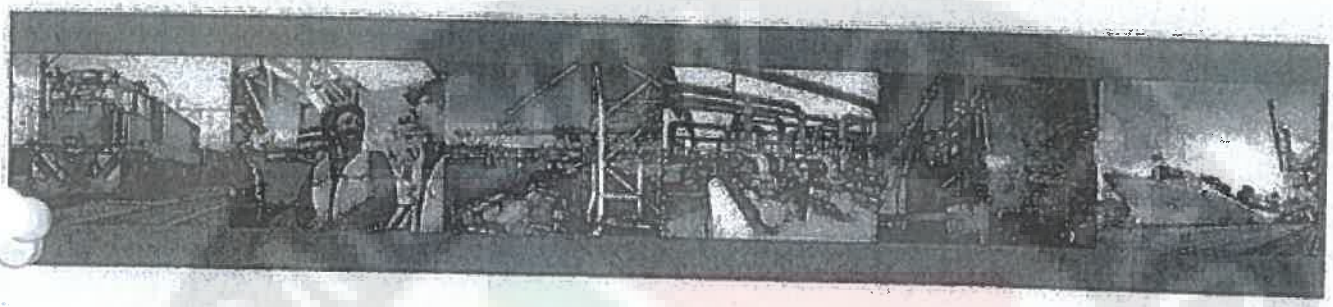
ANNEXURE "MSM 5"

Procurement of 1064 Locomotives for the General Freight Business



Date of Submission	25th April, 2013
Addressed To	Transnet Board of Directors
Title of Submission	Procurement of 1064 Locomotives for the General Freight Business – Final Version

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 R78 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 with estimated total costs of the acquisition of R38.6 billion as per the Corporate Plan (excluding the potential effects from forex hedging, forex escalation and other price escalations).

[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 just over R600 million. This equates to a highly attractive benefit cost ratio of more than 125 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 CO_2 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 CSDP, 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 tonnes 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 and other price escalations).

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.

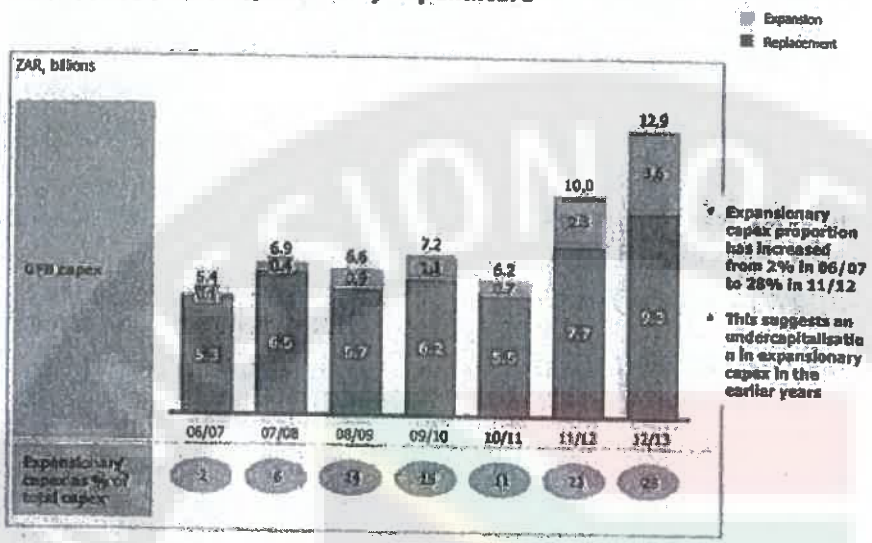
The MDS is informed by future planned investments that generate rail-friendly traffic and target rail-friendly traffic currently on the road. As part of this strategy, TFR has committed to grow its volumes by 142 million tonnes to 350 million tonnes by 2018/19. Over 60 percent of this growth is expected 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.
- Rail produces lower emissions per gross tonne kilometre than road, thus assisting South Africa's GHG emissions reduction effort.
- Haulage by road damages road infrastructure, requiring a significant investment to repair the roads.

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[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.

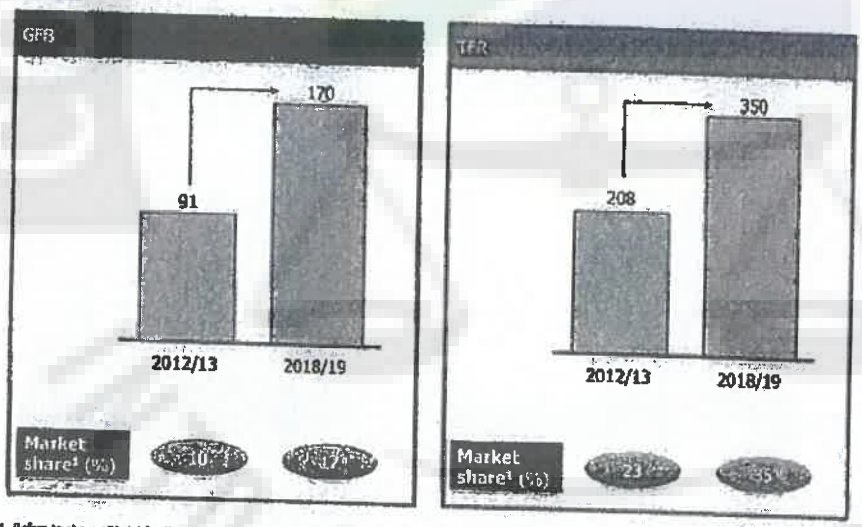
Furthermore, for developing economies like South Africa, economic growth results in a relatively higher increase in trade volumes – and therefore freight demand – than GDP growth rates would otherwise imply (i.e., a higher container volume multiplier, which measures the marginal effect of economic growth 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. 66% of the projected volume growth of 79.2mt from 2013/14 to 2018/19 will be transported over distances greater than 300kms, a distance by which rail is cheaper than road. Transnet believes the rest of the flows will have preference for rail transportation (e.g., the bulk of the remaining volumes relate to Eskom coal flows which are rail preferred due to Eskom simplifying their logistics chain, public sentiment against road transportation for coal and reducing the damage to road infrastructure). TFR's market share is expected to grow from 23% to 35% as shown in the exhibit below.

EXHIBIT 2

Both GFB and TFR are expected to capture significant market-share over the MDS period

Millions of tonnes per annum



1 Refers to share of total South African land freight market
SOURCE: TFR corporate plan 2013/14

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
Ha [illegible]	• 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
Ferrous minerals 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

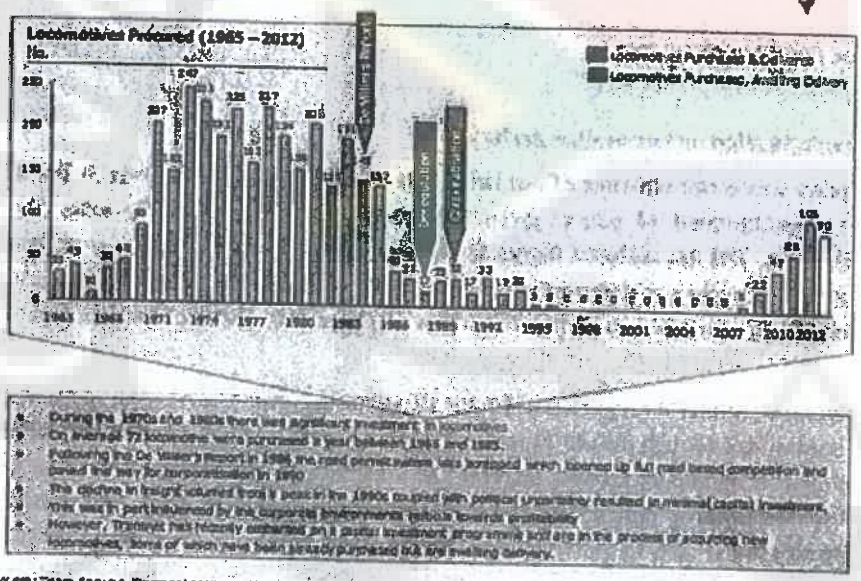
This section demonstrates that the current fleet is incapable of meeting demand. Half the fleet will need to be retired within 10 years and nearly the entire fleet within 20 years.

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

The decline in general freight volumes, political uncertainty and corporatisation of rail led to a significant fall in investment



Source: Team Analysis, Transnet Locomotive Modernisation Fact Pack – December 2010

1

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; given the low investment in GFB 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.

Lease vs. buy

For leasing to be an effective option, there should be a viable and readily accessible market for leased locomotives. This is not the case for Transnet and South Africa.

South Africa is almost unique in the world with its narrow meter gauge (as opposed to standard gauge) 3kV electrification network. There is only one other railway (in India) with similar infrastructure. Because of this, all the electric locomotives for South Africa have been bespoke designs.

There is an international market for diesel locomotives, but for South Africa this is moderated by distance from those markets and the metre gauge, which requires shipping and change of the bogies to

accommodate the wider standard gauge. There is a limited Africa market but this is again moderated by the infrastructure limitation of 15 tonnes per axle.

Without a viable second hand market, the lessor would price the long term risk into the leasing costs resulting in higher net costs for TFR.

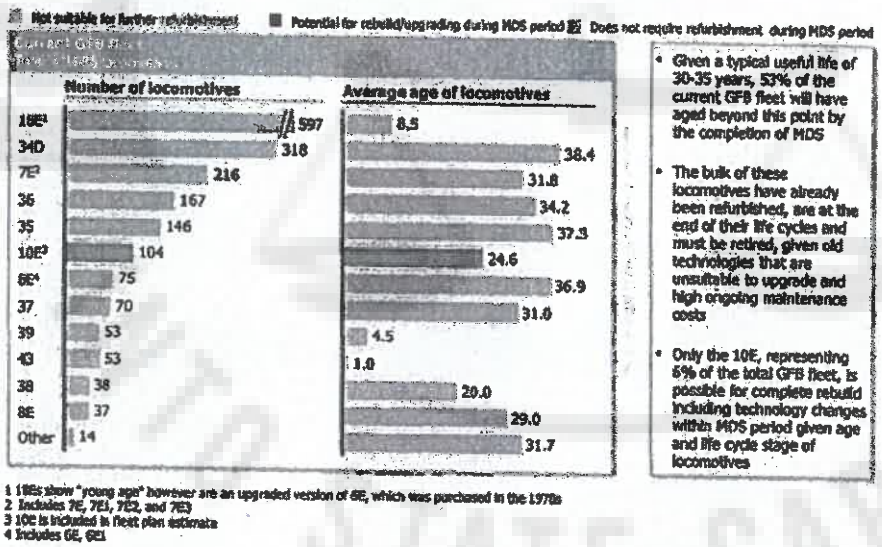
Implication for Transnet

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.

