the plausibility of these reasons and, where necessary, opine on a reasonable increase in ETC.

9.52 Our finding was that the increase argued for in the memorandum to the Board was unjustifiably high (Own emphasis). In the sections to follow, we discuss the reasons and amounts put forward, and where necessary, opine on a reasonable amount.

Reasons Advanced for The Increase In ETC

9.53 In this section I cover the reasons advanced in the executive summary of the Memorandum for the increase in ETC. I will explain each reason, provide the amounts attributed to each reason as per the Memorandum and our determination on the reasonability of each amount. The explanation of any differences between the amounts discussed and our determination is explained in a later section of the statement.

9.54 The executive summary attributes the increase in ETC to the following five factors:

Update of the business case for updated economic factors

9.54.1 It is argued, in the Memorandum by the then GCE, Mr Brian Molefe, that economic factors (Inflation rates and foreign currency exchange rates) between April 2013 and March 2014 were higher than assumed in the Business Case. As such, the locomotive prices needed to be adjusted.

9.54.2 In April 2012/2013, the Financial Model calculated the price of the diesel locomotive to be R25.2m and electric locomotive to be R33.9m. The same prices were maintained for the year 2013/2014.

9.54.3 I agree that there was a deterioration in economic factors beyond the levels allowed for in the Business Case. The cost arising from this deterioration, as per the Memorandum, was R5.4bn. I, however, have computed this cost to be R4.4bn. The basis for this differentiation is dealt with further in this statement.

Risk Mitigation – Forex and Escalation

9.54.4 Forex and escalation risk mitigation costs were in respect of movements in foreign currency exchange rates and inflation rates from the contract signing date, March 2014, to the end of the revised delivery schedule. (The revised schedule is contained in Table 1 of the Memorandum.) This is, therefore, a forward-looking adjustment. I concede that an adjustment was necessary and what I take issue with is the amount often adjustment.

9.54.5 The memorandum posted an increase of R9.5bn in respect of risk mitigation costs. My evaluation of this increase came to R6.2bn. The basis for this differentiation is dealt with further in this statement.

Transnet Engineering Scope

9.54.6 A scope was envisaged for Transnet's engineering division, Transnet Engineering ("TE"). The Memorandum argues strategic factors such as localisation and competition. It is understood that a scope for TE was necessary to enable it to become an Original Equipment Manufacturer. There wasn't sufficient and detailed information at the time to investigate the makeup of this scope. As at the time of my investigation MNS was in a process of clarifying TE's role in relation to this scope.

9.54.7 As at the time of my report MNS had not reverted in this regard. On this basis I have no ground to object to the figure allocated for the TE scope in the memorandum.

9.54.8 Credence was given to the Memorandum by taking the value provided. A revision of the cost in respect of TE's scope might be required once MNS concludes its investigation.

Contingencies

9.54.9 It is standard practice in project appraisals to set aside a contingency reserve. This is because one can never be certain that events will turn out as planned. It is highly unlikely that all risks would have been identified during the risk analysis and assessment stages of a project. A reserve is therefore set aside as part of the management process for risks that might have been overlooked or inadequately mitigated. It is common practice for contingency reserves to be set between 5% and 10% of a project's capital costs.

9.54.10 The Memorandum posted a contingency cost of R4.95bn. This represent a contingency at the rate of 10% of the contract price with all

the 4 OEMS. The contracted price includes insurance costs(forex and escalation). A contingency need not have been set aside for risks already transferred to the OEMs. On this basis a reasonable contingency rate ought to have been between 5 and 7 %, allowing for TE scope. On this basis I opine that R2.8bn would have sufficed in the circumstances. .

Batch pricing adjustment

9.54.11 There are two elements to consider: batch adjustment and break point pricing. Bidders provided indications of what it would cost them in the event of contract orders being terminated. The Request for Proposal ("RFP") stated that Transnet did not expect bidders to charge for changes in quantity. In the circumstances, batch pricing should not have been taken into consideration. I have therefore not allowed for a batch adjustment cost.

Saving

9.54.12 The Memorandum also speaks of a saving of R6.5 billion and attributes this saving to lower capital costs arising out of a competitive tender and negotiation process. My evaluation of this saving was R0.177bn (or R177m). I shall further in the statement address the basis for this differentiation, when considering the locomotive base prices.

10. BUILD UP OF ETC OF R54.5BN

10.1 The Memorandum refers us to Table 2 where the elements making up the ETC of R54.5bn are detailed. This table gives us a detailed breakdown of the reasons put forward for the R15.9bn increase in ETC starting from the clean price of the

locomotives. The clean price refers to the purchase costs to Transnet had it decided to acquire all 1064 locomotives in April 2013. Table 2 builds from this clean price of R29.4bn to the revised ETC of R54.5bn. This section addresses each of the elements noted in Table 2.

Locomotive base prices

10.2 The Cross Functional Evaluation Team ("CFET") Finance produced a Memorandum on, 15 January 2014, detailing the Best and Final Offer ("BAFO") prices in respect of each OEM. Based on the submissions by the CFET Finance team, I arrived at a total price for all 1064 locomotives of R29.53bn (or R29 532 819 948, to be exact), while the total price for all 1064 locomotives, as per the Memorandum, was R29.36bn (or R29 355 532 740, to be exact). I was not provided with document in support of the amount of R29.36bn. The amount is R177 287 208 lower than our computation of R29.53bn. I took the value as provided in the Memorandum and attributed this benefit to the negotiation process.

10.3 It is worth pointing out at this point that the first page of the Memorandum noted a saving of R6.5bn. It has been assumed that the BAFO reflected in table 2 of the memorandum of R29.36bn, which is marginally lower than that set out in the 15 January 2014 CFET memorandum of R29.53bn was as a result of negotiations. The claim therefore of R6.5bn saving is irreconcilable with what is set out at table 2. Page 1 of the memorandum further suggests to exclude a batch price adjustment cost of R2.75bn. The exclusion of this batch price adjustment, in computing the savings is questionable because it forms part of the R15.9bn increase in ETC. If this cost is factored in, as it should be, the purported saving is R9.2bn.

10.4 The claimed saving of R6.5bn assumes that capital acquisition costs were R38.6bn, where else this represented the original ETC including escalation, hedging and contingency costs over a delivery period of approximately 7 years. The memorandum, as part of the recommendation, suggest that the ETC of R38bn excluded these costs. I have demonstrated with reference to Financial Model to the Business Case that these costs were included in the R38bn ETC. The R38.6bn did not cater for the costs of adjusting batch price, which according to this memorandum added a further R2.7bn to the ETC;

10.5 With such an increase in the ETC, that it is no surprise that the transaction turned loss-making from the negotiation stages. Paragraph 80 of the memorandum, on the financial implications of the transaction, accedes to this, noting as follows: "The Net Present Value would become a negative R1.67bn at the original hurdle rate of 18.56%". The hurdle rate needed to be reduced for the project to turn profitable. The hurdle rate was reduced to 15.2% but Transnet could not provide an approved policy to support this reduction. I sought to understand if there were grounds to reduce the hurdle rate from 18.56% to 15.2%, considering that the delivery schedule was accelerated, considerably increasing the risk to Transnet. During my engagement with Transnet officials, they confirmed that the hurdle rate should have increased from 18.56% to reflect the additional risks and cashflow uncertainties arising from the more aggressive delivery schedule on this Greenfields project.

Backward-looking escalation cost

10.6 This cost item is marked "A" in Table 2 of the Memorandum. (Price) escalation simply refers to (price) inflation. The local and the foreign content prices were both affected, albeit to varying extents. The key inputs in determining backward escalation costs were the Local Content declarations by the OEMs and the

COA

relevant price Inflation Indices. Because this was backward-looking, the inputs were observable and required no assumptions.

10.7 Contrary to the submissions in the Memorandum, not all OEMs met the Local Production Content requirements of 55% and 60% for Diesel and Electric locomotives respectively. This derives from the submissions by the OEMs during the negotiations. China North Rail ("CNR") had a Local Content of 37.6%; General Electrical ("GE"), 56.3%; Bombardier Transport ("BT"), 45.6%; and China South Rail ("CSR"), 49.6%. All OEMs, excepting GE, failed to meet the Local Content requirements.

Transnet Engineering

10.8 The cost of Transnet Engineering's ("TE") scope is marked "B" in Table 2 of the Memorandum. There wasn't sufficient and detailed information at the time to investigate the makeup of this scope. MNS is still investigating TE's role in relation to this scope.

10.9 Some questions that I contended with were:

10.9.1 was the base price per locomotive was not revised downwards to reflect the scope of TE?

10.9.2 if some of TE's envisaged scope included: fabrication & assembling of the driver cab, the bogie and the loco, painting and testing as well as the supply of components such as the alternator, the auxiliary supply system, the power conversion system, the propulsion system, the traction motor the wheel system and so forth; how could the price per locomotive with and without TE be the same?

10.9.3 was the reflected cost a premium on input and labour costs from having to use TE as opposed to other subcontractors or the cost of the work to be done by TE?

10.10 I have nonetheless assumed the value provided in the Memorandum to be correct. A revision of this cost might be required once MNS concludes its investigation.

Backward-looking foreign currency cost

10.11 This cost item is marked "C" in Table 2 of the Memorandum. It relates to the impact of changes in foreign currency exchange rates. The Rand depreciated against the foreign currencies of interest, the US dollar and the Euro, between April 2013 and March 2014. This cost was applied only to the prices of the foreign content of the locomotives, as declared by the OEMs.

10.12 China North Rail ("CNR") declared USD and Euro foreign content values. Bombardier Transport ("BT") declared a Euro Foreign Content value. General Electric ("GE") and China South Rail ("CNR") declared the same in USD only. CNR's foreign content made up 62.4% of the locomotive price; GE, 43.7%; BT, 54.5%; and CSR, 50.4%. The OEMs also provided the foreign currency exchange rates that applied to them in April 2013 and in March 2014. The calculations in respect of this cost were therefore done using the figures provided by the OEMs.

10.13 The cost was computed by converting the foreign content values, declared in foreign currency terms, to Rand terms. The conversion was done as at April 2013 and March 2014. The difference between the March 2014 Rand value and the April 2013 rand value was taken as the backward-looking foreign currency cost. This exercise was done for each OEM. Our evaluation of this cost

was R3.17bn, within 5% of the value allowed for in the Memorandum. I accepted the value provided in the Memorandum as a reasonable cost.

Batch adjustment cost

10.14 This cost item is marked "D" in table 2 of the Memorandum. There is a distinction to be made between break-point pricing and this cost reflected in the Memorandum.

10.15 The RFP, in section 3.1, defined break- point pricing as a premature termination of a locomotives order by Transnet. It outlined the period during which break-pricing would apply which was the delivery period. I interpreted this to mean that break-pricing could only apply once a contract was in place between Transnet and the OEMs. The batch price adjustment cost in the Memorandum appears to be a break-point pricing cost. The idea behind break-point pricing is that financial resources would have been be committed by the OEMs to ensure that Transnet's order, from contract stage, is met. Parapraph68 of the Memorandum points to fixed costs in setting up the production lines having to be recouped. However, no contract had been signed between Transnet and the OEMs at the time for production lines to be set up and fixed costs to be incurred.

10.16 The pricing schedules provided by the bidders, as per the RFP requirements, were in respect of break-point pricing. Using the break-point pricing schedules provided by the bidders, a figure of R2.7bn was obtained assuming OEMs were contracted and orders were terminated at the point where CNR and GE had supplied 232 and 233 Diesel locomotives respectively instead of 465 each and, BT and CSR had supplied 240 and 359 Electric locomotives respectively instead of 599 each. Slight variances can be expected between the figures in the Memorandum and our assessment depending on the assumptions used to interpolate between batch sizes. For example; because break-point pricing was

requested for batches of 200 and 300 and not 232/233 Diesel locomotives one would have to interpolate between the prices for 200 and 300 locomotives to arrive at a price for 232/233 Diesel locomotives.

10.17 The RFP, in section 3.1 – prior to requesting break-point pricing schedules, stated that Transnet required flexibility to exercise options including postponing, suspending or changing quantities and that Transnet did not expect to pay a price premium to exercise this option. Transnet exercised this option when it accelerated the delivery schedule and does not appear to have paid a premium for it.

10.18 I concluded that, because Transnet expected to pay a price premium in the event of a premature termination of orders after contracting and not on splitting of orders prior to contracting with the OEMs, a cost for splitting the orders was not warranted.

Forward escalation

10.19 This cost item is marked "E" in Table 2 of the Memorandum. The computation of this cost relied on the accelerated delivery schedule as per Table 1 of the Memorandum. The result of R3.5bn led us to conclude that this cost was overestimated by approximately R3.2bn.

How did I arrive at an escalation cost of R3.5bn?

10.20 I constructed an inflation index for each OEM to reflect each OEMs local and foreign content. As mentioned earlier, not all OEMs met the local content requirements. In modelling the cashflows I allowed for a 90% upfront payment on delivery and 10% after a retention period of 4 months, as per the Business Case. Local and foreign inflation were modelled at 6% and 2% respectively over the accelerated delivery period.

10.21 The South African Reserve Bank, through its Monetary Policy Committee, in achieving its primary purpose of ensuring price stability, adjusts interest rates to achieve its inflation target of 3% to 6%. Our model assumes the upper bound of this target going forward. Likewise, in the United States, the Federal Open Market Committee set an inflation target of 2% - a target to which the US Federal Open Market Committee had been struggling to raise inflation to since the 2008 Financial Crisis. Considering this, I considered future inflation assumptions as at March 2014 of 6% locally and 2% internationally to be reasonably conservative.

10.22 The escalation cost was then taken as the difference between the escalated price at various points over the accelerated delivery period and the escalated price of a locomotive as at March 2014 for each OEM. The difference between my assessment and the Memorandum is not surprising. Paragraph 56 of the Memorandum reads as follows: "*The high-level local content (60%) makes local indices more applicable to assess the cost of escalations going forward.*" The difference between local and foreign inflation assumptions is 4% per year. This not only raises escalation costs by R1.95bn but also raises foreign currency hedging costs by R287m.

10.23 Paragraph 58 of the Memorandum notes that a forward-looking inflation assumption of 6% per year (18.54% over 3.5 years) is appropriate and that there should be no question over the 16.8% escalation applied. The concern here is that a rate of 7.35% per year (as opposed to 6% per year) is needed to arrive at an escalation cost of R6.7bn.

Foreign currency hedging costs

10.24 This cost item is marked "F" in Table 2 of the Memorandum. This cost is influenced by several variables including the foreign content declared by the OEMs and the foreign escalation rate. The higher these two are, the higher the

foreign currency hedging cost will be. It is also a function of the forward curve, and the foreign currency exchange rates discussed in the modelling of the Business Case. The higher these rates are, the higher the foreign currency hedging costs will be.

How did I compute FX hedging costs?

10.25 I first needed to arrive at a distribution of cashflows in Dollar terms. Dollar denominated cashflows based on the foreign contents declared by each OEM were therefore projected at the relevant escalation/inflation rate. It was assumed that locomotives will be delivered gradually over the delivery period of 4 years. The product of the projected cashflows and the number of locomotives, across all OEMs, for each month starting April 2015 and ending June 2018, resulted in the desired cashflow distribution. A 4-month retention period was allowed for, hence June 2018 as opposed to February 2018 is the last month in which payments were expected to be made.

10.26 I then applied the forward curve rates to these Dollar cashflows to arrive at the Rand amounts that would be needed at each point in the future to purchase the Dollar denominated cashflows. The FX hedging costs were then computed as the difference between the Rand amounts at each point in the future and the equivalent amount were the locomotives to be purchased in March 2014.

10.27 Based on the foreign currency forward curve rates from the Business Case, I obtained an amount of R2.4bn in respect of foreign currency hedging costs. This is approximately R300m less than allowed for in the Memorandum. I accepted the costs in the Memorandum on the basis that the:

10.27.1 US Dollar and Euro depreciated by 18% and 24% respectively between April 2013 and March 2014;

10.27.2 US based London Interbank Offered Rate (LIBOR) fell from 0.2761% in April 2013 to 0.23445% in March 2014; and

10.27.3 Johannesburg Interbank Average Rate (JIBAR) rose from 5.11% in April 2013 to 5.73% in March 2014.

10.28 These all point to an upward shift in and a steepening of the foreign currency forward curve. This means that the cost of hedging the currency risk using a March 2014 foreign currency curve, would have been higher than that computed based on the April 2013 FX curve. I checked the cost using a March 2014 foreign currency forward curve and arrived at a cost much higher than R2.7bn, around R4bn. In the assessed value I accepted the cost of R2.7bn put forward in the Memorandum. The basis for the OEMs agreeing to a cost of R2.7bn is therefore in question.

Contingencies

10.29 Contingency costs, at R2.232bn made up 7.4% of the capital costs of the locomotives in the Business Case. In computing this cost, I adopted a conservative approach by retaining the R2.232bn. This equates to a contingency cost percentage of 7.6% of the capital costs of the locomotives. I then added an additional contingency for the costs of capital spares, options and variations; to keep in with the assumptions in the Memorandum. This increased the contingency costs to R2.8bn.

10.30 The Memorandum used a 10% contingency rate, to ostensibly allow for an additional contingency cost on escalation, foreign currency, TE scope and batch price adjustment. I was of the view that a contingency reserve need not have been held for:

10.30.1 escalation and foreign currency risks because Transnet was already charged to have the escalation and foreign currency risks transferred to the OEMs; and

10.30.2 batch pricing adjustment because as this cost was not justified.

10.31 The TE scope, although allowed for in our costs, is still to be investigated. Should this cost be found to be reasonable, a contingency reserve might be required to mitigate the risk of Transnet Engineering not delivering on its contractual obligations.

11. CONCLUSION

The deterioration in economic conditions (inflation and foreign currency) warranted an increase in the ETC of R38.6bn. An increase of R15.9 bn was however not justifiable. Barring the additional costs that come with Transnet Engineering, I opine that an 11% increase in ETC from R38.6bn to R42.8bn would have been reasonable. Allowing for the Transnet Engineering costs of R2.6bn, an 18% increase in ETC to R45.4bn would have been reasonable.

DEPONENT

I CERTIFY that the deponent has acknowledged that he knows and understands the contents of this affidavit which was signed and sworn to, before me, at Illovo on this the day of **26 November 2019**, the Regulations contained in Government Notice No. R.1258 dated 21 July 1972 (as amended) and Government Notice No. R.1648 dated 19 August 1977 (as amended) having been complied with.

AMOD & VAN SCHALK INC
COMMISSIONER OF OATHS
EX-OFFICIO PRACTISING ATTORNEY RSA
Ann Opperman
011 027 9687
084 307 8446
16 Fricker Road
Illovo
Johannesburg.

Annexure "AC 1"

AC 1

MNS 16 YEARS

BY EMAIL: David.Gadd@all5co.com

Mr David Gadd
All 5 Holding Company
175 Surrey Avenue
Ferndale
Randburg

Mncedisi Ndlovu & Sedumedi Attorneys Inc.
2nd Floor 16 Fricker Road Illovo 2196
PO Box 10100 Johannesburg 2000
Tel: 011 268 5225/ 6804/ 5217
Fax: 011 268 6805
Email: Mncedisi@ndlovu-sedumedi.co.za
www.mnsattorneys.com

Company Registration No 2004/012769/21

OUR REF: Mr Ndlovu/MAT3510 YOUR REF: DATE: 17-May-18

Dear Mr Godd

INVESTIGATION INTO THE ACQUISITION OF 1064 LOCOMOTIVES FOR TRANSNET'S GENERAL FREIGHT BUSINESS

1. We thank you for coming in to meet us and accepting our instruction in the above matter.

2. As requested, please find attached the letter from Transnet instructing us to attend to a further investigation into alleged tender irregularities in the procurement of the 1064 locomotives.

3. We also wish to confirm that the scope of your appointment is the following:

   3.1. ascertain whether there was an increase in the Estimated Total Costs, if so, advise on the reasons advanced for the increase;

   3.2. advise if the reasons advanced for the increase are reasonable and/or justifiable;

   3.3. ascertain if indeed R17.4 billion of taxpayers' money was lost as a result of inflated prices when the 1064 locomotives were procured;

   3.4. establish whether prices were inflated after hedging and determine whether contingencies and escalations were added.

4. As advised at our meeting, we intend submitting a report at the end of May 2018. Consequently, we request that you let us have a report by no later than 31 May 2018. In your May Report, we request that you report on:

   4.1. whether there was a price increase and the reasons for the increase.

      4.1.1. understand the Business case variables/assumptions used in the calculation of the R38.6billion;

      4.1.2. validate the variables/ assumptions for the R38.6billion.

      4.1.3. identify and understand the reasons forwarded for increase in cost from R38.6billion to R54.5billion.

   4.2. whether in your expert opinion, experience and industry practices whether the reasons for increase are reasonable and /or justified.

      4.2.1. Test the reasons for economic plausibility/soundness.

4.2.2. Recalculate the magnitude of the increase.

5. Kindly confirm if you will be able to deliver on deliverables for May 2018.

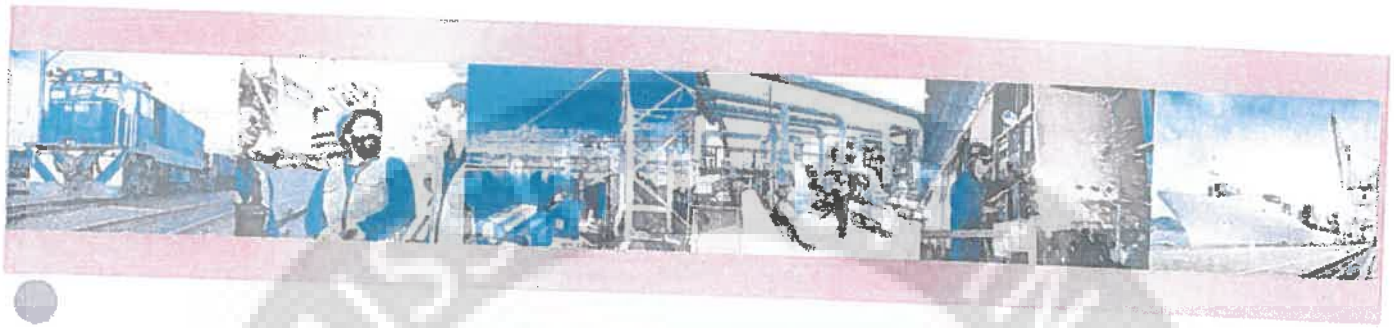
6. We await your response.

Yours faithfully

NT Mzinyathi
MNCEDISI NDLOVU & SEDUMEDI ATTORNEYS

Annexure "AC 2"

Procurement of 1064 Locomotives for the General Freight Business



Date of Submission to Board	18th April, 2013
Addressed To	Board of Directors
Title of Submission	Procurement of 1064 Locomotives for the General Freight Business
Date of Review	25th April, 2013

Contents

A. PURPOSE

This business case provides the rationale to invest in the profitable General Freight Business (GFB) by procuring 1064 new locomotives (465 diesel, 599 electric). This business case demonstrates a clear need to *accelerate locomotive deployment* to enable delivery against Transnet's Market Demand Strategy (MDS) and achieve South Africa's broader socioeconomic objectives. The new locomotive purchase will:

- Create value for Transnet by enabling TFR to deliver 170 mt by 2018/19 and thereby achieve its MDS target. This will result in a positive NPV (R2.7 billion at the TFR hurdle rate of 18.56 percent and R34.1 billion at the TFR WACC of 12.56 percent), top-line growth, enhanced return on assets (ROA), and an improved environmental footprint.
- Lower the cost of doing business in South Africa by enabling operational efficiencies that will increase customer satisfaction and facilitate a shift from road to rail.
- Create and preserve 28,000[1] direct and indirect South African jobs, and R68 billion in economic impact through local supplier development.

A robust procurement strategy that is aligned with Government socio-economic policies and appropriate governance processes have been designed and instituted to ensure transparency, fairness, and value maximisation for Transnet and South Africa. A funding plan and forex management strategy are detailed in the business case.

The risks that are inherent in a procurement event of this nature have been identified and mitigation strategies are in place. Accordingly, it is recommended that the 1064 Locomotives Business Case be approved at a cost of R38.6 billion excluding borrowing costs.

[1] Proportional to MDS-related job creation of 288,000

B. EXECUTIVE SUMMARY

Business need

Transnet Freight Rail (TFR) is moving from a strategy of "responding to confirmed demand" to creating "capacity to unlock demand". The MDS is informed by future planned investments that support the move from road to rail by targeting rail-friendly traffic currently on the road as well as other volume growth opportunities. As part of Transnet's MDS, TFR has committed to grow its volumes by 143 million tonnes, from 208 million tonnes to 350 million tonnes; over 60 percent of this growth is expected to be delivered by the General Freight Business (GFB), which will grow from the current 82.6 million tonnes to 170 million tonnes by 2019. TFR plans to invest R194 billion in capital to deliver this growth in total volumes; of this, R143 billion is planned to be invested in GFB, R19 billion in export iron ore and R32 billion in export coal. Of the total capital invested in GFB, 53 percent will be expansionary and 47 percent sustaining capital.

This investment in growing GFB volumes make business sense, as it lowers the cost of doing business and accelerates a modal shift from road to rail. The majority (85 percent) of the growth in GFB demand is generated by: rail-friendly bulk commodities that need to be transported long distances such as manganese, magnetite, and domestic iron ore; bulk commodities with certain demand, like coal needed for Eskom's power stations; and container-based commodities for which existing demand moves on road and will shift to rail. Moreover, South Africa is well-positioned on global cost curves for GFB commodities that are exported, such as manganese, magnetite, and thermal coal, which mitigates the volume downside due to inevitable global commodity volatility.

Current and new fleet requirements

The average age of the TFR GFB fleet is currently 32 years and comprises 1889 locomotives, which are broadly divided into workhorses and shunters, with the workhorses being the prime income generators. There was a major procurement of over 1000 locally manufactured electric locomotives in the 1970s and 1980s, which became the workhorses of the current fleet. No new locomotives were purchased for GFB from 1992 through to 2008 when the GFB fleet was augmented by a series of purchases that included 50 "like new" diesels, 100 diesels, and 43 diesels; currently, 95 new electrics are on order from China. These purchases were not sufficient to meet market demand and achieve a road to rail migration.

The economic design life of a locomotive is 30 years. In the absence of new locomotives, the workhorse fleet was given life-extending upgrades where possible that extended the working life to 45 years. However, this has resulted in increased maintenance costs as well as difficulty in obtaining spares. As the most cost-effective and technology-compatible options for extending the life of a locomotive are exhausted, further extensions are no longer economically cost-effective or technologically practical.

Proposed way forward on locomotive fleet expansion-related economic impact

The recommended way forward is for TFR to proceed with programmatic procurement of new locomotives. TFR has explored two options: continuing with the status quo, which is economically unviable and does not support the volume ramp-up envisaged by the MDS, putting the entire MDS at risk; new locomotive acquisition is the only viable and recommended option:

- **A status quo scenario.** The current fleet has already begun to run out. Based on TFR's current Locomotive Fleet Plan, the number of locomotives in the GFB fleet will decline from 1889 in 2014 to 1592 by 2019, with further run-out thereafter as the oldest and costliest assets in the fleet are retired. Half the fleet will be retired within 10 years and nearly the entire fleet within 20 years. If this run-out is not addressed, TFR would only have capacity to transport 85 million tonnes in 2019 – 85 million tonnes short of its MDS commitment, representing a cumulative revenue shortfall versus the MDS plan of R73 billion over this period. MDS will not be executed and there will be a negative impact on cash interest cover (CIC) and gearing.
- **A new locomotive procurement scenario.** TFR has to invest in new locomotives to replace its current aged fleet and to support its planned volume ramp-up. To achieve this, TFR needs to procure of 1064 locomotives (465 diesel and 599 electric) over the next 7 years. Procuring 1064 new locomotives between 2013/2014 and 2018/2019 would have a positive NPV of R2.7 billion (discounted using TFR's hurdle rate of 18.56 percent; NPV would be R34.1 billion if discounted using TFR's WACC of 12.56 percent). Accordingly, the only viable solution to deliver on GFB's R53.8 billion revenue MDS target in 2019 is to procure new locomotives.

Benefits of the 1064 locomotive acquisition programme

The 1064 locomotive acquisition will benefit Transnet, South Africa and South African business.

For Transnet, the locomotive acquisition programme will:

- Enhance locomotive operational efficiency thereby increasing asset utilisation.
  - TFR will leverage new technology specification locomotive efficiencies. The new locomotives increase the rate of the fleet's availability and reliability. In addition, further operational efficiencies may be possible by leveraging increased tractive effort to limit the number of locos needed for a given flow or redesign of flows altogether (e.g., some flows have both AC and DC lines, which currently require stops and changeovers between different locomotive types but will not with dual-electric locomotives).
  - The programme offers TFR an opportunity to standardise its locomotive fleet by procuring a limited number of locomotive types. This will result in a host of benefits including simplified maintenance.
- Create business opportunities for Transnet Engineering (TE) to substantially participate in the localisation programme and thereby retain a portion of the locomotives' spend within Transnet.
- Significantly impact TE with respect to maintenance practices and consolidation of maintenance depots where the new locomotives have extended service intervals and on-board diagnostic health monitoring systems where full advantage is to be taken of the currently available technology and international best practice. This is the result of a full deployment plan developed by business unit, year, class of locomotive and depot.
- Enhance Transnet's return on assets and increase financial sustainability. This will be driven by volume growth and declining unit costs of production and will be achieved despite the increase in depreciation.

For South Africa, this large-scale procurement programme will:

- Create R68 billion in localisation benefits for the South African economy. Transnet stipulates local content of 55 percent for diesel and 60 percent for electric locomotives. Given the economies of scale on the purchase of 1064 locomotives with the stipulated localisation

requirements, desired localisation can be achieved for only a 2 percent average cost of localisation – an additional investment of R400 million. This equates to a highly attractive benefit cost ratio of 170 to 1.

- Catalyse the sustainable development of a South African locomotive production industry based on the procurement of 1064 locomotives over approximately 7 years and an estimated on-going annual need of 80 locomotives driven by TFR's 30-year replacement life policy.
- Develop manufacturing skills, which will ultimately support not only the locomotive industry but also South Africa's manufacturing sector more broadly.
- 28,000 indirect and direct South African jobs, created and preserved.
- Achieve greater road safety and fewer road fatalities by supporting the shift from road to rail
- Energy savings will be achieved, with 8- 10% lower fuel consumption for diesels and 18% energy savings for electrics. For the diesel locomotives alone, this will result in savings of over 31,000 tonnes of CO2 and R5 million per year by 2018/2019.

For South African business, the locomotive acquisition will:

- Increase customer satisfaction and enhance the ease of doing business as higher locomotive reliability results in better adherence to schedules.
- Lower the cost of doing business by catalysing a shift from road to rail, which is a more cost-effective mode of transportation for distances over 300 kilometres. Given the spatial dispersion of South African centres of economic activity and the distances between the centres of production and ports, this will benefit most businesses.
- Lower infrastructure repair costs driven by the road to rail shift as damage to roads from the current trucking of commodities like coal is reduced. In addition, it will contribute towards a reduction in road traffic fatalities.

Programmatic procurement strategy and evaluation criteria

Transnet's procurement strategy for the acquisition of 1064 new locomotives, approved by the Board, includes the following key aspects:

- Alignment with the Government of South Africa's socioeconomic policy framework, including CDSP, NGP, NDP, SSI, and IPAP2.
- Increasing local content through developing skills, creating jobs, and transferring technology. Transnet's programmatic procurement strategy follows threshold requirements for locomotive localisation, in line with those designated by the National Treasury (i.e., 55 percent for diesel, 60 percent for electrical locomotives).
- Approaching the market through an open tender process to attract the broadest possible supplier base and maximise value for South Africa and Transnet. Tenders have been issued for both locomotive types. The RFP closure date is April 28th, 2013.
- A six-step evaluation methodology will be applied based on the evaluation criteria: price 60 percent; supplier development 20 percent; and Broad-Based Black Economic Empowerment (B-BBEE) 20 percent.

Managing sensitivities and risks

Procuring Transnet's 1064 new locomotives in the most capital-efficient way requires a detailed understanding of inherent volatilities, risks, and mitigation plans. The locomotive requirement and the pace at which Transnet needs to deploy its capital in the base case scenario is shaped by two factors:

- **Volume volatility.** TFR's overall locomotive procurement programme is based on current, validated MDS GFB volumes. However, given the volatility in the global and domestic economy, the realisation of these volumes may be different than planned. If volumes grow faster or, vice versa, slower than the MDS plan, Transnet must adjust its locomotive procurement accordingly. This flexibility needs to be built into its procurement and contracting strategy to enable it to accelerate or throttle back the pace of locomotive purchases without penalties.
- **Operational efficiency potential.** TFR's current Fleet Plan estimates the number of locomotives including the potential efficiencies that can be captured from technology improvements and operational flexibility of new locomotives. Further operational efficiencies may be possible by leveraging increased tractive effort to limit the number of locomotives needed for a given flow or redesign of flows altogether. These operational efficiencies have not been incorporated in the business case- capturing them could reduce the number of locomotives needed and improve the upside of this business case. The aforementioned flexibility Transnet builds into its procurement strategy will also address this sensitivity.

The following are some of the key risks and sensitivities that are important to consider and mitigate:

- **Volumes.** Of all variables, volume risk has the greatest potential to impact NPV. For example, with a slight underperformance (7 percent versus MDS targets), Transnet would experience revenue shortfalls of R16.4 billion and a reduction in NPV of R1.7 billion. However, under the worst case scenario (growth of volumes in line with GDP as opposed to MDS), NPV would be reduced by over R20 billion. This reinforces the aforementioned need for a flexible procurement and contracting strategy, allowing locomotives to be brought online as they are needed.
- **Delivery schedule.** TFR already has a shortfall of DC electrics, with the electric locomotive shortfall projected to grow to approximately 122 electrics and 32 diesels by 2015. Given the previously expected timelines to procure new locomotives locally, TFR may not be able to close this shortfall until the end of the MDS period. Under the base case (procurement in line with schedules stipulated in the RFP), R13.3 billion in MDS revenues would be at risk; this would more than double under a moderately delayed scenario with further downside under the worst-case scenario. As a result, procurement and production timelines are being tightly managed to ensure the swiftest possible locomotive delivery, and immediate mitigation strategies are being explored. These include front-loading orders with international suppliers and exploring leasing options.
- **Tariffs.** The MDS GFB tariffs are expected to increase faster than CPI through 2020 (7 percent versus 6 percent). Given that the pricing on almost all GFB commodities is below the cost of full economic recovery even after taking into account all efficiencies, the pricing corridor in TFR's plan is achievable. However, should global and local economic conditions create challenges and tariffs above CPI cannot be implemented, the implication would be a reduction in the NPV of the business case by upwards of R4 billion.
- **Foreign exchange exposure.** Assuming target levels of localisation, a change in the Rand to US dollar exchange rate of 10 percent would represent a ~R1.2 billion impact on capital expenditure. Given 15 percent devaluation of the rand against the US dollar over the past year

alone, such volatility is not unrealistic. See the Treasury Section below for the mitigation strategy.

- **Locomotive purchase price.** Closely linked to foreign exchange fluctuations are additional locomotive price risks that need to be actively managed during contracting and negotiations (e.g., change order risks related to detailed specifications). A purchase price increase of 10 percent would have a -R1.5 billion impact on NPV.

Transnet Treasury requirements relating to the locomotive acquisition

Funding plan. The acquisition of 1064 locomotives will cost R38.6 billion and has been included in the overall MDS funding amount of R86.5 billion over the next 6 years. Consequently, the funding options will include those in the borrowing plan as contained in the approved Transnet Corporate Plan 2013/2014. A mixture of cash generated by operations and external borrowing will be used to fund the acquisition. Two-thirds are assumed to be financed using cash generated by operations, and about R13 billion will need to raised externally. The external funding will be raised utilising both the Global Medium Term Note programme for dollar funding and established domestic sources for Rand funding – e.g., the Domestic Medium Term Note programme. In addition, options like development finance institutions (DFIs) and export credit agencies (ECAs) will be considered to lower the cost of funding.

Foreign exchange exposure management. Transnet's Group policy on Financial Risk Management requires that all contracts must be either Rand-based or effectively hedged to minimise the risk of financial loss due to exchange rate fluctuations. Should a Rand-based contract not be possible, hedge accounting will be applied to manage any foreign exchange volatility. The project will be hedged according to the Group Financial Risk Management Framework.

Robust governance

Given the magnitude of this transaction, Transnet has developed a clear governance framework, including:

- The highest standards of confidentiality, reinforced through a High-Value Tender process with oversight from Transnet Internal Audit.
- A 1064 Locomotive Steering Committee meeting, chaired by the Group Chief Executive Officer, has been instituted. This Steering Committee is constituted as a sub-committee of Group ExCo.
- A PMO has been established at TFR with specific responsibilities for: tracking progress towards milestones; establishing and owning a virtual data room based on best practice; scheduling Steering Committee meetings at the request of the Chair and following up on action items; and ensuring that confidentiality protocols are in place.

Ensuring operational readiness

TFR has operational readiness plans in place to ensure efficient deployment of its new locomotives:

- **Critical path interdependencies – integrating locomotives, demand, wagons, infrastructure and operations.** Wagons are tightly linked to the commodities they transport, while locomotives relate to the mass but not the commodity itself; thus, locomotives are allocated according to the tons transported over the particular operating section.

  The proposed diesel locomotives can operate over most of the network with the notable exception of long tunnels. Current single voltage electric locomotives (AC or DC) are confined

according to the current electrification network. This imposes operational inefficiencies due to the traction changes. The new electric locomotives will be dual voltage, eliminating the need to change tractive power and enabling trains to bypass yards.

In addition to the flexibility afforded by the locomotive standardisation above, the 1064 locomotive dependencies with megaprojects, such as Manganese and Waterberg, have been considered and addressed. Human Resources planning is equally critical to execute a programme of this magnitude. For example, to support the overall TFR fleet ramp-up, TFR will need to train 3065 train drivers and assistants. To address current driver shortfalls and increasing requirements over time, TFR will need to begin training drivers immediately.

- **Maintenance regime.** TE will be significantly impacted with respect to maintenance practices and the consolidation of maintenance depots. New locomotives have extended service intervals and on-board diagnostic health monitoring systems, requiring a different maintenance regime than TE currently delivers (e.g., larger "super depots" for large-scale maintenance, with smaller stations for refuelling and other basic services).

Conclusion

Transnet's purchase of 1064 locomotives is a critical procurement event that will facilitate Transnet's delivery against its MDS targets, transform the business, increase operational efficiencies and support local supplier development. Transnet's procurement strategy will be flexible enough to adapt to actual locomotive demand that is realised over time.

Recommendation

Transnet recommends to the Board of Directors for approval:

- The acquisition of 1064 locomotives for the General Freight Business
- Estimated total costs of the acquisition of R38.6 billion as per the Corporate Plan (excluding the potential effects from forex hedging, forex escalation, other price escalations and borrowing costs).

Signed by:

Brian Molefe	Siyabonga Gama	Anoj Singh
Group Chief Executive	TFR Chief Executive	Group Chief Financial Officer

Johannesburg, 25th April, 2013

C. BUSINESS CASE

1. Context

Transnet's MDS is driven by Transnet's shift in strategic focus from "responding to confirmed demand" to creating "capacity to unlock demand". In addition, it is a response to the National Development Plan and National Growth Plan imperatives seeking to contribute to South African economic growth and create jobs on an unprecedented scale.

Shift in Transnet's strategic focus and resulting infrastructure needs

The TFR MDS was borne of a number of strategic drivers. These include:

- The intent to make a significant contribution to national objectives embedded in the New Growth Path and the National Development Plan – to create capacity, to enable an export-led strategy, to develop infrastructure and to create jobs and develop skills.
- To address the legacy structural imbalances in the freight transport system. Significant tonnages of freight are conveyed by road rather than rail which contribute to high logistics costs (and compromises country competitiveness) and to the cost of externalities. Greater tonnages of traffic being transported by rail would make a significant contribution to reducing the number of heavy trucks on roads; overall transport and logistics costs; cost of externalities i.e., road damage, road accidents, road congestion, noise pollution, carbon emissions, the impact of rising fuel prices.
- To pursue opportunities for growth in transportable GDP by targeting rail-friendly opportunities.

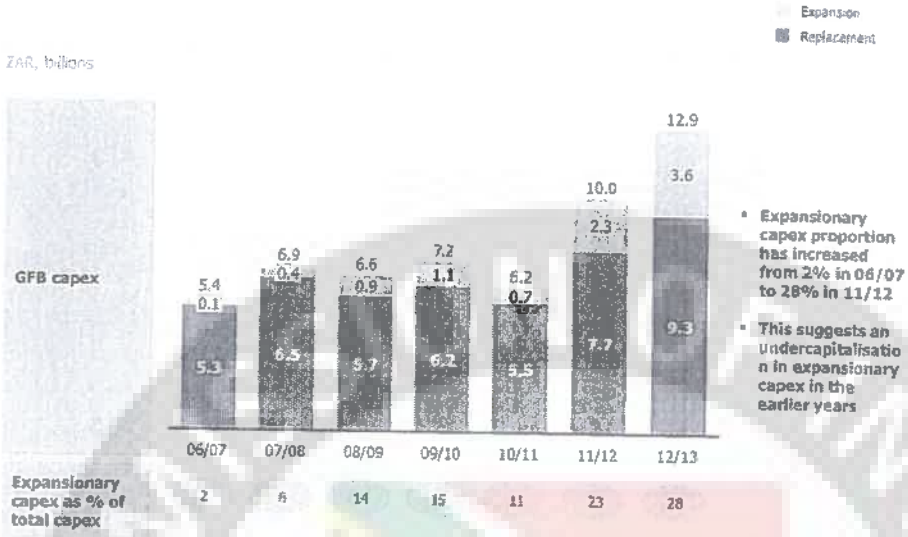
The MDS is informed by future planned investments that generate rail-friendly traffic and target rail-friendly traffic currently on the road. As part of this strategy, TFR has committed to grow its volumes by 142 million tonnes to 350 million tonnes by 2018/19. Over 60 percent of this growth is expected to be delivered by the General Freight Business (GFB), which will grow from the current 82.6 million tonnes to 170 million tonnes by 2019 and is the focus of this business case. To enable this strategy, Transnet plans to invest R308 billion over the next 7 years. The total investment directed to TFR will be R194 billion to deliver on its significant volume growth targets; of this R143 billion is planned to be invested in GFB, R19 billion in export iron ore, and R32 billion in export coal. Of the total capital invested in GFB, 53 percent will be in expansionary projects.

GFB's current situation is an important point of departure to fully understand the business case. While TFR has steadily ramped up investments since 2004/05, these have been largely directed at the export iron ore and export coal businesses. By contrast, little has been spent on expanding GFB capacity and infrastructure since 1992. Even in more recent years, as per the Exhibit below, the focus of GFB capex has been maintenance rather than expansion.

Even in more recent years, as seen in the exhibit below, the focus of GFB capex has been maintenance rather than expansion.

EXHIBIT 1

GFB expansionary has historically been undercapitalised with focus on replacement over expansionary expenditure



This has left GFB highly undercapitalised, with its aging infrastructure unable to meet current market demand let alone generate and service new freight demand in sectors where South Africa has a comparative advantage. This not only limits the growth of Transnet but more importantly hampers the growth of South Africa's economy and leaves the cost of doing business in South Africa uncompetitive, particularly as the road share of total freight transport has increased over time at the expense of rail. It is therefore imperative to rectify this and to enable TFR to service current rail-friendly demand, stimulate further demand, and catalyse a shift from road to rail.

The MDS will address these issues, laying out a plan to improve financial stability, productivity, and operational efficiency and to shift demand from road to rail. Through this strategy, Transnet will: reduce its cost of doing business while becoming more carbon efficient; enable economic growth, job creation, and skills development; and create opportunities for localisation, empowerment, and transformation.

Investing in GFB is a sound business decision. The growth in GFB volumes is driven by commodities and flows that are rail-friendly and attractive for TFR. The majority (85 percent) of the growth in GFB demand is generated by rail-friendly bulk commodities that need to be transported long distances – manganese, magnetite, domestic iron ore, containers; with certain demand – e.g., coal needed for Eskom's power stations; and commodities for which existing demand moves on road and will shift to rail. Moreover, South Africa is well-positioned on global cost curves for GFB commodities such as manganese, magnetite, and thermal coal, which mitigates the volume downside due to inevitable global commodity volatility.

Although global growth has been constrained by the slowdown in global and local economic activity, the strategic intent of the MDS remains, and volumes are projected to grow from 82.6 million tonnes in 2012/13 to 170 million tonnes in 2018/19.

National Development Plan (NDP) and National Growth Plan (NGP) imperatives

Transnet is an important enabler of South Africa's NDP and NGP.

Alignment with priority infrastructure initiatives for South Africa

The NDP aims to address poverty and inequality by creating a favourable environment for public and private investment to create jobs and increase disposable incomes. Its imperatives include economic growth, job creation and skills transfer, infrastructure investment in rail, power, and other industry, a reduction of GHG emissions, and positioning South Africa positively. To achieve full employment, the economy will have to create 11 million jobs by 2030, requiring economic growth of 5.4 percent. The South African government has made infrastructure a major priority, recently announcing the establishment of a Presidential Infrastructure Coordinating Commission and planning investments of more than R800 billion over the next 3 years. Transnet's major infrastructure projects are important pillars of Strategic Integrated Projects (SIPS) and playing their role in delivering on economic growth and job creation objectives.

GHG emission commitments

As a state-owned enterprise and one of the top 10 carbon emitters in South Africa, Transnet has placed reducing carbon emissions high on its agenda. South Africa – having set aggressive targets for carbon mitigation (a 34 percent reduction by 2020 committed at COP 15[2] in Copenhagen) and hosting COP 17[3] in Durban in 2011 – will count on state-owned entities to be role models in this regard.

With the National Treasury making significant strides towards implementing a carbon tax, and the Department of Environmental Affairs developing national marginal abatement cost curves (MACCs) and carbon budgets, carbon reduction will become a strategic imperative for major emitters like Transnet.

2. Business need

To deliver on MDS, GFB will need to grow its volumes transported from 82.6 million tonnes to 170 million tonnes between 2012/13 and 2018/19.

2.1 The shift from road to rail

One of the drivers of this shift is TFR's stated objective to capture market share from road. The rationale for this is that:

- Rail is cheaper than road for long-haul transportation of large parcel sizes, thus reducing the cost of doing business and making South African goods more competitive. The exhibit below shows the cost saving of rail over road per given route and commodity.
- Rail produces lower emissions per gross tonne kilometre than road, thus assisting South Africa's GHG emissions reduction effort.

---

[2] The 15th Conference of the Parties (COP 15) to the United Nations Framework Convention on Climate Change (UNFCCC) – Copenhagen.

[3] The 17th Conference of the Parties (COP 17) to the United Nations Framework Convention on Climate Change (UNFCCC) – Durban, South Africa.

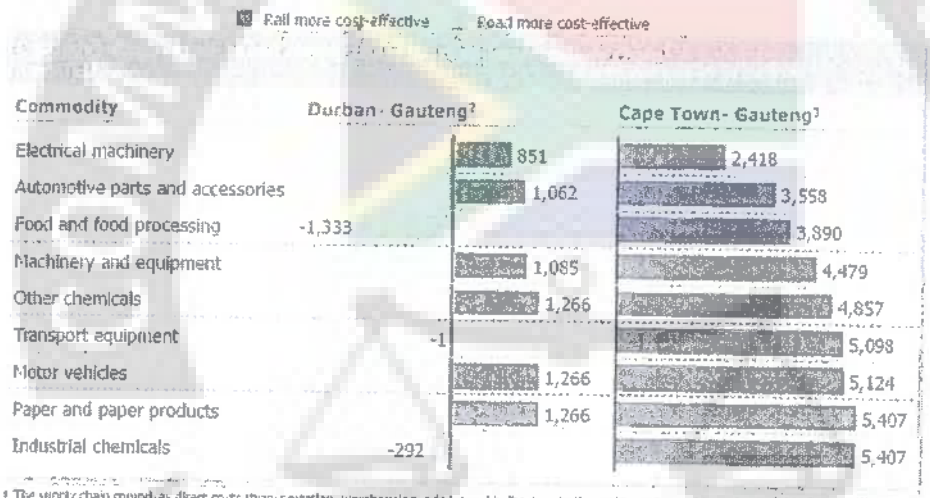
- Haulage by road damages road infrastructure, requiring a significant investment to repair the roads.

Furthermore, for developing economies like South Africa, economic growth results in a relatively higher increase in trade volumes – and therefore freight demand – than GDP growth rates would otherwise imply (i.e., a higher container volume multiplier, which measures the marginal effect of economic growth on freight volumes).

Therefore, given the clear impetus for volume growth and a shift from road to rail, delivering on the MDS depends on TFR's ability to capture volumes. TFR plans to capture rail-friendly volumes from road by developing a comprehensive value proposition based on customer needs. Rail-friendly goods are typically mineral and mining commodities and some manufactured goods, as well as raw material inputs to manufactured goods (such as steel and cement) that are conveyed from siding to siding in large parcel sizes, over relatively long distances.

EXHIBIT 2

Road to rail shift has a cost advantage in most commodities in key corridors at long distances



1 The supply chain comprises direct costs (transportation, warehousing, admin) and indirect costs (lost sales, obsolescence, inventory carrying cost, f.e.
exports from Gauteng to relevant port in 2008
2 Land distance of ~707km from Gauteng to Durban
3 Land distance of ~1250km from Gauteng to Cape Town

SOURCE: Stellenbosch University; Transnet quotes, MEX; LOGOS model

2.2 GFB demand increase by commodity

From the TFR Corporate Plan, freight rail volume projections per commodity from 2013-2019 are summarised in the following exhibit. The projections represent a market demand view of volumes in support of South Africa's New Growth Path (moderated in line with port capacity and Eskom electricity supply), and they reflect a significant growth in volume for the overall general freight commodities.

EXHIBIT 3

MDS volumes by commodity

Business Unit	2013/14 Budget	2014/15	2015/16	2016/17	2017/18	2018/19
Agriculture & Bulk Liquid	12.66	14.39	15.63	18.02	18.66	19.26
Coal	16.86	19.92	24.93	36.34	44.61	48
Manganese	8.7	8.72	11.57	13.05	15.56	17.03
Containers and Automotive	12.63	14.27	18.32	19.94	15.25	16.71
Mineral Mining & Chrome	18.53	20.32	24.45	28.89	30.11	30.57
Steel & Cement	21.84	26.66	32.37	35.23	36.47	38.89
General Freight (mt)	**91.21**	**104.27**	**127.27**	**151.46**	**160.66**	**170.45**
Coal (Export Coal)	77	81	81	84	95	97.5
Export Iron Ore	61.5	62.3	62.3	70.3	78.3	82.5
TFR Total (mt)	**229.71**	**247.57**	**270.57**	**305.76**	**333.96**	**350.45**

To capture these increases in freight demand, GFB has developed a commodity-level commercial strategy. The next two exhibits show the sources of growth from the major commodity flows and the various strategies developed to address them. See Supporting Documentation section E1 for the full 7-year commodity growth. Growth in coal volumes will be driven by Eskom's shift from road to rail on the Eskom-Tutuka and Eskom-Majuba flows and the development of new power stations. Steel and cement will be driven by a competitive pricing strategy aiming to capture domestic coal, and iron ore volume growth from the government infrastructure development plan. The focus on unlocking capacity for junior miners will capture volume growth from manganese export. Mineral volume growth will be secured through penetrative pricing strategies in the growing market.

EXHIBIT 4

Rationale for 79mt increased commodity demand for GFB from 91mt in 2013/14 to 170mt in 2018/19 (1/2)

Flow	Commercial strategy	Key flows	Growth (Δ mt)	Rationale
Coal	• Capture increasing coal export volumes • Eskom move from road to rail • Secure volumes through take or pay contracts	• Export TCM Maputo	8.1	• TCM to expand due to Limpopo projects (Vele and Makhado)
		• Eskom – Tutuka	6.5	• Transition from rail containers to tippler solutions in 2 years
		• Eskom – Majuba	5.2	• Eskom road to rail migration plan
		• Coal - Other	11.3	• Sustained strong demand for SA coal due to China and India emerging as net thermal coal importers
Steel and cement	• Customer-focused value proposition to secure volumes • Revision of pricing strategy • Exploring markets ex-SA	• Coal (domestic)	3.8	• Driven by growth in other industries (e.g., Steel, timber)
		• Iron ore (domestic Sishen)	2.8	• Domestic and regional consumption of steel fuelling demand for iron ore & new iron ore export from Thabazimbi to Richards Bay/Maputo
		• S&C - Other	10.4	• Cement volumes to increase in line with SA's GDP growth (4% on average) • Freight rail is also targeting rail-friendly volumes in this sector
Manganese	• Unlock capacity for junior miners • Capacity review process	• Manganese	8.3	• SA's share of world output set to grow with expansion projects planned by both traditional miners and junior miners

EXHIBIT 5

Rationale for the 79mt increased commodity demand for GFB from 91mt in 2013/14 to 170mt in 2018/19 (2/2)

Flow	Commercial strategy	Key flows	Growth (Δ mt)	Rationale
Mineral, mining and chrome	• Pricing aimed at market penetration	• Magnetite (Export Maputo)	2.4	• Demand from China driven by steel production
		• MMC - Other	9.6	• Gold ore and other minerals enjoy healthy demand
Intermodal	• Containerise mineral products • Develop Freight hubs in key areas	• Coal (Eskom – Camden)	2.6	• Demand increase driven by increased electricity usage
		• Containers	1.6	• Rail container volumes to increase in line with Freight rail's objective of increasing market share along key intermodal routes such as the Natcor
Agriculture and bulk liquid	• Transnet Rail and Port capacity support for agri-logistics and rural infrastructure • Demand shift from road to rail	• Grain, maize, wheat and foodstuffs	2.1	• Demand increase driven by increased electricity usage
		• Other	4.5	• Increased over border demand from Botswana and Mozambique • Sappi expansion
Total			79.2	

2.3 Investment history and locomotive fleet run-out in GFB

Overview

This section demonstrates that the current fleet is incapable of meeting demand. Half the fleet will need to be retired within 10 years and nearly the entire fleet within 20 years.

Investment history

TFR is generally considered to be under capitalised with an aging infrastructure unable to deliver and consequently hampering South Africa's economic growth. TFR has three distinct areas of operations, namely General Freight, Coal Export and Iron Ore Export. The Coal and Iron Ore Export operations are ring-fenced operations with assets dedicated to a single commodity. Since 2004/05, they have been upgraded and expanded to take advantage of the commodity boom. By contrast, little has been spent on General Freight since 1992, as can be seen in the next exhibit.

EXHIBIT 6

Remedial actions to mitigate locomotive run-out

The expected useful life of a locomotive is 30 years with a full mid-life intervention at approximately 16 to 18 years, which is part of the normal life cycle of the locomotive. The average age of the TFR General Freight Locomotives is 32 years and current programs have extended the life if the workhorse locomotives to a maximum of 45 years. All the locomotives that were suitable for life extending interventions have already been targeted and the remaining locomotives are technologically incompatible.

Locomotive mid-life interventions are part of the normal life-cycle process to achieve the design life of a locomotive. The mechanical components have a life of 30 years but the electrical and electronic

components and systems have a shorter life based on natural degradation and the rapid evolution of control technology. Electrical spares generally have a ten year guaranteed availability after which they become obsolete and often unavailable. Component replacement within the design life of a locomotive is not life extending but part of the planned total cost of ownership.

However, although Transnet policy assumes a locomotive lifecycle of 30 years, two primary strategies were adopted to mitigate locomotive run-outs and extend the useful locomotive life to 45 years.

The first implementation was to upgrade the workhorse 6E series of locomotives to the 18E series through a partial redesign, a rebuild and upgrade of components, and the replacement of the electro-mechanical control system with an electronic control system. These upgrades improved locomotive output from 170kN to 200kN and extended locomotive life by 15 years. The first of the upgraded locomotives will run out in 2017/18.

The second implementation was an upgrade program to the class 34D and 37D locomotives supplied by General Electric (GE) and General Motors (GM). These upgrade programs comprise a mix of extensive routine maintenance, rewiring and partial body repair. The differentiating upgrade feature is replacing the outdated and obsolete control systems with state of the art electronic control systems which improve control and prevent driver abuse. By analogy, it can be compared to traction control on a modern motor car that prevents wheel spin.

The impact of undercapitalisation on locomotive performance

The extension to 45 years was a consequence of not being able to afford new locomotives at the time and was not a formal restatement of policy. By extending a locomotive's life to 45 years, TFR has suffered higher faults per million kilometres, lower gross tonne kilometres, and substantially higher maintenance costs. This has decreased customer satisfaction, leading to a shift from rail to road, increased the Total Cost of Ownership (TCO) of locomotives and reduced TFR's ROA.

Life extension programmes normally range from 10 to 15 years. Beyond the 15-year period the technology becomes outdated. Although refurbishment options may seem cost-effective on the surface, as the life of a locomotive is extended, failures increase. As locomotives age, maintenance becomes increasingly difficult. Spares become difficult to obtain because of shrinking markets and outdated technologies. There are also fewer skills to maintain dated technologies, as newer entrants are unwilling to skill themselves on previous technologies. These operational inefficiencies and failure rates have compromised TFR's ability to increase its volumes and have contributed to a rail-to-road shift.

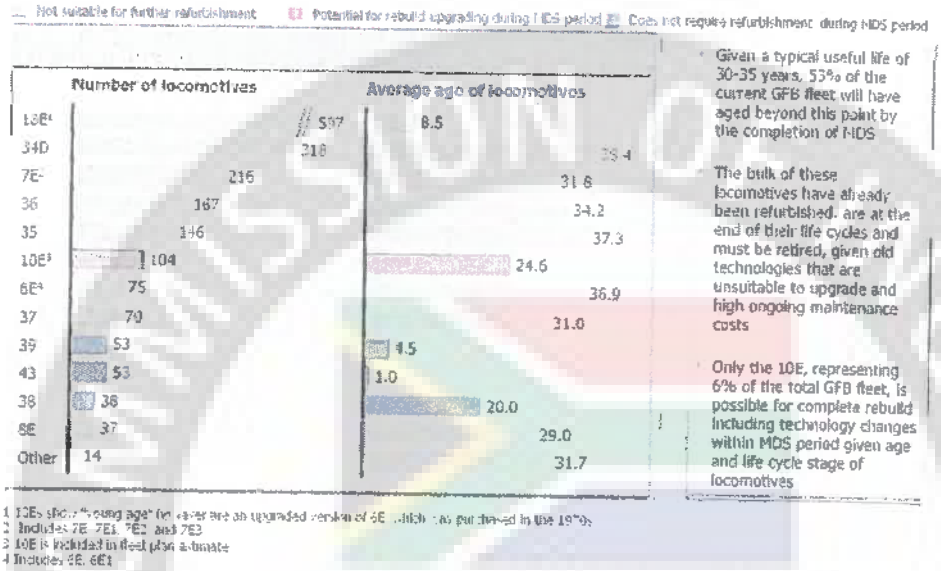
Purchasing new locomotives would allow TFR to depreciate its costs over a 30-year useful life. More importantly, due to the increased reliability that new locomotives provide, Transnet would be able to significantly increase the volumes it transports. This would drive substantially higher ROA for the business.

Through past refurbishment strategies, ***TFR has exhausted almost all meaningful rebuild opportunities***. Thus, even if it were decided to extend the life of current assets once again (and suffer continued operational inefficiencies and lower ROA), TFR would not be able to do so. The next exhibit shows life extension options are limited to 6 percent of the fleet, as the aged locomotives have gone through extensive refurbishment over time to a point where they can no longer be refurbished. Even the

"young" locomotives in the fleet are refurbished versions of older models. For example, although the 18E is listed at an average age of 8.5 years, it is, in reality, an upgraded version of the 6E, a locomotive that was purchased in the 1970s.

EXHIBIT 7

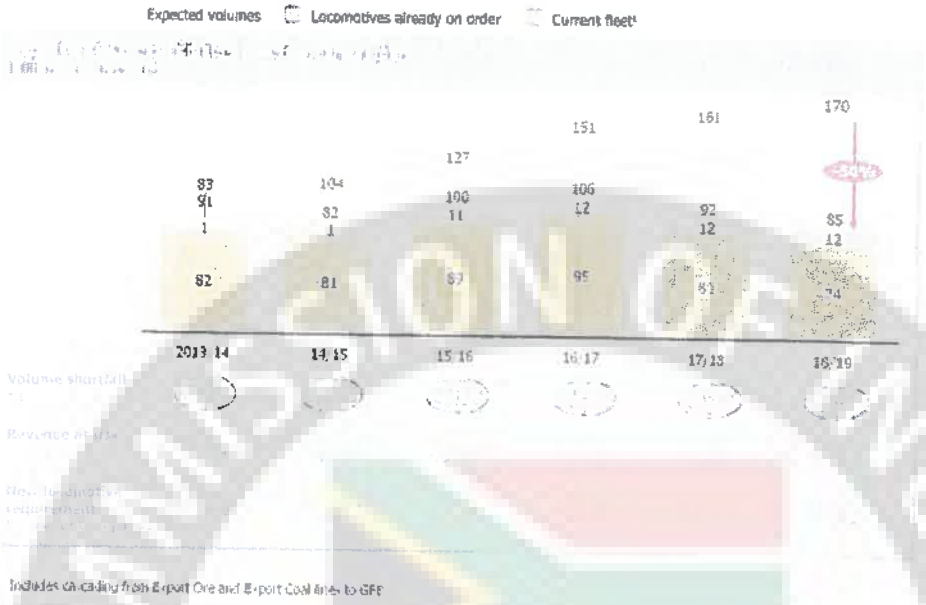
The current GFB fleet is aged – life extending options have been exhausted - only 6% targeted for a complete rebuild



Conclusion: TFR will experience a R73 billion revenue shortfall if the procurement option is not exercised. The next exhibit shows that, unless new locomotives are purchased, the fleet will lose 85million tonnes per annum in capacity by 2018/19.

EXHIBIT 8

Given the current trajectory of TFR's fleet runout plan, cumulative revenues of R73bn will be at risk by the end of MDS in 2019, with further revenue at risk thereafter



1 Includes circulating from Export Ore and Export Coal lines to GFB

3. Proposed solution

3.1 Overview

To meet the fleet requirements necessary to support the MDS volumes, TFR needs to procure 1064 new locomotives. However, flexibility must be built into procurement to account for two factors – demand fluctuations and operational efficiencies captured – that will ultimately affect the timing of locomotive requirements.

3.2 Locomotives required to service market demand

TFR's Locomotive Fleet Plan was presented to the Transnet Board in April 2011 and was approved. This plan provided details on the fleet's composition; how it would run-out subject to the availability of funding; the locomotive upgrades; and the new locomotives required to achieve volumes of 110 million tonnes per annum. Since then, the plan has been updated to reflect the fleet GFB requires to meet the revised MDS volumes, which ramp up from 82.6 million tonnes in 2012/2013, to 127 million tonnes in 2015/16, to 170 million tonnes in 2018/19.

The plan's key objectives are to:

- Maintain and expand current capacity to meet the increasing demand:
  - New locomotives required to sustain the current fleet.
  - New locomotives required to deliver the increase in volumes.

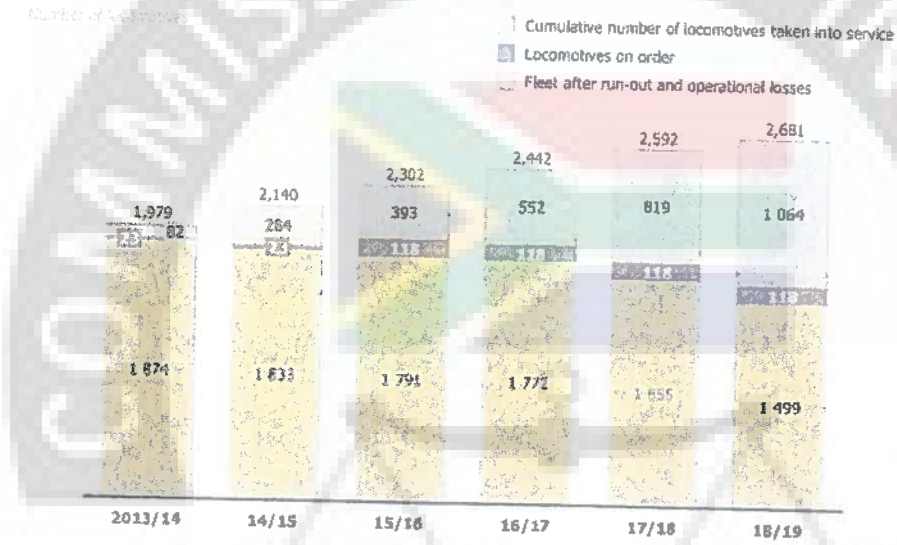
- Standardise the fleet to resolve both operational and maintenance difficulties – such as training drivers, planning route designs, and maintaining locomotives – that arise with a diverse fleet of multiple locomotive types.
- Capture improved operational efficiencies provided by new generation locomotives.

The following exhibit summarises the current and proposed locomotive fleet for general freight up to 2018/19.

The Fleet Plan is Transnet's current estimate of the number of locomotives it will require to meet its MDS commitments.

EXHIBIT 9

Locomotives required according to fleet plan



New locomotive procurement is a catalyst to unlock this demand through standardisation which increases flexibility to deliver increased operational efficiencies. This will increase customer satisfaction and enable the shift from road to rail. For example, the exhibit below shows how locomotive efficiency and wagon turnaround times would improve with a renewed fleet. Refer note below.

However, the ultimate number of locomotives needed could change over time depending on the operational efficiencies captured and volumes realised.

EXHIBIT 10

Improved operational performance and increased customer satisfaction from the upgraded fleet

SOURCE: 2013-2014 Transnet Corporate Plan

The increase in locomotive efficiency is based on three factors; firstly, an inherent improvement in utilisation of the current fleet; secondly, in greater tractive effort per locomotive of the proposed procurements; and thirdly, operational flexibility.

Volumes

Increasing volumes during the MDS period are a primary driver of locomotive requirements. However, Transnet's ability to meet the targets set out in the MDS will depend on external market conditions, including the growth of the South African economy and changes in the demand for commodities shipped. Should conditions change (e.g., modifications to Eskom's new build timelines would have a significant impact on domestic coal requirements, and a slowdown in GDP growth would result in fewer containers shipped), locomotive demand will change. As a result, locomotive procurement timelines must be flexible enough to adapt to potential changes in volumes based on macroeconomic and demand conditions.

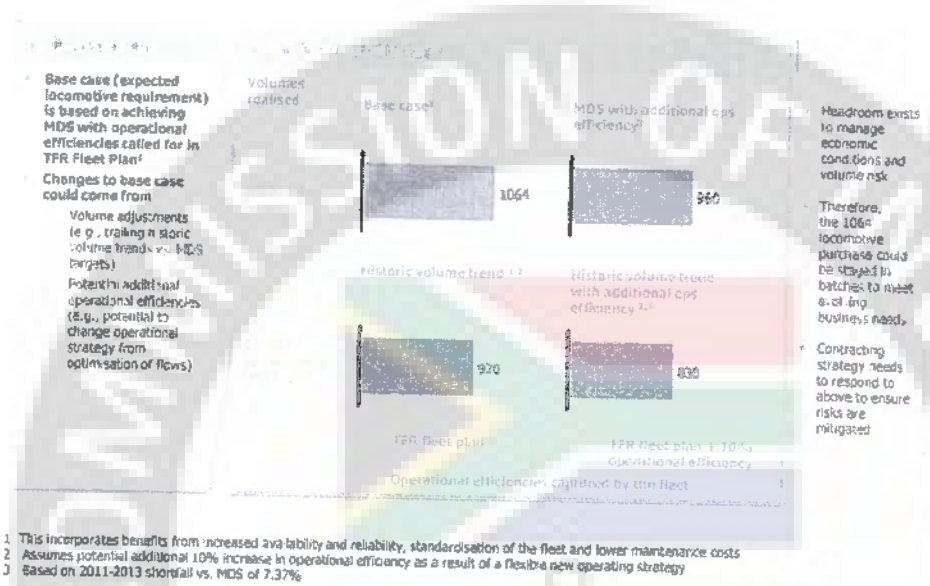
Operational efficiencies

The Fleet Plan will be affected by the operational efficiencies captured from new locomotive technology. The plan takes the position that new locomotives' improved performance will enable operational efficiencies to be captured (e.g., increased availability, reliability and operational flexibility and lower maintenance). Rightly – and conservatively – the Fleet Plan does not estimate unproven potential additional operational efficiencies that could be achieved from optimisation of flows based on the new technologies (e.g., running dual-electric locomotives across routes that previously required multiple changeovers from AC to DC technologies).

The following exhibit shows how different assumptions of volume and operational efficiency could ultimately lead to different locomotive requirements. Thus, to account for factors that could affect how quickly locomotives are needed, Transnet must pursue a flexible procurement schedule, building in trigger points that will be staged throughout the MDS period.

EXHIBIT 11

The need for 1064 locomotives is determined by the realisation of volumes and operational efficiencies – which informs the procurement strategy



1 This incorporates benefits from increased availability and reliability, standardisation of the fleet and lower maintenance costs
2 Assumes potential additional 10% increase in operational efficiency as a result of a flexible new operating strategy
3 Based on 2011-2013 shortfall vs. MDS of 7.37%

3.3 Role of Transnet Engineering (TE)

TE maintains the TFR fleet and in the past it has partnered with OEMs to provide local content. TE will be significantly impacted by the procurement of the 1064 locomotives – shifting from a maintenance-oriented organisation with relatively smaller builds to a manufacturing-oriented organisation. See the impact on maintenance in the section Impact of the new Deployment Plan, below.

The procurement of the 1064 is a TFR strategy to support MDS. The positioning of TE as a manufacturing entity with one or more OEMs will be influenced by the procurement as articulated in the RFP. The extent of TE's involvement with regards to its strategy will be determined by TE during its negotiation the relevant OEMs appointed as an outcome of the bidder evaluation and negotiations.

EXHIBIT 12

Greater specialisation and focus by splitting Build and Maintain functions within Transnet Engineering

Impact of the new deployment plan

Locomotive deployment is never static and changes dynamically in accordance with commodity and market requirements. It is also influenced by standardisation of maintenance facilities and crew trained in operating a particular type of locomotive. The proposed new locomotives are however specified to enhance standardisation and be deployed over the entire core network with the exception of diesels going through long tunnels.

The new deployment plan will also significantly alter the way TE operates. It will have an impact on:

- **Locomotive maintenance strategy and practices.** The new locomotives will have added features that will reduce maintenance and increase reliability, requiring a contemporary maintenance regime to exploit these features. For example, the Class 34 diesels generally have a 28-day intervention where the locomotive travels to a depot, with major interventions taking place at specific depots. The new Class 43 diesels, however, have a service interval of 90 days that can possibly be extended to 180 days. Where an intervention may be required between service intervals, this would entail the technician coming to the locomotive rather than the locomotive going to the depot. As TFR improves its efficiencies, it will result in lower downtime and increased availability of locomotives.
- **Maintenance technologies.** New maintenance technologies are anticipated, include:
  - LCMS. A Locomotive Control Monitoring System continuously reports the locomotive status to a central Locomotive Control, helping achieve optimum locomotive utilisation.
  - Acoustic Bearing Monitor. This wayside equipment acoustically monitors the rolling stock bearings as they pass the wayside station, analysing the bearing "noise signature" for signs of failure. The signature provides sufficient warning that the locomotive can be

diverted to a depot for bearing replacement in a timely fashion. This extracts the maximum possible life out of the bearing as opposed to the conservative time-centred replacement that is the current practice.

- **Skills and staffing.** The skills needed will change from a mechanical maintenance paradigm (electrical and diesel fitter) to one of an electronic diagnostician. Should this change not be contextualised and internalised and old maintenance practices continue, reliability and availability will be compromised and locomotive life will be lessened. Although maintenance staffing requirements will be reduced, potential exists to reallocate these resources to build-based activities.
- **Depot evaluation.** Current, older locomotives must be serviced for several weeks at a time. Even for some of the heaviest maintenance, a new locomotive is expected to be in a workshop for no more than 72 to 96 hours. This will bring about a shift in the way TE conducts maintenance operations. Today, Transnet has over 130 locations throughout the country. In the future, TE will require a smaller number of very large super-depots that can handle a range of activities, including all types of major component exchange for both diesel and electric locomotives. Additional smaller facilities will still be required for servicing, fuelling, preparation, and vehicle recovery in case of breakdown.

See the Supporting Documentation section E5 (Deployment Plan) for more detail on TE's new maintenance philosophy and proposed changes.

3.4 Other benefits to South Africa

Lower costs of transportation

As described in the Business Needs Section, a more efficient and reliable fleet will support the transition from road to rail, which is typically more cost-effective for transporting goods more than 300 kilometres. This shift will lower infrastructure repair costs (given the damage to roads from the current trucking of commodities like coal) and contribute towards a reduction in road traffic fatalities.

Lower costs of emissions per tonne

Modern locomotive technologies will also result in energy savings – (8- 10% lower consumption for diesels and 18% energy savings for electrics). Therefore, this will result in savings of over 31,000[4] tonnes of CO_2 and R5[5] million per year by 2018/19 for diesel locomotives and potential additional savings in electrics. Today's diesel fleet is more than 30 years old and therefore not emission-efficient. The electric locomotives, which haul approximately 86 percent of the total gross tonne kilometres moved per annum, are not considered heavy polluters. However, given the coal pollution from Eskom electricity generation, total emissions attributable to the locomotives are higher. The new electricity-increased energy efficiency would lessen their environmental impact, as well as the demand on the power grid.

Although meeting Transnet's MDS targets would naturally entail increased locomotive use – and thus increased emissions – the new locomotives' greater energy efficiency will help offset this. The new diesels and electrics would, at a minimum, meet United States Environmental Protection Agency Tier 3 and Tier 4 standards when they come into effect. For diesels, the new locomotives are expected to be

[4] Savings over the current locomotive emissions per MGTK

[5] Given the expected tariff structure from 2015

10 percent more efficient in energy conversion than current diesels. In electrics, the Ore Line 9E and the new 15E series are at least 18 percent more efficient in energy conversion. A similar improvement is expected in the new general freight electric workhorse with AC traction motors that will replace the 18E series with DC traction motors.

4. Detailed analysis of recommended option

4.1 Financial analysis overview

4.1.1 Overview

The capital expenditure for the 1064 locomotive procurement transaction is expected to be R38.6 billion, assuming current exchange rate assumptions hold. Using TFR's hurdle rate of 18.56 percent, the NPV of the transaction is R2.7 billion; applying TFR's WACC of 12.56%, would increase the NPV to R34.1 billion. The following sections describe the approach used to calculate the NPV and expected capital expenditure.

4.1.2 Base case NPV

Key assumptions into this base case NPV calculation are in the exhibit below.