Leasing is not an option and 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

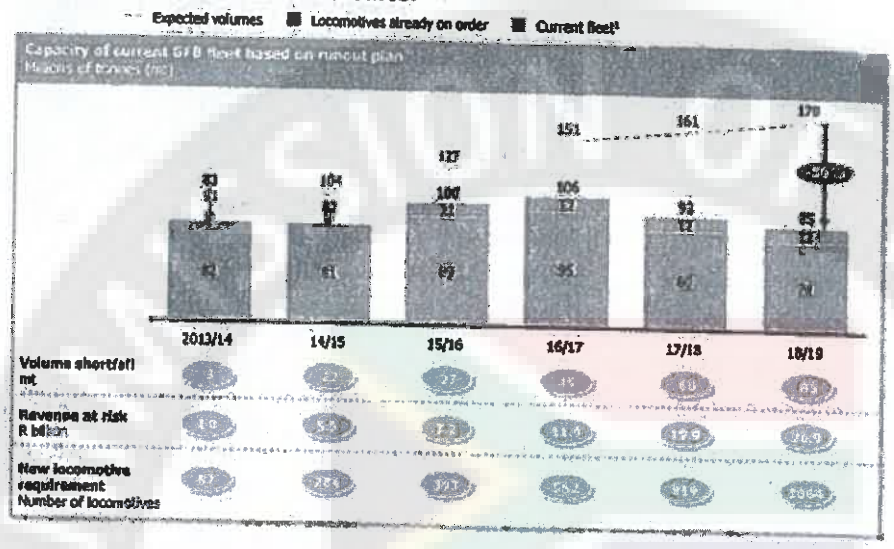
The current GFB fleet is aged – life extending options have been exhausted - only 6% targeted for a complete rebuild



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 cascading 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.

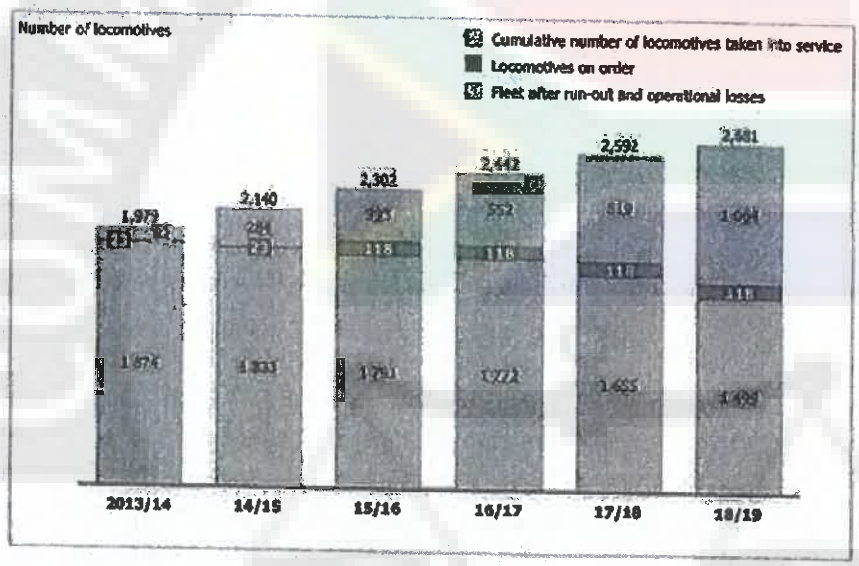
- Standardise the fleet to resolve both operational and maintenance difficulties – such as training drivers, planning route designs, and maintaining locomotives – that arise with a diverse fleet of multiple locomotive types.
- Capture improved operational efficiencies provided by new generation locomotives.

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



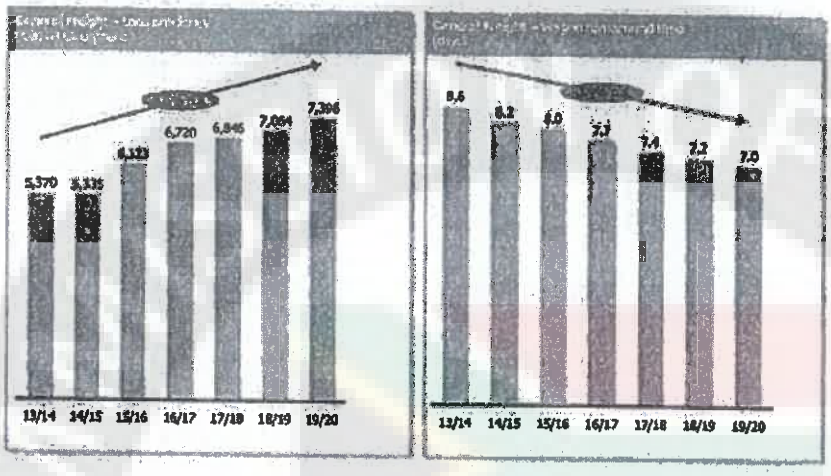
3.2.1 New locomotive procurement

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.

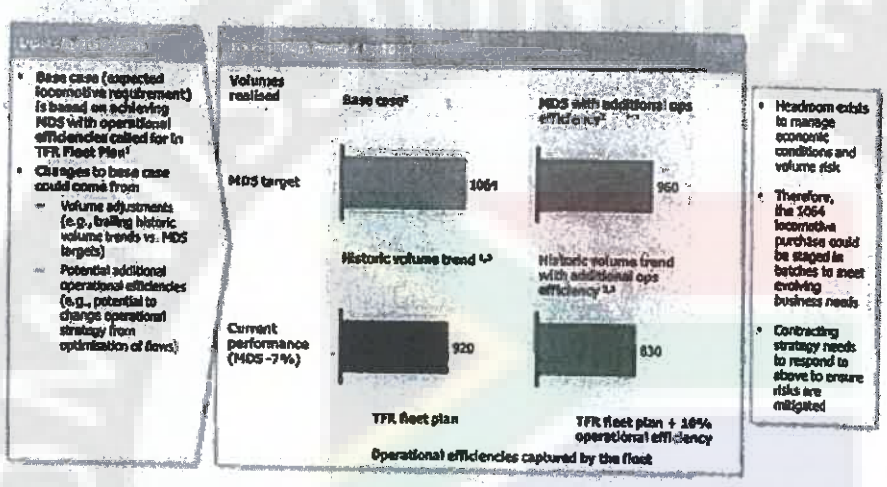
Operational efficiencies

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



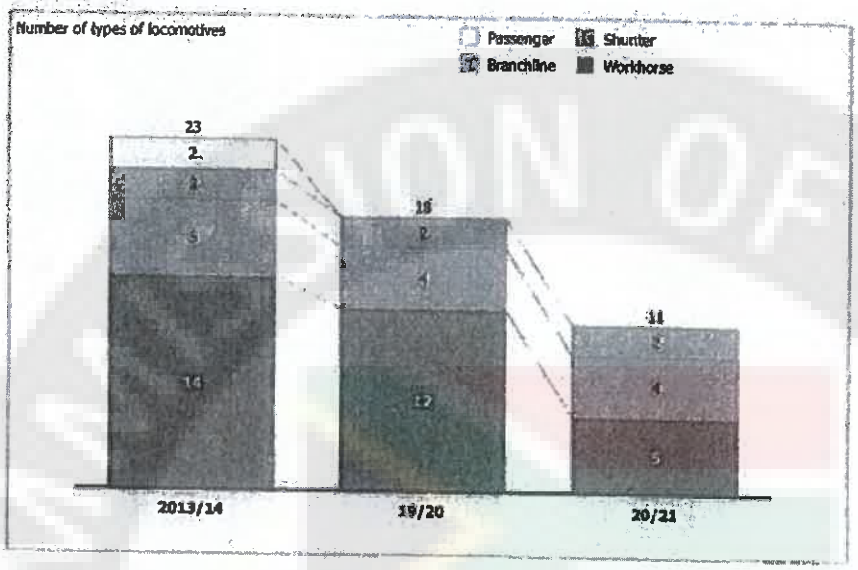
1 This incorporates benefits from increased availability and reliability, standardisation of the fleet and lower maintenance costs
2 Assumes potential additional 10% increase in operational efficiency as a result of a flexible new operating strategy
3 Based on 2011-2013 shortfall vs. MDS of 7.37%

3.3 Impact on locomotive standardisation

The purchase of relatively small numbers of locomotives at a time in the past has resulted in a diverse fleet which in turn has not delivered the benefits of standardisation. The TFR locomotive fleet plan recommends progressive standardisation of the locomotive fleet to enhance interoperability, minimise spares holding and simplify maintenance procedures and driver training. With the imminent run out of the current fleet there will be a natural rationalisation of current locomotive types as depicted in the exhibit below.

EXHIBIT 12

Procurement of the 1064 locomotives will result in locomotive standardisation, reducing types of locomotives from 23 currently to 11 by 2020/21



While 20/21 is outside the current 7 Year MDS, it reflects the "waterfall" run out of locomotives that lies just outside of the current 7 year MDS. The exhibit is a summary from the General Freight Locomotive fleet plan where the run out of each type and class can be seen. It refers only to GFB and does it reflect the heavy haul classes of the export coal and iron ore lines. Where locomotives are cascaded from the Coal Export Line to General Freight, the classes and types are included.

To prevent further diversification of the fleet, it has been recommended that the electric workhorses and diesel workhorses be procured from no more than two OEMs. In the event that the proposed procurement coincides with a type and class already in use, it will be benefit the standardisation program.

3.4 Impact on safety

Aside from the human component, safety on the GFB network will be determined by locomotives, wagons and infrastructure. The procurement of the 1064 locomotives is expected to improve safety in the GFB network. The new locomotives will have the following systems, which will provide safety advancements to the user and TFR:

- Onboard computers (OBC) that will prevent drivers from exceeding speed limits. Some of the locomotives in the current fleet have been fitted with OBC and it shown a proven ability to modify driver behaviour to adhere to speed limits and improve safety.
- Cameras employed as standard equipment which will allow behaviour modification as well as allow TFR to have real time data during any incident that should occur.
- Electronic Brake Rack over the current mechanical brake racks. This will allow for better monitoring and application of brakes.