EXHIBIT 13

The NPV of the 1064 locomotives transaction is R2.7bn (hurdle rate) or R34.1bn (WACC)

Base case assumptions

Fleet strategy	• Increased operational efficiencies from new locomotives called for in TFR Fleet Plan will be achieved • Run-out optimised for current refurbishment state, by loco class
Volume	• Delivery on MDS targets, with volumes increasing from 91mt in 2013/14 to 170mt in 2018/19
Delivery schedule	• Delivery schedule called for in the diesel and electric RFPs can be met (e.g., calls for first 100 diesels in 2013/14 and first 65 electrics in 2014/15) • All 1064 locomotives procured by 2019
Forex	• Current forward ZAR/USD exchange rates at average of 11.0 over the acquisition period
Price	• USD 2.6 million/R25.2 million per diesel and USD3.5 million / R33.9 million per electric, assuming 50% localisation and a 2% localisation premium. RSA component escalated with inflation, USD component escalated at US inflation and converted back to ZAR based on forward exchange rate
Tariffs	• Tariffs as per MDS commitments (escalation ~7% per year from 0.42 R/tonKm in 2013/14 to 0.58 R/tonKm in 2018/19)

Capex: R38.6bn aligned to corporate plan[1]

NPV: R2.7bn[2]

1 Escalated capex for the acquisition of 1064 locomotives in 2013/14 - 2018/19
2 Calculated using hurdle rate of 18.56%; NPV would be R34.1bn if TFR's WACC of 12.56% is used

4.1.3 Fleet plan versus RFP delivery timelines

The number of locomotives required to deliver MDS is based on TFR's Fleet Plan and planned run-out strategy. It is based on the assumption that TFR will capture operational efficiencies from new

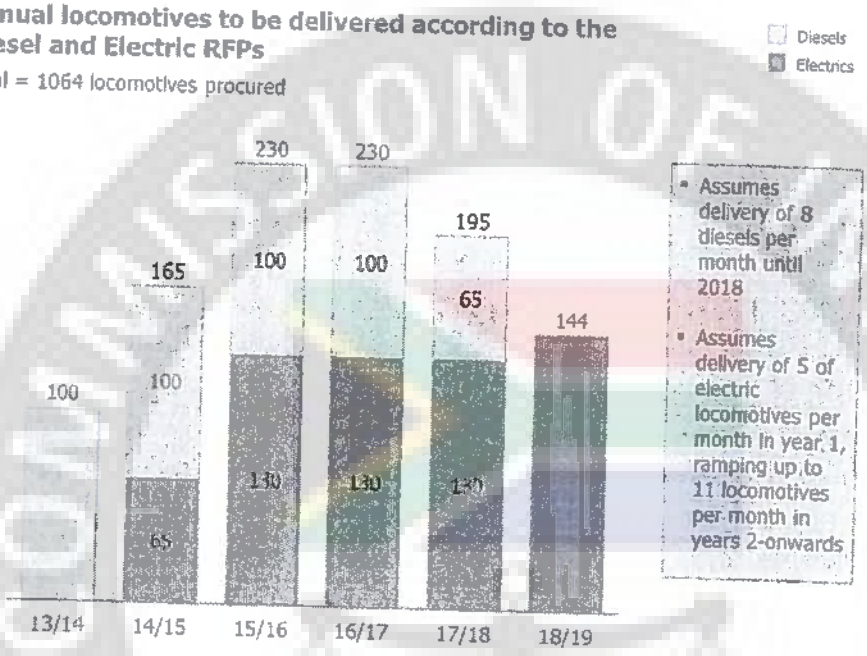
locomotives (e.g., increased availability, reliability and operational flexibility, lower maintenance costs). This fleet requirement is also driven by volumes, which are assumed to be TFR's MDS targets for GFB.

The 465 diesel and 599 electric RFP delivery timelines, which are currently in the market, were used to understand the timing of the locomotives. The exhibit below details the locomotive delivery timelines that were modelled as per the RFPs and used as the base case assumption.

EXHIBIT 14

Annual locomotives to be delivered according to the Diesel and Electric RFPs

Total = 1064 locomotives procured



4.2 Approach to revenue calculations

Revenues were calculated based on the incremental volumes attributed to the 1064 procured locomotives and the average forecasted GFB tariffs from the MDS 2012/13. Volumes to be attributed to the 1064 locomotives were calculated using a bottom-up approach, which used historical GFB productivity (million gross tonne kilometres, MGTK) for each of the locomotive types and the number of locomotives within each type aggregated to a fleet level productivity capacity. The incremental volumes for the 1064 procured locomotives were calculated on the difference between the capacity required to achieve the MDS and the existing fleet capacity, subject to the maximum capacity of the procured locomotives.

Bottom-up volume calculations based on locomotive productivity

The total MGTK was transformed into net tonnes volumes using a historical GTK/NTK ratio and forecasted average distance using the MDS forecasts. Locomotive productivity assumptions for locomotives without an applicable historical productivity were based on similar locomotive types within the fleet. The productivity estimates for the new procured locomotives were based on the historical

average productivity levels achieved by the TFR fleet. The existing fleet breakdown and productivity for 2013/14 is detailed in the exhibit below.

EXHIBIT 15

Existing fleet GFB at 2013/14

Fleet type	Number of locos	GTKm per loco	Cumulative GTKM
6E	75	33	2 507
7E	58	130	7 520
7E1	48	107	5 137
7E2	45	94	4 217
7E3	65	98	6 351
8E	37	1	19
10E	104	133	13 795
14E	8	41	330
18E	597	57	34 026
33D	5	8	38
34D	318	24	7 689
35D	146	7	1 006
36D	167	1	244
37D	70	20	1 372
38D	38	22	827
39D	53	54	2 852
43D	55	80	4 395
Total	1 889	49	92 324

Volume capacity was calculated and split across three different categories:

- TFR fleet requirement capacity (based on TFR fleet requirements, Supporting Documentation Section E4-7-Year Locomotive Requirement).
- Existing TFR fleet capacity (based on the TFR fleet run-out schedule and expected locomotives on order, Supporting Documentation Section E2 -General Fleet Runout).
- 1064 procured locomotives capacity (based on the procurement assumptions above).

The incremental volumes for the 1064 procured locomotives were calculated on the difference between the capacity required to achieve the MDS and the existing fleet capacity, subject to the maximum capacity of the procured locomotives. The existing fleet capacity also accounts for lost capacity due to locomotive write-offs due to incidents, with 7 diesels and 8 electric locomotives assumed to be written off each year. The productivity lost was based on average locomotive productivity for diesel and electric locomotives.

EXHIBIT 16

Productivity MGTK (2013/14 to 2018/19)						
	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
MDS required capacity	**86,401**	**98,479**	**120,811**	**138,409**	**148,467**	**158,434**
Existing fleet capacity	79,403	79,697	98,478	101,730	90,848	86,130
Written-off (lost) capacity	1,101	2,201	3,302	4,446	5,591	6,736
Required capacity	**8,099**	**20,983**	**25,634**	**41,126**	**63,211**	**79,040**

Translation into volumes required

The aforementioned required capacity amount is converted into required net tonnes based on the average distance travelled for GFB traffic and the historical ratio of GTK to NTK.

The table below represents the incremental volumes attributed to the 1064 locomotives. TFR experience a large volume shortfall in the first 3 years due to DC locomotive shortfalls. Without planned mitigation strategies, this shortfall will persist till 2018/19 given that TFR fleet requirements are assessed as of the beginning of the fiscal year but locomotives would be delivered throughout the year (e.g., in 2018/19, 1064 locomotives are required at the start of the year, but the 1064th locomotive will only be expected later that year). Refer to Section 5 on Risks for a description of TFR's planned mitigation strategy.

These volumes can be combined with the expected tariffs for GFB during the MDS period, as per the exhibit below:

EXHIBIT 17

Volumes (net tonnes)						
	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
MDS target	**91**	**104**	**127**	**151**	**161**	**170**
Existing fleet	83	82	100	106	92	85
1064 locomotives	1	7	21	41	60	77
Volume shortfall	7	15	6	4	9	8

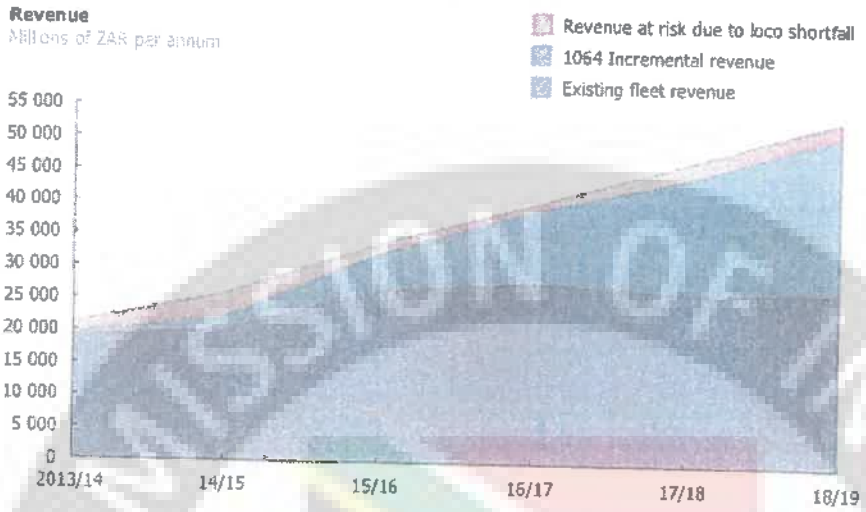
As per the exhibit below, putting volumes and tariffs together yields a view of revenues – MDS targets, revenues allocated to the existing fleet, revenues derived from the new locomotives, and potential shortfalls.

EXHIBIT 18

GFB tariff average (R/Net tonKm)					
2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
0.42	0.45	0.48	0.50	0.54	0.58

EXHIBIT 19

The 1064 locomotives are instrumental in capturing MDS target revenues, but a revenue shortfall will persist due to procurement timelines lagging target demand



4.3 Approach to cost calculations

Cost schedules were calculated for the entire life cycle of the 1064 fleet split into the categories listed below, including: a) Total cost of ownership (TCO); and b) capital and other costs, including wagon cost, infrastructure cost, overheads, and tax.

4.3.1 Total cost of ownership of new locomotives

The TCO of locomotives was calculated using bottom up analysis and expert input and has the following components:

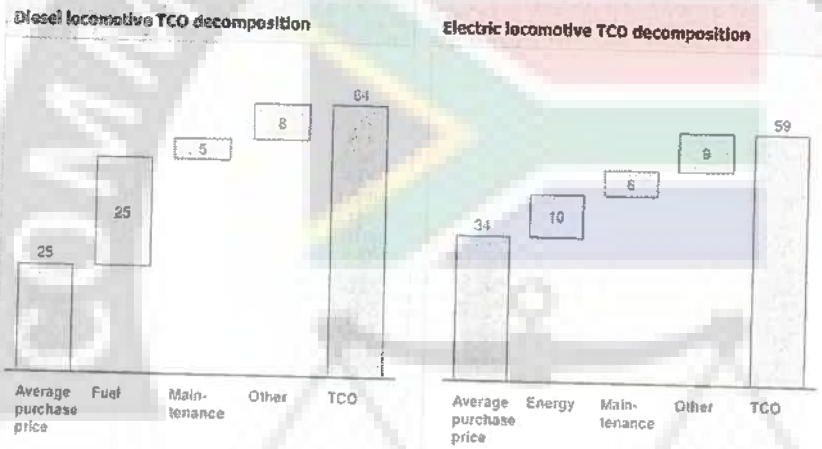
- **Purchase price.** As mentioned above, the purchase price is assumed to be R25 million (US $2.6 million) for a diesel locomotive and R34 million (US $3.5 million) for an electric locomotive in 2013/14. The purchase price of both diesel and electric locomotives assumes a conservative 50 percent localisation component with a 2 percent localisation premium applied. The localisation component ramps up over time. The USD price component was forecasted by escalating at USD inflation and converting back to ZAR using forward ZAR/USD hedge rates. The local price component was escalated at South African PPI. Refer to Exhibit 20 for the TCO breakdown and Exhibit 21 for the purchase price cost breakdown. An important consideration in the negotiation of the purchase price is the amortisation of the development costs over the quantity ordered demonstrated in Exhibit 22. The analysis indicates that the procurement order quantity for the 1064 locomotives will significantly reduce the development costs component of the locomotive price and has been factored into determine the price estimates.

- **Diesel costs.** The diesel costs for the 465 locomotives were based on the GTK of the locomotives and diesel consumption per GTK. Prices were escalated from a 2013/14 price of R11 per litre escalated at R/USD forward rate percentage change and US inflation.
- **Electricity costs.** The electricity costs for the 599 locomotives were based on the GTK of the locomotives and consumption per GTK. Electricity costs were escalated at forecasted Eskom tariff rate increases of 8 percent up to 2017/18 and an average of forecasted CPI and PPI thereafter.
- **Maintenance costs.** Expected maintenance cycles over the lifecycle of locomotives were calculated. The cash flow profiles for diesel and electric locomotives are presented in Exhibit 23.
- **Insurance.** Assumes an expected wreck cost per year escalated at the average of CPI and PPI.

EXHIBIT 20

Electric locomotives have a lower TCO than diesels, but their upfront cost is higher than diesel locos

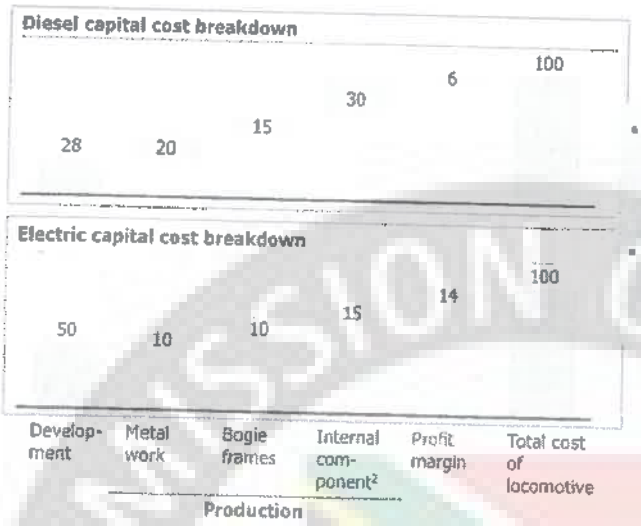
ZAR million



SOURCE: Transnet 1064 Loco Business Case, Expert interviews

EXHIBIT 21

Development costs are the largest components of total capital cost of both diesel and electric locomotivemotives

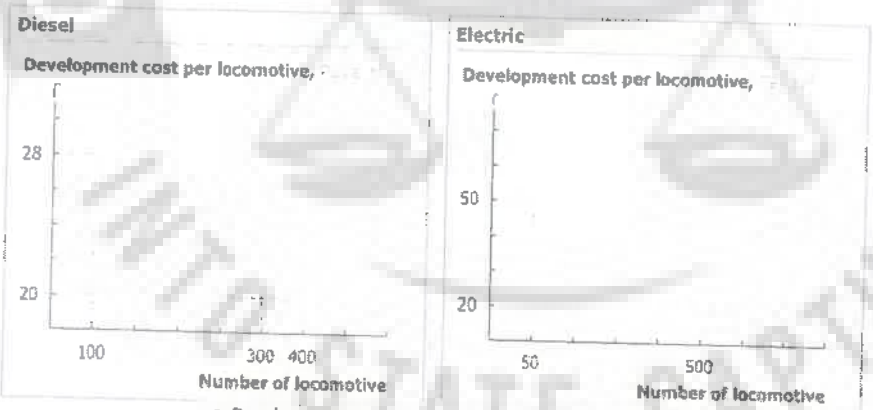


- Majority of savings on purchase price are from development (i.e., design, type testing and other one off costs)
- Electric locomotives will have a higher proportion of development cost due to greater customization

1 Based on standard locomotivemotives with an order of 100 locomotives delivered
2 Traction motor, wiring, alternator, control system, etc.

EXHIBIT 22

Electric locomotive price is more sensitive to order size than diesel locomotives



- Development costs are greater proportion of total cost of a locomotive in electric vs. diesel
- Development costs are fixed and thus decline on a per locomotive basis as the order size increases
- Therefore, order size will be a bigger driver of electric locomotive price compared to diesel

SOURCE: Source

EXHIBIT 23

Maintenance TCO for Diesel and Electric locomotives for a 30 year lifecycle

4.3.2 Capital and other costs

Capital cost outflows for the procured locomotives have been structured with an aggressive payment strategy of 90 percent of the locomotive purchase is paid on delivery of the locomotive and 10 percent on acceptance. Upfront costs of R250 million for diesel locomotives and R300 million for electric locomotives will be paid on signing the supplier contract and will offset against the cost of the first batch purchased. The purchase price of both diesel and electric locomotives assumes a 50 percent localisation component, with a 2 percent localisation premium applied.

In addition to modelling the capital costs for locomotives to be procured for the 1064, associated wagon and infrastructure costs have been allocated as per the 2013 Transnet Corporate Plan – the exhibit below shows the capital costs for diesel and electric locomotives, wagons, and infrastructure.

EXHIBIT 24

Capital expenditure schedule

Rm Cashflow	PV	13/14	14/15	15/16	16/17	17/18	18/19	19/20
Diesels	8 314	2 433	2 552	2 709	2 881	2 064	0	0
Electrics	12 252	300	1 860	4 665	5 042	5 360	6 284	217
Wagon capex	10 017	3 022	3 417	3 462	3 228	2 559	649	0
Wagon copex	1 583	3	23	70	151	242	339	420
Infra capex	9 513	1 026	2 787	3 379	3 023	3 092	4 967	0
Infra copex	8 978	60	384	795	1 249	1 627	1 837	2 253
Total	**50 656**	**6 844**	**11 023**	**15 079**	**15 575**	**14 944**	**14 075**	**2 890**

- **Wagon costs:** Costs were calculated based on the expansionary number of wagons required to achieve 170 million tonnes (16,459 wagons) based on the proposed capex budget in the Supporting Documentation Section E12 (Wagon Requirements). Opex and copex costs are incurred according to incremental volumes moved.
- **Infrastructure costs.** Costs were calculated using the total required expansionary GFB infrastructure to deliver 170 million tonnes based on the latest corporate plan. Infrastructure copex costs are incurred according to incremental volumes moved.
- **Overhead costs.** GFB overhead costs were calculated using actual 2011/12 TFR overhead costs allocated according to the ratio of GFB personnel to total TFR personnel. Procured 1064 overhead costs were allocated from the GFB overhead costs on the ratio of 1064 incremental volumes to GFB volume required.
- **Tax costs.** Tax costs were based on an assumed tax rate of 28 percent and calculated against net cash flows (revenues – costs) and adjusted for capital cost distributions of locomotive, wagons, and infrastructure expansion. The capital costs for locomotives and wagons were depreciated over 5 years since the purchase date and infrastructure has been depreciated over 30 years. Tax credit income has been included as a cash inflow in the following year of accrual.

4.4 Breakeven points for NPV: volumes and tariffs

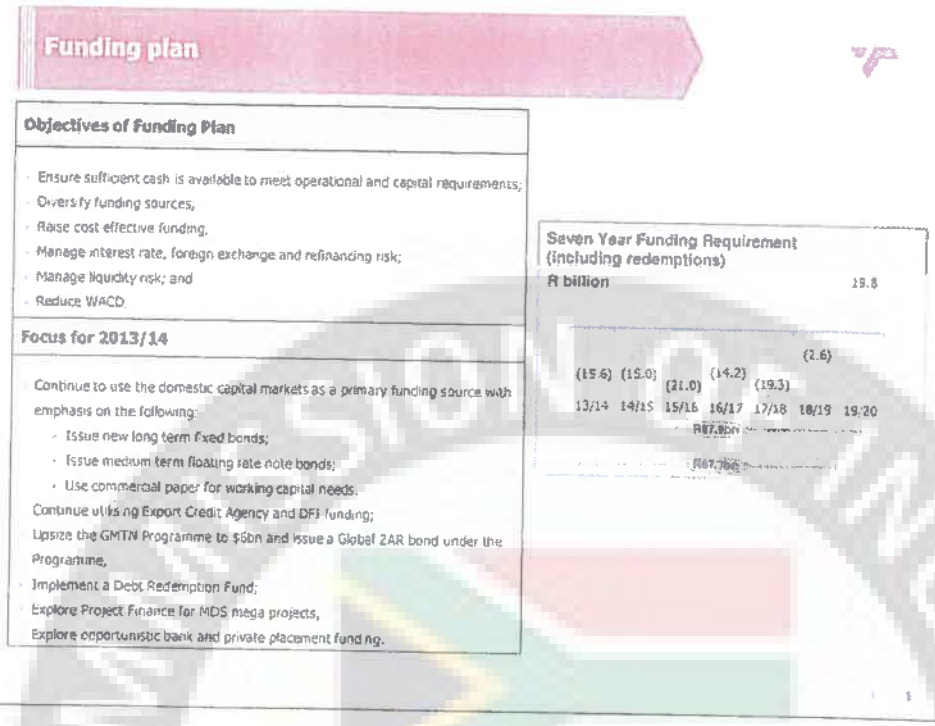
The business case proves to be neutral at the following volumes and tariffs:

- Volume (everything else fixed). CAGR of 11.7 percent from 2013/14 to 2018/19(160 mt p.a. realised in 2018/19 vs. 170 mt p.a. as per MDS), which is below the MDS target of 13.3 percent.
- Tariffs (everything else fixed). CAGR of 6.1 percent from 2013/14 to 2018/19, which falls directly between CPI (5.6 percent) and the MDS target (6.6 percent).

5. Treasury Considerations

The acquisition of 1064 locomotives will cost R38.6 billion and has been included in the overall MDS funding amount of R86.5 billion over the next 6 years. Consequently, the funding options will include those in the borrowing plan as contained in the approved Transnet Corporate Plan 2013/2014. A mixture of cash generated by operations and external borrowing will be used to fund the acquisition. Two-thirds are assumed to be financed using cash generated by operations, and about R13 billion will need to raised externally. The external funding will be raised utilising both the Global Medium Term Note programme for dollar funding and established domestic sources for Rand funding – e.g., the Domestic Medium Term Note programme. In addition, options like development finance institutions (DFIs) and export credit agencies (ECAs) will be considered to lower the cost of funding.

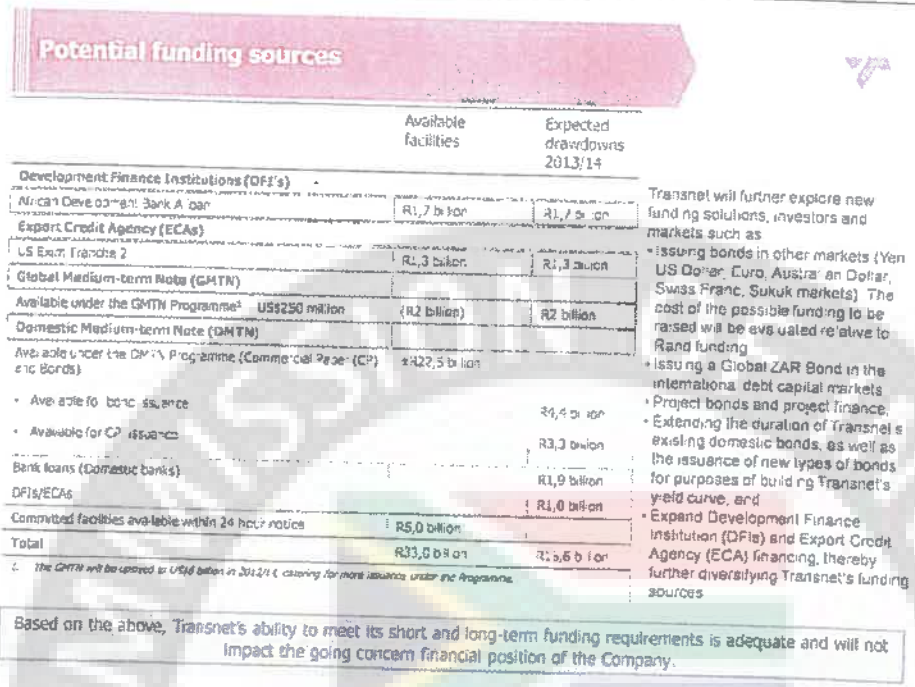
EXHIBIT 25



The planned new fleet is estimated to cost R38.6 billion using escalated calendar year 2013 prices. The acquisition of the 1064 locomotives will be funded using a mixture of cash generated by operations and external borrowings. Assuming that two-thirds will be financed using cash generated by operations, about R13 billion will need to be raised externally.

5.1 Funding options

EXHIBIT 26: POTENTIAL FUNDING SOURCES FOR MDS



Potential funding sources

	Available facilities	Expected drawdowns 2013/14
Development Finance Institutions (DFI's)		
African Development Bank Loan	R1,7 billion	R1,7 billion
Export Credit Agency (ECAs)		
US Exim Tranche 2	R1,3 billion	R1,3 billion
Global Medium-term Note (GMTN)		
Available under the GMTN Programme[1] US$250 million	(R2 billion)	R2 billion
Domestic Medium-term Note (DMTN)		
Available under the DMTN Programme (Commercial Paper (CP) and Bonds)	R22,5 billion	
• Available for bond issuance		R4,4 billion
• Available for CP issuance		R3,0 billion
Bank loans (Domestic banks)		R1,9 billion
DFIs/ECAs		R1,0 billion
Committed facilities available within 24 hours notice	R5,0 billion	
Total	R33,0 billion	R15,6 billion

1. The GMTN will be upsized to US$3 billion in 2013/14, catering for more issuances under the Programme.

- Transnet will further explore new funding solutions, investors and markets such as
- Issuing bonds in other markets (Yen, US Dollar, Euro, Australian Dollar, Swiss Franc, Sukuk markets). The cost of the possible funding to be raised will be evaluated relative to Rand funding
- Issuing a Global ZAR Bond in the international debt capital markets
- Project bonds and project finance.
- Extending the duration of Transnet's existing domestic bonds, as well as the issuance of new types of bonds for purposes of building Transnet's yield curve, and
- Expand Development Finance Institution (DFIs) and Export Credit Agency (ECA) financing, thereby further diversifying Transnet's funding sources

Based on the above, Transnet's ability to meet its short and long-term funding requirements is adequate and will not impact the going concern financial position of the Company.

EXHIBIT 27

Amount in R billions

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	Total expenditure
Diesel locomotives - 465	2.43	2.55	2.71	2.88	2.06	-	-	12.63
Electric locomotives- 599	0.30	1.86	4.67	5.04	5.36	6.28	0.22	23.73
Locomotive contingency	0.17	0.27	0.45	0.49	0.46	0.39	0.01	2.24
Total	**2.90**	**4.68**	**7.83**	**8.41**	**7.88**	**6.67**	**0.23**	**38.60**

5.1.1 Funding risks

The fleet cost is based on a set of assumptions including the timing of contracting, ZAR/USD exchange rate, and the mix between local and foreign content, interest rate, volume growth, revenue growth, inflation, operational efficiencies, and steel prices. Any negative movement on the base assumptions exposes TFR to a potential risk. In addition to the abovementioned risks and sensitivities (see Section 7), the following risks and implications need to be closely monitored:

- Implications to funding of actual versus planned cash flows.
- The implications of Basel III on swap costs, terms and conditions of derivative transactions, and availability and quantum of credit lines, monitor ETC and impacts on cash interest cover, gearing and S&P liquidity ratio.

5.2 Forex risk mitigation

Forex risk mitigation will be imperative for a transaction of this size. A change in the Rand to US dollar exchange rate of 10 percent would represent a R1.2 billion impact based on the amount of localization assumed. Given 15 percent devaluation of the rand against the US dollar over the past year alone, such volatility is not unrealistic. Forward exchange rate projections suggest a devaluation of the Rand versus the US dollar over the next few years.

Transnet's hedging approach

Transnet's preferred option is to enter into Rand based supplier agreements with OEMs, with the hedges undertaken by the OEMs themselves. However, even when hedging is conducted by the OEM, Transnet ultimately pays for the cost of hedging, which is factored into the purchase price. The main advantage of a Rand based supplier agreement is the elimination of volatility in the Group's financials and the non-utilisation of bank credit lines for hedging purposes.

Should Transnet not be in a position to enter into a Rand based agreement, all foreign exchange exposures will have to be hedged as per the Board approved Financial Risk Management Framework (FRMF). It is anticipated that Transnet should be in a position to obtain the necessary credit lines to hedge the FX risk exposures. However, this cannot be guaranteed, as a number of banks will have to be approached to diversify their risk exposures and the banks will have to obtain approval from their respective credit committees. However, there is a risk that the magnitude of this transaction will add pressure to the availability of hedging lines for future MDS requirements.

Long dated hedges as anticipated in this transaction are expensive due to banks' capital requirements. The exhibit below shows Transnet Treasury's view of a ZAR/USD forward curve including the cost of hedging, used in the business case.

EXHIBIT 28

$R9.13	$R9.59	$R10.04	$R10.52	$R11.00	$R11.48	$R11.98	$R12.55

Impact of localisation

Localisation of production is a natural hedge. Exposure would increase with lower a lower level of localisation (and, by extension, decrease with a higher level of localisation). The exhibit below shows foreign currency exposure for a 10 percent devaluation scenario to be ~R1.2 billion given 70% localisation of component manufacture. Without any localisation, exposure under this scenario would be ~R4 billion, suggesting a localisation benefit of ~R2.8 billion.

EXHIBIT 29

	[illegible]	[illegible]	[illegible]
Assuming a 60% localisation	R15.4 bn	R0.8 bn	R1.5 bn
Assuming a 70% localisation	R11.6 bn	R0.6 bn	R1.2 bn
Assuming a 80% localisation	R7.7 bn	R0.4 bn	R0.8 bn

Thus, hedge accounting will be used to minimise exchange rate volatility on the Group income statement, but localisation is a critical lever to reduce the ultimate cost of the hedge.

6. Operational readiness

6.1 HR plan

A procurement event of this magnitude will require a significant increase in in GFB's workforce. GFB's 7-year human resource requirements are part of a TFR-wide workforce plan as train drivers and assistants are often interchangeable across TFR's businesses. All train personnel are sourced from Transnet's School of Rail.

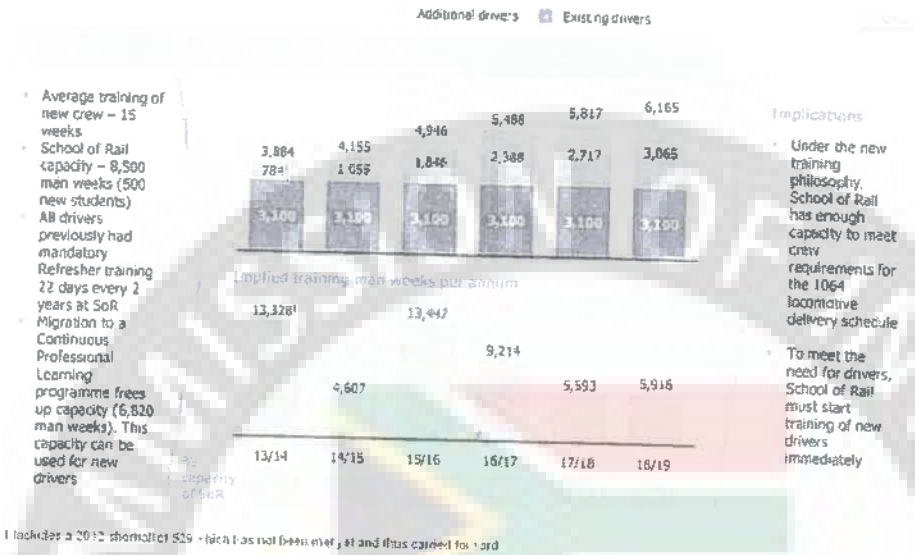
According to TFR's 7-Year Man Plan (see Section E10)2012 figures, TFR has a driver shortfall of 529. It is also estimated that over the life of MDS, TFR will require an additional 3 065 drivers from current levels. However, TFR only has capacity to train on average 500 drivers per year and, at its peak in 2015-2016, TFR will require an additional 791 drivers, resulting in shortages.

TFR has transitioned from a mandatory Refresher Training every 2 years to a Continuous Professional Learning programme, cutting training time from 22 days every 2 years at the School of Rail to 6 days every 2 years on site. This will effectively free up capacity at the School for additional training of new recruits.

The exhibit above shows the drivers required every year over the MDS period, highlighting how many additional drivers need to be trained. It also shows the School's capacity requirements over the period. The new training philosophy will give an additional 6,820 man weeks (80 percent increase) of capacity to the facility, allowing it to meet TFR requirements. However, TFR will need to start training new drivers immediately to close the driver shortfall before the peak demand period in 2015/16.

EXHIBIT 30

Under the new training philosophy, Transnet's School of Rail can supply enough train drivers and assistants to sustain the 1064 delivery schedule



6.2 Infrastructure dependencies

To deliver against MDS volumes, the 1064 locomotives must perform as part of a railway system well equipped to move such volumes. Therefore, sustaining and expanding investment in infrastructure and other key projects within the system will be critical to support MDS delivery.

Infrastructure dependencies

Locomotive deployment is tightly mapped to the railway infrastructure and routes. Route characteristics (e.g., power source on route, axle loading capacity, and the presence of long tunnels or tight bends) largely determine the type of locomotive that can be used on a particular route.

As part of the MDS' planned R308 billion spend, TFR will also invest in projects to sustain and expand rail network capacity and footprint. The strategy pursued by the Rail Network over the 9-year planning horizon covers two key strategic focus areas to enable volume growth and systemically improve the safety of operations. Programmes aim to:

- **Expand infrastructure**, creating capacity ahead of demand. Supporting Information Section E12 (Infrastructure Plans) depicts the current status of the network in terms of axle loading and electrification, respectively, and Section F11 depicts the future status of the network in terms of axle loading and electrification are also depicted in Section E11.
- **Sustain existing infrastructure** through accelerated maintenance programmes. In addition to the railway network, there are also programmes for the sustenance and expansion of supporting

infrastructure. The tables in the Supporting documentation Section E11 are extracted from the TFR Business Plan 2013/14 – 2018/19 and detail both the expansion and the sustaining maintenance programmes for Perway, Electrical, Signalling, and Telecommunications.

The exhibit below shows key strategic projects planned over the 7-year period involving both the extension of the electrified network and the axle loading of specific routes.

EXHIBIT 31

Key infrastructure programmes will enable the 1064 locomotives' delivery of expected volumes

ZAR bn

Rail line section	Total seven year spend (ZAR bn)	Timeline
Eskom and coal line to 91mtpa+	8	2012-2019
Waterberg	5	2012-2020
Ore line to 90mtpa	6	2012-2019
Swazi rail link (SA Portion only)	0	2012-2015
Manganese General Freight 16mtpa	11	2012-2019
Gauteng Freight ring	0	2018-2019
Terminals	0	2012-2018
Maputo link	1	2012-2016
Natcor	0	2013-2017
Grand total	**31**	

EXHIBIT 32

Expansionary infrastructure expenditure timeline

Bold text = Interdependencies with GFB volume expansion

BACKUP

Business focus	Preparation for growth (zero to two years)	Sustained growth (two to five years)	Consolidate (five to seven years)
Infrastructure expansion: Parway/axle loading	• **Increase axle loading** • Increase coal line capacity to 81mt • **Eskom 32mt project** • **Partial doubling of RCB-Nsezi line** • **Waterberg – Phases 2-5 additional passing loops** • **Manganese 16mtpa (Hotazel – Coega)** • **Swazi rail link 15mt.** • **Increase axle loading on Groenbult– Hoedspruit**	• Increase axle loading • Increase coal line capacity to 81mt • Coal 91mt project (including Overall tunnel doubling) • **Eskom 32mt project** • **Geluksplaas grade separation** • **Line tripling Broodsnyerspiaas-Ermelo** • **Waterberg – Phases 2-5 additional passing loops** • **Manganese 16mtpa (Hotazel – Coega)** • **Ore line Phase 2A to 82.5mtpa** • **Swazi rail link 15mt**	• **Increase axle loading** • **Overall tunnel doubling** • **Coal 91mt project (including Overvaal tunnel doubling)** • **Eskom 32mt project** • **Line tripling Broodsnyerspiaas-Ermelo** • **Swazi rail link 15mt** • **Doubling of all critical deviations**
Infrastructure expansion: Electrical	• **Increase electrical capacity on the AC section on the coal line** • **Upgrade section Rooikop-Newcastle. Manganese 16mtpa New and Upgraded sub-stations and OHTE**	• **Manganese 16mtpa New and Upgraded substations** • **Ore line Phase 2A to 82.5mtpa power upgrade (including of OHTE)** • **Increase electrical capacity on the AC section on the coal line** • **Coal 91mt project** • **Upgrade substations and electrical equipment** • **Commence with the conversion of 3kV DC to 25kVAC Ermelo-Pyramid South**	• **Completion of the conversion of 3kVDC to 25kVAC Ermelo-Pyramid South** • **Coal 91mt project** • **Eskom 32mt project** • **Upgrade substations and electrical equipment** • **Waterberg – Phase 6 (23mtpa) commence with the electrification of Thabazimbi-Lephalale** • **Conversion of 3kVDC to 25kVAC on Ermelo-Pyramid South**
Infrastructure expansion: Signaling	**Manganese 16mtpa**	• **Pyramid South – Lephalale: Communication based authorisation (CBA) plint installation** • **Manganese 16mtpa**	• Commence with the re-signaling of the coal line (CBA)

Considering the existing network capacity and the expectation that these projects will be competed according to plan, network capacity is not seen as a constraint to achieving the MDS targets.

6.3 Wagons

Transporting the volumes envisaged in the MDS requires sufficient an appropriate rolling stock in wagons and locomotives. TFR has three distinct operations; General Freight Business, and the heavy haul operations of the Coal Export and Iron Ore Export Lines. Each of these has their own unique set of wagons and locomotives. This business case addresses the General Freight locomotive requirements only though they are lightly interlinked with the other operations.

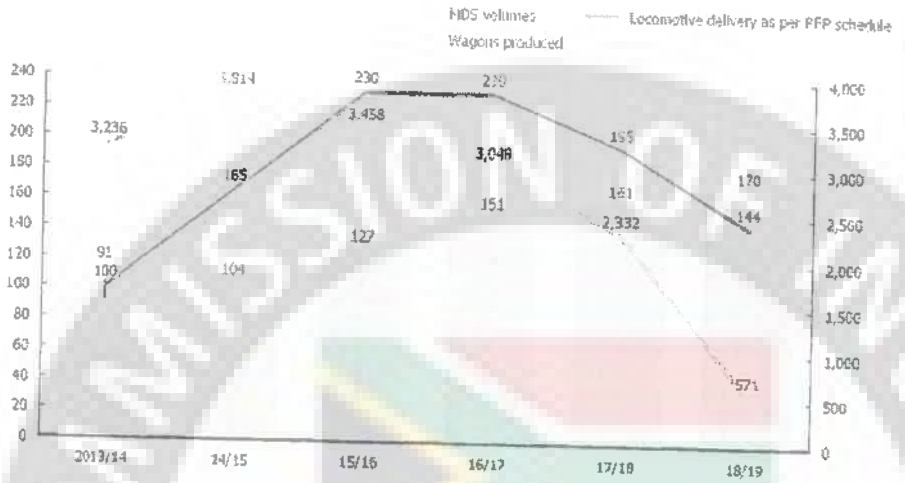
The MDS predicates growth over a number of flows and which extend over a number of operating areas where locomotives are changed because of traction changes dictated by the rail network infrastructure. Wagons are tightly linked to the commodities they transport while locomotives relate to the mass but not the commodity itself; accordingly locomotives are allocated according to the tons transported over the particular operating section.

To meet MDS volumes, wagon capacity needs to expand for all TFR businesses. In addition to producing new wagons through TE, there are various life extension strategies are in place to sustain capacity within the business.

Wagon production

EXHIBIT 33

The wagon build programme will deliver wagons in advance of demand thus enabling the delivery of MDS volumes



The exhibit above shows that wagon production will peak well in advance of MDS volumes and locomotive delivery. Therefore, wagon capacity will likely not be a constraint in the delivery of MDS volumes.

7. Risk management

7.1 Risk overview

A transaction of this magnitude in the public sector has inherent risks that should be addressed. Some of the main categories of risks are planning risk, market risk, exchange rate risk, operational readiness risk, transaction governance, legal risk, and exogenous risk. Transnet uses a CURA framework to categorise and assess risks, as per the exhibit below.

EXHIBIT 34

Risk assessment and rating

High medium likelihood, high impact
High medium likelihood, medium impact/ Medium likelihood, high impact
Medium likelihood, medium impact
Low likelihood, low impact

Risk		Risk ranking	Mitigation action
Planning		I	• Specialized procurement and planning team • Conservative payment regimes to incentivize delivery • Optimize number of OEMs for planning required and benefit realized
Market		I	Staged procurement strategy to maintain flexibility in delivery schedule and continuous monitoring of performance against MDS estimates Execute against Market Development Strategy Clean sheet costing to unpack key locomotive cost components
Exchange rate		I	Hedge all foreseeable foreign currency-based expenditure as per Transnet policy
Operational readiness	Skills	II	Develop people infrastructure plan Upgrade training modules in line with new locomotives Include maintenance staff training in supplier contract
	Maintenance	II	Implementation of 7 year maintenance plan Increase capacity by increasing production lines and shifts Regular review of build programme that aligns TRE factories
	Infrastructure	III	Develop infrastructure expansion business plan Implement infrastructure maintenance plan
	Technology	V	The IATS[1] technologies as part of the new locomotives specifications School of Rail to provide appropriate IATS training
Transaction governance		II	Minimize size of working team and minimize dissemination information where possible while enforcing strictest confidentiality Enforce protocol on document sharing and data rooms
Legal		I	Ensure transparent procurement process with accountability Contract with multiple OEMs
Exogenous		II	Explore long term supplier agreements with Eskom while also taking advantage of electric locomotive regenerative powers

[1] Information and Administrative Technology Services

7.2 Planning and delivery risk

There are three elements of delivery risk: approval delays, procurement process delays, and production delays. First, a lack of the appropriate approvals at the required time could result in delays in the transaction process. A major risk is TFR's current PPPFA exemption status that has lapsed. TFR is currently awaiting a PPPFA exemption for the 1064 locomotive procurement that will allow it to procure using the 60:20:20[6] criteria as planned. Second, procurement delays during the tender and negotiation processes may also cause delivery risk and will be managed by the TFR procurement team with a robust procurement strategy, processes, and contingency plans. Third, production risk may arise if a supplier is unable to meet its delivery targets for the 1064 locomotives. Delays of the delivery schedule are a critical risk to Transnet's ability to meet its MDS commitments and the sensitivities are modelled below..

7.2.1 Delivery schedule sensitivities

Given expected production and procurement timelines, it is unclear whether the quantities demanded by the RFP (100 diesel locos in 2013/14) are achievable.

Even assuming that the RFP procurement schedules are achieved, as per the base case in Exhibit 35, TFR would experience locomotive shortfalls from 2014 to 2019, peaking at approximately 150 locomotives in 2014-2015, because of the procurement delivery lagging the required fleet demand. This results in a cumulative volume shortfall of 49 million tonnes for the MDS period.

[6] Breakdown of bid evaluation criteria: 60 percent price, 20 percent local supplier development , and 20 percent B-BBEE.

Delivery schedule sensitivity 1 and 2, which factor in delays in procurement and production, show significant impact on volume shortfalls (110 million tonnes and 155 million tonnes respectively), highlighting the importance of expediting delivery schedule to meet MDS targets.

Delivery schedules impact the cash interest cover CIC ratio significantly, decreasing the ratio for 3.6X to 3.0X.

To mitigate the risk of delays, TFR will pursue a number of strategies simultaneously, including contracting multiple suppliers; staging procurement by using international suppliers for initial batches as local supplier development ramps up; and pursuing a conservative payment strategy[7] to incentivise delivery. TFR will also examine mitigation strategies to address the immediate locomotive shortfalls, including leveraging existing contracts, front-loading orders with international suppliers, exploring leasing options, and revising the fleet run-out strategy.

7.3 Market risk

The inherent risk is that the commercial sectors that the wagons and locomotives are built for will not achieve the anticipated market growth. This is dependent on South Africa's economic growth and the growth of its trading partners. Realisation of this risk could result in underutilised assets and diminished financial performance given the high-fixed-cost nature of the business. In addition, given that tariffs are projected to grow at a faster rate than CPI under the MDS plan, there is a risk that tariff increases are not fully realised. Other key business risks include inflated purchase prices (not related to forex changes) and cost increases exceeding forecasts.

7.3.1 Volume

Purchasing 1064 locomotives without matched volume demand will lead to a significant loss of value on the transaction. Sensitivities 1 and 2 in Exhibit 35 indicate the large swings in NPV due to MDS volumes not materialising with NPV dropping to R1.0 billion and –R20 billion, respectively. Volume sensitivities have the biggest impact on CIC, with Sensitivity 1 decreasing the cash interest cover ratio (CIC) from 3.3X to 3.1X in 2013/14 and Sensitivity 2 decreasing the CIC from 4.1X to 2.7X from 2015/16 onwards. To mitigate this risk, as mentioned in Section 3, Proposed Solution, TFR should stage procurement to maintain flexibility.

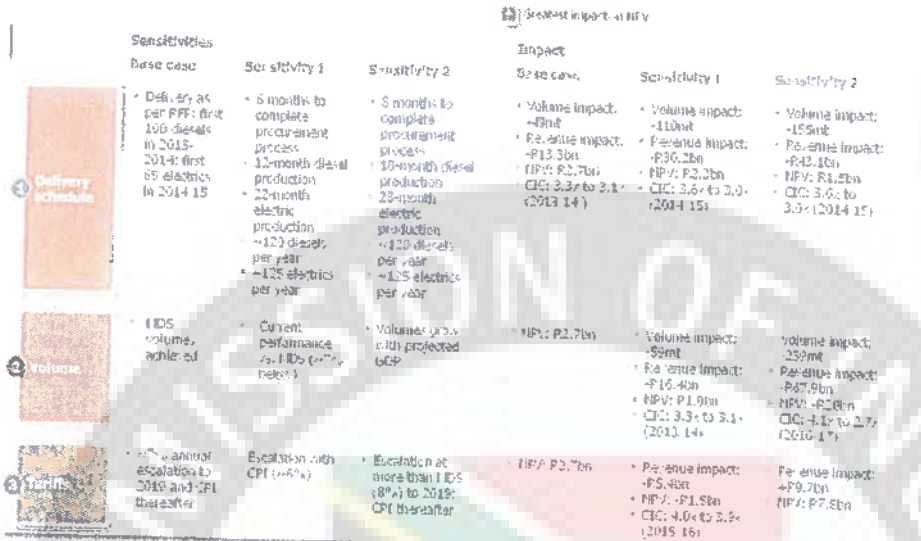
7.3.2 Tariffs

Exhibit 35 demonstrates that tariff growth impacts the NPV value significantly, with CPI-related growth 1 percent lower than the MDS base case of 7 percent, results in an NPV of –R1.5 billion. Accelerated tariff growth 1 percent above MDS results in a positive NPV of R7.8 billion. Tariffs have a marginal impact on CIC with the biggest impact in 2015/16, dropping from 4.0X to 3.9X. To mitigate the value at risk, TFR will execute against its Market Development Strategy, building strong customer satisfaction that will enable it to deliver target volumes.

[7] Bulk of payment made on delivery and acceptance.

EXHIBIT 35

Demand, tariffs, and delivery schedule risks must be managed (1/2)



7.3.3 Purchase price

Purchase price sensitivities detailed in Exhibit 36 indicate a moderate impact on NPV with a 10 percent increase in base price resulting in a –R1.5 billion movement in NPV. To mitigate the risk of inflated purchase prices, clean sheet costing should be performed to unpack components of the locomotive price and support effective commercial negotiations.

7.3.4 Costs

Exhibit 36 indicates that cost base movements will have a moderate impact on NPV, decreasing it by R3.5 billion for a 5 percent increase in base costs. Costs have been budgeted according to Transnet's Corporate Plan.

7.4 Forex risk

Forex movement sensitivities in Exhibit 35 indicate a moderate impact on NPV with a 10 percent devaluation in Rand versus USD resulting in a -R2.4 billion movement in NPV. To mitigate the risk of exchange rate fluctuations, the project will be hedged according to the Group policy.

Demand, tariffs, and delivery schedule risks must be managed (2/2)

7.5 Transaction governance risk

For a transaction such as this, confidentiality is of the utmost importance to maintain the integrity of the procurement process and prevent unwanted media interest. Failure to uphold strict confidentiality may result in procurement delays or even compromise the entire transaction. This risk has been mitigated by ensuring a minimise size of the working team and minimizing the dissemination of information where possible while enforcing strictest confidentiality.

7.6 Operational readiness risk

Operational readiness risk refers to TFR's potential inability to integrate the new fleet into its operations because of a lack of skills, infrastructure capacity, long-term maintenance strategy, and poor technology integration in the fleet. Operational readiness, as well as Transnet's preparations, are detailed in the operational readiness section below.

7.7 Exogenous risks

7.7.1 Energy security

Eskom supply remains constrained as South Africa's reserve margins have dropped to as low as just over 1 percent in the past 6 months compared to best practice of 15 percent. It is almost certain that South Africa will experience electricity shortages in the next few years. The resulting power outages will likely have knock-on effects on industry and slow down economic growth in the medium term as electricity

supply continues to lag demand. Transnet faces at least four inter-related major risks related to energy security that must be appropriately mitigated:

- Delays could occur in Eskom's IRP build programme, resulting in a shortage of electricity for South Africa. South Africa hopes to meet forecasted demand by adding 21 GW of new capacity by 2030 through the IRP build programme. However, the programme is running behind schedule. Strike action and equipment failure earlier this year has made it likely that the Medupi plant will miss its deadline of coming online at the end of 2013. IPPs and nuclear power plants will most likely not have the capacity to have any meaningful impact on the supply shortfall in the medium term given the current lack of regulatory frameworks and procurement delays. Furthermore, Eskom has only been granted about 50 percent of the tariff increases it requires to finance infrastructure investment, which may also have long-term implications for Eskom's ability to meet demand.
- Energy costs could increase should the IRP's planned capacity be commissioned on schedule but at a cost much higher than in the initial plan. The cost of electricity is expected to rise at 8 percent per annum in the next 5 years to finance the required infrastructure investment. The planned migration to relatively more expensive clean energy will cause energy costs to rise even further.
- Timely decisions may not be made for electricity supply beyond Kusile capacity, resulting in a shortage of power beyond 2017.
- Electrification infrastructure may not be installed in the appropriate geographies to enable Transnet to capture volumes from new regions as planned.

7.7.2 Potential strike action

Given recent history, there is some risk of strike action along the local supply chain over the life of the transaction (i.e., at locomotive assembly factories, TFR, coal mines, and Eskom). Strike action at any point in the supply chain could delay delivery of locomotives, increase costs, and compromise operations of the fleet, resulting in lower volumes moved.

8. Governance

To ensure effective governance of the 1064 locomotives transaction, a number of structures have been implemented:

- A Steering Committee with the primary purpose of providing oversight of the transaction, including developing a business case, submitting this business case to the appropriate governing bodies, and overseeing the procurement process.
- A high-value tender process managed in conjunction with Transnet Internal Audit (TIA) with the mandate to protect against fraud and corruption.
- A Project Management Office (PAO) to manage processes and timelines related to the transaction, including a confidential data room and the management of non-disclosure agreements (NDAs) and access to information.

8.1 Steering Committee

The 1064 Locomotives Steering Committee, which is chaired by the Transnet Group Chief Executive, has taken overall ownership of the final draft business case for locomotive investment and the procurement process. Key activities that have been overseen by the Steering Committee include:

- Developing the business case and approval for submission to Transnet's governing bodies.
- Submission of the business case to the Department of Public Enterprise (DPE)
- Appointment of working team members and accountabilities.
- Understanding operational requirements and alignment to business case
- Recommending a procurement strategy, including goals related to environmental issues, supplier development and localisation.
- Understanding and recommending strategies to address all legal ramifications of the locomotive procurement process.
- Ensuring procurement process transparency.

8.2 High-Value Tender Process (HVT)

Objective of the HVT

- A key objective of the High-Value Tender (HVT) Gateway Review Process is to provide real-time guidance, support and assurance against the PPM, tender management control framework, and procurement best practice at each gateway on tenders above R50 million.
- The purpose of the HVT Gateway Review Process is to increase the likelihood that the processes undertaken for these tenders are fair, transparent, equitable, competitive and cost-effective.
- The High-Value Tender (HVT) Gateway Review Process provides a platform for:
  - Providing assurance to BAC and other key stakeholders within Transnet on the effectiveness of the processes followed for high-value tenders.
  - Providing input into updating of procurement procedures and supporting controls, thereby strengthening the overall control environment for high-value tenders over time.
  - Fewer queries/challenges raised by DACs and/or bidders during high-value tenders
  - Reduction in timelines due to reduction in number of re-tenders resulting in faster capacity creation.
  - Rolling out and sharing of best practice across all ODs to improve the efficiency of procurement processes.
  - Long term up-skilling of procurement staff.

Design principles of the HVT

- Drawing on recent lessons learnt from 85 electric and 43 diesel locomotives tenders, enhance the overall tender process for improved efficiency, effectiveness and enhanced control.
- Play a greater role in the planning and coordinating activities to support the PMO.

- Ensure full integration with the Corruption Risk (Forensic) management plan developed for the 1064 locomotive acquisition.
- Introduce an international peer-review mechanism to bolster the team structure in the evaluation and negotiation stages to make the award "bullet-proof".
- Provide end-to-end support including the contracting stage to ensure there is no "leakage" between negotiations and contracting stages.
- Generally place added emphasis on ensuring that TIA is proactively involved at all stages of the gateway review process and are able to fully share best practices and insights with the evaluation, negotiation and acquisition council review teams.

EXHIBIT 37

Approach to the 1064 Locos HVT

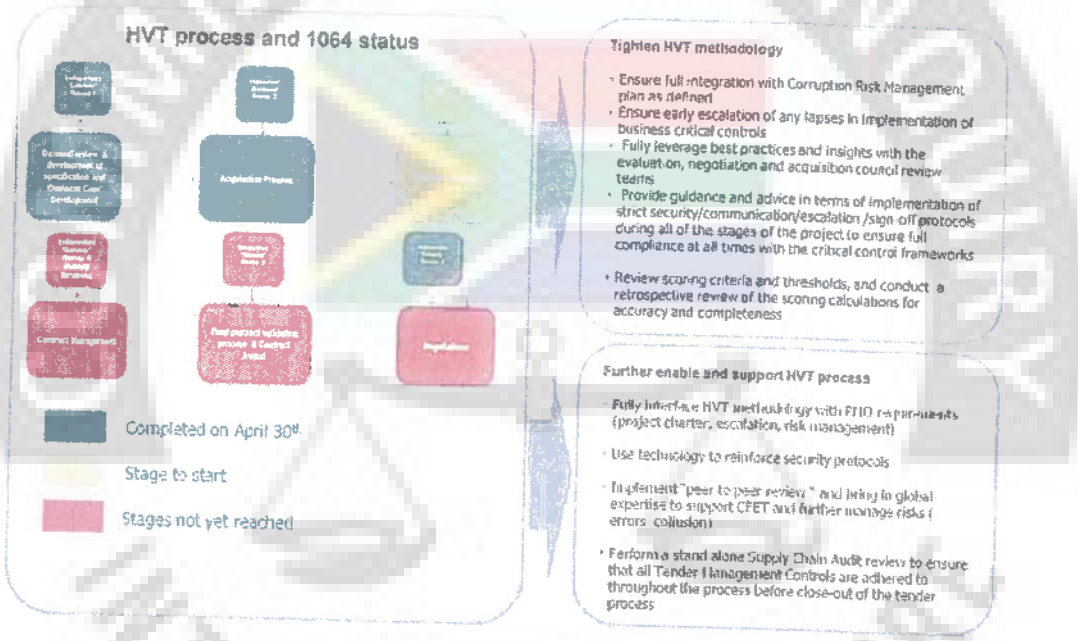
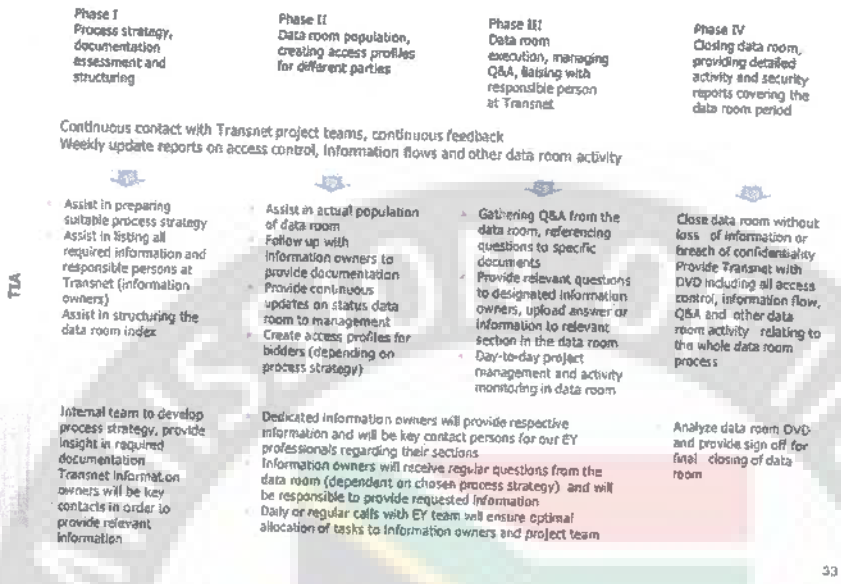


EXHIBIT 38

Data Room Project Management Process



8.3 Project Management Office (PMO)

A PMO has been established to monitor process and timelines related to the 1064 locomotives transaction, including the following items:

- Tracking project milestones and critical path and ensuring that progress is on-track against key deliverables.
- Scheduling Steering Committee meetings at the request of the Chair (GCE).
- Following up on action items emerging from SteerCo meetings.
- Ensure implementation of key confidentiality protocols/requirements (e.g., NDAs signed by all parties, data room access is restricted to a small group, etc.).

The PMO is also responsible for owning and managing the transaction's central data repository ("data room"). This includes:

- Maintaining and regularly work with content owners to ensure availability of latest final deliverables (e.g., RFP, Business Case, etc.) and working documents (industry analyses, cost build ups, etc.).
- Categorising and standardising file names to enable easy tracking.
- Most critically, the data room will also provide transparency (as needed) to enable tracking of downloads (who, when, frequency) and assist in internal auditing.

9. Conclusion

Having explored all options, Transnet's purchase of 1064 locomotives is a critical procurement event that will transform the business, increase operational efficiencies, support local supplier development, and enable Transnet to meet its MDS targets.

Key risks are being mitigated: volume volatility will be addressed through flexible procurement, foreign exchange risks are being mitigated through hedging and potential shortfalls are being mitigated through efficient procurement and accelerated locomotive orders. The business will be operationally ready to take on new locomotives and interdependencies are being planned for.

Therefore, Transnet recommends the purchase of 1064 new locomotives (465 diesel, 599 electric) at an estimated purchase price of R38.6 billion.

D. PROCUREMENT STRATEGY

The benefits in this section are contingent on:

- Responses from bidders
- PPPFA exemption
- Post-tender negotiations

1. Procurement overview

In accordance with Transnet's Board approved Supply Chain Policy Transnet shall apply Section 217 of the Constitution of the Republic of South Africa, (Act No 108 of 1996, as amended) by contracting for goods and services in accordance with a system which is fair, equitable, transparent, competitive and cost effective.

Transnet shall reform all its procurement activities in order to align them in an integrated manner with national developmental goals, relevant legislation that enforces the goals and relevant governmental supply chain management approaches that are cost-effective.

Transnet has been mandated by government to assist in lowering the cost of doing business in South Africa, enabling economic growth and security of supply through appropriate ports, rail and pipeline infrastructure as well as operations in a cost effective and efficient manner within acceptable benchmark standards.

The aim of the Supply Chain Policy is to ensure that Transnet gets value for money in the procurement of goods and services in order to fulfil its mandate while redressing the economic imbalances that have been caused by unfair discrimination in the past.

The focus for Transnet with respect to its SD activities will involve, among others, the leveraging of its procurement to increase local content through the development of skills, job creation and technology transfer. This will lead to decreased costs in its supply chain and an overall increase in its competitiveness. Transnet's aim is to build stronger and more meaningful relationships with its suppliers, to find mutually beneficial mechanisms to extract maximum value.

Transnet's procurement of rolling stock and in particular the 1064 locomotives provides a unique opportunity for both localised assembly and localised manufacture of component parts, but in addition an opportunity to strategically re-position the rolling stock industry. This is particularly true of the role and function of the largest incumbent rolling stock manufacturer in South Africa, Transnet Engineering as well as players in the private sector.

There is a drive by Government to increase the localisation of rolling stock. Government has strong leverage over the procurement of these assets as they reside almost completely within state owned companies, predominantly in Transnet and PRASA. Other sectors such as mining and the power sector bear close similarities in the production processes and heavy engineering requirements associated with rolling stock and thus the manufacturing sector would benefit substantially through the additional manufacturing capability and demand that this order would provide.

The Department of Trade and Industry (DTI) have identified the localisation opportunities in rolling stock as part of a number of key sectors within the industrialisation programme of South Africa as contained within the Industrial Policy Action Plan (2011/12). Transnet has identified the same opportunities as part

of its MDS and through its Supplier Development Plan seeks to develop and empower local business providing goods and services to the parastatal.

2. Procurement strategy

Transnet promotes open competitive bidding as its default procurement mechanism since this is the best means of obtaining value for money. All Transnet procurement shall be done in a way that ensures that Transnet obtains quality goods and services at competitive prices. It was therefore decided to follow an open tender process for the locomotives acquisitions. In crafting the procurement strategy, which informed the RFPs, the following aspects were focussed on and considered.

Transformation and Empowerment

In order to address economic imbalances that have been caused by unfair discrimination, government developed the black economic empowerment policy.

- Black economic empowerment is broad-based;
- Black economic empowerment is an inclusive process;
- Black economic empowerment is associated with good governance; and
- Black economic empowerment is part of the country's growth strategy.

Government uses a number of instruments to achieve black economic empowerment. It has developed a "balanced scorecard" to measure progress made in achieving B-BBEE objectives by enterprises and sectors. This has been included in the tender.

In evaluating and awarding the locomotive tenders, Transnet shall award preference points in regard to the contribution that a supplier makes towards the achievement of broad-based black economic empowerment objectives, namely.

- Ownership and Control;
- Management;
- Skills Development;
- Employment Equity;
- Preferential Procurement;
- Enterprise Development; and
- Socio-economic Development.

Additionally, Transnet will award further recognition points for B-BBEE based on the extent to which a supplier commits to improving its B-BBEE status over the contract period. This is referred to as Further Recognition Criteria (FRC).

B-BBEE has been set as 20 points in the overall scoring for the tenders assuming PPPFA exemption is given.

Job creation

Transnet must be a major contributor to job creation. Therefore, Transnet's procurement shall focus consistently on areas that have the potential for creating employment on a large scale in order to

contribute substantially to the national employment creation effort. As the main economic agent in the South African transport and logistics infrastructure, Transnet's planned capital expenditure forms the big bulk of Transnet's procurement spend. This is the single largest procurement spend of the MDS and as such has been planned on a programmatic basis so as to obtain maximum benefit to achieve industrialisation which will in turn create long- term sustainable job opportunities particularly among the previously disadvantaged members of the South African society.

Local Content

This procurement has been designed in a manner that builds industry capacity around its build programme. Transnet has identified this as its key programmatic procurement and consequently developed a long-term procurement and local content plan. Tender requirements include local procurement and supplier development (SD), which will also address the transformation agenda.

Transnet has included the local content percentages as detailed in the National Treasury Instruction Note issued on 16th July 2012 that highlights a local content percentage of 55 percent for diesel and 60 percent for electric locomotives. This is in line with the DTI's Industrial Policy Action Plan II in driving strategic fleets. Local content is included as a threshold.

Current local content for diesel locomotives and for electric locomotives has increased over the recent acquisitions due to the CSDP. The technology and competence in the production of locomotives occupy a different space in the challenge to localise in comparison to wagons. Globally, there are few large suppliers or OEMs of locomotives and their market dominance of the technology, the supply chain, and the know-how require nuanced and technology capture localisation strategies in order to create real sustainable local manufacturing benefits.

The approach adopted by Transnet has been to stipulate the following required minimum threshold requirements for locomotive localisation that are in line with those designated by National Treasury as highlighted above:

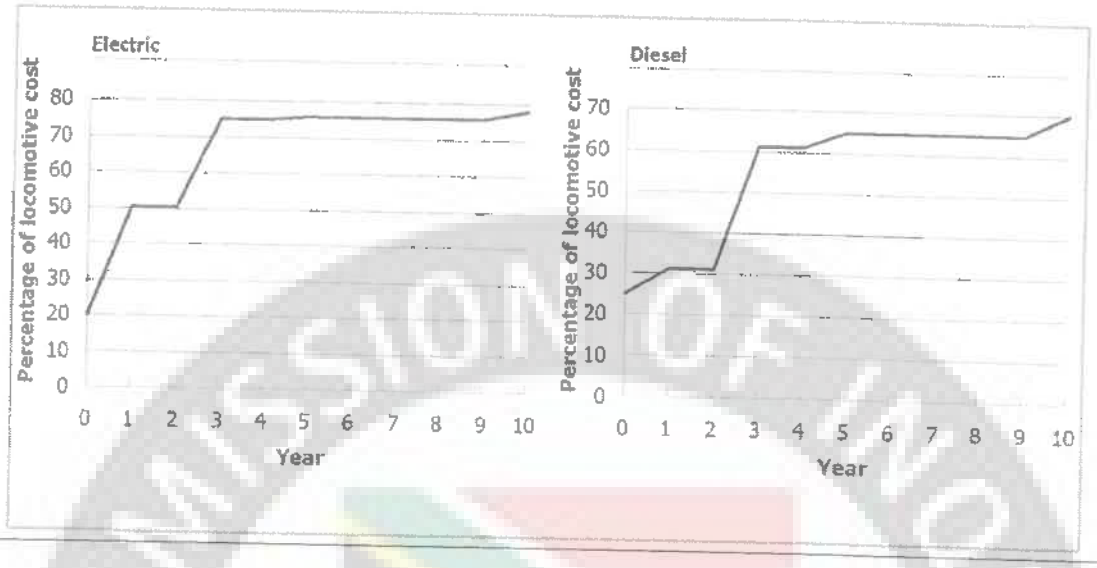
1. 55 percent for diesel locomotives; and
2. 60 percent for electric locomotives.

Transnet's assessment of this opportunity is that the economies of scale in purchasing 1064 locomotives are sufficiently large so as to create localisation opportunities that could elevate percentage localisation above these minimum thresholds at very little additional price premium to Transnet.

South African component suppliers are not yet able to produce the inputs and require build-up to reach substantial levels of localisation. Transnet estimates that this will take at least a full 3 years to complete, even though there may be certain components (particularly those used in electric locomotives) that can be localised much earlier.

EXHIBIT 39

Estimated time to localise localisable components across diesel and electric locomotive platforms



A detailed component analysis undertaken by Transnet demonstrates that price premium is not static across the percentage rise in local content, but rather is informed by the cost of production of the individual components making up a locomotive.

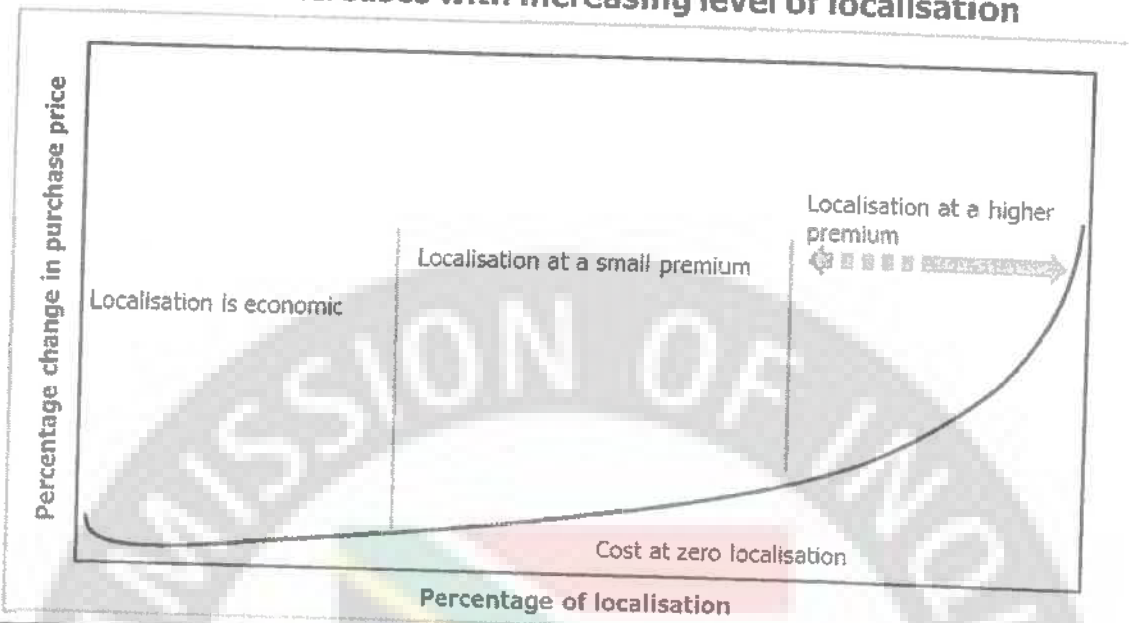
In certain areas, particularly in assembly and fabrication, South African localisation is economic especially given the order size of 465 diesels and 599 electric locomotives.

For other components, although not yet localised, a relatively small price premium is evident. In these cases similar industrial production capability is already available in South Africa and needs to be re-aligned to the production needs of locomotive components. The capital equipment setup cost is low for components such as under-frames, radiators, transformers, etc.

However, as localisation requirements increase, certain components begin to have substantial price premiums associated with their local production. Examples include engines, control systems, specialised braking equipment, etc.

EXHIBIT 40

Cost to localise increases with increasing level of localisation

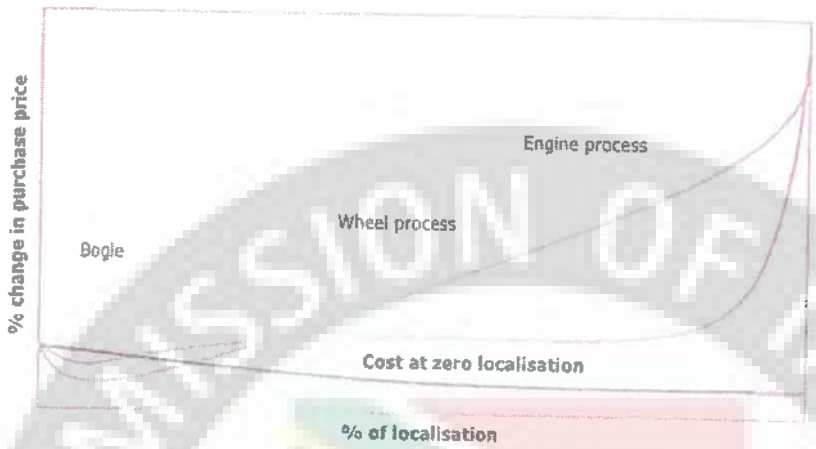


A grey zone exists where the limit of localisation is dependent on OEM investment in manufacturing in South Africa. Part of the way the Transnet RFP is structured is to attempt to capture as much localisation as possible within the grey zone without overly inflating the price premium paid.

As each component within a locomotive has its own price to localisation curve, Transnet could expect to pay different premiums for each sub-set of local component manufacture. By way of an example:

EXHIBIT 41

Each component within a locomotive has its own price verse localisation curve



1. ***Engine process***. Initial benefits are achieved through utilising cheaper skilled labour in assembly. Increased localisation comes at a high cost as specialised parts could only be manufactured locally in small production runs with insufficient economies of scale to bring down the unit costs of such parts.
2. ***Wheel process***. Small benefits are achieved through some local assembly and a slight premium is paid as forging is undertaken locally. As the manufacture of a complete bearing moves locally, the costs increase steeply due to small, highly technical bearing production runs; and
3. ***Bogie***. Benefits are achieved through utilising a competitive manufacturing process and reduced transport costs of not having to bring bulky items such as bogies to SA.

One of the characteristic of the curves for many component items analysed is that the price-premium grows rapidly at high levels of local content requirements (80 percent to 100 percent). By way of an example, for wheel assembly, much of the wheel could be localised at relatively low cost, including the bearings. However, the rollers within each bearing are parts that cannot be economically localised and are produced at just a few global sites. This is due to technological complexity in the production process, safety criticality of the item, and the need for high production volumes to make the production runs cost-efficient. By implication, forcing high localisation requirements on such components will result in uneconomic price premiums as well as possible compromises in safety critical items such as braking systems, wheel assemblies, etc.

Transnet's detailed component analysis is summarised into 14 component groups for both diesel and electric locomotives. The cost structure is based on 18 separate bills of materials obtained from the current assembly and maintenance of locomotives and thus closely emulates current market pricing.

Target localisation is based on a component by component assessment of localisation potential for each particular component within a component group. Because of the complexity and high cost to localise certain individual components (often small components), the analysis seldom reaches full 100 percent local content as is evident in the tables below. The cost to localise is based on an assessment of the capital cost to set up a production plant for the various components within each category. The time frame to localise is based on a similar approach. The findings demonstrate the potential to localise overall local content in excess of the Treasury Note requirements of 55 percent and 60 percent for a diesel and electric locomotive.

EXHIBIT 42

Electric locomotive pricing per component set, current and target localisation, and estimated cost to localise

Percent

Categories	Total cost %	Current local %	Target local %	Percentage of Cost to local	Accum local
Locomotive assembly	21	19	20	0.29	20
Main transformer	16	0	13	1.33	33
Main power traction system incl. aux systems	15	0	8	0.87	41
Main power traction motors	14	0	11	6.33	53
Propulsion switch gear	9	0	6	1.53	58
Bogie	4	0	4	0.25	62
Cooling, ventilation, and filtration systems	4	0	3	0.80	65
Locomotive control systems	4	0	2	4.90	67
Drivers cab	3	1	3	0.15	70
Auxiliary supply	3	0	3	2.12	73
Wheel system	2	0	2	9.10	74
Pneumatic supply system	1	0	1	5.81	76
Braking system	1	0	0	3.94	76
Coupling system	1	0	1	1.00	77
Other	1	0	0		
Grand total	**100%**	**21%**	**77%**		

EXHIBIT 43

Diesel locomotive pricing per component set, current and target localisation, and estimated cost to localise

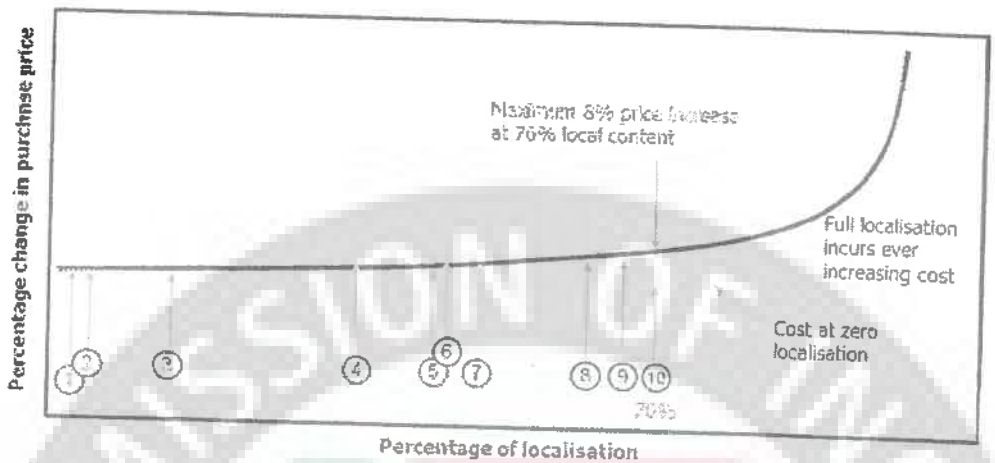
Percent

Categories	Total cost %	Current local %	Target local %	Percentage of Cost to local	Percentage of Accum local
Drivers cab	2	0	2	0.27	2
Bogie	4	3	4	0.27	6
Locomotive assembly	22	20	22	0.32	28
Cooling, ventilation, and filtration systems	5	0	4	0.68	32
Main power traction system incl. aux systems	23	0	10	0.82	42
Coupling system	1	0	1	1.03	43
Underframe (i-beams)	1	0	1	1.25	44
Locomotive control systems	6	0	3	3.44	47
Braking system	2	0	0	5.59	47
Main power traction motors	17	0	14	6.33	61
Wheel system	3	0	3	6.45	64
Pneumatic supply system	2	0	1	7.38	65
Engine system	13	0	5	8.07	70
Other	1	0	0		
Grand total	**100%**	**24%**	**70%**		

As is demonstrated in these tables, the difference between current and expected 3- to 5-year localisation requirements are significant. The relatively easy localisation opportunities have already largely been taken and further localisation will require not only additional capital investment but also the appropriate testing and quality control of both the production facility and the parts produced.