- Remote monitoring of locomotives while in operation. This will allow monitoring of the usage of the locomotives and remote pick up of any breaches in application of parameters being exceeded. This will therefore allow behavioural modification and a reduction in abuse of the assets which in turn will bring down unscheduled failures and costs thus providing the evolution in maintenance to Reliability Centred Maintenance.

New wagons will retain existing systems which have been proven to be effective with regards to safety. The planned increase in the axle load of the core network (See Network standardisation- section C6) will also improve the structural integrity of the network.

3.5 Role of Transnet Engineering (TE)

Rolling stock covers a range of asset classes used by railways for specific purposes, including wagons and locomotives. TE is already competitive in wagon manufacture and the procurement of 1064 locomotives could position it for similar competitiveness in locomotive manufacture.

At the base level, South Africa has remained competitive in the production of wagons, which retain very high levels of local content. Local manufacturers such as TE continue to hold dominant market positions in this space and export to customers outside SA. In addition, they behave very much as OEMs through their understanding of the technology and design requirements of this type of rolling stock. In recent years, TE has developed capabilities in more complex forms of rolling stock such as locomotive assembly and associated component assembly and manufacture. Various other players in the private sector have also benefited from recent purchases of locomotives through the Competitive Supplier Development Programme (CSDP) driven by Transnet.

TE currently does locomotive maintenance for TFR. However, the purchase of 1064 locomotives by TFR could create an additional opportunity for TE to play a strategic role in design, integration and supplier development of locomotives in addition to its expected role in maintenance. This could elevate TE beyond the assembly function to hold a more strategic position in the future development of locomotive technologies and enhanced maintenance capability as shown in exhibit 12. However this opportunity is subject to competitive bidding against other local suppliers.

Scope of work for TE

There are two categories of local work that emerge from the 1064 locomotive tender where TE could be strategically repositioned:

- Development of locomotive technologies and capabilities in integrated design and control system design and the adaptation of these systems to local operating environments.
- Development and design of high-value complex components and alignment of maintenance regimes to best serve the needs of Transnet Freight Rail as the operator of these assets.

The drive to localise a considerable portion of a locomotive would be undertaken to competitively position local private sector suppliers, particularly those demonstrating strong B-BBEE credentials. Thus, whilst Transnet would seek to empower TE strategically and as an integrator and assembler of locomotives, the majority of lower tier supply would be outsourced competitively to competent local manufactures.

The main focus for TE lies in the area of final assembly of the locomotive, development of important sub systems and integration of the locomotive control systems. This additional scope of work would provide TE with additional skills in ongoing locomotive maintenance and the feedback from the maintenance programmes associated with existing locomotives would provide valuable insights into the design and manufacture of the various sub-assemblies and components that make up the new diesel and electric locomotives.

Although TE is strategically positioned to play a dominant role in these areas it would do so under the custodianship/leadership of the locomotive OEM selected to provide the diesel and electric locomotive contracts. In addition, providing this scope of work would require integrating the supply base from both local private sector specialist firms and global specialists in each respective area. This would open up considerable scope for local manufactures to play a role in conjunction with the locomotive OEM and TE in elevating South Africa's manufacturing capability in each of these areas.

Opportunities for private sector in local content

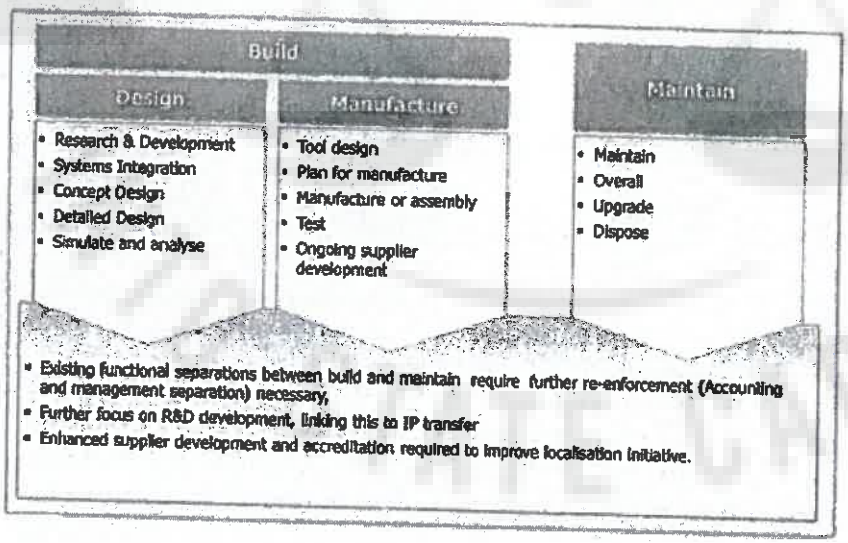
Transnet Engineering (TE) must obtain certain skills through the approach described above in order to reposition itself strategically.

Transnet's detailed component analysis is based a market related costs structure informed by the bills of materials used in assembly and maintenance of various locomotive components. It thus closely emulates current market pricing within the locomotive market.

The analysis identifies certain areas of expertise and components where Transnet Engineering will be strategically positioned, as well as scope of work and expertise that will directly benefit South African private sector manufacturers.

EXHIBIT 13

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



Impact of the new deployment plan on TE

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.

3.6 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) given manufacturer insights and internal studies conducted. 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 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.

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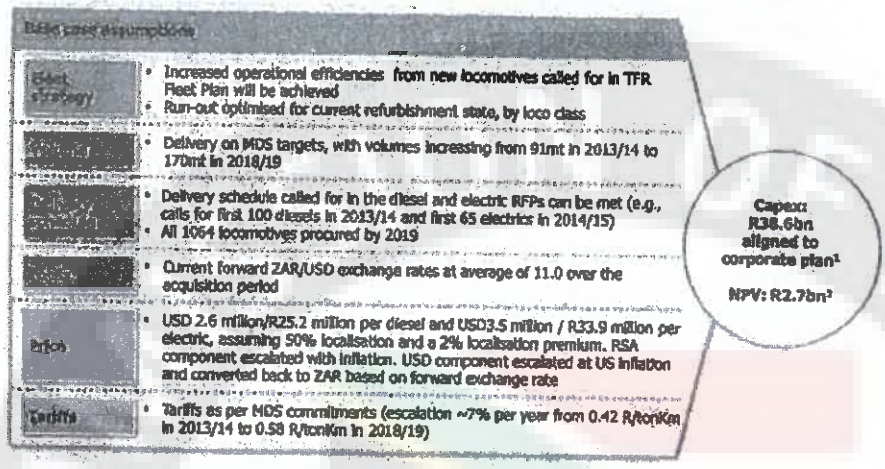
[4] Savings over the current locomotive emissions per MGTK

[5] Given the expected tariff structure from 2016

EXHIBIT 14

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



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 12.96% is used

4.1.3 Fleet plan versus RFP delivery timelines

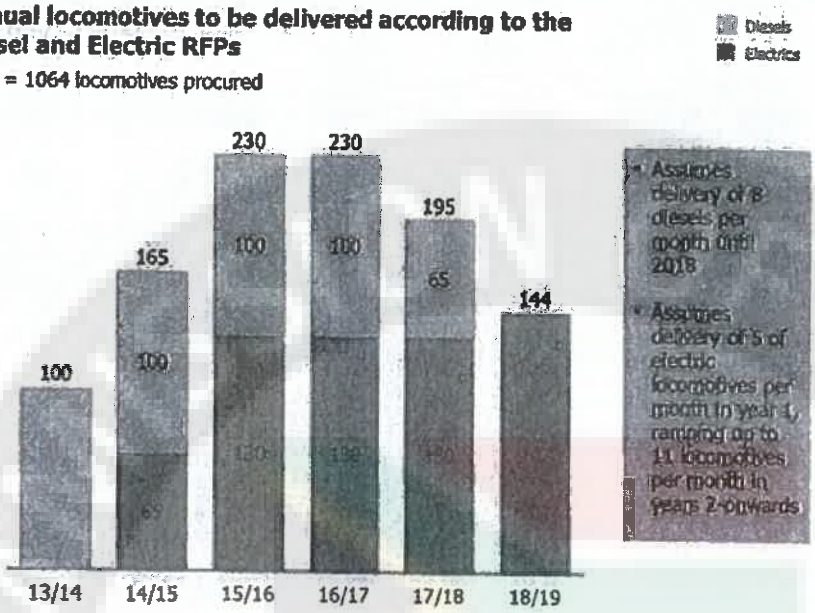
The number of locomotives required to deliver MDS is based on TFR's Fleet Plan and planned run-out strategy. It is based on the assumption that TFR will capture operational efficiencies from new locomotives (e.g., increased availability, reliability and operational flexibility, lower maintenance costs). 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 15

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 16

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 17

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 18

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

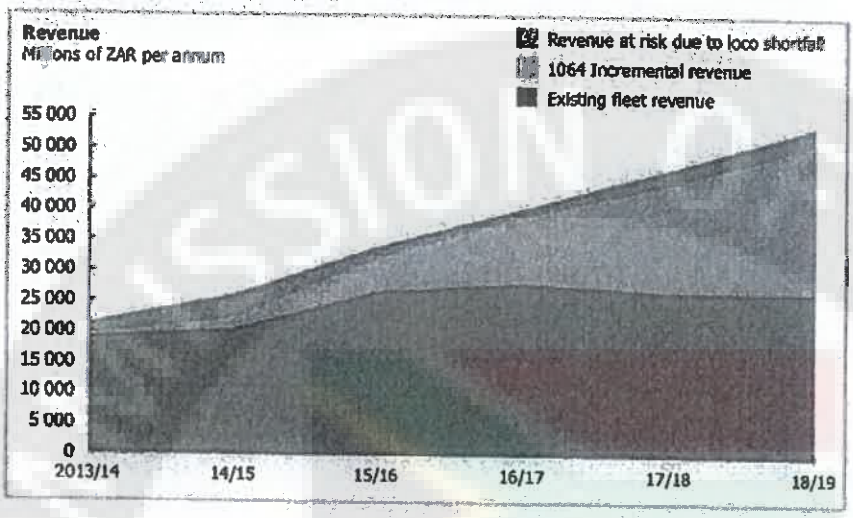
As per the exhibit below, putting volumes and tariffs together yields a view of revenues – MDS targets, revenues allocated to the existing fleet, revenues derived from the new locomotives, and potential shortfalls.