EXHIBIT 44

Local content of 70 percent overall incurs up to an 8 percent increase in purchase price



Item #	Category	% increase	Item #	Category	% increase
1	Drivers cab	0.27	6	Aux supply	2.1
2	Bogie	0.27	7	Control system	3.4
3	Loco assembly	0.33	8	Traction motors	6.3
4	Main transformer	1.3	9	Wheel system	6.5
5	Propswitch gear	1.5	10	Engine system	8.0

A key finding of the analysis is that the nature of the price premium curve as shown above for a generic locomotive is such that Transnet could achieve a high level of localisation at relatively small price premiums. For diesel and electric locomotives, localisation of 70 percent and 77 percent respectively could be achieved at an average price premium of less than 2 percent. This percentage is calculated as the average price premium paid for a locomotive – i.e., including some items with no price premium and others such as engine assembly with an estimated 8 percent price premium.

This is provided that three conditions are met:

1. That components are localised up to a level that is economically viable (i.e., that price premiums for each set of component are economic);
2. That realistic time frame targets are set to reach full localisation potential. Shortening these time periods would in itself result in considerable uneconomic price premiums; and
3. That some minimum annual order size for locomotive production is guaranteed to the market over the life of the 1064 locomotive supply contracts. The analysis indicates that a guaranteed minimum order size of 50 diesel and 70 electric locomotives is required annually for the life of the contract.

The Benefits of Localisation

The benefits associated with localisation are considerable and, based on the estimates for 70 percent localisation for diesel locomotives and 77 percent for electric locomotives, the following benefits are evident:

Enterprise benefits to Transnet are considerable and include the design and integration capabilities that would be passed to Transnet Engineering through a structured programme of localisation; an enhanced Research and Development base in conjunction with the selected OEMs to develop and refine technologies for both the South African and African locomotive market; and re-engineering capability to design and provide technologies aligned to the needs of the South African rail market.

Benefits to the manufacturing sector will include key industrial capability in:

- Traction motors and traction control equipment;
- Locomotive control system capability;
- Locomotive electrical systems; and
- Large diesel engine capability.

In addition, there will be considerable benefits in related industries such as: heavy engineering, component manufacture such as found in the auto sector; electromechanical, electrical machinery, and software systems and design.

Benefits to the South African economy include benefits to a number of related sectors that would enhance capability and export potential. There would be R68 billion in economic impact for South Africa at a small localisation premium of 2 percent, implying a cost of localisation of 2 percent given expected levels of local supplier development. The resulting benefit-to-cost ratio of localisation is thus 170 to 1 in favour of localisation. Multiplier benefits would be substantial and for each Rand of localised production there is an expected average multiplier of R2.74 across the economy.

Procurement strategy summary

- Issue open tenders for both locomotive types.
- Local content thresholds of 55 percent and 60 percent for diesel and electric locomotives respectively as per PPPFA and National Treasury Instruction Note.
- SD/BBBEE (40 percent) threshold.
- Technical threshold.
- Stage 2 will comprise price (60 percent), Supplier Development (20 percent), and B-BBEE (20 percent).
- B-BBEE included for scorecard (10 points) and FRC (10 points).

Reasons for following an open tender programmatic process

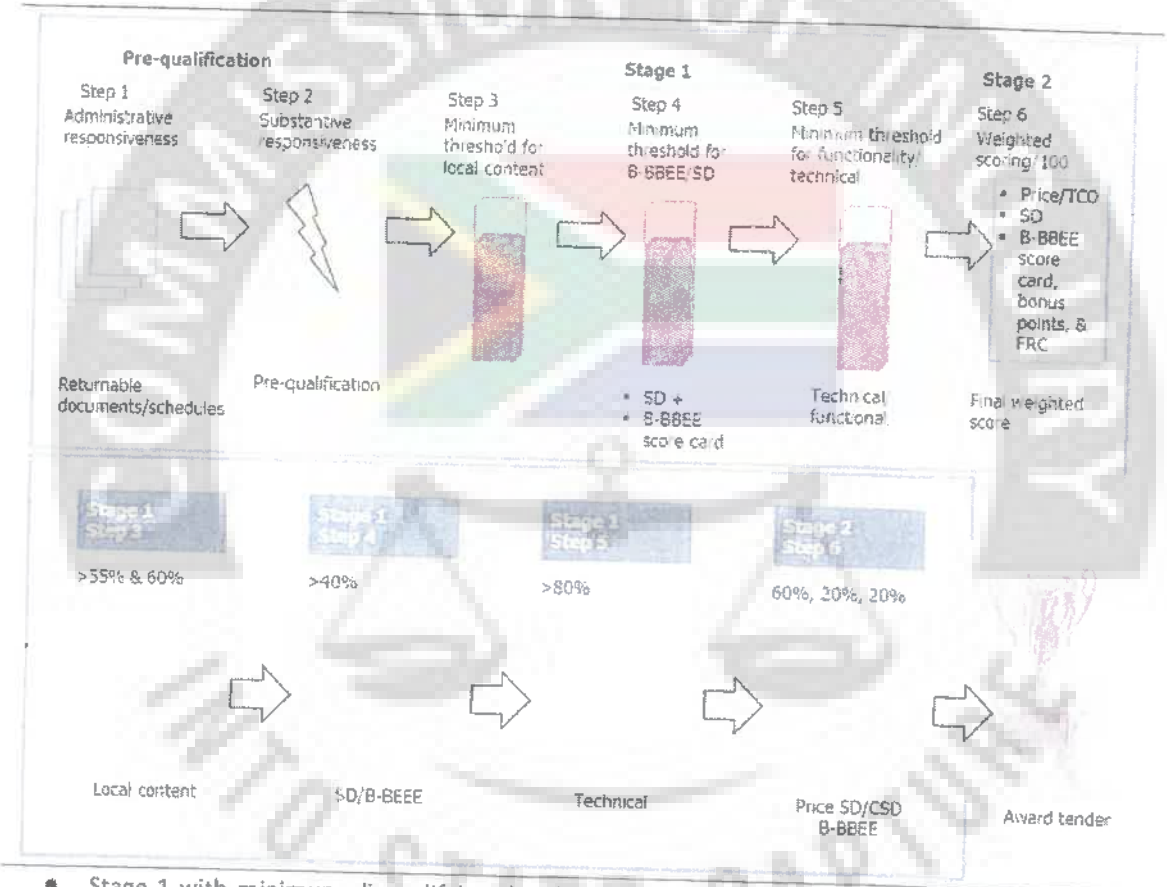
To ensure the bidding process is as fair and transparent as possible. As a long-term procurement event, open tender will identify suppliers with whom TFR can partner, to ensure value for money and compliance with Transnet's support for the NGP and government objectives. The programmatic nature of this purchase requires TFR to find suppliers who can commit to delivering on governments industrialisation objectives, which include:

- Localisation and industrialisation
- The creation of jobs
- The transfer of technical skills, IP, and know-how to the South African industry

- Increasing the capability and capacity of the South African rolling stock industry
- Reducing capital leakage
- Increasing South Africa's exports
- Integrating of South African suppliers into the locomotive OEMs' global supply chains
- Long-term security of demand will allow suppliers to commit to investing in SA operations
- Suppliers must commit to transferring skills to SA suppliers to allow for the long-term maintenance of the locomotives post warranty period.

Evaluation methodology

EXHIBIT 45



- Stage 1 with minimum disqualifying thresholds, will follow a three-step process, starting with the Local Content (Step 3), followed by the SD/B-BBEE (Step 4) evaluation, and finally the Technical (Step 5) evaluation. Stage 2 will comprise the commercial (Step 6) evaluation including price (60 percent) and supplier development (20 percent) and B-BBEE (20 percent)
- In line with categories for local content identified by the DTI, 55 percent and 60 percent minimum threshold of local content will be applicable to diesel and electric locomotives, respectively. These thresholds will need to be equalled or exceeded for the submission to qualify for SD/B-BBEE evaluation.

- A minimum threshold of 40 percent will be set for the SD/B-BBEE criteria evaluation. This threshold needs to be equalled or exceeded for the submission to qualify for Step 5.
- A minimum threshold of 80 percent will be set for the technical criteria evaluation. This threshold needs to be equalled or exceeded for the submission to qualify for Step 6.
- Once the minimum criteria thresholds are both met or exceeded, the supplier's submissions will be evaluated against price, SD, and B-BBEE.

3. Localisation

Since 2010, there have been significant changes in the South African policy environment, as well as to Transnet's strategic objectives. The New Growth Path (NGP) was launched in 2010 and at the end of 2011, the National Development Plan (NDP). Transnet realised the need and opportunity to develop a more holistic approach to supplier development, incorporating changes to the policy environment, lessons learned from previous SD initiatives, and Transnet's development of a holistic Supply Chain Policy and Framework, as well as its new corporate strategy, the MDS.

The South African government has highlighted supplier development as one of the ways with which to improve the local economy. SD is achieved by "procuring in such a way as to increase the competiveness, capacity and capability of the local supply base, where there are comparative advantages and potential competitive advantages of local supply" and is derived from the Competitive Supplier Development Programme (CSDP), which is a government initiative run by the Department of Public Enterprises. At Transnet, SD is driven through procurement with a focus on delivering transformation and empowerment as well as economic growth.

The transformation element ensures that procurement transactions bring historically disadvantaged individuals (HDIs) into the economic mainstream through the advancement of HDI ownership. It addresses economic disparities and entrenched social inequalities through the use of the B-BBEE scorecard and the seven pillars which make up the score card.

Growth of the local supply base is achieved through leveraging high-value procurement to achieve (where applicable) industrialisation, localisation, technology transfer, job creation and preservation, developing industry specific skills, enterprise development (ED), and rural integration.

The above has been factored into the locomotive tenders as has been highlighted in the Procurement Strategy Section and as is evidenced in the evaluation methodology.

Transnet has extracted SD value through some benchmark Competitive Supplier Development Programme (CSDP) locomotive acquisition contracts. These include:

- 100 X General Electric Locomotives – 54 percent SD commitment
- General Electric Long Term Parts Agreement – 12 percent SD commitment
- Electo-motive Diesel Long Term Parts Agreement – 41 percent SD commitment
- 32 X Mitsui/Venus Locomotives – 40 percent SD commitment
- 50 X Electro-motive Diesel Locomotives – 67 percent SD commitment
- 44 X Mitsui/Venus Locomotives – 39 percent SD commitment
- 43 X General Electric Locomotives – 65 percent SD commitment.

These commitments have been achieved with purchases being made sporadically and on a transactional basis; therefore, we expect greater benefit to be achieved from a programmatic procurement of this nature given the size and stable pattern of demand it creates. The benefit will obviously be limited if PPPFA exemption is not obtained.

Government envisages SOC expenditure as one of the key levers to achieve transformation and growth. The 1064 locomotive procurement provides a great opportunity to fulfil government's SD aspirations.

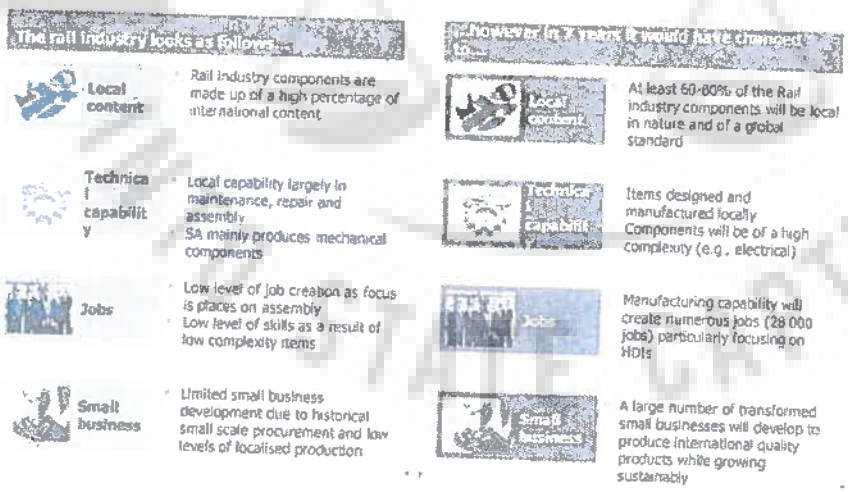
This spend will be leveraged to extract SD value in a manner that increases employment and also facilitates diversification beyond South Africa's current reliance on traditional commodities and non-tradable services. It will address the shortfall in artisan and technical skills by increasing the education level and skills capability. An equitable socio-economic society will be promoted through the integration of HDIs into the mainstream economy within the rail industry. Small businesses will be enabled in a manner that allows them to successfully compete in the South African economy. There will also be rural development throughout the country ensuring the sustainability of these communities.

Transnet's main focus with regards to these two tenders will be around the industrialisation of the rail industry. This spend can be leveraged in order to industrialise this sector and create sustainability. A large number of jobs will be created while ensuring that the local industry produces world-class products that can be exported. The will also be a large portion of spend on maintenance and upgrading of new and existing locomotives and wagons, which will ensure sustainability.

Our intention is to take the rail industry as it stands and fundamentally shift it within 7 years. This shift is illustrated in below.

EXHIBIT 46

Fundamental shift of the Rail industry over the next 7 years



E. SUPPORTING DOCUMENTATION

1. 7-year commodity growth

	SELECTED GENERAL FREIGHT FLOWS	YEAR + TONS							ASSUMPTIONS / INITIATIVES
		2013/14 Budget	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	7 year Ton increase	
AGRICULTURE & BULK LIQUID	COMMODITIES NOT CLASSIFIED IN GROUPS	2.762	2.822	3.101	3.796	4.016	4.147	4.335	1.573	This category includes OTHER AGRICULTURE PRODUCE for instance BEANS, FMCG (SUGAR etc) as well as GASSES. Demand projections indicates increased volumes by rail in support of the NMPP. Also, there has been increased cross-border demand from Botswana and Mozambique
	GRAIN, MAIZE, WHEAT & FOODSTUFFS	4.184	4.477	4.95	5.844	6.055	6.304	6.635	2.451	Domestic harvests average between 10mtpa - 14mtpa, weather permitting. Demand projection represents TFR's projected increase of total market demand as traffic is shifted from road to rail. Transnet's rail and port capacity support agri-logistics and rural infrastructure including a TFR section dedicated to branch line development.
	TIMBER	2.49	2.576	2.854	3.383	3.485	3.646	5.118	2.628	Sappi Ngodwana – Production expansion will increase demand in 2013 by 115,000 tons from Piet Retief and Lothair areas. The plant will be completed in 2013. The expansion of the Sappi SAPPCOR Wood yard rail dependent to increase timber intake by 75 000 pa by 2013. Mondi is building new private siding at Richards Bay.
	AGRICULTURE & BULK LIQUID	13.589	14.869	15.626	18.018	18.651	19.259	21.324	8.665	
COAL	COAL (DOMESTIC - OTHERS)	1.681	2.696	2.825	2.889	3.047	3.047	3.188	1.507	Coal deliveries to the Hendrina and Sappi power stations, will increase based on the growth in electricity usage over the next year.
	COAL (ESKOM - ARNOT)	0	0	0	2	2	2	2	2	Commissioning and conclusion of the Arnot Powerstation
	COAL (ESKOM - GROOTVLEI)	0	0	0	0	5	5	5	5	Grootvlei will use container rail solutions for the next two years and tipplar solutions thereafter. TFR Business case for these have been approved.
	COAL (ESKOM - MAJUBA)	8.758	9.392	12.054	13.836	13.816	14	14	5.256	Eskom road to rail migration plan. Eskom planned heavy haul line coming on stream in 2014 - increase tons to 14mt
	COAL (ESKOM - TUTUKA)	0	0	0	5.5	6	6.5	7.5	7.5	Thutuka will use container rail solutions for the next two years and tippler solutions thereafter. TFR Business case for these have been approved.
	COAL (EXPORT DURBAN WESTS)	2.434	1.771	2.237	2.94	2.94	2.96	2.705	1.272	Transnet SA Coal transportation system development, Export coal line, Waterberg developments, Swazi Railink, Coal backbone capacity, Eskom Road to Rail, Cross-border connections
	COAL (EXPORT RICHARDS BAY MAINTRATE)	0.638	1.046	1.183	1.854	1.854	1.854	1.998	1.36	Transnet SA Coal transportation system development, Export coal line, Waterberg developments, Swazi Railink, Coal backbone capacity, Eskom Road to Rail, Cross-border connections
	COAL (EXPORT TEMA/MPUTO)	2.66	4.376	5.929	6.421	9.049	11.715	10.964	7.304	TCM expansion plan is to grow to 16mt in the next five years due to Limpopo projects (Vale and Makhado).
	COAL	16.856	19.918	24.927	36.341	44.68a	47.997	48.825	31.669	
EXPORT IRON ORE LINE & MANGANESE	MANGANESE (EXPORT - NGQURA BAY PE)	5.1	5.1	9	9.897	13.118	14.157	16	10.9	SA's share of world output set to grow with junior miners and organic growth of traditional clients. New entrants are expected to commence with their respective productions in 2013/14. Global economy recovers from the current slump and demand from China does not subside. Hotazel Manganese ex pansion in figure 2 materialises. South Eastern node & corridor development - Transnet Freight Transformers Hub, integrated COC development and manganese Export Corridor.
	EXPORT IRON ORE LINE & MANGANESE	9.7	8.716	14.574	13.647	15.56	17.032	18.9	10.2	
INTERMODAL	COAL (ESKOM - CANDEN COAL IN CONTAINERS)	2.647	2.2	2.966	4.272	4.376	5.272	5.798	3.151	Coal deliveries to the Powerstations will increase based on the growth in electricity usage over the next years. Camden will use container rail solutions for the next two years and tippler solutions thereafter. TFR Business case for these have been approved.
	CONTAINERS (2M, 6M, 12M & NON-ISO STANDARD)	8.852	8.095	9 273	10 293	10.358	15 983	11.647	2.795	Linked to GDP growth. Refurbishment and establishment of terminals. Containerising mineral products at key sourcing sites. Development of Freight Hubs in areas such as Polokwane and Bloemfontein; New Castle Terminal. Drink Strategy: Kingsrest Yard Rail Stack, Reconfigure Bayhead Yard to push back users. Durban – Free State – Gauteng Logistics and Industrial Corridor - Transnet: Port of Durban expansions, new dig-out port, Natcor rail capacity expansion, Gauteng hubs and terminals development Transnet Integrated Container Strategy at consultation with current and potential customers.
	INTERMODAL	12.628	14.209	18.321	19.915	19.253	24.706	18.791	8.153	
MINERAL MINING & CHROME	COMMODITIES NOT CLASSIFIED IN GROUPS	4.261	3.593	4.825	6.756	6.918	7 007	7.477	3.216	Included in this group is Gold Ore & Other lesser Minerals and Ore mining. These commodities currently enjoy a healthy demand.
	MAGNETITE (EXPORT MAPUTO)	2.405	3.367	4.36	4.615	4.839	4 839	6	1.595	Demand mainly from China – driven by increased steel production. Export growth indicates modest increase and domestic consumption is set to grow once local beneficiation projects are started.
	MAGNETITE (EXPORT RICHARDSBAY)	4.17	4.791	4.782	5.3	5.3	5.3	5.3	1.13	Demand mainly from China – driven by increased steel production. Export growth indicates modest increase and domestic consumption is set to grow once local beneficiation projects are started.
	ROCK PHOSPHATE (DOMESTIC RICHARDS BAY NAVITRATE ROC)	1.717	1.979	2.332	2.612	2.822	2.622	3	1.283	Building Order 9 to support current 7 year demand
	MINERAL MINING & CHROME	16.532	19.317	24.494	28.892	28.11	30.587	33.083	14.531	
STEEL & CEMENT	CEMENT	4.585	5.204	5.861	6.311	6.265	6.271	6.343	1.758	Volumes to increase in line with SA's GDP growth (4% on average). TFR also targeting rail-friendly volumes in the sector. There is roughly 4m of bagged cement currently on road. The Rail to Rail strategy aim is to target 300,000 tons in the 1st year and gradually capture more over the 7 year period.
	COAL (DOMESTIC - OTHERS)	5.24	6.631	7.66	8.485	9.024	9.024	9.511	4.271	Driven by growth in other industries, e.g. steel, cement, lumber etc
	COMMODITIES NOT CLASSIFIED IN GROUPS	1.774	1.848	1.937	2.198	2.407	2.784	2.879	1.105	These include dolomite, iron slag etc used in the production processes of the Steel manufacturers and is linked to increased output in the production processes.
	IRON ORE (DOMESTIC SISHEN)	1.082	2.673	3.639	3.731	3.839	3 839	3.84	2.758	Increases in domestic steel production supported by government infrastructure development plan. Domestic and regional consumption of steel fuelling demand for iron ore & new export project by Aquila from Hotazel to Maputo.
	LIME	1.451	1.536	2.186	2.417	2.501	2.497	2.595	1.144	Lime is used in the production processes of the Steel Manufacturers and is linked to increased output in the production processes.
	STEEL & CEMENT	23.836	26.857	32.367	35.239	36.469	38.694	39.658	17.824	
Total	General Freight	91.212	104.785	127.272	151.491	160.658	170.434	180.262	89.041	

2. General Freight fleet runout

Locos		GFB FLEET			Runouts and upgrades out same year				Wreck repairs from previous year, Cascades same year													
Type	Class	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32
6E	6E		12																				
	6E1		103	103	75	25																	
7E	7E		57	57	56	56	29																
	7E1				48	48	48	48	48	48	24												
	7E2		43	43	45	45	23																
	7E3		65	65	65	65	65	65	65	65	65	65	65	65	65	65	54	43	32	21	10		
	7E4							17	17	17	7												
8E	8E		58	37	37	37	37	25	13														
9E	9E																						
10E	10E		45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
	10E1		30	30	37	39	41	55	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
	10E2		17	17	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
11E	11E				1	1	1	11	23	19	19	19	19	19	18	13	13	19	13	19	9		
12E	12E																						
14E	14E		1	1	1	1	1	1	1	1													
	14E1		7	7	7	7	7	2	4	1													
15E	15E																						
18E	18E		505	525	597	647	597	727	727	727	682	632	582	532	482	432	382	332	282	232	182	132	82
19E	19E																						
20E	20E																						
20E	New E																						
31	31 GE																						
32	32 GE																						
33	33 GE		17		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
34	34 GE		107	173	199	199	204	190	176	150	125	75	25										
	34 GM		85	85	119	119	124	111	95	79	79	79	79	69	44	19							
35	35 GE		43	43	39	39	39	36	32	29	25	15	10	2									
	35 GM		110	110	107	107	107	107	107	94	80	57	33	18									
36	36 GE		94	94	86	86	86	86	86	86	86	72	58	44	30	16							
	36 GM		83	83	81	81	81	81	81	81	81	81	81	81	81	67	53	39	25	11			
37	37 GM		50	50	70	70	58	46	34	22	10												
38	X38		35	38	38	38	38	38	38	38	38	33	19										
39	39 GM		55	55	53	53	53	53	53	53	53	53	53	53	49	45	49	49	49	49	45	46	46
43	43 GE		27	27	53	53	53	53	45	45	46	46	46	46	46	46	46	45	46	46	46	46	46
NewD	NewD																						
91	91 GE																						
Grand Total		1730	1748	1888	1990	1864	1832	1776	1686	1540	1365	1261	1051	945	842	732	657	582	507	425	355	300	
Diesel Fleet (before wrecks)		706	758	850	850	848	808	753	683	628	524	410	310	264	261	152	139	124	110	99	99	99	
Electric Fleet (Before Wrecks)		1024	990	1038	1040	1016	1028	1023	1003	922	841	791	741	681	581	580	518	458	397	326	257	207	

3. Locomotive run-out mitigation

Total Maintenance cost for Wagons and Locomotives

By inspection the cost per annum increase of locomotive maintenance is significantly greater than that of wagon maintenance. Locomotive maintenance increase from R2 377m to R3 335 over the five year period 2007/08 – 2011/12; an increase of 40 percent. By contrast wagon maintenance, which does not have the same level of technology, increased from R2 044 to R2 234 over the same period: an increase of 9.3 percent. All maintenance is performed by Transnet Engineering.[8]

Locomotive class comparison Maintenance cost vs. NTK for the last 5 years

This figure shows the average cost of maintenance per class of locomotive over the past five years against its performance measured in Net Ton Kilometres.

[8] The increasing proportion of copex to opex in locomotive maintenance is a function of changes in accounting procedures as a greater proportion of maintenance is capitalised according international accounting standards.

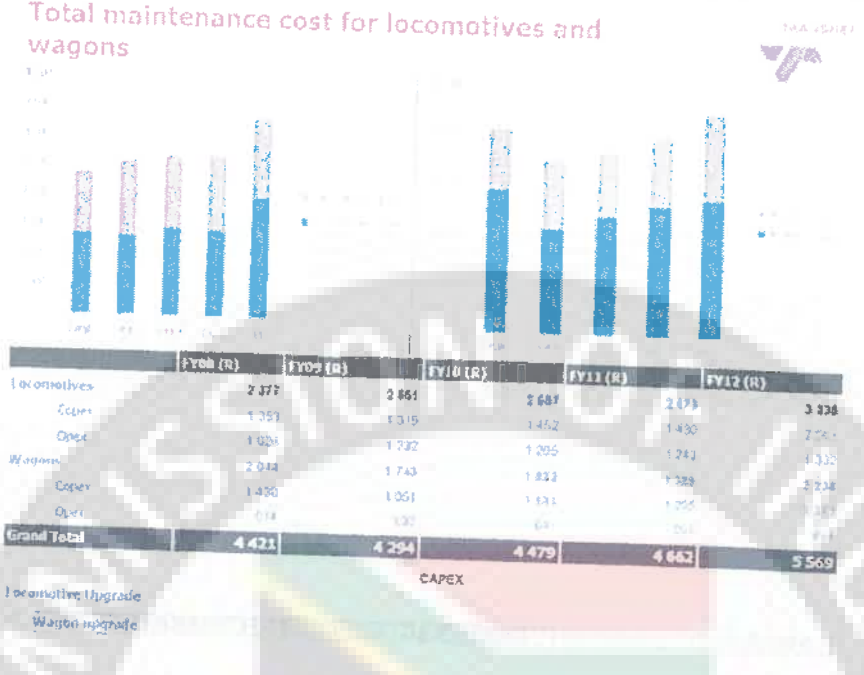
The new locomotives such as the 15E, 19E and 43D cannot be directly compared to the older locomotives as the new locomotives have not seen five full years of service but even making allowance for the shorter service, the savings in maintenance costs is evident.

The three locomotives (excluding the new locomotives) with the best ratio of NTK/Cost of Maintenance are the heavy haul locomotives 9E, 11E and 7E1.

The workhorse locomotives that have a poor NTK/Cost of Maintenance ratio include the 18E, 6E 34-000, 34-400 series.

The locomotives that have the worst NTK/Cost of Maintenance ratio include the 37-000, 7E2, 34-800, and the 33, 35 and 36 classes. These are amongst the oldest locomotives.

1. EXHIBIT 47



TFR has exhausted the life extension possibilities of its current "workhorse" fleet which are the primary contributors to GTK / NTK. Extending the life of "shunters" and "haulers" does not contribute to increasing GTK / NTK as the locomotives are not used and cannot be used for the heavy loads of main line operations.

The SMILIP programme for new traction power was developed circa 2002. When this programme was not accepted TFR responded by extending the life of the current workhorse fleet.

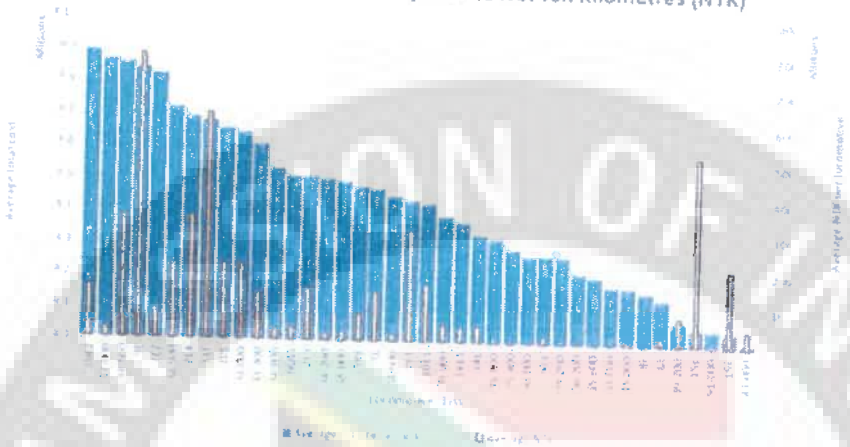
The life extension / upgrade programme included:

- 650 6E1 series upgrade to new class 18E providing a 12-15 year life extension. 120 upgrades are still be completed by March 2016. By 2018 the first of the upgrades will start to runout.
- 150 class 34 GE locomotives programmed for fitting with new Britestar Contol systems with 55 still to be completed. As the locomotives are already over 35 years old this is a palliative.
- 75 class 34 GM locomotives fitted with new Nexsys Control Systems. A further 20 are programmed for 2013. As these locomotives are already 38 years old, this decision will be reconsidered in anticipation of the new locomotives.
- Other interventions were more essential maintenance than life extension strategies. The above programs result in extend the run out age from a designed 30 years to 45 years.
- The locomotives suitable for upgrade / life extension have already all being targeted. The balance of the fleet does not lend itself to similar interventions.

EXHIBIT 48

E & Y Locomotive class comparison
Maintenance cost vs. NTK for the last 5 years

Average maintenance cost compared to Net Ton Kilometres (NTK)



4. Locomotive 7-year locomotive requirement

GFB 7 YEAR LOCOMOTIVE REQUIREMENT

GFB	CAROLINA	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023
6E/6E1	6E	183	172	134	43								
16E	16E	506	521	662	744	760	715	715	665	615	565	515	465
7E	7E	64	66	42	42	42							
7E1	7E1	0		21	21	21	46	46	46	46	46	46	46
7E2	7E	32	34	34	34	34	34						
7E3	7E	11	65	65	65	65	65	65	65	65	65	65	65
8E	8E	58	54	37	33	24	12	12					
9E	9E		30	4	4								
10E1	10E	23	26	36	36	36	53	62	45	45	45	45	45
10E2	10E	59	58	62	62	62	62	62	62	62	62	62	62
14E1	14E	8	8	8									
33	0E	17											
34	GE	115	188	188	188	188	142	142	142	120	120	120	120
34	GM	82	90	94	94	94	94	94	94	94	94	94	94
35	GE	65	69	74	77	79	79	79	79	79	79	79	79
35	GM	79	86	93	93	96	96	96	96	96	96	96	96
36	GE	87	90	90	98	98	98	98	98	98	98	98	98
36	GM	81	84	84	92	92	92	92	92	92	92	92	92
37	GM	48	50	50	50	29	25						
38	X38	34	38	38	38	38	38	38	38	38	38	38	38
38	GM	55	50	50	50	50	50	50	50	50	50	50	50
43	GE	34	62	113	113	113	126	113	113	113	113	113	113
440 NEW		0			82	179	279	362	393	465	515	535	545
20E		0			81	202	332	462	599	672	721	771	821
Total		1841	1841	1979	2140	2282	2447	2592	2681	2753	2803	2823	2813

5. Deployment plan

EXHIBIT 49

Table of Contents

EXHIBIT 50

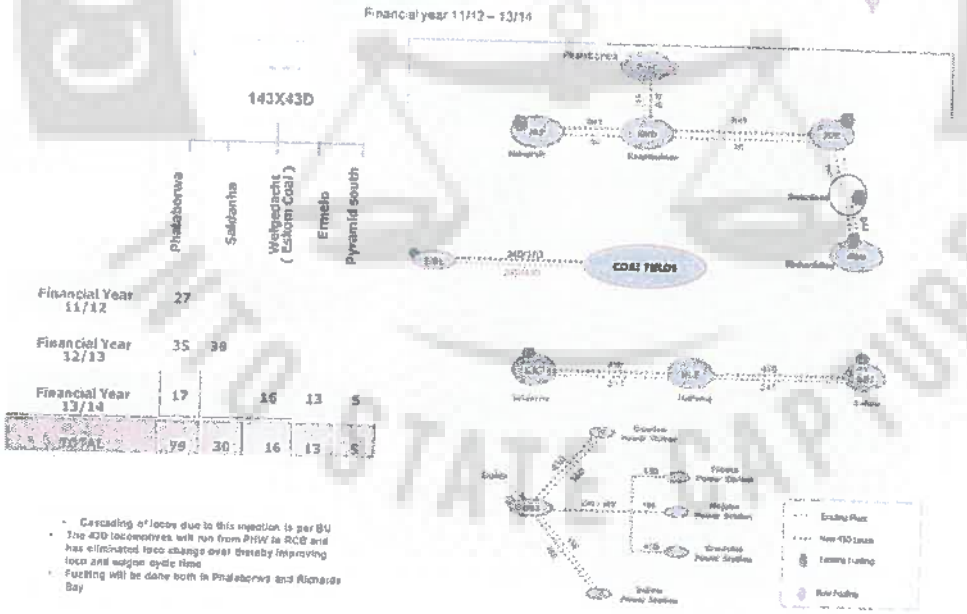
GLOSSARY

MUS – MUSINA
PRZ – PYRAMID SOUTH
PHW – PHALABORWA
NLP – NELSPRUIT
KMD – KAAPMUIDEN
KTR – KOMATIPOORT
HLF – HALFWEG
SLD – SALDANHA
BLE – BELLVILLE
KGR – KRUGERSDORP
ELN – EAST LONDON
NAS – NATALSPRUIT
WED – WELGEDACHT
KAZ KASERNE
SBG – SASOLBURG
ME – MAFIKENG
SPR – SPRINGS
TLT – TRICHARDT
BPR – BRAKPAN
ISO – ISANDO
BFX – BLOEMFONTEIN
NWT – NOUPOORT
HZL – HOTAZEL
PMG – POSTMASBURG
BEC – BEACONSFIELD
POM – POTCHEFSTROOM
BIJ – BIJLKOR
WTN – MEYERTON
NCS – NEWCASTLE
DSL – DANSKRAAL
DNR DURBAN
DER – DE AAR
PE PORT ELIZABE

EXHIBIT 51

43D Deployme

Financial year 11/12 – 13/14



- Cascading of locos due to this injection is per BU
- The 43D locomotives will run from PHW to RCB and has eliminated loco change over thereby improving loco and wagon cycle time
- Fuelling will be done both in Phalaborwa and Richards Bay

EXHIBIT 52

Cascading of 55x34D's from the Ore Line to GFB

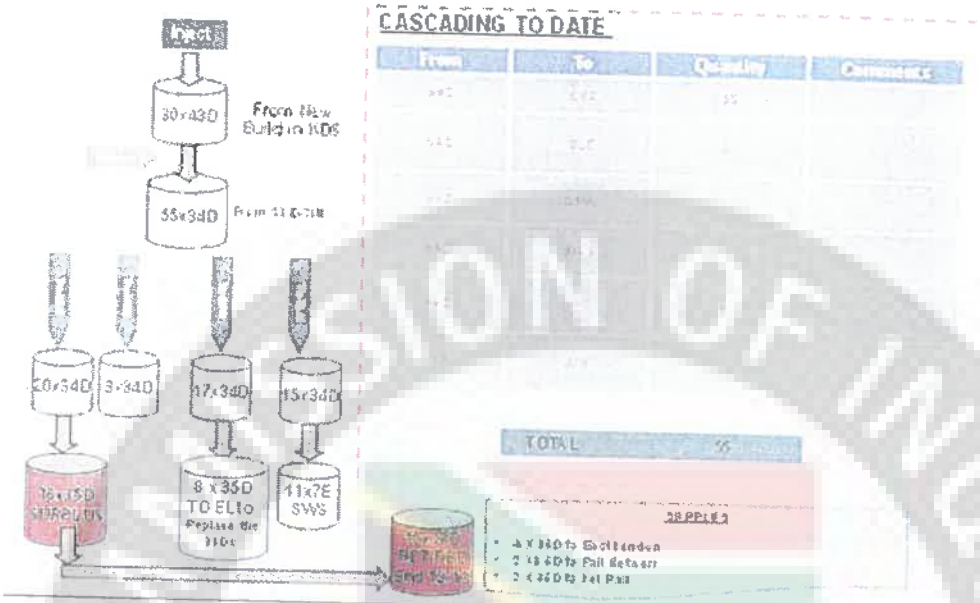


EXHIBIT 53

Schematic view of the deployment of new locomotives into the Coal Business Unit

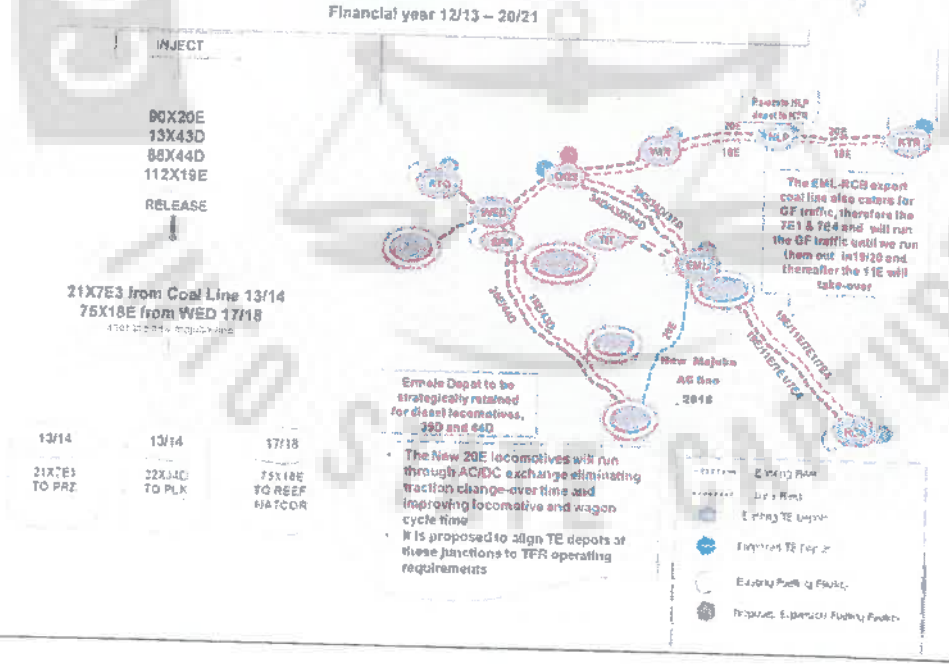


EXHIBIT 54

New Locomotives Deployment Plan

Efficiency and Volume Growth

TRANSNET

Financial year 12/13 – 20/21

High Level Delivery, Cascading and Run out Plan for the Domestic and Export Coal Business Unit

	Current Fin Yr 12/13	Fin Yr 13/14	Fin Yr 14/15	Fin Yr 15/16	Fin Yr 16/17	Fin Yr 17/18	Fin Yr 18/19	Fin Yr 19/20	Fin Yr 20/21
EML 13E1	33	33	33	33	33	---	---	---	---
RCB Coal Line (43D4)						37	43	44	44
RCB 7E1	40	---	---	---	---	---	---	---	---
RCB 7E4	17	17	17	17	17	---	---	---	---
RCB 11E	45	45	45	45	45	---	---	---	---
RCB 18E	110	110	110	110	110	222	222	222	222
EML 34D	37	---	15	15	---	---	---	---	---
EML 37D	30	---	30	30	15	---	---	---	---
EML 43E	---	---	15	15	15	33	33	33	33
EML 44D	---	---	---	---	30	30	30	30	30
RCB 7E1	---	44	44	44	44	44	44	---	---
RCB 7E3	53	33	33	33	---	---	---	---	---
RCB 7E4	---	---	---	---	17	17	17	---	---
EML 13E1	5	5	5	5	5	17	---	---	---
RCB 11E	---	---	---	---	3	23	23	23	23
RCB New Batch Rec	---	---	---	---	---	---	---	50	100
WED 18E	75	75	75	75	75	75	25	---	---
WED 43D	---	15	---	---	---	---	---	---	---
WED 20E	---	---	---	---	---	30	30	30	30
WED 44D	---	---	22	22	36	54	54	54	54

EXHIBIT 55

Deployment Strategy & Benefits : Coal

TRANSNET

Coal : RBCT

- The 19E's will be increased from 110 to 222 from 2015/2016 to 2016/2017. The following strategic changes are envisaged:
  - It is to be noted that the 222 x 19E/equivalent's will run from RCB to various mines directly with only driver hot-seat changes.
  - The process will start 2013/2014.
  - This will reduce the cycle time of locomotives from 58 to 41 hours and wagons from 62 to 48 hours
  - This increases the volumes capacity of the current wagon fleet from 81 to 94.7 mtons.
  - By operating design all 19E/equivalent will be maintained in RCB.
  - This requires that all investment for maintenance at Ermelo to be reviewed as this depot will be retained for diesel locomotives maintenance (39200's and 43D/44D's). Capacity has to be reviewed as the maintenance work content on these locomotives is considerably less than the current fleet.
  - Richards bay will become a super maintenance depot. (Based on GF practices)
- Cascade 11E's to GF traffic by 2016/2017. This could reduce to zero based on dual power processing and the clear the deck position of the 10E1s.
- The whole diesel fleet to be replace by new diesels by 2016/2017.
- Provide for the Under Floor Wheel Lathe at Richards Bay as it will be a singular super locomotive depot for TFR.
- 67XOld Diesels (34D/37D) swapped with 43XNew Diesels (43D/44D), however the figure will be reviewed.

EXHIBIT 56

Deployment Strategy & Benefits : Coal

General Freight

- General Freight traffic on the Coal line will be injected with 21 x 7E1 from the 1 May 2013. The figure will be increased to 48 by 2015/2016.
- The 7E1 and 7E4 that are ring-fenced for the Coal line general freight traffic will run-out in 2019/2020, however if the efficiencies from PRZ are realized this run-out will be earlier.
- The 7E3 will be cascaded to Pyramid South to capture the growth in Coal, Chrome and Ferrochrome from the Rustenburg area.
- All 7E3's will be cascaded to Pyramid South by 2015/2016.
- Note that with dual power processing, the 7E type locomotives will also be eliminated from the Coal line.
- All traffic from Waterburg area will be dual powered thereby removing the need for Pyramid South.

EXHIBIT 57

Deployment Strategy & Benefi

- The following are the benefits:
  - Reduced fuel consumption with new diesel locomotives being introduced
  - Improved cycle times for rolling stock
  - Improved reliability
  - Better utilisation of crews
  - Reduced handling and shunting
- Impact on Crew and Maintenance depot
  - Richards Bay to be the Super Locomotive Maintenance depot
  - Standardise the Ermelo depot to few locomotive types, specifically diesels (39200's. 43D's and 44D's)
  - Training crew on the new locomotives
  - Ermelo yard strength and crew strength will be reviewed to the new operating standards
  - Book off at Ermelo will be reviewed as some loading station can take 200 wagon trains straight in
- Necessitated required changes
  - System cannot afford to run a 41 hour and a 56 hour cycle as it will not be seamless and will be somewhat counter-productive.
  - This will then require the 10E1's to be converted to dual power for a one type 41 hour operation.
- Financial Impact Analysis
  - Savings due the introduction of the new operating model from 1 September:

EXHIBIT 58

Schematic view of the deployment of new locomotives into the Steel and Cement Business Unit

Efficiency and Volume Growth

Financial year 12/13 – 20/21

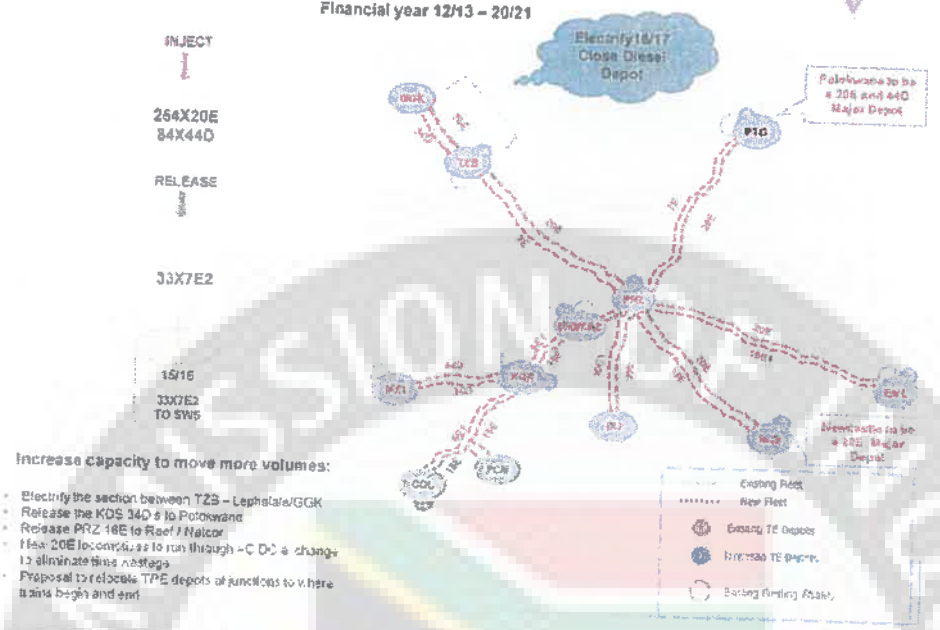


EXHIBIT 59

New Locomotives Deployment Plan

Efficiency and Volume Growth

Financial year 12/13 – 20/21

High Level Delivery, Cascading and Run out Plan for the Steel and Cement Business Unit

	Current Fin Yr 12/13	Fin Yr 13/14	Fin Yr 14/15	Fin Yr 15/16	Fin Yr 16/17	Fin Yr 17/18	Fin Yr 18/19	Fin Yr 19/20	Fin Yr 20/21
RGB 20E	---	---	---	24	(45) 69	(30) 99	(30) 129	(35) 164	(90) 254
PRZ 7E2	33	33	33	---	---	---	---	---	---
PRZ 7E3	13	(21) 34	34	(21) 55	(11) 66	66	66	33	---
PRZ 10E1	30	30	30	30	(15) 45	---	---	---	---
RGB Dual Loco 10E1	---	---	---	---	---	48	48	48	48
PRZ 18E	16	16	---	---	---	---	---	---	---
TZB 34D	18	---	---	---	---	---	---	---	---
COL 6E1	34	---	---	---	---	---	---	---	---
COL 18E	---	34	(10) 44	44	44	44	44	44	44
KGR 34D	28	28	28	28	14	---	---	---	---
TZB 39D	13	20	20	20	20	20	---	---	---
KGR 44D	---	---	---	---	40	40	(12) 52	52	52
PRZ 43D	---	5	5	---	---	---	---	---	---
PLK 34D	24	(22) 46	46	46	46	46	46	26	---
PLK 44D	---	---	---	15	(2) 17	17	(15) 32	32	32
TOTALS	208	248	248	263	264	305	417	319	430

Deployment Strategy & Benefits : SAC

General Freight

- The introduction of the dual locomotives at Pyramid South will see all flows from origin to destination on the AC/DC route running with single type of locomotive. Flows such as Chrome to Richards bay; Coal & Iron Ore to Newcastle and Vereeniging, Cement to Polokwane and including over border traffic. This will eliminate traction change over at Pyramid South and Ermelo there by improving cycle time and enhancing asset utilisation.
- The efficiency of 20E's will play an important role in the release of 7E locomotives to areas where they are needed or for early run-out to reduce the cost of maintenance.
- Electrification of the section between Thabazimbi and Grootegeluk become vital for dual loco system, hence the need to fast tracked to 2015/2016
- The expectation is that once the dual 20E's are deployed it will negate the need for 10E1's in its current form, this calls for the 10E1's to be upgraded to dual powered.

Impact on Crew and maintenance depot

- Koedoespoort diesel depot required to be down scaled as the number of diesels will be reduced.
- Thabazimbi no longer required as a maintenance depot
- Retraining of crew on new routes.
- Introduce new book-off practices.
- Pyramid South to be a run through yard with minimum processing for maize trains, cement trains etc.
- The new electric locomotive will be running to Richards Bay, Newcastle, Bijlkor and Durban, therefore these areas need to prepare for the maintenance of these locomotives.
- Upgrade the collgny depot to increase its scope of work and down-scale activities in Sentrarand depot.
- Polokwane to be a 20E and 44D depot
- Newcastle to be a 20E depot
- The yard capacity at Pyramid will require to be reviewed

11

EXHIBIT 61

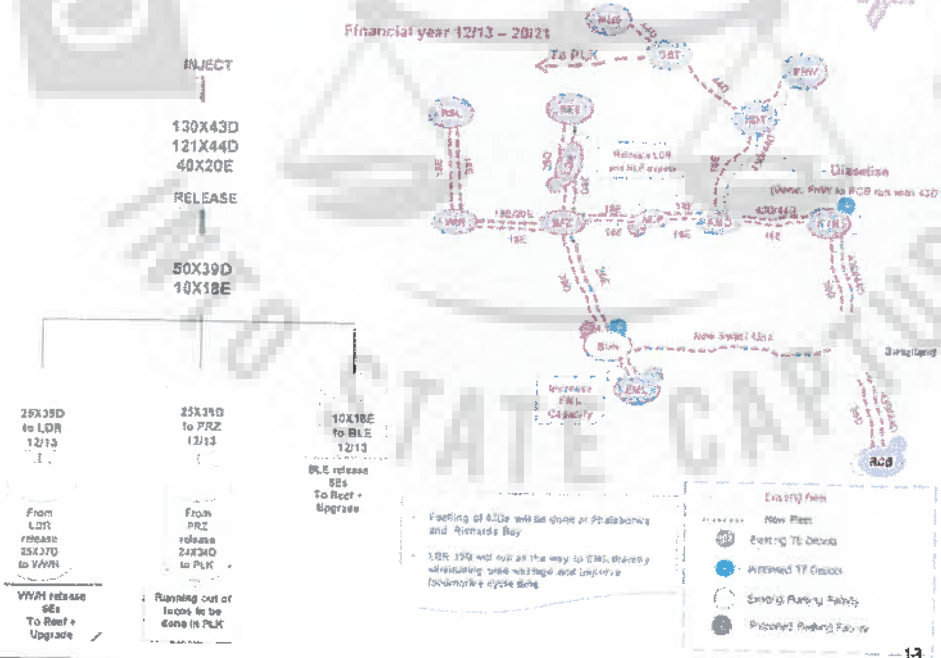
Deployment Strategy & Benefits : SAC

Financial Impact Analysis

- Pyramid yard strength to be addressed
- Cycle time from Lephalale to Richardsbay will be reduced conservatively by 30 hours
- This impacts on wagon requirements for the these tons to be calculated
- Fuel savings from replacing old diesels with new
- Pyramid South and Rustenburg yard no longer needed as holding yards, parking of Pyramid South 7E2's and 7E3's, Krugersdorp 34D and the Polokwane 34D's: SAVINGS

EXHIBIT 62

Schematic view of the deployment of new locomotives into the Mineral Mining and Chrome Business Unit Efficiency and Volume Growth



13

EXHIBIT 63

New Locomotives Deployment Plan

Efficiency and Volume Growth

Financial year 12/13 – 20/21

High Level Delivery, Cascading and Run out Plan for the Mineral Mining and Chrome Business Unit

	Current Fin Yr 12/13	Fin Yr 13/14	Fin Yr 14/15	Fin Yr 15/16	Fin Yr 16/17	Fin Yr 17/18	Fin Yr 18/19	Fin Yr 19/20	Fin Yr 20/21
WIR 29E	---	---	---	---	---	20	(10) 30	(10) 40	40
EHG 39D	3	---	---	---	---	---	---	---	---
WIR 18E	89	83	83	83	83	53	43	43	43
EML 39D	27	30	30	30	30	30	50	50	50
PHW 43D	62	(12) 75	(15) 95	(5) 100	100	(30) 130	130	130	130
PHW 44D	---	---	---	---	---	12	(10) 22	22	22
RGB 44D	---	---	---	---	---	18	(8) 26	26	26
EML 44D	---	---	---	---	14	14	14	14	14
Swazi Link 44D	---	---	---	---	---	---	30	(24) 54	(15) 69
TOTALS	180	182	208	213	227	277	345	379	394

EXHIBIT 64

Deployment Strategy & Benefits : MMC

General Freight

- Note the original deployment was 89 locomotives for required MDS tons, based on th efficiencies achieved this was dropped to 79 locomotives for the same tons. The GTKs was achieved in advance of what the business case stated.
- Increase the 62 x 43D's at Phalaborwa to 79 to capture the growth in Magnetite and coal from Musina by 2013/2014.
- The locomotive cycle time has improved from 72 hours to 55 hours with the injection of the 43D's
- Wagon cycle time has improved from 7 days to 5 days on the corridor.
- Deployed 39D's at Lydenburg
- Eliminated locomotive change over at Belfast. Running the 39D's all the way to Ermelo.
- A 100 wagon train was tested successfully between Lydenburg and Ermelo.
- Steelpoort to be 104 wagon RDP train
- Investigate the future growth plans for the Roossenekal area and keep Witbank depot in the meantime

Impact on Crew and Maintenance depot

- Nelspruit
  - Relocate the crew and maintenance depot at Nelspruit to Komatipoort

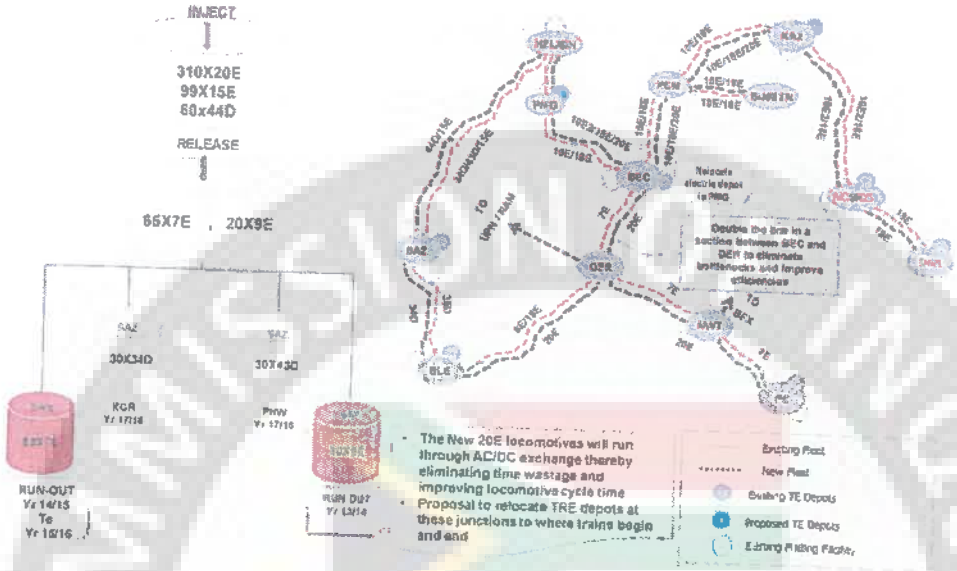
Komatipoort

  - Komatipoort to have a 12 ton crane and a drop-pit.
- Waterval Boven
  - Relocate the crew depot Witbank and Komatipoort
- Lydenburg
  - The corridor has been standardised to 39D's only
  - Future maintenance to be done at Ermelo
  - Relocate Lydenburg as a Loco and Crew depot to Steelpoort

EXHIBIT 65

Schematic view of the deployment of new locomotives into the Iron Ore and Manganese Business Unit Efficiency and Volume Growth

Financial year 12/13 – 20/21



16

EXHIBIT 66

New Locomotives Deployment

Efficiency and Volume Growth

Financial year 12/13 – 20/21

High Level Delivery, Cascading and Run out Plan for the Iron Ore and Manganese Business Unit

GFB	Current Fin Yr 12/13	Fin Yr 13/14	Fin Yr 14/15	Fin Yr 15/16	Fin Yr 16/17	Fin Yr 17/18	Fin Yr 18/19	Fin Yr 19/20	Fin Yr 20/21
PMG 20E									
PMG 20E									
SWS 7E									
SWS 7E2									
PMG 15E2									
PMG Dual loco (15E2)									
PMG 15E									
SAZ 34D									
SAZ 9E									
SAZ 44D									
Total									
ORE LINE									
SAZ 15E									
SAZ 43D									
SAZ 44D									
Total									
Grand Total									

EXHIBIT 67

Deployment Strategy & Benefits : IOM

Ore Line

- The Ore line 15E will increase from the current 44 x 15E to 76 x 15E by 2013/2014 financial. This will further be increase by 24 x 15E to meet the MDS volume budgets.
- The 30 x 9E will be reduce to a rough figure of 4 to cater for GF traffic on the Ore Line and mine shunting requirement. This will address the Saldanha Coal service and the containerised manganese to Saldanha.
- An injection of 30 x 43D's will be used to on the long trains due to power supply constraint. This will also improve reliability and fuel consumption.
- The 34 class diesels will reduce to 30 x 34D's to cater for other GF traffic, Infra and shunting purposes.
- By 2017/2018 all diesels on the Ore Line to be replaced by the new 44D diesels

General Freight Lines

- The deployment of the new electric dual powered locomotives will bring benefit in the manner in which trains are operated. The new AC/DC locomotives will have the capability to run through the interchange at Beaconsfield and Beaufort West thereby eliminating traction change over time.
- The dual powered locomotives for Postmasburg depot will service both the PMG-PE route and the Gauteng-Cape Town/PE route with Swartkops being the super depot.
- Swartkops 7E's retired in 2015/2016, 33XPRZ 7E2 cascaded to Swartkops to be retired in Swartkops the 2016/2017.
- 10E/2 to be converted to dual power locomotives and this will impact positively on the cycle times.

Impact on Crew and Maintenance depot

- Beaconsfield maintenance depot no longer required
- Investigate the possibility of De Aar as a book-off place
- Postmasburg to be the a critical turn around locomotive maintenance depot.

EXHIBIT 68

Deployment Strategy & Benefits : IOM

Financial Impact Analysis

- Car and container trains to Kaalfontein and Kazerne from PE will have an improvement in cycle time of 10 hours
- Further fuel saving will be achieved with moving the combination of 15E and 34s to 15E and 43000 this is approximated to be around 1M litres
- Yard capacity to be reviewed at Kimberly due to run through and only hot seat changes
- Parking of SWS 7E by 2015/2016:

EXHIBIT 69

Deployment Strategy & Benefits : IOM

Financial Impact Analysis

- Car and container trains to Kaalfontein and Kazerne from PE will have an improvement in cycle time of 10 hours
- Further fuel saving will be achieved with moving the combination of 15E and 34s to 15E and 43000 this is approximated to be around 1M litres
- Yard capacity to be reviewed at Kimberly due to run through and only hot seat changes
- Parking of SWS 7E by 2015/2016:

EXHIBIT 70

Locomotives Deployment Plan

Financial year 12/13 – 20/21

High Level Delivery, Cascading and Run out Plan for the Container and Automotive Business Unit

	Opening Fin Yr 12/13	Fin Yr 13/14	Fin Yr 14/15	Fin Yr 15/16	Fin Yr 16/17	Fin Yr 17/18	Fin Yr 18/19	Fin Yr 19/20	Fin Yr 20/21
UBO 18E	222	222	222	222	222	(30) 252	(-) 262	262	262
BFX 34D	44	44	44	44	24	---	---	---	---
BFX 43D	---	---	---	30	(10) 30	40	40	(10) 50	50
WWH 37D	39	39	39	27	15	---	---	---	---
WWH 64D	---	---	13	(20) 33	33	33	(10) 43	(-) 49	49
TOTALS	305	305	318	356	324	325	345	361	361

EXHIBIT 71

Deployment Strategy & Benefits : CAB

General Freight

- **Kazerne/City Deep**
  - Postmasburg/Swartkops 20E locomotive fleet will cater also for the corridor to Cape Town. This will improve the container services between Gauteng and Cape Town
  - Reviewing the containers to Port Elizabeth to run via Beaconsfield. Including the motorcars.
  - This will improve on the assets cycle time thereby eliminating traction change overs at Beaconsfield and Beaufort West.

- **Impact on Crew and maintenance depot**
  - Retraining of crew on the new locomotives.
  - Introduce book-off where feasible.
  - Bellville to be major depot while Kaserne becomes a supporting depot for the new electric locomotives.
  - Review viability of Wentworth maintenance depot considering maintenance cycle times of 44D's versus 37D's and the 37D failures rates.

- **Financial Impact Analysis**
  - Fuel savings when replacing 34/37 with 44Ds
  - Parking of Wentworth 37D by 2017/2018 and B pomfontein 34D by 2017/2018 SAVING

EXHIBIT 72

Schematic view of the deployment of new locomotives to the Agriculture, Timber, Bulk Liquids and Africa Trade Business Units

Financial year 12/13 – 20/21

INJECT

15X44D

Increase capacity to move more volumes and re-deploy CBE 7E to SWS:

- Dieselise the sections SFR-CBE as well as EMG-PSH
- The upgrades and locos that will be freed by deploying new locos in other BU's will play a pivotal role in increasing Agriculture and Africa Trade BU capacity

- The 35D that will be released from SPR when injecting 34D s will be sent to CBE for the 33D that will be running out
- The 16X35D that will be released from BLE when injecting 34D s will BECOME SURPLUS!

16X35D SURPLUS

LOOKING AT YARDS AROUND THE NETWORK FOR USE IN SHUNTING ACTIVITIES

EXHIBIT 73

New Locomotives Deployment Plan
Efficiency and Volume Growth

Financial year 12/13 – 20/21

High Level Delivery Cascading and Run out Plan for the Agriculture and Africa Trade Business Unit

	Current Fin Yr 12/13	Fin Yr 13/14	Fin Yr 14/15	Fin Yr 15/16	Fin Yr 16/17	Fin Yr 17/18	Fin Yr 18/19	Fin Yr 19/20	Fin Yr 20/21
BLE 35D	29	13	13	13	13	13	13	13	13
BLE 34D	14	14	14	14	14	14	14	14	14
BLE 18E	27	27	27	27	27	15	15	15	15
CPK 18E	5	5	(-5) 15	15	15	15	15	15	15
BTQ 6E (CPK+WHK+DOL+KRO)	135	83	33	---	---	---	---	---	---
JHB 18E	---	50	(-50) 100	100	100	(+12) 112	(+40) 152	(+55) 207	(+28) 235
SPR 35D	12	---	---	---	---	---	---	---	---
SPR 34D	37	(-9) 28	28	28	28	28	28	28	28
CBE 34D	16	20	20	20	20	20	20	20	20
CBE 44D	---	---	---	---	---	---	15	15	15
TOTALS	253	249	250	217	217	217	272	327	355

EXHIBIT 74

Deployment Strategy & Benefits - ABL

General Freight

- The Sentrarand depot will start to receive 18E's from 2013/2014.
- The 6E locomotives will be phased out by 2016/2017, with the rest upgraded to 18Es.
- Dieselise the Springfontein to East London and make Springfontein a run through yard.
- The depots under ABL will be standardised to 18E's on DC areas.
- The Polokwane 34D retired in 2020/2021 as we receive new diesels.
- Beaufort West no longer required as a change –over yard

Impact on Crew and maintenance depot

- Retraining of crew on the new locomotives.
- Introduce book-off were feasible.

6. Business unit power sheets

See attached power sheer excel file "20130418 Supporting Document F6 Business Unit Power Sheets"

7. NPV analysis

	Present Value to Start of Fin Year 2014		2014	2015	2016	2017	2018	2019	2025	2030	2035	2040	2045	2046	2047	2048	2049
WACC	0.052	5.2%															
Discount factor			84%	71%	60%	51%	43%	36%	13%	6%	2%	1%	0%	0%	0%	0%	0%
PPI			4.8%	5.3%	5.5%	5.7%	5.6%	5.5%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%
CPI			5.3%	5.5%	5.6%	5.8%	5.6%	5.6%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Volume increases			-	13	36	60	69	79	79	79	79	79	79	79	79	79	79
Escalation factor CPI			1.05	1.11	1.17	1.24	1.31	1.38	1.96	2.63	3.52	4.71	6.30	6.67	7.07	7.50	7.95
CPI discount factor			95%	90%	85%	81%	76%	72%	51%	38%	28%	21%	16%	15%	14%	13%	13%
Total volumes (Net tons)			91	104	127	151	161	170	170	170	170	170	170	170	170	170	170
Incremental Volumes (Net tons)			1	7	21	41	60	77	89	89	89	89	77	60	40	21	5
Tariffs Average (R/Tonkm)			0.42	0.45	0.48	0.50	0.54	0.58	0.84	1.12	1.50	2.01	2.69	2.85	3.02	3.20	3.39
Average distance (Kms)			552	551	553	533	539	542	542	542	542	542	542	542	542	542	542
Revenue	109 104		272	1855	5517	10847	17437	24185	40540	54252	72601	97156	111366	91952	65895	36392	9884
Total Diesel TCO	22 080		2674	3323	4040	4548	4725	3047	4894	5366	8745	11214	9520	6621	3475	0	0
Diesel TCO																	
Initial capital outlay	8 314		2 583	2 709	2 876	[illegible]	2 190	0	0	0	0	0	0	0	0	0	0
Disposal value	0																
Fuel	8 657		90	459	824	1 233	1 713	2 064	2 814	1 735	4 956	6 577	5 600	3 940	2 047	0	0
Maintenance	1 849		1	14	63	174	220	327	986	869	1 584	1 687	1 187	896	470	0	0
Personnel costs	3 029		0	130	256	393	559	662	1 018	1 462	2 069	2 769	2 377	1 675	880	0	0
Insurance	49		0	2	5	7	10	13	16	21	28	38	35	23	12	0	0
Emissions	182		0	9	17	25	36	42	60	80	107	144	121	87	46	0	0
0% Hedging costs (included in purchase price)	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Electric TCO	21 763		338	2016	5216	6733	6892	8481	3836	5485	7082	10190	11523	9642	7261	4617	1266
Electric TCO																	
Initial capital outlay	12 252		318	1 974	4 951	[illegible]	5 689	6 670	0	0	0	0	0	0	0	0	0
Disposal value	0																
Fuel	3 801		0	21	133	337	577	840	1 485	1 956	2 611	3 486	4 316	3 683	2 766	1 731	470
Maintenance	1 724		0	0	1	17	70	152	845	1 346	1 403	2 599	2 109	1 610	1 224	839	240
Personnel costs	3 401		0	17	110	275	468	692	1 317	1 883	2 665	3 567	4 428	3 279	2 841	1 778	483
Insurance	53		0	0	2	5	8	12	21	27	37	49	61	52	39	24	7
Emissions	531		0	3	19	46	80	117	204	273	366	489	608	519	390	244	66
0% Hedging costs (included in purchase price)	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Contingency adjustment to corporate plan																	
Total Wagon costs	12 463		3028	3456	3579	3474	2943	1178	908	1238	1698	2331	2741	2275	1637	910	248
Purchase cost	10 017		3022	3417	3462	3228	2559	649	0	0	0	0	0	0	0	0	0
Capex	1 583		3	23	70	151	242	339	591	817	1135	1577	1877	1561	1126	627	172
Opex	863		3	17	48	95	142	190	318	421	563	754	864	714	511	282	77
Total Infrastructure costs	18 491		1085	3171	4173	4272	4719	6803	3038	4065	5440	7280	8345	6890	4933	2727	741
Expansion	9 513		1026	2787	3379	3023	3092	4967	0	0	0	0	0	0	0	0	0
Capex and replacement capex	8 978		60	384	795	1249	1627	1837	3038	4065	5440	7280	8345	6890	4933	2727	741
Overhead costs	23 910		112	660	1585	2781	4033	5163	8539	11427	15291	20463	23456	19367	13866	7665	2082
Net cashflow before tax	10 397		-6846	-10772	-13077	-10558	-5901	-476	19325	25871	34344	45878	55981	47158	34662	20474	5547
28% Effective Tax costs (negative = credit)	7 658		0	-341	-789	-1039	-1016	-238	5240	7973	9446	12619	15540	13101	9630	5686	1553
Cashflow after tax	2 739		-6 846	-10 431	-12 288	-9 520	-4 885	-239	14 084	18 797	24 898	33 259	40 442	34 057	25 032	14 787	3 994

8. Risk register

No	Key Elements	Risk Something will Occur	Impacts leading to...	Causes caused by...	Controls controlled by...
1	Change Management Risk	Ineffective change management in implementing the strategies as encompassed in the	> Lack of buy in from labour > Lower employee morale > Employee resistance > Relocation of people	> Lack of understanding as to the business need for the changes > Ineffective communication resulting from the communication	None. Pending deployment plan approval
2	Volumes Risk	Volumes Risk associated with the late delivery (1064	> Loss of Revenue (R70.9bn) > Loss of Tonnages	> Current planned timelines may be at risk for local production1 and suggest annual locomotive shortages peaking at 150 electrics and 70 diesels in 2015	> Close monitoring of the delivery schedule > 1064 steerco
3	Planning Risk	Incorrect fleet life cycle planning	> tonnages not materialising as a result of the unavailability and unreliability of the fleet > projects falling behind schedule. > underutilised assets > Inability to deliver the fleet as per the plan	> Severely underestimating the contractual complexities > Adding additional requirements and complexities to the contract > Lengthy approval processes causing delays and mismatch between scheduled deployment and operational requirements > Non alignment between rolling stock planning, network planning and technology planning > There is an inherent risk with the increase in number of OEMs. The number of OEMs used for locomotives increases the acquisition time for design and testing, and increases the contractual complexities > Unrealistic timelines creating undue pressure on fast tracking the time taken for design and testing > Lack of co-ordination and integration between the various Capital projects > Protracted negotiations > TFR lack of capacity to manage contracts > Lack of capacity / capability from the supplier to execute contracts within the required time frame > Ineffective lifecycle planning	> Standard agreement & standardised technical specifications > 1064 loco steer committee > Improved approval process of prototypes prior to planned builds ahead of demand (Wagons & loco's upgrade) > Signed off user requirement specifications (Wagons) > Alignment of fleet deployment plan according to traffic file > Procurement controlled by current procurement strategy. > Aggressive delivery forced by conservative payment regimes > None > None > Contract management process > Project Management, contractual terms for terminating and contract penalty clauses > Resuscitate of the fleet plan > Deployment plan

No	Key Elements	Risk *Something will Occur*	Impacts *leading to..*	Causes *caused by..*	Controls *controlled by..*
4	Market Risk	Inherent risk that the commercial sectors that the wagons and locomotives are built for do not achieve the anticipated market growth	> tonnages not materialising as a result of the unavailability and unreliability of the fleet > projects falling behind schedule, > underutilised assets	> lower than anticipated customer demand > The anticipated customer demand does not materialise > The customer demand exceeds planned demand > not obtaining the right wagon mix for the right volumes of commodities at the right time	> Annual budget review of the demand (Demand file) > Logistic integration function (monitors asset performance & allocate resources)) > Annual budget review of the demand (Demand file) > Financial KPI focusing on asset utilisation (Return on total assets) > Annual/ Quarterly review of the build programme to align TE factories (wagon fleet)
5	Skills Risk	Lack of required skills to build, maintain, project manage and utilise the new fleet	> Delay in the execution of the fleet plan > Delay in project schedule/ deployment > Underutilised assets > Poor assets handing assets	> Insufficient maintenance skills (artisans, technicians) > Insufficient new generation technology maintenance skills > Train drivers not adequately equipped to utilise the new fleet > Inadequate transfer of knowledge of skills from the OEM to Transnet > Lack of project management skills	> Maintenance staffing plan > Succession plan & training with SOR > Train Drivers are trained in accordance with training plan > Training is built in the contract with the suppliers to train the maintainer (TRE) on the new technology > Project management staffing plan
6	Exogenous Risks	Impact of Eskom generation capacity shortage on the fleet plan Impact of strike action at major supplier plants	> Projects delay commissioning > Power shortages > Cost overruns > Scope creep	> Eskom's inability to secure long term sourcing contracts > Industrial action from major suppliers > Earthquakes > Floods > War > Sanctions or trade restrictions the world countries > Component prices going up	> Efficiency Improvement Initiatives > Energy Saving Initiatives > Establish Energy Efficiency Forum > High level engagement with Eskom as to plans to address shortage of capacity (including contractual agreements with Eskom) > Complete list of TFR projects submitted to Eskom. > Contracts clauses > Contract - under the force majeure clauses > The force majeure is valid for six months of which afterwards Transnet can terminate contract or apply breach of contract terms. >SLA with suppliers of TRE >TFR and TRE annual price review and escalation to TFR

No	Key Elements	Risk Something will Occur	Impacts leading to..	Causes caused by..	Controls controlled by..
7	Governance Risk	Lengthy Approval processes Treasury note on supplier development has introduced uncertainty	> Delay in the execution of the fle	> long lead time in obtaining approval as per PFMA requirements by DPE	> Project approval governance process
8	Operational Readiness	Inability to integrate new fleet into operations (readiness of the entire supply chain)	> loss of revenue > Poor return on investment > Delay in deployment > Underutilised capacity	> Lack of capacity by School Of Rail, School Of Engineering & curriculum readiness (Skills) > Lack of maintenance capacity (Facilities and Personnel) at TE > Lack of capacity & facility alignment with TPT & Customers > Lack of fully integrated technology plan > Lack of Rail network maintenance capacity, poor condition of the track > Inadequate systems to support the operability of the fleet post deployment (Existing IT related systems) > Lack of proper handover of the asset to operations and maintenance > Impact of the deployment plan on the organisation i.e. fleet & ITP once the deployment plan has approved.	> OR implementation guideline and Training approach & guideline > Maintenance Philosophy and Deployment Plan > Customer relations management > Technology plan > Rail Network Maintenance Plan > IT Plan and contracts > Draft Handover policy > Change Impact Assessment
9	Maintenance Risk	Inability to align maintenance and build plan to the fleet plan	> Not meeting the delivery schedule > Exceeding planned unit price > Work not performed according to works instructions	> Supplier to deliver on the TFR mandate (normal scheduled maintenance; new build programme, major fleet overhaul	> 7 year maintenance plan (TRE) > Delivery of material is planned ahead of demand > Annual/ Quarterly review of build programme that align TRE factories > Production lines at TRE doubled > Additional material suppliers sourced > Some factories operating 24 hour shifts to mitigate risk of delay to schedule > Fix unit prices for major components
10	Technology implementation Risk	No clear identification of the technology functional needs and user requirements specifications	> Inadequate functionality of the fl	> Inadequate process to define the URS > Lack of fleet ownership to identify the technology functional needs (no clear URS)	> Project management process > Signed off URS
11	Technology risk	Inappropriate technology	> Wrong technology deployed Non optimal functional of the fleet	Lack of know ledge and expertise to provide correct specified technologies	Technology management section with experts

9. Fraud risk management plan

1064 Transnet Locomotive Acquisition Process: Fraud / Corruption Risk Management Plan

Activities	Status	Responsibility	Process Owner	Start Date	End Date	Objective	Measurement
			Fraud /Ethics				
Rollout Awareness Education Training sessions to internal stakeholders involved in the 1064 Locomotive Acquisition process, which includes Fraud, Ethics & Information Security		Forensic Champion / TIA Forensic OD Leader				- Employees involved in the Locomotive acquisition process become aware of fraud and are able to identify incidents of possible fraud and report their allegations effectively	- Training to be aligned to 1064 Locomotive Acquisition plan / strategy.
Monitor the roll-out of Supplier Integrity Pacts for suppliers bidding for the supply of the Locomotives.		Forensic Champion / TIA Forensic OD Leader				-Ensure that suppliers bidding for the supply of locomotives are being made aware of the Supplier Integrity Pact and its content - Ensure that suppliers bidding for the supply of locomotives sign the Supplier Integrity Pact as part of their contractual obligations with Transnet	- Feedback provided at monthly Locomotives Acquisition Steering Committee
Perform a Fraud Risk Assessment on the 1064 Locomotive Acquisition process		Forensic Champion / TIA Forensic OD Leader				- Identify fraud risks associated with the Locomotive acquisition process. - Ensure controls and action plans are in place to mitigate fraud and corruption risks relevant to acquisition process	- Workshops to be scheduled with stakeholders timeously and - Fraud Risk Document distributed to all key Stakeholders involved in the acquisition process.
			Governance				
- Establishment of a Locomotive Acquisition Steering Committee (LSC) - Finalize the Mandate and terms of reference for the LSC.		Forensic Champion				- Ensure that there is oversight and that key stakeholders are held accountable in terms of their obligations in the locomotive acquisition process.	- Finalise terms of reference and mandate for the Locomotive Acquisition Steering committee.
High Value Gateway Review Process		Forensic Champion				-Provide assurance that due process is complied with in the acquisition of the Locomotives.	Timely delivery of assurance reports to Locomotives Acquisition Steering Committee.
Conduct a Conflict of Interest compliance check for employees involved in the 1064 Locomotive Acquisition process		Forensic Champion / TIA Forensic OD Leader				- Determine compliance with the Declaration of Interest and Related Party Disclosures Policy - Identify possible conflicts of interest	- Timeous delivery of the final report to Steering Committee.
Conduct a Gifts compliance check for stakeholders involved in the 1064 Locomotive Acquisition process		Forensic Champion / TIA Forensic OD Leader				- Determine compliance with the Gifts Policy - Identify possible incidents of non compliance	- Timeous delivery of the final report to Steering Committee.
Conduct a Delegation of Authority compliance check for stakeholders involved in the 1064 Locomotive Acquisition process		Forensic Champion / TIA Forensic OD Leader				- Determine compliance with the Delegation of Authority framework - Identify possible incidents of non compliance	- Timeous delivery of the final report to Steering Committee.
Perform Vendor Due Diligence on all entities that accepted the 1064 locomotives, including site visits, 3rd tier business interests against Transnet restricted vendors and their directors		Forensic Champion / TIA Forensic OD Leader				- Determine compliance with all Transnet related Policies	- Timeous delivery of the final report to Steering Committee.
Conduct Nmecast and Harddrive Analysis on all internal stakeholders involved in the 1064 Locomotive Acquisition process.		Forensic Champion / TIA Forensic OD Leader				Indentify possible fraud / corruption being committed by stakeholders in the 1064 Locomotive Acquisition process	-Timely delivery of reports to Management and the Locomotives Acquisition Steering Committee.
Review and enhance OEM site visit guidelines		Forensic Champion / TIA Forensic OD Leader				- To ensure that dealings with OEMs are kept at arms length during site visits by Transnet employees or agents	- Timeous delivery of the enhanced OEM site visit guidelines to the Steering Committee for adoption.