EXHIBIT 19

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 20

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:

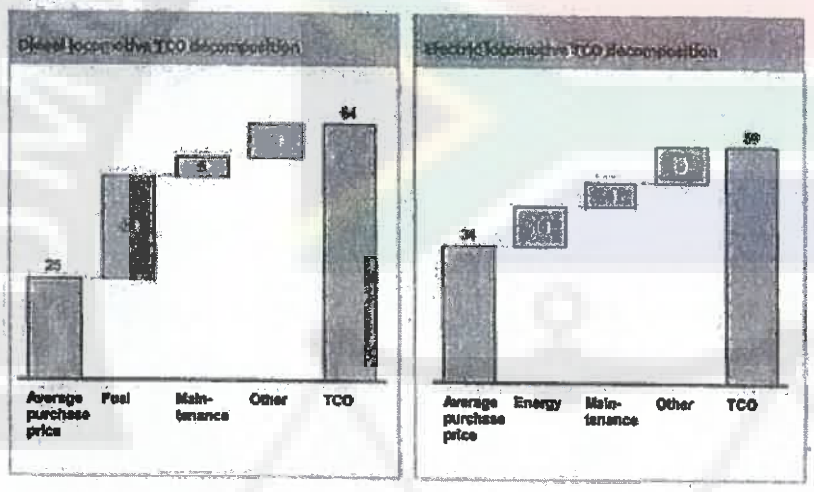
- **Purchase price.** As mentioned above, the purchase price is assumed to be R25 million (US $2.6 million) for a diesel locomotive and R34 million (US $3.5 million) for an electric locomotive in 2013/14. The purchase price of both diesel and electric locomotives assumes a conservative 50 percent localisation 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 21 for the TCO breakdown and Exhibit 22 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 23. 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 24.
- **Insurance.** Assumes an expected wreck cost per year escalated at the average of CPI and PPI.

EXHIBIT 21

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

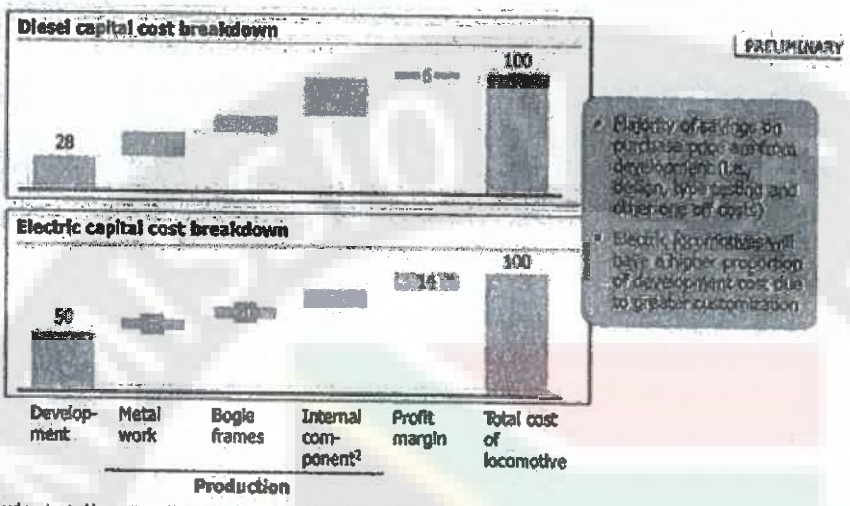
ZAR, millions



SOURCE: Transnet 1064 Loco Business Case, Expert interviews

EXHIBIT 22

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

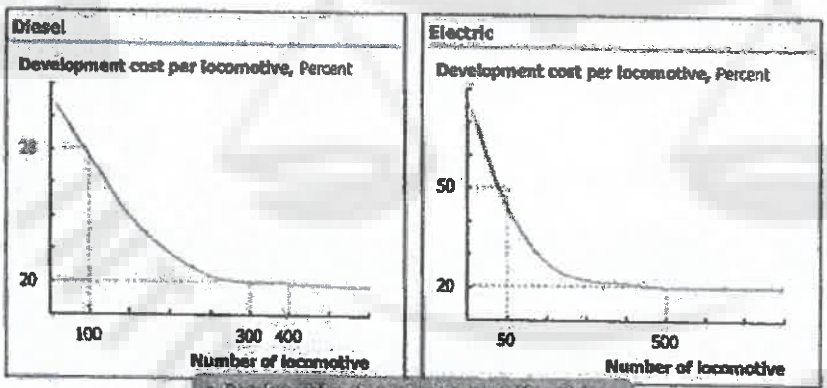


1 Based on standard locomotivemotives with an order of 100 locomotives delivered
2 Traction motor, wiring, alternator, control system, etc.

EXHIBIT 23

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

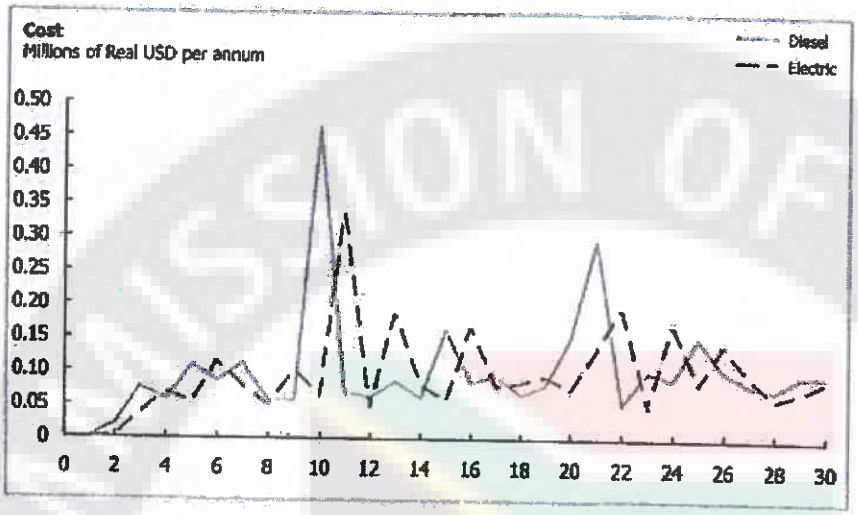
PRELIMINARY



SOURCE: Source

EXHIBIT 24

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 a conservative 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 25

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 capex 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 capex 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

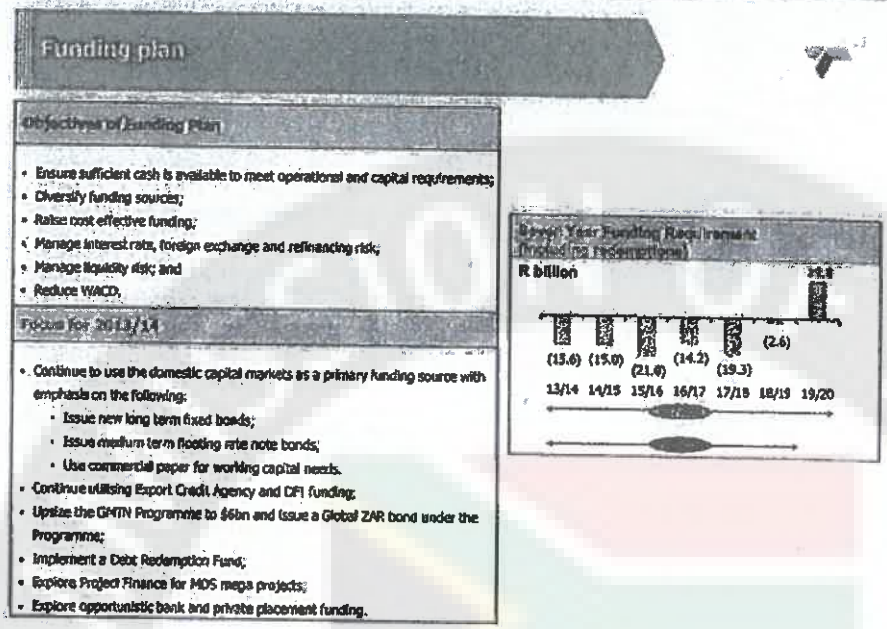
The business case proves to be neutral at the following volumes and tariffs:

- 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.

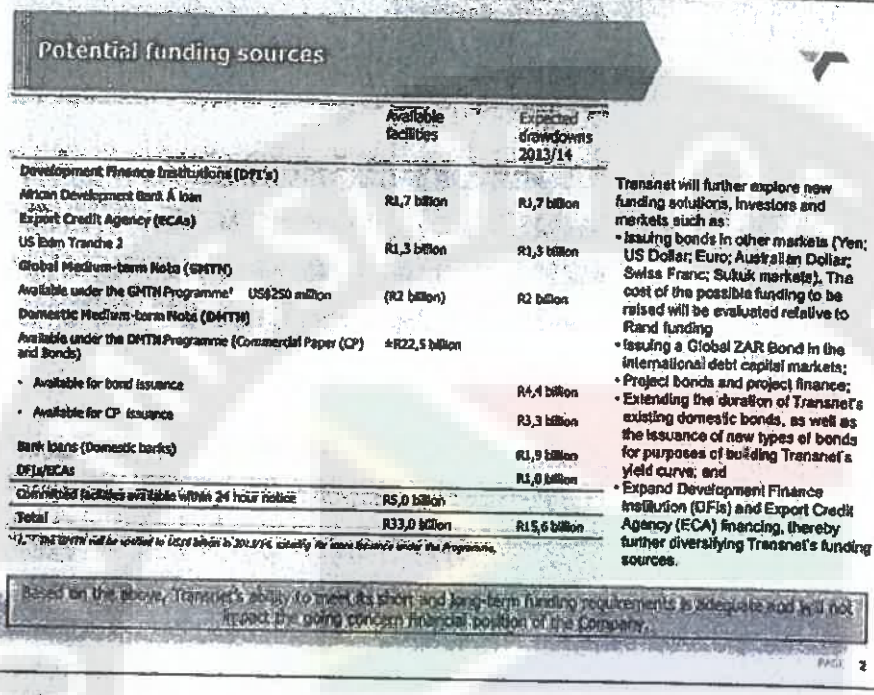
EXHIBIT 26



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 27: POTENTIAL FUNDING SOURCES FOR MDS



Potential funding sources

	Available facilities	Expected drawdowns 2013/14
Development Finance Institutions (DFI's)		
African Development Bank A loan	R1,7 billion	R1,7 billion
Export Credit Agency (ECAs)		
US Ioan 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		R3,3 billion
Bank loans (Domestic banks)		R1,9 billion
DFIs/ECAs		R1,0 billion
Committed facilities available within 24 hour notice	R5,0 billion	
Total	R33,0 billion	R15,6 billion

[1] The GMTN will be upsized to US$3 billion in 2013/14, subject to loans advance 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 28

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 29

Spot	1 Year	2 Year	3 Year	4 Year	5 Year	6 year	7 year
$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 30

	Forward Rand value of imported component at current market rates	Impact of a 5% weakening of Rand against USD	Impact of a 10% weakening of Rand against USD
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 above current staffing levels. This need is dependent on delivery against MDS volumes across the GFB, Coal and Ore businesses.

Currently, TFR only has capacity to train on average 500 drivers per year. However, at its peak in 2015-2016, TFR will require an additional 791 drivers. TFR has transitioned from a mandatory Refresher Training every 2 years to a Continuous Professional Learning programme. This will cut training time from 22 days every 2 years at the School of Rail to 6 days every 2 years on site according to best practice as shown in the exhibit below, freeing capacity at the School for additional training of new recruits. This expected reduction in training time is based on a joint exercise done with DB Siyaya and international benchmarking of TFR's methods in conjunction with other railways.

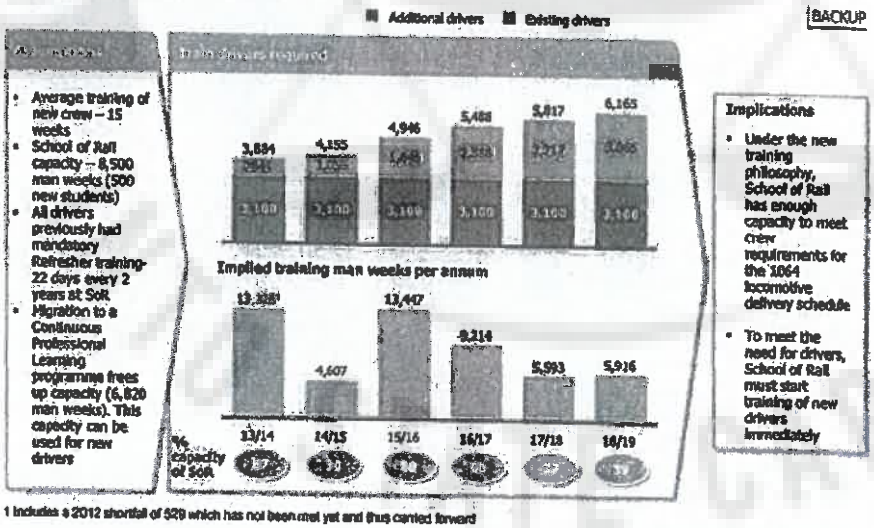
EXHIBIT 31

The new CPL programme will significantly reduce the training time and fee capacity at the School of Rail

	Refresher training	New CPL programme
Length	22	6
Frequency	Once every 2 years	Continuously over 2 years
Location	School of Rail	Operational area
Content	Not sensitive to operational needs	Determined by BU and train
Impact	Does not promote continuous proficiency	Promotes continuous proficiency

EXHIBIT 32

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



1 Includes a 2012 shortfall of 529 which has not been met yet and thus carried forward

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. In addition, the one man crew project, if successfully tested, will allow TFR to fast track trained assistants to become train drivers if successfully tested.

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 FII 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 33

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

ZAR, billions

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	4	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 34

Expansionary infrastructure expenditure timeline

Bold text = interdependencies with GFB volume expansion

BACKU

Business focus	Preparation for growth (zero to two years)	Sustained growth (two to five years)	Consolidate (five to seven years)
Infrastructure expansion: Fairway/axle loading	• Increase axle loading • Increase coal line capacity to 81mt • Eskom 32mt project • Partial doubling of NCB-Nseal 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 • Gelvisplaas 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 OMTE	• Manganese 16mtpa New and Upgraded substations • Ore line Phase 2A to 82.5mtpa power upgrade (including of OMTE) • 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) pilot 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.

Network Standardisation

Network standardisation is a long term project extending well beyond the current 7 Year MDS. This project is expected to include increasing axle loading in the core network (that conveys roughly 90% of GFB traffic); extending the 25 kV AC to close gaps in the existing electrification network and replacing the 3kV DC electrification network with the 25 kV AC network in high tonnage corridors as shown in the exhibits above.

Excluding the export iron ore and export coal lines with their 30 and 26 ton per axle loading respectively, the core network for general freight traffic, which has a loading capability of 20 tonnes per axle, conveys more than 90% of the general freight traffic. This core network will be enhanced to 26 tonnes per axle as part of the maintenance program. Increasing the axle loading capability of the network enables increased wagon loads which increase the tonnes throughput per train. The majority of growth is in mineral and mining commodities which will be the prime drivers for heavier axle loads. There are no plans to increase the axle loading capabilities of branch lines of 18.5 tonnes per axle and lower as it is not warranted by the anticipated traffic growth.

The extension of the 25 kV AC electrification is firstly strategically targeted to close gaps in the existing electrification network that conveys high tonnages to reduce locomotive changeovers and the operating delays that they introduce. Secondly, the 25 kV AC network will replace the existing 3kV DC electrification network in high tonnage corridors. This is because the 25 kV AC is technically better suited to the high volumes requiring a lighter mast and fittings and fewer substations spaced further apart; this is less restrictive on the number of trains in the section. Finally, the 25 kV AC will be extended into currently non-electrified lines as and when the volumes make it economically viable.

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.

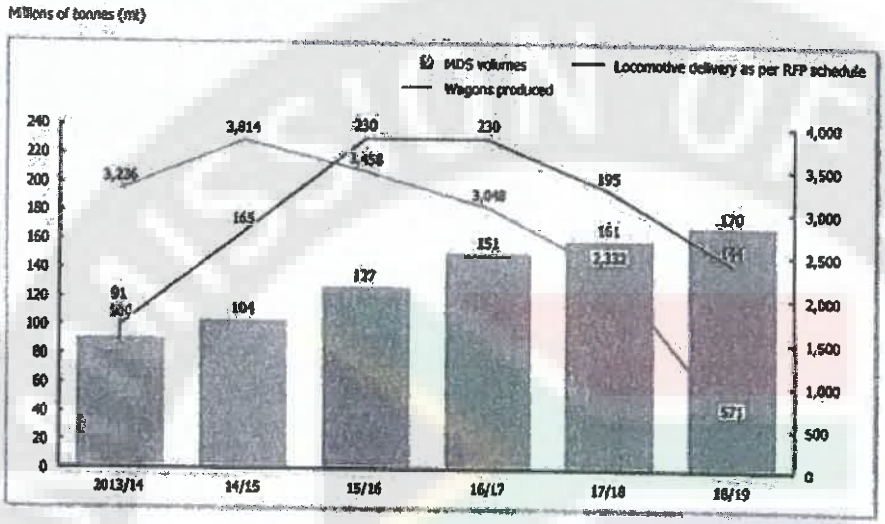
The MDS predicates growth over a number of flows and which extend over a number of operating areas where locomotives are changed because of traction changes dictated by the rail network infrastructure. Wagons are tightly linked to the commodities they transport while locomotives relate to the mass but not the commodity itself; accordingly locomotives are allocated according to the tonnes 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 35

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.

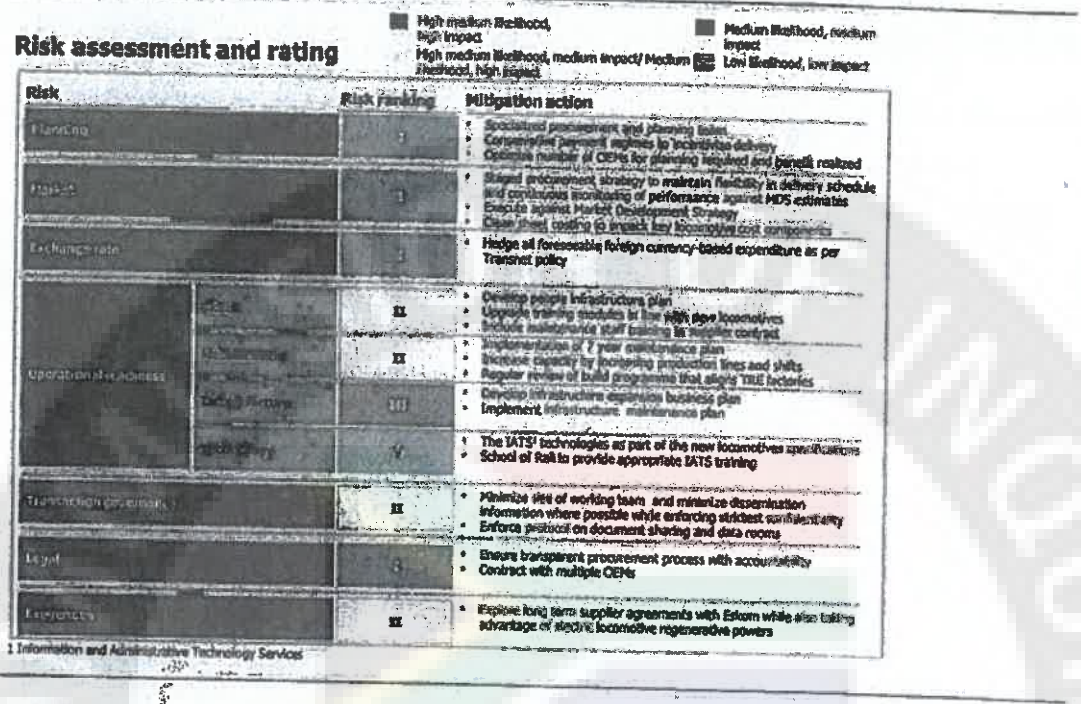
In addition to all these elements, TFR has also developed a change management plan including assimilation of new technology, implementation of the new operational philosophy and execution of the new maintenance strategy. (See section E16, Change management plan)

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 36



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 37, 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, and revising the fleet run-out strategy.

7.3 Market risk

The inherent risk – which is also the greatest risk to realisation of Transnet's road to rail strategy – is that anticipated market growth will not materialise. This growth 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 (shortfall vs. MDS) and 2 (growth with GDP) in Exhibit 37 indicate the large swings in NPV due to MDS volumes not materialising with NPV dropping to R1.0 billion and –R20 billion, respectively.