10. 7-year man plan

	Yr12/13	Yr13/14	Yr14/15	Yr15/16	Yr16/17	Yr17/18	Yr18/19
Natcor							
Required	752	805	861	1025	1137	1205	1278
Available	408	408	408	408	408	408	408
Delta	344	397	453	617	729	797	870
Natcor2							
Required	216	231	247	294	327	346	367
Available	146	146	146	146	146	146	146
Delta	70	85	101	148	181	200	221
Coalline							
Required	783	838	896	1067	1184	1255	1330
Available	417	417	417	417	417	417	417
Delta	366	421	479	650	767	838	913
Ore line							
Required	156	167	179	213	236	250	265
Available	107	107	107	107	107	107	107
Delta	49	60	72	106	129	143	158
Capecor1&2							
Required	598	640	685	815	904	959	1016
Available	426	426	426	426	426	426	426
Delta	172	214	259	389	478	533	590
Hockeystick							
Required	278	297	318	379	420	446	472
Available	191	191	191	191	191	191	191
Delta	87	106	127	188	229	255	281
Westcor							
Required	128	137	147	174	194	205	217
Available	109	109	109	109	109	109	109
Delta	19	28	38	65	85	96	108
Northcor							
Required	236	253	270	322	357	378	401
Available	158	158	158	158	158	158	158
Delta	78	95	112	164	199	220	243
Sentracor							
Required	270	289	309	368	408	433	459
Available	208	208	208	208	208	208	208
Delta	62	81	101	160	200	225	251
Eastcor							
Required	212	227	243	289	321	340	360
Available	180	180	180	180	180	180	180
Delta	32	47	63	109	141	160	180
	Yr12/13	Yr13/14	Yr14/15	Yr15/16	Yr16/17	Yr17/18	Yr18/19
Required	**3629**	**3884**	**4155**	**4946**	**5488**	**5817**	**6165**
Available	**3100**	**3100**	**3100**	**3100**	**3100**	**3100**	**3100**
Delta	**529**	**784**	**1055**	**1846**	**2388**	**2717**	**3065**

11. Infrastructure plans

EXHIBIT 75

Track / Perway – Axle loading (Current status)

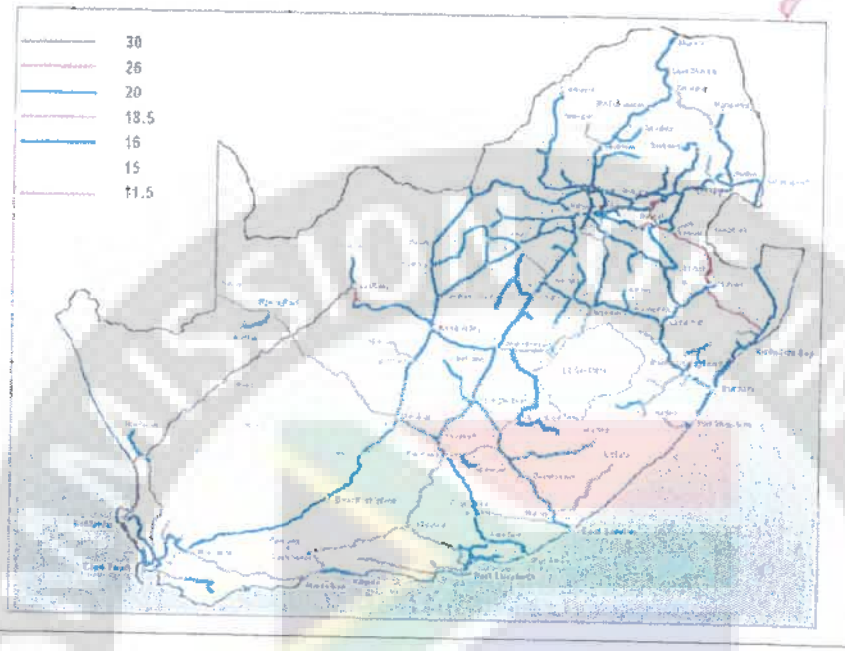


EXHIBIT 76

Electrification (Current status)

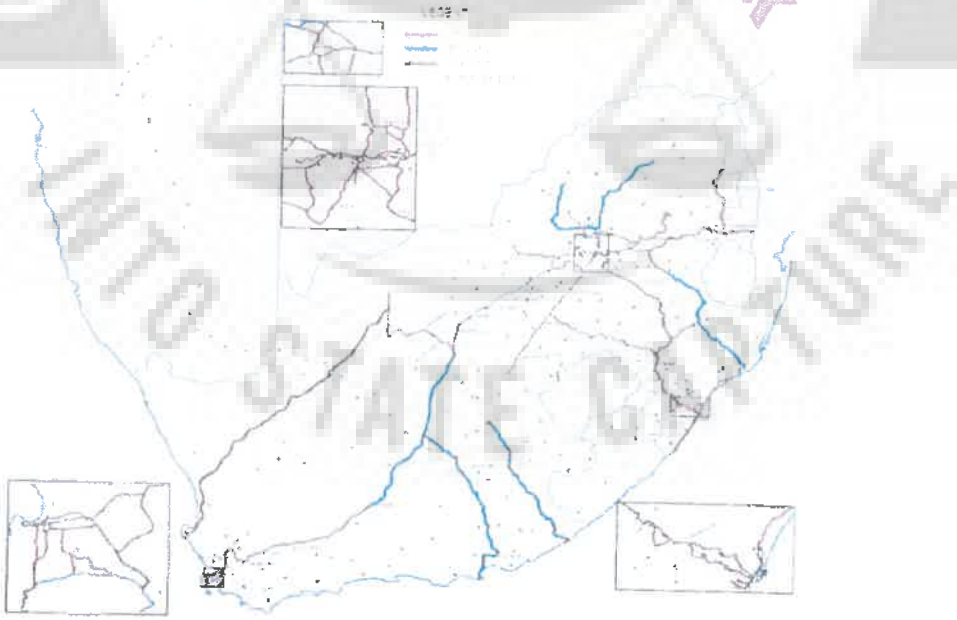


EXHIBIT 77

Expansionary infrastructure expenditure timeline

Business focus	Preparation for growth (up to two years)	Sustained growth (two to five years)	Consolidate (five to seven years)
Infrastructure expansion Perway/axle loading	• Increase axle loading • Increase coal line capacity to 81mt • Eskom 32mt project • Partial doubling of RC8-Nisezi line • Waterberg – Phases 2-5 additional passing loops • Manganese 16mtpa (Hotazel – Coega) • Swazi rail link 15mt. • Increase axle loading on Groenbult– Hoedspruit	• Increase axle loading • Increase coal line capacity to 81mt • Coal 91mt project (including Overall tunnel doubling) • Eskom 32mt project • Geluksplaas grade separation • Line tripling Broodsnyersplaas-Ermelo • Waterberg – Phases 2-5 additional passing loops • Manganese 16mtpa (Hotazel – Coega) • Ore line Phase 2A to 82.5mtpa • Swazi rail link 15mt	• Increase axle loading • Overall tunnel doubling Coal 91mt project (including Overvaal tunnel doubling) • Eskom 32mt project • Line tripling Broodsnyersplaas-Ermelo • Swazi rail link 15mt • Doubling of all critical deviations
Infrastructure expansion Electrical	• Increase electrical capacity on the AC section on the coal line • Upgrade section Rooikop-Newcastle. Manganese 16mtpa New and Upgraded sub-stations and OHTE	• Manganese 16mtpa New and Upgraded substations • Ore line Phase 2A to 82.5mtpa power upgrade (including of OHTE) • Increase electrical capacity on the AC section on the coal line • Coal 91mt project • Upgrade substations and electrical equipment • Commence with the conversion of 3kV DC to 25kVAC Ermelo-Pyramid South	• Completion of the conversion of 3kVDC to 25kVAC Ermelo-Pyramid South • Coal 91mt project • Eskom 32mt project • Upgrade substations and electrical equipment • Waterberg – Phase 6 (23mtpa) commence with the electrification of Thabazimbi-Lephalale • Conversion of 3kVDC to 25kVAC on Ermelo-Pyramid South
Infrastructure expansion Signalling	• Manganese 16mtpa	• Pyramid South – Lephalale: Communication based authorisation (CBA) pilot installation • Manganese 16mtpa	• Commence with the re-signaling of the coal line (CBA)

EXHIBIT 78

Track / Perway – Axle loading (Future status)

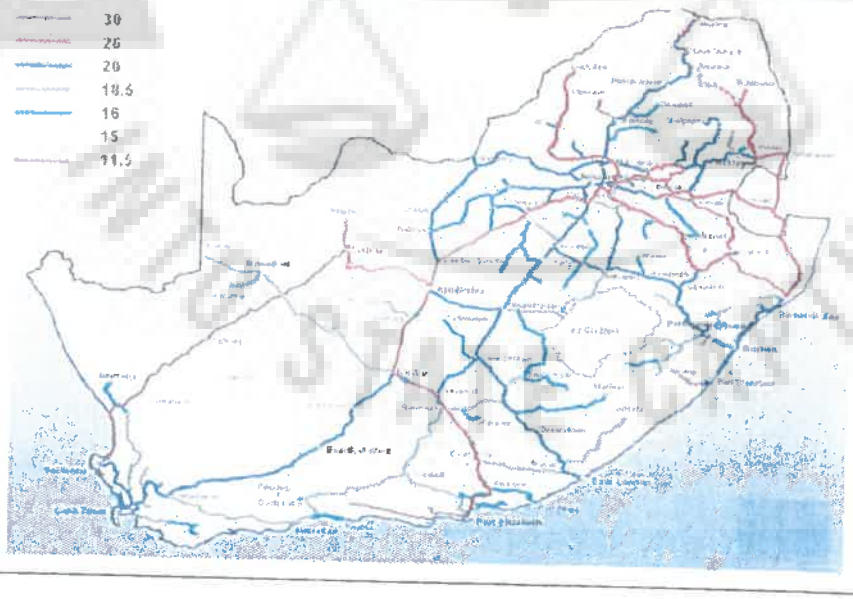


EXHIBIT 79

Electrification (Future status)

EXHIBIT 80

Maintenance infrastructure expenditure timeline (1/3)

- Increase on-track machines capacity and productivity
- Accelerated rail replacement (765km to 865km)
- Increase sleeper replacement (480 000 – 550 000/year)
- Increase ballast screening (690km – 750km)
- Ore line rail break mitigation plan, Wayside Intelligent Longstress measurement System (WILMA), Ultrasonic Broken Rail Detector System (UBRD)
- Longstress measurement system (WILMA) – Natcor and coal line
- Infrastructure sustains (General Freight business) tunnels and bridges
- Additional three rail trains
- Level crossing elimination/Level crossing protection (new bridges/protection systems)
- Drainage rehabilitation
- Formation rehabilitation
- Install wheel impact monitoring and weigh-in motion (WIM-WIM) system

- Increase on-track machines capacity and productivity
- Accelerated rail replacement (865km to 1 065km)
- Increase sleeper replacement (550 000 to 650 000/year)
- Increase ballast screening (750 – 800km)
- Longstress measurement systems (WILMA) for core lines
- Infrastructure sustains (General Freight business) tunnels and bridges
- UBRD systems on General Freight business core lines
- Level crossing elimination/Level crossing protection (new bridges/protection systems)
- Drainage rehabilitation
- Formation rehabilitation
- Install wheel impact monitoring and weigh-in motion (WIM-WIM) system

- Increase on-track machines capacity and productivity
- Accelerated rail replacement (1 065km to 1 200km)
- Maintain sleeper replacement at 650 000/year
- Increase ballast screening (800km – 850km)
- Longstress measurement systems (WILMA) for core lines
- Infrastructure Sustain (General Freight business) tunnels and bridges
- UBRD systems on General Freight businesses core lines
- Level crossing elimination/level crossing protection (new bridges/protection systems)
- Drainage rehabilitation
- Formation rehabilitation

EXHIBIT 81

Maintenance infrastructure expenditure timeline (2/3)

Business focus	Preparation for growth	Sustained growth	Consolidate
Infrastructure maintenance, Sustaining electrical	• Primary circuit breaker replacement • Track breaker replacement • Upgrade and replace switchgear (distribution subs) • Traction substations 25-year lifecycle intervention • Traction substations 50-year lifecycle intervention • Sabotage/vandalism/theft projects	• Primary circuit breaker replacement • Track breaker replacement • Upgrade and replace switchgear (distribution subs) • Traction substations 25-year lifecycle intervention • Traction substations 50-year lifecycle intervention • Sabotage/vandalism/theft projects	• Traction substations 25-year lifecycle intervention • Traction substations 50-year lifecycle intervention • Sabotage/vandalism/theft projects
[illegible]	• Consolidation of single manned cabins • Centralisation of CTCs • Subsystem replacement to extend life (e.g., replace track circuits, remote control systems, power equipment) • Migrate systems from copper to optic fibre (coal line, Manganese corridor, Hantam, Sentrarand area, Houtheuwel – Klerksdorp) • Installation of electronic interlocking systems (three pilot sites) • Resignalling of Kamfersdam – Postmasburg • Resignalling of Bellville – Wellington • Resignalling of Umgeni – Stanger • In-motion weighbridges • Upgrade/replace measurement systems	• Centralisation of CTCs • Subsystem replacement to extend life (e.g., replace track circuits, remote control systems, power equipment) • Migrate systems from copper to optic fibre (Port Elizabeth – De Aar, De Aar – Wellington, Empangeni, Ogies) • Rationalisation of signaling systems in the central region (Gauteng area) • Remodelling track layout and resignalling Gauteng area (Elsburg – India – Jupiter – Wattles) • Resignalling of Bellville – Wellington • Resignalling of Umgeni – Stanger • Replace PEL interlockings in the Karoo and Port Elizabeth • Upgrade/replace measurement systems	• Subsystem replacement to extend life (e.g., replace track circuits, remove control systems, power equipment) • Migrate systems from copper to optic fibre • Replace PEL interlockings in the Karoo and Port Elizabeth • Coal line: Upgrade/replace the Vehicle Identification System (VIS) • Resignalling projects on General Freight business lines commence

3

EXHIBIT 82

Maintenance infrastructure expenditure timeline (3/3)

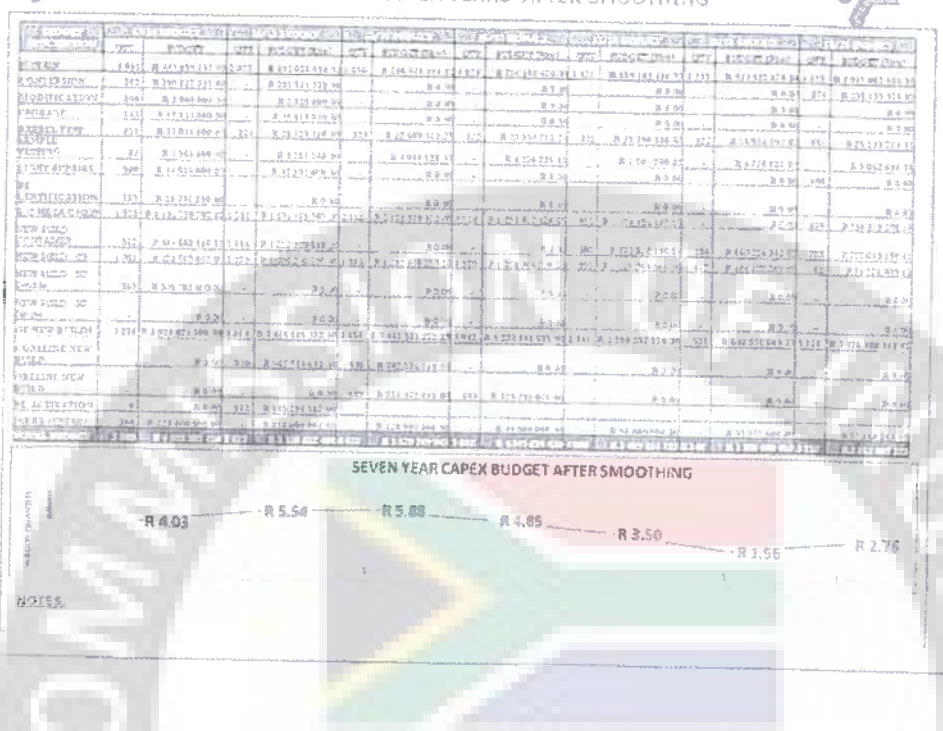
Business focus	Preparation for growth	Sustained growth	Consolidate
[illegible]	• Upgrade national optical fibre cable network • Upgrade and replace access multiplexers • Improve train communication in rail tunnels countrywide • Provision of new telecommunication backbone infrastructure • Train radios Phase 4 • Replace unstable masts and towers • De-copper in Empangeni, Ermelo and Ogies	• Upgrade national optical fibre cable network • Upgrade and replace access multiplexers • Improve train communication in rail tunnels countrywide • Provision of new telecommunication backbone infrastructure • Train radios Phase 4 • Replace unstable masts and towers	• Upgrade national optical fibre cable network • Upgrade and replace access multiplexers

4

12. Wagon requirements

EXHIBIT 83

PROPOSED CAPEX BUDGET OVER SEVEN YEARS AFTER SMOOTHING



13. Locomotive types and capacity

EXHIBIT 84

The GFB fleet currently has a total capacity of ~92 MGTK per year

Electric			Diesel		
Loco type	Number in fleet	Total capacity (MGTK p.a.)	Loco type	Number in fleet	Total capacity (MGTK p.a.)
6E	75	2,507	33	5	38
7E	216	23,224	34	318	7,689
8E	37	19	35	146	1,006
9E	0	0	36	167	244
10E	104	13,795	37	70	1,372
11E	1	130	38	38	827
14E	8	330	39	53	2,852
18E	597	34,026	43	53	4,235
Total	**1038**	**74,031**	**Total**	**850**	**18,626**

The current fleet is made up of 66 percent electric and 34 percent diesel with a total fleet size of 1,888 locomotives and capacity of 92 million gross ton kilometres per year. The active GFB fleet includes both the operational fleet and the fleet undergoing maintenance, but excludes mothballed locomotives. The operational fleet consists of the locomotives available for operations. Typically, 12 percent of the active fleet's locomotives are undergoing maintenance or minor repairs, but this varies depending on the level of reliability of individual locomotives and locomotive classes at any point in time.

The operational fleet is categorised into "shunters" and "workhorses." Workhorses are the prime movers, hauling loads between hubs, and generate the income earning net ton kilometres. They are TFR's inputs in locomotive efficiency measures. Shunters are primarily used to place and clear loaded wagons and compile trains before departure. Although shunters are not prime income earners, they are an essential component of operations and an overhead cost that must be covered.

14. Locomotive specifications

Locomotives have a long lifespan and the technology is constantly evolving. Therefore, to maintain efficiencies and capacity, TFR needs to procure recently designed locomotive types that not only enable it to deliver on the Fleet Plan but also capture the aforementioned operational efficiencies.

EXHIBIT 85

General locomotive specifications

Locomotive feature	Electric	Diesel
Energy source	• 25 kv AC and 3 kv DC	Diesel
Maximum axle load (tonnes)	22	22
Continuous tractive effort[1]	Bo-Bo 267 / Co-Co 400	Bo-Bo 267 / Co-Co 400
Base speed	34	34
Maximum operating speed (km/hr)	100	100

1 Bo-Bo 2521 kw at 34 km/hr and Co-Co 3778 kw at 34 km/hr

SOURCE: 1064 Loco Business Case Annexure K- Locomotive Specifications

4

Exhibit 9, above, shows the high-level specifications of the locomotives to be procured. A major feature of the procurement is that it offers suppliers the choice of providing either Bo-Bo[9] or Co-Co[10] wheel configurations. It also requires the electric locomotives to run on both AC and DC lines given South Africa's gridline structure.

The proposed locomotives have significant improvements in engine design and lower pollutants per tonne kilometre. They are 8 percent more fuel efficient and are also more powerful, with a continuous tractive effort of 349 kN compared to the 218 kN of the class 34 diesels in dry conditions.

A direct comparison of class 6E and 18E to the proposed new locomotive is not possible. However, our knowledge of and experience with the recently delivered 19E and 15E suggest TFR can expect an electrical efficiency improvement of at least 18 percent, as well as regenerative capability that feeds power back into the Eskom grid. The design calls for a tractive effort between 267 and 400 kN, which is considerably higher than the 170 kN of the 6E series or the 200 kN of the 18E series.

15. Technology

The new locomotives will all be equipped with new technology which is currently being retrofitted to the existing fleet. The technologies are summarised below.

9 Two-wheel configuration

10 Three-wheel configuration

- Integrated Asset Tracking to track locomotives and wagons using a combination of tracking technologies including GPS and GPRS.
- Electronic Control Pneumatic Braking (ECPB). This enhances the current pressurised air brake system by sending an electric signal via a control cable simultaneously to all wagons to apply their brakes. This eliminates the propagation delay encountered in the traditional system where the signal is pneumatically transmitted from the locomotive down the length of the train. A result of this system trains brake more responsively and more evenly and safer. It is being implemented on all 200 wagon trains.
- Radio Distributed Power enables driverless locomotives to be placed within the length of the train and remotely control them from the lead locomotive. This enables longer and safer trains as the tractive forces are more evenly distributed along the length of the train. Coupler breakages because are reduced to being eliminated as the tractive forces are no longer concentrated at the leading locomotive consist.

This technology was pioneered on the Iron Ore Export Line and will be used in other heavy haul operations but will not be universally fitted.

- Cab based authorisation, control and communication systems. This cab mounted equipment provides an unobtrusive visual display to the driver with easy and intuitive controls and inputs. There are also interfaces to the locomotive controls providing automatic stop features in the event of over speeding or failure to adhere to a valid command.

All new locomotive designs will incorporate the design ergonomics of these systems and interfaces to the locomotive controls conception through to commissioning.

Retrofitting this equipment to existing locomotives almost always results in suboptimal ergonomic designs and control interfaces.

- Electronic Fuel Injection Engine Technology provides better green fuel efficiencies and higher power output using micro controllers that intelligently switches the engine on and off to eliminate excessive idling. Indications are that these could reduce the energy bill for these locomotives with up to 10 percent.
- Data Loggers report on the condition (health) of the locomotive fleet, thereby optimising maintenance and improving efficiencies in the maintenance of the locomotive fleet. It is planned that this information is transmitted back to the central locomotive control for maintenance planning and to analytically develop preventative maintenance measures.
- Trip Optimisers are being tested and evaluated for diesels and are being considered for electric locomotives. The Trip Optimiser results in significant fuel and energy savings as it computes the best match for the throttle / notch position of the locomotive to preloaded profile for the trip and running time to be achieved. Using the trip optimiser ensures that only the optimum power is applied at any one time and integrated over the trip, the minimum energy is consumed. As a stand-alone system with automatic throttle control, energy savings of 3 percent - 17 percent are indicated in the commercial literature depending on the locomotive type, track conditions and driver behaviour. Further savings are possible depending on the degree of integration into other systems such as Dynamic

Brake Control, Integration with Train Authorisation Systems and ultimately Movement Planning.

Project Authorisation Signatures

Transnet Freight Rail

Submission supported:

Rita Roper
General Manager, Capital Projects

Date

Submission supported:

Mlamuli Buthelezi
Chief Operating Officer

Date

Submission recommended:

Siyabonga Gama
Chief Executive: Freight Rail

Date

Transnet Group

Submission recommended:

Anoj Singh
Chief Financial Officer

Date

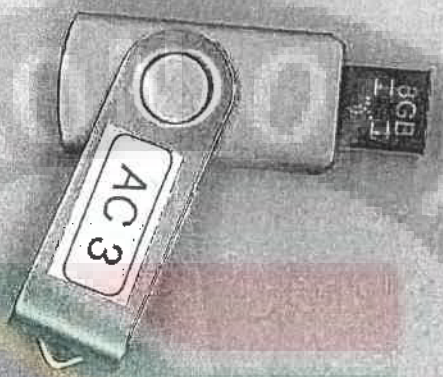
Submission recommended:

Brian Molefe
Group Chief Executive

Date

Annexure "AC 3"

AC 3



CONTENT OF MEMORY STICK MARKED AS ANNEXURE "AC 3"

Screen print of the content

Name	Date modified	Type	Size
20130418 1064 1100 Locomotives Business Case_WithAnx.docx	06 Jul 2019 20:54	Microsoft Word Document	11,701 KB
20130418 TRX Business Model validation Final.xlsx	13 Nov 2019 15:24	Microsoft Excel Worksheet	2,852 KB

Content of the memory stick attached as Annexure "AC 3"

#	DESCRIPTION	ANNEXURE
1.	20130418 1064 1100 Locomotives Business Case_WithAnx.docx	"AC 2"
2.	20130418 TRX Business Model validation Final.xlsx	"AC 3.1"

Annexure "AC3.1"

VISIBLE AND HIDDEN WORKSHEETS IN ACTIVE WORKBOOK

"20130418 TRX Business Model validation Final.xlsx"

#	WORKSHEET	VISIBLE/HIDDEN
1	Productivity lookup	Hidden
2	Gross KMS lookup	Hidden
3	Bus case output	
4	NPV	
5	NPV Output	Hidden
6	NPV calculation (WIP)	Hidden
7	Demand linked Loco calc	Hidden
8	Main control input	
9	Loco efficiency MGTK	
10	Loco efficiency loco check	
11	Volumes MDS output	
12	Loco requirement	
13	MDS shortfall calculations	
14	Supplier Procurement Calc	
15	Tariffs Data	
16	T.C.O Locos Capex	
17	T.C.O Electric Maintenance	
18	T.C.O Diesel Maintenance	
19	T.C.O Non Maintenance	
20	Inputs	Hidden
21	GFB Productivity per loco	
22	Current fleet tech allowance	
23	Procurement timelines	
24	Data List	
25	Loco efficiency_Old	
26	GDP growth	
27	USD inflation	
28	FX Futures	
29	Exchange rate forecasts	
30	Bank forecast exchange rates	
31	Data sheets ----->	
32	SUMMARY Year 13_14 updated	
33	12_GFB runout	
34	Loco type info	
35	GFB Locos -Stevens-Latest	
36	MDS Latest - BU GROUPFLOWS	
37	43_GTkm_Monthly	
38	TFR Performance History	
39	Raw data sheets----->	
40	Historic Input	
41	IS Inputs	
42	Mtce_&_Pers_Inputs	
43	Vol & Tariff Input	
44	Wagon Input	
45	Infra Input	
46	Locomotive Input	
47	13_GFB	
48	Loco type (2)	
49	GFB Locos	
50	BU GROUPFLOWS	
51	Infrastructure	
52	fleet breakdown	
53	Historical TFR capex	
54	Data TFR capex	
55	Treasury curve hedged rates	

Productivity MGTK (13/14 to 18/19)										
	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
MDS required capacity	**86,401**	**98,479**	**120,811**	**138,409**	**148,467**	**158,434**	**158,434**	**158,434**	**158,434**	**158,434**
Existing fleet capacity	79,403	79,697	98,478	101,730	90,848	86,130	83,091	72,165	67,476	63,109
Written off (lost) capacity	1,101	2,201	3,302	4,446	5,591	6,736	7,881	9,026	10,171	11,316
Required capacity	**8,099**	**20,983**	**25,634**	**41,126**	**63,211**	**79,040**	**83,224**	**95,295**	**101,128**	**106,641**

Cashflow schedule Snapshot (13/14 to 20/21)																													
	PV	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23																		
Revenue	109,104	272	1,855	5,517	10,847	17,437	24,195	30,066	32,111	34,038	36,080	38,245	40,540	42,972	45,551	48,284	51,181	54,252	57,507	60,957	64,614	68,491	72,601	76,957	81,574	86,469	91,657	97,156	102,986	109,165
Diesel TCO	22,080	2,674	3,323	4,040	4,846	4,729	3,047	3,323	3,530	3,744	4,257	4,673	4,894	5,228	5,560	5,345	5,754	6,166	6,529	6,964	7,318	8,165	8,745	9,309	9,893	10,413	10,476	11,214	11,791	12,474
Electric TCO	21,763	318	2,016	5,216	6,033	6,892	8,481	2,656	2,749	3,013	3,234	3,489	3,836	4,281	4,730	5,125	5,529	5,485	5,773	6,011	6,296	6,792	7,082	7,621	8,279	8,863	9,575	10,190	10,495	11,114
Wagon costs	12,463	3,028	3,456	3,579	3,474	2,943	1,178	653	702	749	799	852	908	967	1,029	1,094	1,163	1,238	1,319	1,405	1,496	1,594	1,698	1,809	1,927	2,053	2,188	2,331	2,483	2,646
Infra costs	18,491	1,085	3,171	4,173	4,272	4,719	6,803	2,253	2,406	2,550	2,703	2,866	3,038	3,220	3,413	3,618	3,835	4,065	4,309	4,567	4,841	5,132	5,440	5,766	6,112	6,479	6,868	7,280	7,717	8,180
Overheads	23,910	112	660	1,585	2,781	4,055	5,163	6,332	6,763	7,169	7,599	8,055	8,539	9,051	9,594	10,170	10,780	11,427	12,112	12,839	13,609	14,426	15,291	16,209	17,181	18,212	19,305	20,463	21,691	22,992
Tax costs	7,658	0	-341	-789	-1,039	-1,016	-238	1,760	2,640	3,530	4,303	4,943	5,240	5,493	5,772	6,251	6,583	7,073	7,520	7,997	8,524	8,897	9,446	9,977	10,520	11,155	11,938	12,619	13,496	14,322
Net Cashflow	**2,739**	**-6,946**	**-10,431**	**-12,288**	**-9,520**	**-4,885**	**-239**	**13,088**	**13,322**	**13,283**	**13,184**	**13,366**	**14,084**	**14,733**	**15,452**	**16,682**	**17,537**	**18,797**	**19,945**	**21,174**	**22,529**	**23,486**	**24,898**	**26,265**	**27,661**	**29,293**	**31,307**	**33,059**	**35,313**	**37,437**

Capital expenditure schedule										
Rm Cashflow	PV	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	tal expenditure
Diesel capex	8,314	2,433	2,552	2,709	2,881	2,064	0	0	0	12,640
Electric capex	12,252	300	1,860	4,665	5,042	5,360	6,284	217	0	23,728
Wagon capex	10,017	3,022	3,417	3,462	3,228	2,559	649	0	0	16,337
Wagon copex	1,583	3	23	70	151	242	339	420	452	1,700
Infra capex	9,513	1,026	2,787	3,379	3,023	3,092	4,967	0	0	18,272
Infra copex	8,978	60	384	795	1,249	1,627	1,837	2,253	2,406	10,611
Total	**50,656**	**6,844**	**11,023**	**15,079**	**15,575**	**14,944**	**14,075**	**2,890**	**2,859**	**83,287**
Locomotive contingency	1,189	168	271	453	486	456	386	13	0	2,232

Fleet requirements (based on Fleet plan and existing fleet runout)									
Required at start of year	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22
Diesel	59	148	242	368	459	528	558	603	652
Electric	58	144	147	238	415	536	611	706	744
Total	**117**	**292**	**388**	**606**	**874**	**1,064**	**1,169**	**1,309**	**1,396**

1064 Procurement (RFP delivery schedule)									
Locomotives at start of year	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22
Diesel	0	100	200	300	400	465	465	465	465
Electric	0	0	65	195	325	455	599	599	599
Total	**0**	**100**	**265**	**495**	**725**	**920**	**1064**	**1064**	**1064**

Shortfalls									
Estimated Shortfalls	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22
Diesel	25	32	25	51	43	63	93	138	187
DC	58	66	43	4	50	33	0	10	47
AC	0	0	0	0	0	0	12	97	98
Dual voltage	0	56	6	17	18	22	0	0	0
Electric	58	122	49	21	68	54	12	107	145
Total	**83**	**154**	**74**	**72**	**112**	**118**	**105**	**245**	**332**

New GFB Diesel Locomotive plan						
Delivery Periods	13/14	14/15	15/16	16/17	17/18	Total
Quantity of Locomotive	100	100	100	100	65	465

New GFB Electric Locomotive plan						
Delivery Periods	14/15	15/16	16/17	17/18	18/19	Total
Quantity of Locomotive	65	130	130	130	144	599
	100	165	230	230	195	144

Supplier production capacity (Locomotives per month)						
	Year 1	Year 2	Year 3	Year 4	Year 5	
Diesel into service	8	8	8	8	8	
Electric into service	5	11	11	11	12	

Existing fleet GFB at 2013/14			
Fleet type	Number of locos	GTKm per loco	Cumulative GTKM
6E	75	33	2,507
7E	58	130	7,520
7E1	48	107	5,137
7E2	45	94	4,217
7E3	65	98	6,351
8E	37	1	19
10E	104	133	13,795
14E	8	41	330
18E	597	57	34,026
33D	5	8	38
34D	318	24	7,689
35D	146	7	1,006
36D	167	1	244
37D	70	20	1,372
38D	38	22	827
39D	53	54	2,852
43D	55	80	4,395
Total	**1,889**	**49**	**92,324**

GFB Tariff Average (R/NetTonKm)										
13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
0.42	0.45	0.48	0.50	0.54	0.58	0.63	0.66	0.70	0.75

Volumes (Net tons)						
	13/14	14/15	15/16	16/17	17/18	18/19
MDS target	**91**	**104**	**127**	**151**	**161**	**170**
Existing Fleet	83	82	100	106	92	85
1064 Locomotives	1	7	21	41	60	77
Volume Shortfall	7	15	6	4	9	8

Capital expenditure schedule									
Rm Cashflow	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	Total
Diesel capex	2,433	2,552	2,709	2,881	2,064	0	0	0	**12,640**
Electric capex	300	1,860	4,665	5,042	5,360	6,284	217	0	**23,728**
Total	**2,733**	**4,412**	**7,374**	**7,924**	**7,424**	**6,284**	**217**	**0**	**36,368**