Should sensitivity 2 (the worst case scenario, with volumes growing with GDP) materialise, the gap in NPV from the base case would only be closed with annual tariff increases of 14% during the MDS period. The infeasibility of increasing tariffs at this rate further underscores the importance of a flexible procurement strategy with key determinates regularly reviewed to inform the strategy

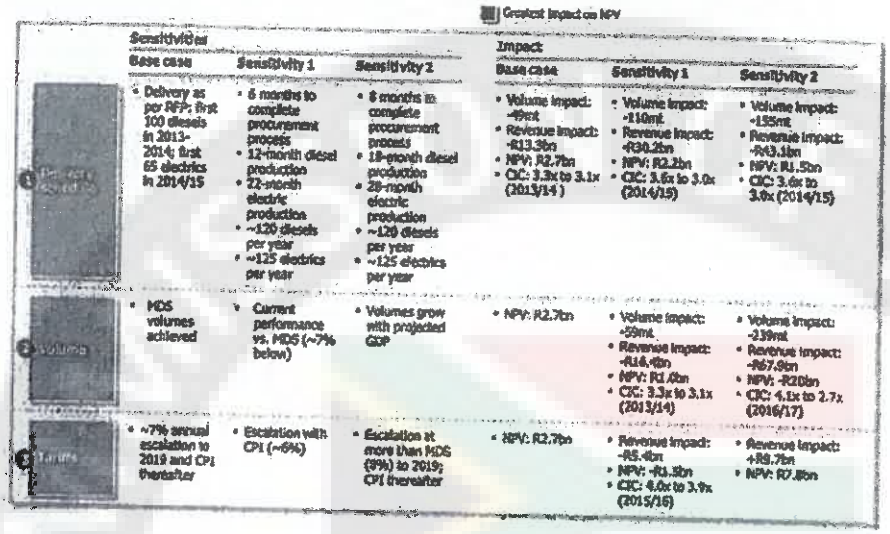
Volume sensitivities also have the biggest impact on CIC, with Sensitivity 1 decreasing the cash interest cover ratio (CIC) from 3.3X to 3.1X in 2013/14 and Sensitivity 2 decreasing the CIC from 4.1X to 2.7X from 2015/16 onwards. To mitigate this risk, as mentioned in Section 3, Proposed Solution, TFR should stage procurement to maintain flexibility.

Exhibit 37 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 37

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



7.3.2 Purchase price

There are two elements of price risk. Firstly, there is the risk that TFR will not be able to purchase locomotives at the price estimates in this business case. Purchase price sensitivities detailed in Exhibit 38 indicate a moderate impact on NPV with a 10 percent increase in base price resulting in a reduction in NPV of R1.5 billion. 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. Secondly, there is the risk that price escalations in the future will be higher than current assumptions. To mitigate this, Transnet will deploy capable procurement team with a clear and effective contracting strategy.

7.3.3 Costs

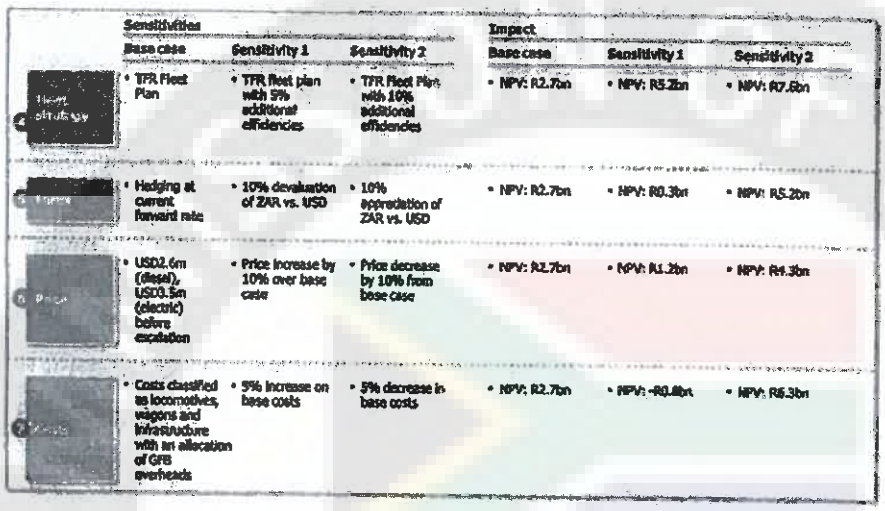
Exhibit 38 indicates that cost base movements will have a moderate impact on NPV, decreasing it by R3.5 billion for a 5 percent increase in base costs. Costs have been budgeted according to Transnet's Corporate Plan.

7.4 Forex risk

Forex movement sensitivities in Exhibit 38 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.

EXHIBIT 38

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



	Sensitivities			Impact		
	Base case	Sensitivity 1	Sensitivity 2	Base case	Sensitivity 1	Sensitivity 2
[redacted]	• TFR Fleet Plan	• TFR fleet plan with 5% additional efficiencies	• TFR Fleet Plan with 10% additional efficiencies	• NPV: R2.7bn	• NPV: R5.2bn	• NPV: R7.6bn
[redacted]	• Hedging at current forward rate	• 10% devaluation of ZAR vs. USD	• 10% appreciation of ZAR vs. USD	• NPV: R2.7bn	• NPV: R0.3bn	• NPV: R5.2bn
[redacted]	• USD2.6m (diesel), USD3.5m (electric) before escalation	• Price increase by 10% over base case	• Price decrease by 10% from base case	• NPV: R2.7bn	• NPV: R1.2bn	• NPV: R4.3bn
[redacted]	• Costs classified as locomotives, wagons and infrastructure with an allocation of GFB overheads	• 5% increase on base costs	• 5% decrease in base costs	• NPV: R2.7bn	• NPV: -R0.4bn	• NPV: R5.3bn

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 will be mitigated by implementing a governance framework that includes a High-Value Tender (HVT) process, a Steering committee to oversee the transaction and protocols (e.g. PMO and data room) to monitor and track the transaction. These items are described in depth in Governance (see section C8) and briefly below:

- 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 in the tender process.
- 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.
- A PMO has been established at TFR with specific responsibilities for tracking progress towards milestones and establishing and owning a virtual data room to track dissemination of information and flag incidences.

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 6.

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 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 39

Approach to the 1064 Locos HVT

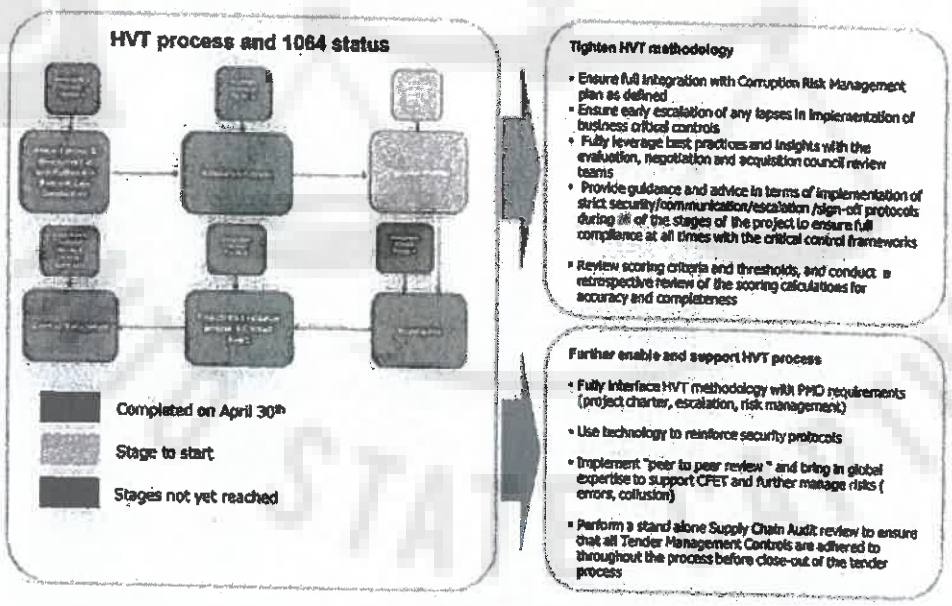


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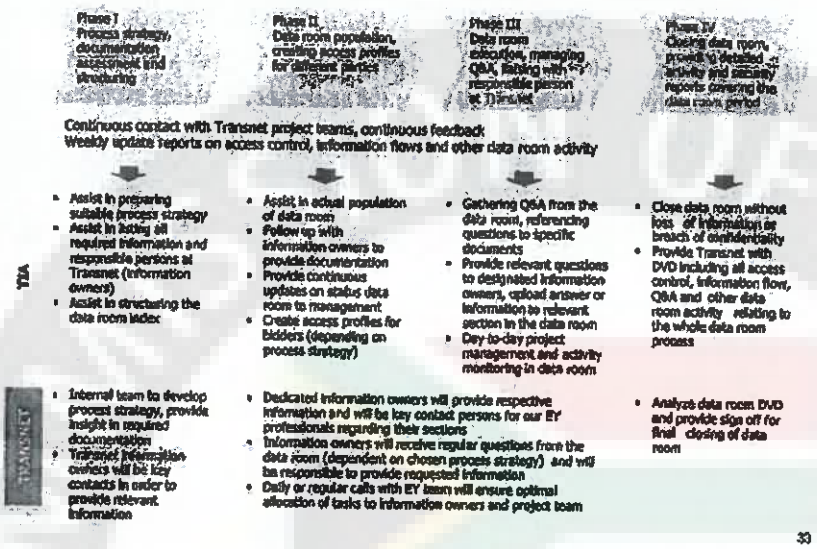
EXHIBIT 40

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. Overview

1.1 Contracting strategy

Transnet's contracting strategy includes a number of key aspects, including alignment with the Government of South Africa's socioeconomic policy framework, an open tender process, approaches to ensure flexibility and an appropriate number of suppliers. The outcome of Transnet's contracting strategy is subject to bid evaluations and supplier negotiations.

Socioeconomic policy and localisation

The transaction will be aligned with the Government of South Africa's socioeconomic policy framework, including CSDP, NGP, NDP, SSI, and IPAP2. In addition, local content will be increased through skills development, job creation and technology transfer. 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). To ensure sufficient locomotive production to enable development of local industry in South Africa, Transnet will procure a minimum number of locomotives per year, which will be agreed upon with vendors through negotiations.

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.

Open tender process

Transnet is 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. Integrity of the transaction will be ensured through a High Value Tender (HVT) process overseen by Transnet Internal Audit (TIA).

Once OEMs are selected through the open tender process, Transnet reserves the right to contract independently with the chosen OEMs for the transfer of skills and support of maintenance activities.

The aforementioned localisation requirements suggest an opportunity for TE to be involved in locomotive production. However, TE will compete with other bidders for local content. The selected OEMs will in turn partner with the most competitive local supplier(s).

Flexibility

There will be flexibility to adapt procurement to the way locomotive demand materialises – based on volumes achieved and operational efficiencies realised. Transnet will conduct an annual forward review of its locomotive fleet requirements. This long-term view will enable it to amend order quantities as required while sustaining local industry development, providing sufficient notice to account for the production lead times of manufacturers (e.g., 18-24 months). The ultimate number of locomotives

procured is assumed to remain fixed, as is the aforementioned minimum quantity, but flexible procurement could impact the timing by which Transnet acquires its 1064 locomotives subject to annual reviews of Transnet's fleet requirements.

Number of suppliers

A number of factors will inform the decision on the number of suppliers Transnet will select through the procurement process:

- Ability to deliver against timeline. To fast-track timelines and mitigate potential locomotive shortfalls, Transnet may procure from more than one supplier in parallel, which could increase the number of suppliers needed.
- Ability to achieve standardisation. Transnet's new maintenance philosophy will require interoperability. This will lead to a stronger balance sheet and reduce the requirement for spares. However, this could reduce the number of suppliers needed.
- Ability to secure supply and price. Security of supply and protection against potential price escalations – both for locomotive prices and after-sales support and maintenance – suggest the need for more than one supplier.

1.2 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:

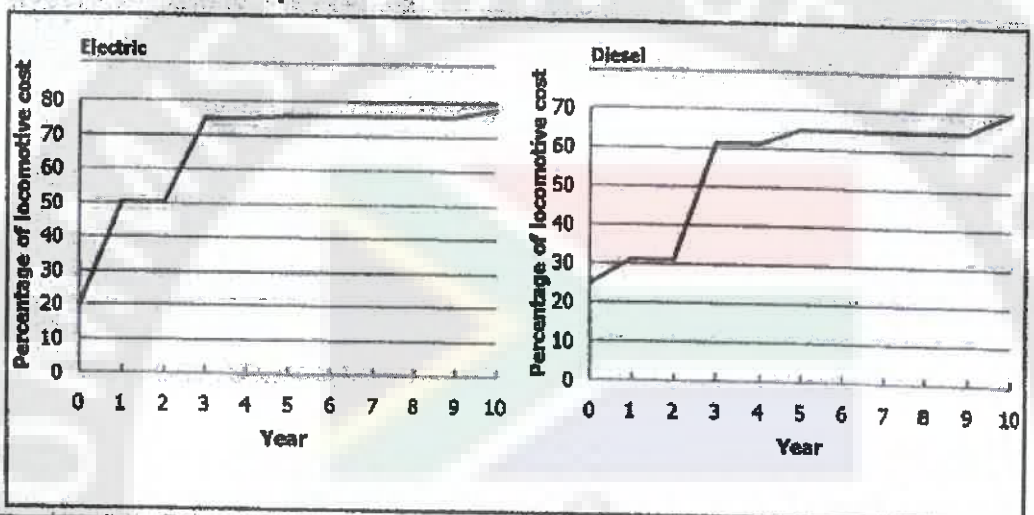
1. 55 percent for diesel locomotives; and
2. 60 percent for electric locomotives.

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 41

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



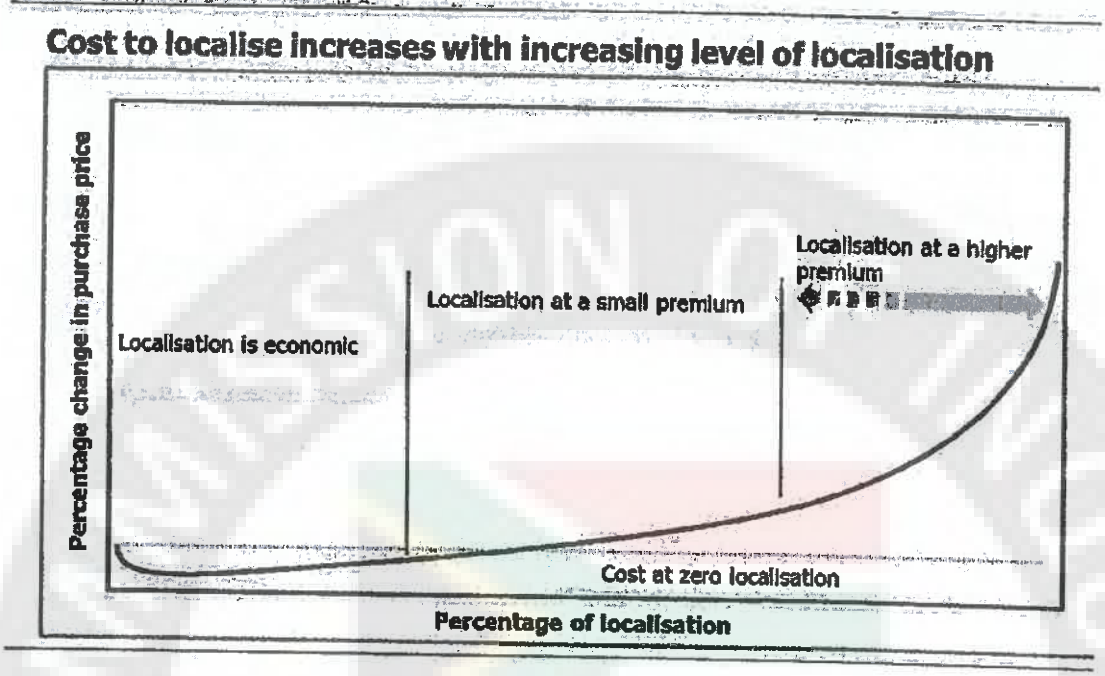
A detailed component analysis undertaken by Transnet demonstrates that price premium is not static across the percentage rise in local content, but rather is informed by the cost of production of the individual components making up a locomotive.

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 42

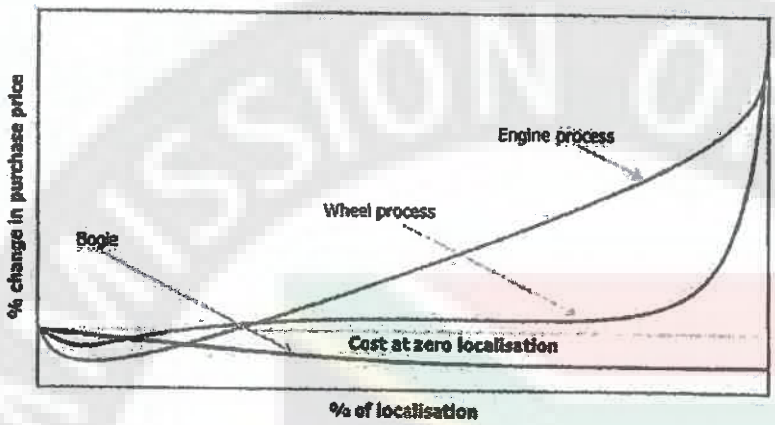


A grey zone exists where the limit of localisation is dependent on OEM investment in manufacturing in South Africa. Part of the way the Transnet RFP is structured is to attempt to capture as much localisation as possible within the grey zone without overly inflating the price premium paid.

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 43

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 44

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 45

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

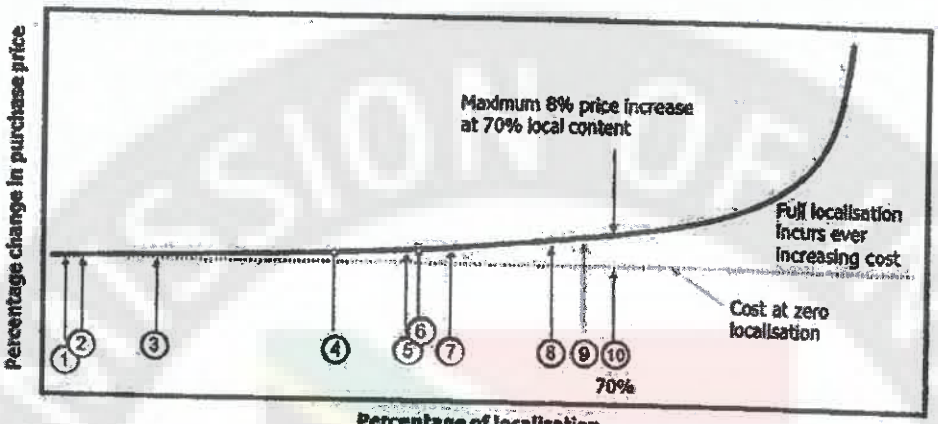
Percent

Categories	Total cost %	Current local %	Target local %	Percentage of Cost to local	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 46

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 R78 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 greater than 125 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

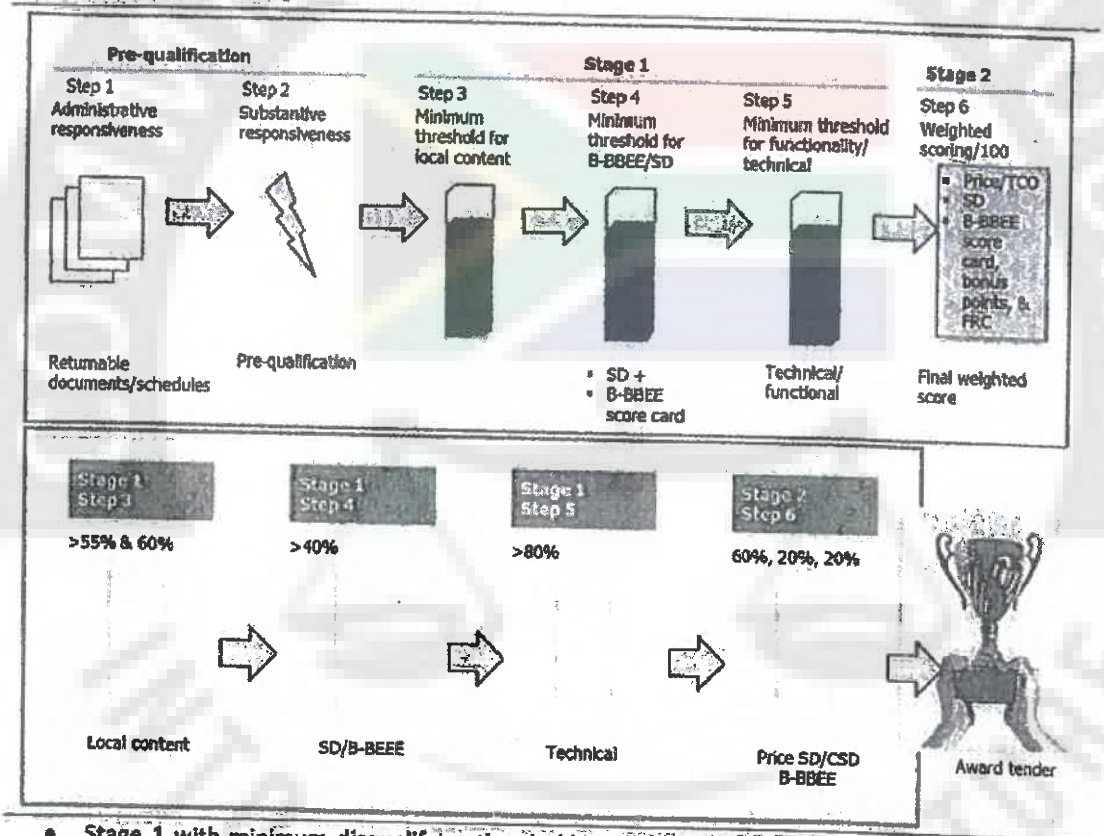
To ensure the bidding process is as fair and transparent as possible. As a long-term procurement event, open tender will identify suppliers with whom TFR can partner, to ensure value for money and compliance with Transnet's support for the NGP and government objectives. The programmatic nature of this 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 47



- 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.