Productivity MGTK (13/14 to 18/19)										
	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
MDS required capacity	**86,401**	**98,479**	**120,811**	**138,409**	**148,467**	**158,434**	**158,434**	**158,434**	**158,434**	**158,434**
Existing fleet capacity	79,403	79,697	98,478	101,730	90,848	86,130	83,091	72,165	67,476	63,109
Written off (lost) capacity	1,101	2,201	3,302	4,446	5,591	6,736	7,881	9,026	10,171	11,316
Required capacity	**8,099**	**20,983**	**25,634**	**41,126**	**63,211**	**79,040**	**83,224**	**95,295**	**101,128**	**106,641**

Cashflow schedule Snapshot (13/14 to 20/21)											
	PV	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
Revenue	109,104	272	1,855	5,517	10,847	17,437	24,195	30,066	32,111	34,038	36,080
Diesel TCO	22,080	2,674	3,323	4,040	4,846	4,729	3,047	3,323	3,530	3,744	4,257
Electric TCO	21,763	318	2,016	5,216	6,033	6,892	8,481	2,656	2,749	3,013	3,234
Wagon costs	12,463	3,028	3,456	3,579	3,474	2,943	1,178	653	702	749	799
Infra costs	18,491	1,085	3,171	4,173	4,272	4,719	6,803	2,253	2,406	2,550	2,703
Overheads	23,910	112	660	1,585	2,781	4,055	5,163	6,332	6,763	7,169	7,599
Tax costs	7,658	0	-341	-789	-1,039	-1,016	-238	1,760	2,640	3,530	4,303
Net Cashflow	**2,739**	**-6,946**	**-10,431**	**-12,288**	**-9,520**	**-4,885**	**-239**	**13,088**	**13,322**	**13,283**	**13,184**

Capital expenditure schedule										
Rm Cashflow	**PV**	**13/14**	**14/15**	**15/16**	**16/17**	**17/18**	**18/19**	**19/20**	**20/21**	**Total expenditure**
Diesel capex	8,314	2,433	2,552	2,709	2,881	2,064	0	0	0	12,640
Electric capex	12,252	300	1,860	4,665	5,042	5,360	6,284	217	0	23,728
Wagon capex	10,017	3,022	3,417	3,462	3,228	2,559	649	0	0	16,337
Wagon copex	1,583	3	23	70	151	242	339	420	452	1,700
Infra capex	9,513	1,026	2,787	3,379	3,023	3,092	4,967	0	0	18,272
Infra copex	8,978	60	384	795	1,249	1,627	1,837	2,253	2,406	10,611
Total	**50,656**	**6,844**	**11,023**	**15,079**	**15,575**	**14,944**	**14,075**	**2,890**	**2,859**	**83,287**
Locomotive contingency	1,189	168	271	453	486	456	386	13	0	2,232

Fleet requirements (based on Fleet plan and existing fleet runout)									
Required at start of year	**13/14**	**14/15**	**15/16**	**16/17**	**17/18**	**18/19**	**19/20**	**20/21**	**21/22**
Diesel	59	148	242	368	459	528	558	603	652
Electric	58	144	147	238	415	536	611	706	744
Total	**117**	**292**	**388**	**606**	**874**	**1,064**	**1,169**	**1,309**	**1,396**

1064 Procurement (RFP delivery schedule)									
Locomotives at start of year	**13/14**	**14/15**	**15/16**	**16/17**	**17/18**	**18/19**	**19/20**	**20/21**	**21/22**
Diesel	0	100	200	300	400	465	465	465	465
Electric	0	0	65	195	325	455	599	599	599
Total	**0**	**100**	**265**	**495**	**725**	**920**	**1064**	**1064**	**1064**

Shortfalls									
Estimated Shortfalls	**13/14**	**14/15**	**15/16**	**16/17**	**17/18**	**18/19**	**19/20**	**20/21**	**21/22**
Diesel	25	32	25	51	43	63	93	138	187
DC	58	66	43	4	50	33	0	10	47
AC	0	0	0	0	0	0	12	97	98
Dual voltage	0	56	6	17	18	22	0	0	0
Electric	58	122	49	21	68	54	12	107	145
Total	**83**	**154**	**74**	**72**	**112**	**118**	**105**	**245**	**332**

New GFB Diesel Locomotive plan						
Delivery Periods	**13/14**	**14/15**	**15/16**	**16/17**	**17/18**	**Total**
Quantity of Locomotive	100	100	100	100	65	465

New GFB Electric Locomotive plan						
Delivery Periods	**14/15**	**15/16**	**16/17**	**17/18**	**18/19**	**Total**
Quantity of Locomotive	65	130	130	130	144	599
	100	165	230	230	195	144

Supplier production capacity (Locomotives per month)					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Diesel into service	8	8	8	8	8
Electric into service	5	11	11	11	12

Existing fleet GFB at 2013/14			
Fleet type	**Number of locos**	**GTKm per loco**	**Cumulative GTKM**
6E	75	33	2,507
7E	58	130	7,520
7E1	48	107	5,137
7E2	45	94	4,217
7E3	65	98	6,351
8E	37	1	19
10E	104	133	13,795
14E	8	41	330
18E	597	57	34,026
33D	5	8	38
34D	318	24	7,689
35D	146	7	1,006
36D	167	1	244
37D	70	20	1,372
38D	38	22	827
39D	53	54	2,852
43D	55	80	4,395
Total	**1,889**	**49**	**92,324**

GFB Tariff Average (R/NetTonKm)										
13/14	**14/15**	**15/16**	**16/17**	**17/18**	**18/19**	**19/20**	**20/21**	**21/22**	**22/23**
0.42	0.45	0.48	0.50	0.54	0.58	0.63	0.66	0.70	0.75

Volumes (Net tons)						
	13/14	**14/15**	**15/16**	**16/17**	**17/18**	**18/19**
MDS target	**91**	**104**	**127**	**151**	**161**	**170**
Existing Fleet	83	82	100	106	92	85
1064 Locomotives	1	7	21	41	60	77
Volume Shortfall	7	15	6	4	9	8

Capital expenditure schedule									
Rm Cashflow	**13/14**	**14/15**	**15/16**	**16/17**	**17/18**	**18/19**	**19/20**	**20/21**	**Total**
Diesel capex	2,433	2,552	2,709	2,881	2,064	0	0	0	**12,640**
Electric capex	300	1,860	4,665	5,042	5,360	6,284	217	0	**23,728**
Total	**2,733**	**4,412**	**7,374**	**7,924**	**7,424**	**6,284**	**217**	**0**	**36,368**

Annexure "AC 4"

AC 4

2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050

	15/16	16/17	17/18	18/19
219	0,503215	0,506198	0,508874	0,511887	0,514791

	15/16	16/17	17/18	18/19	19/20
9%	50,3%	50,6%	50,9%	51,2%	51,5%

Annexure "AC 5"

Transnet SOC Ltd
Registration
Number
1990/000900/30

Carlton Centre
150 Commissioner
Str. Johannesburg
2001

P.O. Box 72501
Parkview
South Africa, 2122
T +27 11 308 2528
F +27 11 308 2512

TRANSNET

www.transnet.net

MEMORANDUM

To: Transnet Board of Directors (BOD)

From: Brian Molefe, Group Chief Executive

SUBJECT: INCREASE IN ESTIMATED TOTAL COST (ETC) OF THE ACQUISITION OF 1064 LOCOMOTIVES FOR TRANSNET FREIGHT RAIL'S GENERAL FREIGHT BUSINESS (GFB)

PURPOSE:

1. The purpose of this memo is:
   a) for the BOD to note the reasons for the increase in ETC.
   b) to request that the BOD approve an increase in the estimated total cost (ETC) for the acquisition of 1064 Locomotives for the General Freight Business of Transnet Freight Rail from R 38.6 billion to R 54.5 billion.

EXECUTIVE SUMMARY:

2. In summary the increase in ETC of R 15.9 billion can be attributed to the following:

Update of business case for updated economic factors	R 5.4 bn	34 %
Risk Mitigation - Forex and Escalation	R 9.5 bn	59 %
TE Scope	R 2.6 bn	16 %
Contingencies	R 4.9 bn	31 %
Lower capital acquisition cost of the locomotive obtained through the competitive tender and negotiation process less the batch pricing adjustment of R 2.7 billion.	R – 6.5 bn	- 41 %

3. 93 % of the ETC increase relates to changes in market conditions and the risk tolerance level of the company. Whilst 16 % of the ETC increase relates to strategic factors such as localisation and competition. These increases have been offset by a competitive tender and negotiation process that realised a benefit of 41 %.

4. On a like for like comparison the new price including TE scope of R 40.09 billion (excluding hedging and escalation) is only 3.89 % higher than the approved ETC of R 38.6 billion. The balance of the ETC increase relates to risk mitigation and strategic

concessions such as batch pricing.

5. Regiments Capital (using an international expert) benchmarked the Capital Acquisition Cost of the locomotives at the "best and final offer" stage of this transaction and the results indicate that the price being offered by the bidders is reasonable. Given that forex, escalation, economic factors and batch pricing impact is subject to market conditions it can be deduced that the final contract price is also reasonable.

6. The need to incur these costs has been justified and the associated costs are reasonable in the circumstances.

7. The NPV of the business case remains positive at R 11.68 billion.

8. Impacts on the 2014/15 corporate plan has been assessed and mitigated. Consequently the R 54.5 billion is affordable and reasonable.

9. Risk mitigation measures have been developed and are being implemented to ensure benefits are realised.

10. Significant socio economic benefits such as localisation and job creation will be realised.

11. Significant benefit will be achieved by the company including additional volumes earlier, additional cash flows, a stronger balance sheet, which should enable greater capital expansion in future.

12. This acquisition in conjunction with other locomotive acquisitions will significantly contribute towards the company achieving its original MDS targets of 350 mt by 2018/19 and consequently is fully aligned with the MDS of the company.

13. The strategic, commercial and socio economic benefits associated with this acquisition will significantly outweigh the capital cost.

BACKGROUND:

14. The acquisition of 1064 Locomotives was approved by the Board of Directors in April 2013 at a cost of R 38.6 billion. This excluded the following costs:

    a. The cost of changes in economic conditions (forex and inflation) between approval of the business case and award of the contracts
    b. The cost of hedging for foreign exchange movements;
    c. The cost for future inflationary escalations;
    d. The cost of additional scope for Transnet Engineering (TE);

15. The rationale for the investment is to increase the capacity of TFR's GFB from 80mt to 180mt in terms of the Market demand Strategy (MDS).

16. The acquisition of 1064 Locomotives for GFB was approved by the Shareholder Minister (Department of Public Enterprises) on 3 August 2013.

17. Although the approval from the Minister was not subject to a final cost of R 38.6 billion, for good governance and for information purposes a letter will be sent to the DPE

advising of the final ETC.

18. Four contracts to acquire 1064 locomotives were concluded on 17 March 2014 at a cost of R 49,5 billion including the cost of future escalations, including additional scope for TE and including foreign exchange hedging costs thus resulting in an increase in ETC of approximately R 15.9 billion (including a 10 % contingency).

19. As per the DTI codes for local content, the tender process required that bidders exceed a minimum Supplier Development (SD) threshold of 40 %. All bidders exceeded this threshold. All the bidders met the minimum thresholds for local content of 55 % for diesel locomotives and 60% for electric locomotives.

20. The locomotives will be delivered at a rate of 12 locomotives per month per bidder at peak production as per the summarised delivery schedule below (refer Table 1). In order to mitigate against late delivery risk, a penalty regime capped at 10 % of the contract price has been agreed to with all bidders.

Table 1

Delivery Schedule - Diesel Locomotives	CNR	GE
	232 (50%)	233 (50%)
	CNR 1st 20 from China	GE 1st 6 from USA
by March 2015	0	0
by March 2016	20	31
by March 2017	87	126
by Oct 2017	84	73
by February 2018	42	
Locomotives will be manufactured at a peak tempo of 12 per month.		

Delivery Schedule - Electric locomotives	Bombardier	CSR
	240 (40%)	359 (60%)
	BT produce all loco's locally	CSR 1st 40 from China
by March 2016	6	88
by March 2017	137	142
by December 2017	97	
by January 2018		129
Locomotives will be manufactured at a peak tempo of 12 per month.		

DISCUSSION

21. In order to analyse the increase in ETC two factors need to be considered:

    i. Updated economic data from business case date to current (backward looking);

    ii. Future financial risks emanating from the transaction and costs associated to mitigate these risks (forward looking).

22. This document has been prepared to explain the increase in ETC on this basis, concentrating on why these costs needed to be incurred and were these costs reasonable in the circumstances.

23. The increase in ETC of R 15.9 billion is due to the following reasons (refer Table 2 below):

    a) Escalations from the approved business case to award date (backward looking) (Item A of Table 2)

    b) Forex from the approved business case to award date (backward looking) (Item C of Table 2)

    c) Additional scope of work allocated to Transnet Engineering (TE) for the strategy to enable TE to eventually transform to an Original Equipment Manufacturer (OEM) of locomotives (strategic) (Item B of Table 2).

    d) The cost of reducing the batch size (strategic and risk mitigation) (Item D of Table 2)

    e) The cost of future escalations over the life of the contract (forward looking and risk mitigation) (Item E of Table 2)

    f) The cost of fixing forex exposure over the life of the contract (forward looking and risk mitigation) (Item F of Table 2)

    g) Contingencies related to variation orders, options (such as electronically controlled pneumatic braking and wire distributed power etc.) and capital spares (Item G of Table 2)

Table 2

		[illegible] Diesel & Electrical	[illegible]
		[illegible] Grand Total [illegible]	[illegible]
		[illegible] 064 [illegible]	[illegible]
Best and Final Offer per Board submission excluding Hedging & Escalation		27 333 832 740	
Adjusted for changes in:		5 994 923 119	
Escalation up to signature date (from close of tender to Mar 14)	A	2 352 013 104	8.6%
Add back original TE scope removed for BAFO purposes	B	1 709 643 360	5.9%
Forex adjustment to spot rate at 17 March 2014	C	3 030 640 144	10.3%
Batch pricing adjustment for reduction of batch size to 40 % / 60 %	D	2 754 402 335	9.4%
Best and Final Offer updated for economic and other factors		33 209 255 613	
Adjustments for:			
Additional TE Scope	E	893 172 732	3.0%
New Price including TE scope		40 093 419 813	
Cost to fix escalation to end of contract	E	6 725 743 199	15.9%
Cost of Hedging	F	2 729 045 496	6.5%
Estimated Total Cost including Hedging and Escalation		43 547 324 413	
The ETC above excludes the cost of any options, variations capital spares, initial spares, tools and test equipment. Add approximately a further 10 % at least to cover this cost	G	4 554 775 520	
Proposed Estimated Total Cost including Hedging, Escalation, options, spares, tools and test equipment		54 503 004 664	

BACKWARD LOOKING ECONOMIC AND OTHER FACTORS THAT HAVE IMPACTED THE PRICE:

24. The estimates and assumptions on which the 1064 business case was based have changed substantially since approval was obtained from the Transnet Board in April 2013.

25. In addition a number of parameters have materially changed since issue of the tender, approval of the investment by the Transnet Board and the contract negotiation process. These are summarised in Table 3 below:

Table 3

	Business Case	Tender Stage	Negotiation/ Contracting Stage	% movement
Rand to the US Dollar	9.13	8.98	10.72	19.4%
Rand to the Euro	n/a	11.86	14.87	25.4%
Local CPI	n/a	100%	106.10%	6.1% *
Local Hot rolled Steel plates Index	n/a	100%	112.90%	12.9% *
Local PPI	n/a	100%	107.50%	7.5% *
Chinese Equivalent CPI Index	n/a	100%	102.50%	2.5% **
US Equivalent CPI Index	n/a	100%	101.33%	1.3% **
Euro Equivalent CPI Index	n/a	100%	102.06%	2.1% **

* Index movements calculated from Dec 12 to Jan 14
** Index movements calculated from May 13 to Mar 14

Item C of Table 2

a. Foreign exchange rates. The Rand has depreciated by 19.4 % against the US Dollar since the tender stage. Similarly the Rand has also depreciated by 25.4 % against the Euro over the same period. The spot rate of exchange used in the business case to calculate the base price of the locomotive was 9.13 Rand to the US Dollar, as compared to the spot exchange rate as at contract signature date of 10.72 Rand to the US Dollar, an increase of 17.4 %. This has impacted the expected price of the locomotive as per the business case and ultimately the ETC as approved by the Board.

Consequently the additional 10.3 % per C in Table 2 is reasonable.

Item A of Table 2

b. Labour cost increase. The cost of labour required to build the locomotives has increased locally within South Africa and globally over this period, as indicated within the CPI/PPI indices listed in Table 3 above and as evidenced by the higher than CPI wage settlement that Transnet entered into at 8.5 % for a 2 year period. Due to the tender localisation requirements, Transnet Engineering (TE) will assemble the locomotives and consequently local labour will be utilised for the assembly.

c. Material cost increase. A significant component of the locomotive is steel. The price of steel is impacted by the steel commodity price of which the trading currency is in

US Dollars and secondly thereby foreign exchange deterioration as well. The local index for hot rolled steel plates has deteriorated by approximately 12.9 % since December 2012, which is indicative of the level of increase in the price of steel.

d. Inflation. Local Producer Price Index (PPI) has increased by over 7.5 % since December 2012 thereby affecting the price of locally sourced products required for the build of the locomotives. Foreign equivalent indices also increased over this period. This together with the foreign exchange deterioration indicated above has resulted in the price of imported components for this project increasing.

e. Statistics SA report that the headline CPI annual inflation rate in April 2014 was 6.1 %, further explained in the Business Day article "CPI breaches Reserve Bank target" dated 22 May 2014.

f. Applying the relevant proportion of each of the labour, material and other input costs which make up the basket of items required for the manufacture of the locomotives, would result in the net increase in the locomotive price of 8 %.

g. Consequently the net impact of 8 % on the locomotive price due to the change in economic conditions as per item A of Table 2 is reasonable.

FORWARD LOOKING ECONOMIC FACTORS AND MEASURES TO MITIGATE FINANCIAL RISK THAT HAVE IMPACTED THE PRICE:

Forex (Item F of Table 2)

26. The Financial Risk Management Framework (FRMF) approved by the Board of Directors (BOD) does not permit Transnet accepting forex exposure on committed transactions.

27. The South African Reserve Bank (SARB) also does not permit SOC's to accept open exposure on foreign currency contracts.

28. In addition credit rating agencies and bond holders both prefer conservative risk appetites and consequently would also support fixing our forex exposure.

29. Sensitivities indicate that a 5 % devaluation of the Rand could impact the total ETC by approximately R 3.07 billion if left unhedged.

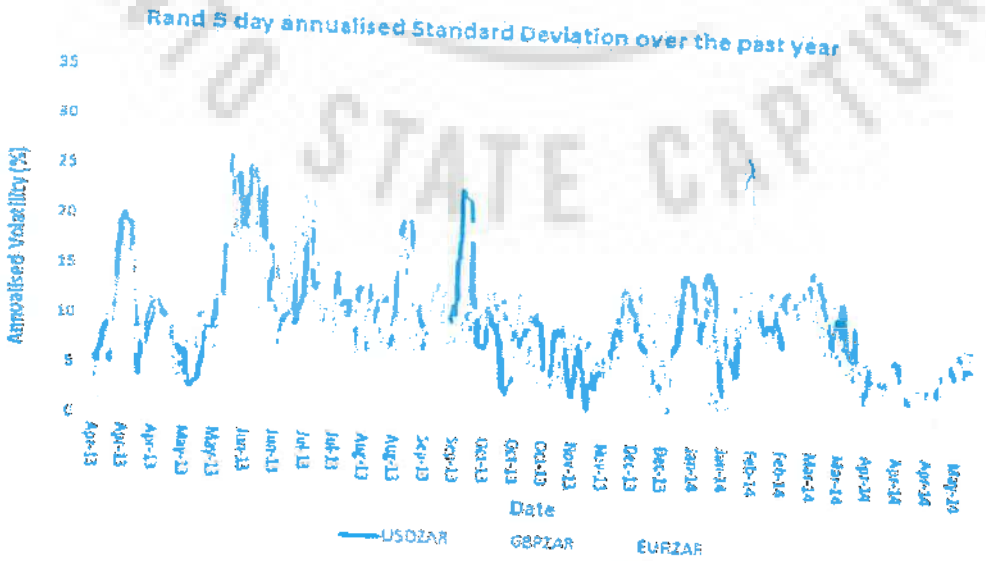
30. Consequently the cost of foreign currency hedging to mitigate and protect the Company against foreign currency devaluation is an inherent cost of the transaction.

31. Costs related to forex are influenced by market forces which are not within managements control and therefore were not included in the ETC for the business case submission. The impact of these forex related costs would only be known once the contract was negotiated and finalised as they are based on market conditions and sentiment at the time.

32. The cost of fixing the forex exposure is impacted by currency volatility and time or duration of the exposure.

33. The recent volatility in the foreign exchange rate of on average up to between 15 & 20 % directly impacts the transaction cost as can be seen in Table 4 below:

Table 4

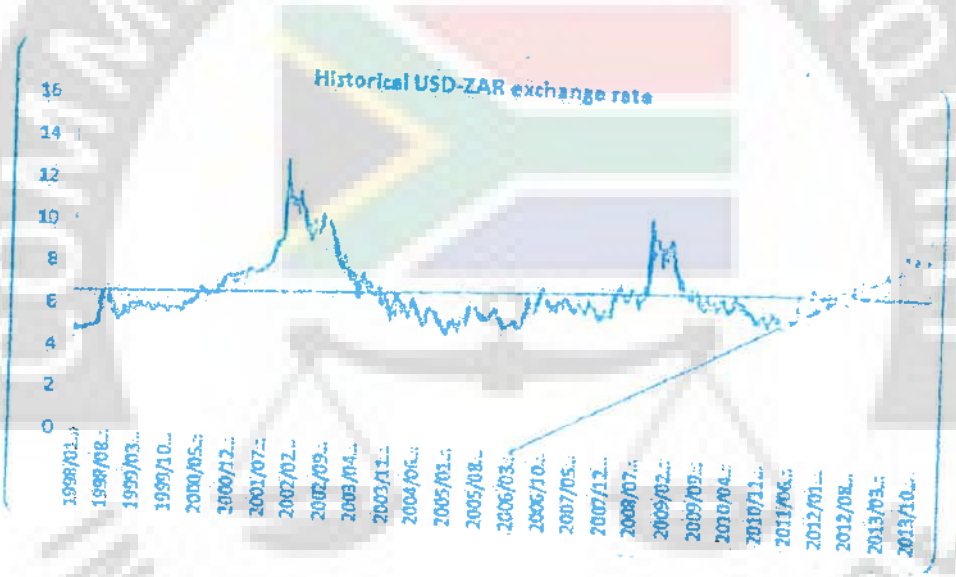


34. In addition the ZAR currency is one of the most volatile and fragile currencies in the world. This view is substantiated by the ZAR currency being termed as one of the "fragile five" by economists and financial markets (refer diagram below).

35. Business Day reported on 18 March 2014 that the Rand is in for a "Rocky ride" for the rest of the year (Refer article "Rocky Ride forecast for 'still to expensive' Rand)

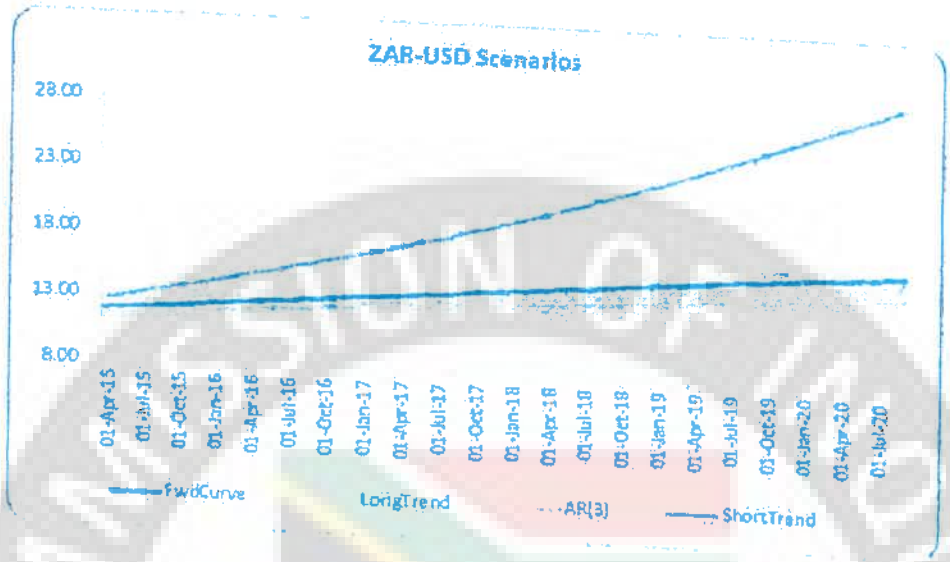
36. The generally held consensus view is that due to the twin deficit of the RSA budget and the current account, and the weak economic outlook supports Rand devaluation in the medium to long term.

Table 5



37. A historical regression analysis conducted by Regiments Capital indicates that the ZAR currency is on a trend of devaluation as indicated in Table 5 above.

Table 6



38. In addition Regiments Capital conducted various currency trend scenarios as indicated in Table 5 above. All scenarios indicate a general devaluation in ZAR over the medium term.

39. The imminent risk of the Ukraine crisis and its impact on emerging markets also had an impact on the decision to fix the exchange rate exposure.

40. In addition the delivery schedule of the locomotives, between 31 and 35 months, also impacts the cost of hedging as the length of the exposure impacts the costs. The longer the period the higher the premium paid due to unknown outcomes in the future.

41. Alternative methods, such as call and put option structures, to reduce cost and mitigate against forex exposure risk were explored in conjunction with Regiments Capital including methods in which Transnet would participate in any possible upside in Rand movements. These methods were evaluated from a cost benefit perspective and consequently the FEC route proved most beneficial and practical to mitigate forex risk.

42. In addition the accounting treatment of options was not optimal as per opinion obtained from KPMG as it would result in the creation of an embedded derivative.

43. The cost to hedge this exposure was obtained from banks by the suppliers. This was then vetted by Transnet Treasury and Regiments Capital for reasonability. They both found the rates and cost to be acceptable.

44. Consequently the net 6.8 % per F in Table 2 above is reasonable.

Escalation of Input Costs (Item E of Table 2)

45. Given the size, magnitude and risk tolerance of the company due to MDS execution, cash flow certainty is of paramount importance when trying to plan over a long term horizon.

46. This ensures that the company is able to manage its key financial metrics such as gearing, cash interest cover and the A/B ratio (required by rating agencies).

47. In addition credit rating agencies and bond holders both prefer conservative risk appetites and consequently would also support fixing our escalation exposure.

48. Careful consideration had to be given to accepting other risks such as labour, steel etc. and being exposed to market conditions.

49. Consequently it was decided to fix escalation for these input costs and gain certainty of cash flows.

50. Costs associated with fixing these input costs are largely driven by market sentiment at the time of contracting such as the items mentioned below.

51. Labour unrest and strikes in the platinum sector has put significant pressure on forward looking labour costs. As indicated earlier Transnet is subject to an 8.5 % wage adjustment for the 2014/15 financial year.

52. The contractor has also built a risk premium into their pricing for forward looking inflation, to cater for the unpredictable nature of the labour environment within South Africa and the risk associated with TE carrying out this additional *new* scope of work.

53. Statistics SA reports that the headline CPI annual inflation rate in April 2014 was 6.1 %, and which is further explained in the Business Day article "CPI Breaches Reserve bank target" dated 22 May 2014.

54. The SARB and National Treasury 2014 Budget Review forecasts CPI at 6.2 %, 5.9 % and 5.5 % for the years 2014, 2015 and 2016 respectively.

55. The MPC also is concerned about upward inflationary pressure on the economy as they have increased the Repo rate by 50 basis points recently in response to managing the upward inflationary pressures. Another imminent increase is highly likely at the next sitting of the MPC on 22 May 2014.

56. The high level of local content (60%) makes local indices more applicable to assess the cost of escalations going forward.

57. Applying the relevant proportion of each of the labour, material and other input costs which make up the basket of items required for the manufacture of the locomotives, would result in the net increase in the locomotive price of 9.2 % for electrics and 6.3 % for diesels increase.

58. Hence a CPI of 6 % escalated for 35 months on a compound basis (excluding a premium for risk) results in a 18.54 % increase, thus the net 16.8 % per E in Table 2 above is reasonable.

59. Escalations of input costs have been verified by Transnet by using publicly available data and by Reglments Capital using their intellectual property methodology and techniques.

TE Scope (Item B of Table 2)

60. A strategic decision was taken at a Transnet level that TE should transform to eventually become an OEM of locomotives. This 1064 tender process, together with the 100 equivalent 19E Dual Voltage Electric locomotive process, was used as a catalyst to facilitate this strategy.

61. As such bidders were advised to provide pricing based on providing TE with additional scope for the manufacture of the locomotives.

62. Strategically it was decided that for specific items within the build process where TE were within 10 % of the market price then it would be acceptable to allow TE to retain this scope.

63. The pricing as reflected above in Table 2 is inclusive of this additional scope for TE based on this principle.

64. Bidders have also built a risk premium into their pricing, to cater for the risk associated with Transnet Engineering carrying out this additional *new* scope of work for the 1st time.

65. Consequently the net additional 3 % per B in Table 2 is justified and is reasonable.

Batch Size (Item D of Table 2)

66. As approved by the Transnet Board the preferred bidders were advised that the batch size has been split on a 50/50 basis for the Diesels and a 60/40 basis for the electrics, amongst them.

67. This was done to mitigate locomotive delivery risk and reduce the MDS risk related to volumes.

68. As a result, the fixed costs related to setting up the production line would have to be recouped over a smaller batch.

69. This resulted in an increase in the cost per locomotive.

70. Although the cost per locomotive has increased, an overall saving is realised due to splitting the batch, because of the saving made on future escalations and hedging costs as a result of a shorter delivery period. This has been quantified to be R 4.08 billion.

71. Consequently the net additional 9.4 % per D in Table 2 is justified and is reasonable.

Contingencies (Item G of Table 2)

72. The contracted price of R 49.5 billion excludes the cost of any requirements for capital spares beyond the warranty period, variation orders and options (such as electronically controlled pneumatic braking and wire distributed power etc.) and as such an additional 10 % (R 4.9 billion) has been added into the request for additional ETC for this (refer Item G of Table 2)

73. In order to stimulate development in other parts of South Africa, Transnet have decided that it would be more strategic to have two OEM's manufacture the locomotives in Durban.

74. In addition TE production lines in Koedoespoort cannot accommodate four OEM's as validated by the PWC study.

75. Bidders have based their contracted prices on manufacturing operations being carried out in Gauteng. Bidders have not yet quantified this cost, however this cost is included in the additional 10 % (refer Item G of Table 2).

FINANCIAL IMPLICATIONS:

76. The business need and rationale remains as originally indicated in the business case submission.

77. The Business case resulted in a positive NPV (R2.7 billion at the TFR hurdle rate of 18.56 % and R34.1 billion at the TFR WACC of 12.56 %).

78. The Transnet hurdle rate has since been amended to 15.2 % and the NPV at this hurdle rate using the business case assumptions would be R 16.02 billion.

79. The financial models for the Business case have been updated for the following based on the conditions per the signed final contracts:
    a. Final pricing
    b. Revised cash flow profile for the capital investments
    c. Commensurate changes to the volume ramp up and tariff increases on commodities that are priced relative to the investment outlay

80. The updated NPV result is a positive NPV of R 11.68 billion at the new hurdle rate of 15.2 % and R 22.71 billion at the TFR WACC of 12.6 %. The NPV would become a negative R 1.67 billion at the original hurdle rate of 18.56%.

81. The WACC and hurdle rates are updated annually for changes in economic conditions and are approved by Transnet Exco and reviewed by External audit during the year end audit process.

BUDGET IMPLICATIONS:

82. The Investment is included in the 2014/15 seven year capital investment plan.

83. The contracted delivery schedule and cash flows have changed as compared to the investment included in the 2014/15 seven year capital investment plan.

84. In order to ensure that Transnet's approved key affordability limits (gearing and cash interest cover) are not breached, a capital prioritisation process will be undertaken, such that other investments which do not impact MDS volume targets would be deferred.

85. The difference between the 2014/15 seven year investment plan and the projected cash flows based on the supplier agreements with contractors with an additional 10 % added for options, variation orders, special tooling, test equipment, initial spares and capital spares, is illustrated in Table 7 below:

Table 7

	Rand million									
	ETC	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21
Budget per Corporate Plan	41 465	-	315	4 198	8 344	9 123	9 420	8 362	1 696
Contracted	49 547								
Add 10 % for options, variations, tools, spares etc.	4 955								
Expected	54 502	4 824	6 308	6 597	18 618	16 970	1 185	-	-
Difference	-13 036	-4 824	-5 993	-2 409	-10 274	-7 847	8 235	8 362	1 696
Corporate Plan alignment to Business Case	-2 868								
Net ETC difference	-15 902								

86. In order to secure accelerated delivery of the locomotives to address the MDS volumes at risk, a larger advance payment (R 4844 million) had to be made to the contractors in the 2013/14 financial year.

87. As confirmed by a letter received from the suppliers this was required by the suppliers in order to cover costs to ensure quicker delivery. The rationale as explained by the supplier was confirmed reasonable by Transnet's external auditors and was capitalised accordingly in the Financial Statement at 31 March 2014.

88. Although the accelerated delivery schedule would have resulted in earlier cash outflows for Transnet, an overall saving is realised because of the saving made on future escalations and hedging costs as a result of a shorter delivery period

89. The impact from the locomotive acquisition on the 2014/15 corporate plan as well as the impact of the prioritisation process; updating for the change in volumes, revenue, EBITDA and capital due to the combination of the 100 electric locomotives, 1064 locomotives and 60 Diesel locomotives contracts is reflected in the graph below:

Increase in ETC for 1064 GFB Locomotives

90. As can be seen from the graphs the initial two years of the 2014/15 Corporate Plan has been negatively impacted the by locomotive acquisitions.

91. However after the planned EBITDA and optimisation initiatives that have been factored into the model the ratios are restored.

92. The initiatives identified to meet the Corporate Plan targets are detailed in Annexure A.

RISK MANAGEMENT:

93. In order to manage risks associated with this transaction a risk management framework is in the process of being developed.

94. A Locomotive Steering Committee has been set up to manage the operational issues associated with the locomotive acquisition and will address the following risks:

- Locomotive delivery
- The wagon build program
- Infrastructure requirements
- Operational readiness
- Commercial and Volumes

95. A socio economic monitor will be appointed to ensure socio economic benefits will be realised.

96. In order to mitigate against late delivery risk, a penalty regime capped at 10 % of the contract price has been agreed to with all bidders.

97. Escalation risk has been mitigated by fixing the price of the locomotives.

98. Forex risk has been mitigated by hedging the price of the locomotives by using the suppliers balance sheets.

99. All advance payments are secured by an on demand advance payment guarantee issued by a bank with a minimum long term credit rating of an A- Fitch rating or equivalent.

100. Payment terms have been structured such that the bulk of payments, of between 70 % and 90 %, happens after delivery of the locomotives.

101. In order to manage the total cost of ownership and mitigate against the risk that the locomotives once placed into operation will consume more fuel (diesel locomotives) or energy (electric locomotives) than indicated in bidders responses to the RFP, a penalty clause with a related fuel/energy warranty regime has been included in the supply agreement with bidders.

102. In order to mitigate against default of Supplier Development (SD) commitments, and SD penalty clause has been included in the supply agreements with bidders. An SD bond has also been obtained to cover risk against default.

103. GE have agreed to provide a 30 month warranty on the locomotive as well as a 6 year warranty on the traction motor and a 12 month warranty on spares.

104. CNR, BT and CSR have agreed to provide a 24 month warranty on the locomotive as well as a 6 year warranty on the traction motor and a 12 month warranty on spares.

105. A liability cap of 15 % of the contract price is included in the supply agreement thereby limiting Transnet's exposure in the unlikely event of breach of contract by Transnet.

106. In order to mitigate against the risk of having to accept and pay for locomotives during an economic downturn when volumes from customers may not be forthcoming thereby impacting negatively upon Transnet's loan covenants, bidders agreed to accept a clause in the supply agreement whereby acceptance of locomotives could be deferred for a period of time. Transnet agreed that in return bidders would be reimbursed for reasonable and auditable costs. These costs could include warehousing costs, time value of money costs, costs related to the rolling of hedges etc.

SOURCE OF INFORMATION AND REFERENCES:

107. Data quoted in the memo above has been sourced from:

- Statistics South Africa – release P0141
- Business Day 22 May 2014 – "CPI Breaches Reserve Bank target"
- Business Day 18 March 2014 – "Rocky Ride forecast for still too expensive Rand
- Reserve Bank and National Treasury 2014 Budget Review
- Regiments Capital (transaction advisory services)
- KMPG (accounting opinions)
- PWC (locomotive localisation opportunities for TE and South African industry)

RECOMMENDATION:

108. It is recommended that:

a) the BOD take note that the main reasons for the increase in ETC is due to the exclusion of the following costs from the 24 January 2014 submission:

i. The cost of hedging for foreign exchange movements;
ii. The cost for future inflationary escalations;
iii. The cost of additional scope for Transnet Engineering (TE);
iv. The cost of changes in economic conditions (forex and inflation) between approval of the business case and award of the contract

b) the BOD approves an increase in estimated total cost (ETC) for the acquisition of the 1064 locomotives for Transnet Freight Rail's General Freight Business from R38,6 billion to R54,5 billion.

Recommended by:

Anoj Singh
Group Chief Financial Officer
Date: 22/5/14

Recommended by:

Siyabonga Gama
TFR Chief Executive
Date: 20/5/14

Recommended by:

Brian Molefe
Group Chief Executive
Date: 23.5.14