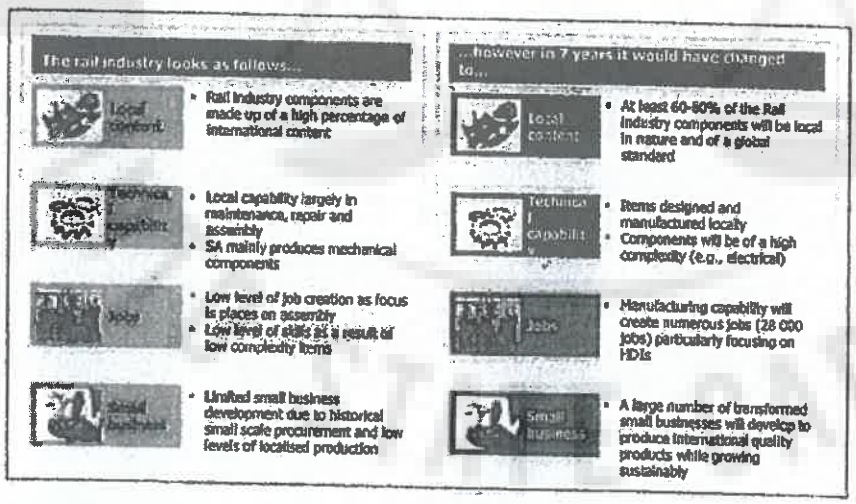
This spend will be leveraged to extract SD value in a manner that increases employment and also facilitates diversification beyond South Africa's current reliance on traditional commodities and non-tradable services. It will address the shortfall in artisan and technical skills by increasing the education 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 48

Fundamental shift of the Rail Industry over the next 7 years



4. Comparison of benefits between 90/10 and 60/20/20 methodologies

The 60/20/20 approach to localisation targets will create 30 percent greater total economic benefits (40 percent greater net benefits) at a significantly lower localisation cost, as shown in the exhibit below. Calculations are based on a total contract value of R38.6 billion.

The 60/20/20 approach will facilitate a local spend of an estimated R28.4 billion at an additional cost of R621 million. The overall benefit to the South African economy, factoring in the multiplier effect, is R78 billion (a net benefit R77 billion after deducting expected costs); this assumes high localisation levels of 70 percent for Diesels and 77 percent for Electrics. The 90/10 approach will facilitate local spend of an estimated R22.1 billion at an additional cost of R4.5 to 6.0 billion. The benefit to the South African economy based on the multiplier effect is R 61 billion (a net benefit ~R56 billion). This is based on 55 percent localisation for Diesels and 60 percent for Electrics.

EXHIBIT 49

The 60/20/20 approach to localisation will provide more benefits compared to the 90/10 approach

	60/20/20			90/10		
	Propose local spend (Rm)	Additional cost to localise (Rm)	Benefits through multiplier effect (Rm)	Proposed local spend (Rm)	Additional cost to localise (Rm) range	Benefits through multiplier effect (Rm)
Diesel locomotive	9,803	250	26,860	7,653	1,222 to 1,697	20,970
Electrical locomotive	18,626	371	51,036	14,467	3,235 to 4,313	39,639
Total	28,429	621	77,896	22,120	4,457 to 6,010	60,609

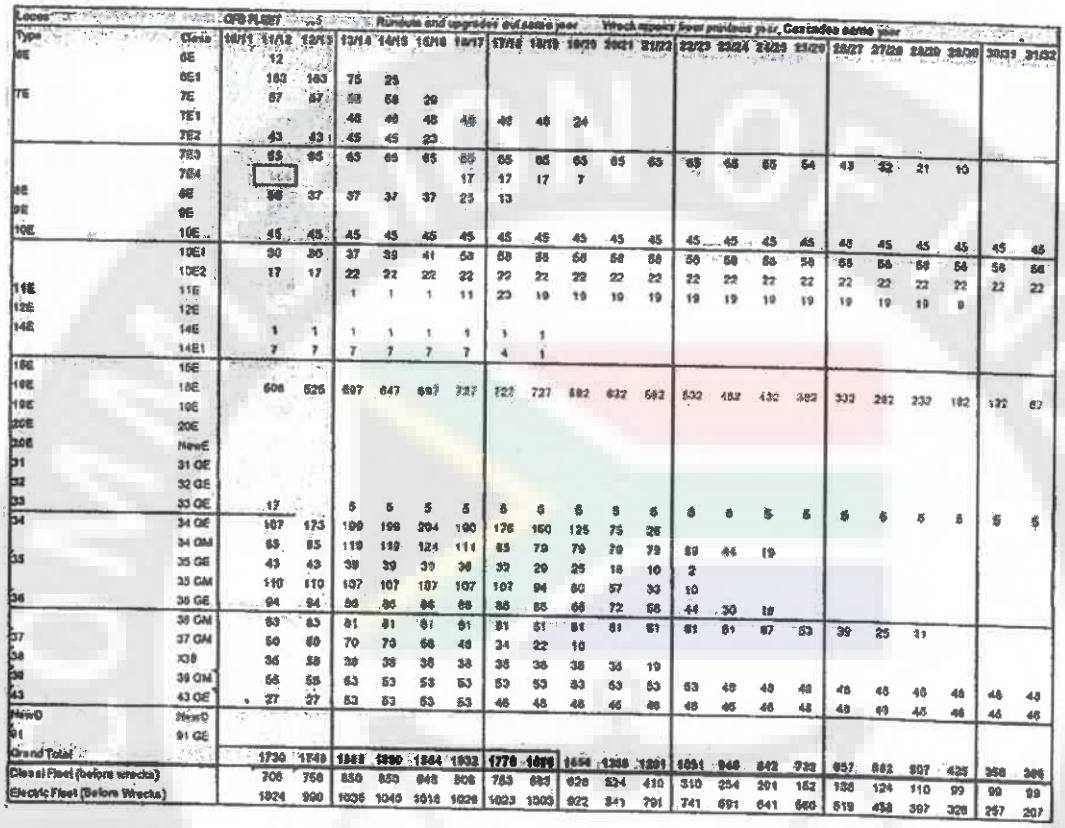
E. SUPPORTING DOCUMENTATION

1. 7-year commodity growth

	GENERAL FREIGHT GROUP FLOW	YEAR 2013/14 Budget	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Tons +/- increase	MAJOR ASSUMPTIONS/INITIATIVES
AGRICULTURE & BULK LIQUID	GRAIN, MAIZE, WHEAT & FOODSTUFFS	4,184	4,477	4,950	5,444	6,083	6,304	6,635	2,451	Domestic harvests average between 10mtpa - 14mtpa, weather permiting. Demand projection represents TFR's increased share of total market demand as more traffic is shifted from road to rail. Agri-logistics and rural infrastructure - Transnet's rail and port capacity to support agri-logistics including branch lines development
	COMMODITIES NOT CLASSIFIED IN GROUPS	2,762	2,822	3,101	3,796	4,018	4,147	4,335	1,573	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 overborder demand from Botswana and Mozambique
	TIMBER	2,450	2,576	2,894	3,303	3,485	3,645	3,118	2,624	- Sappi Ngodwana – Production expansion will increase demand in 2013 by 115,000 tons from Piet Retief and Enthuthi areas. The plant will be completed in 2013. - The expansion of the Sappi SAICCOR Wood yard rail to increase timber intake by 75,000 pa by 2013. Mondi Ixopo building new timber yard
	PETROLEUM LIQUIDS (DOMESTIC)	1,361	1,381	1,472	1,643	1,691	1,721	1,750	0,389	
	IRON ORE (SWAZILAND HEMATITE)	0,000	1,210	1,210	1,210	1,210	1,210	1,210	1,210	
	CHEMICALS	0,801	0,871	0,895	0,975	0,983	0,976	1,000	0,199	
	PETROLEUM LIQUIDS (OVERBORDER)	0,790	0,796	0,830	0,897	0,921	0,946	0,956	0,166	
	COAL (DOMESTIC - OTHERS)	0,104	0,108	0,109	0,115	0,118	0,119	0,124	0,020	
	LIME	0,061	0,062	0,069	0,073	0,078	0,077	0,080	0,019	
	ROCK PHOSPHATE (DOMESTIC OTHER)	0,054	0,056	0,062	0,067	0,069	0,071	0,073	0,019	
	COAL (EXPORT RICHARDS BAY - OBT)	0,030	0,033	0,034	0,034	0,034	0,034	0,032	0,002	
	CONTAINERS (3M, 6M, 12M & NON-ISO STANDARD)	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,000	
	TOTAL AGRICULTURE & BULK LIQUID	12,638	14,349	15,628	18,018	18,661	19,250	21,324	8,645	
COAL	COAL (ESKOM - MAJUBA)	8,794	9,392	12,054	12,838	13,816	14,000	14,000	5,206	Eskom road to rail migration plan. Eskom Majuba heavy haul line coming on stream in 2014 - increase tons to 14mt
	COAL (EXPORT TCM/MAPUTO)	3,680	4,376	5,525	6,421	9,049	11,735	10,964	7,284	TCM expansion plan is to grow to 16mt in the next five years due to Limpopo projects (Vele and Makhado).
	COAL (ESKOM - TUTUKA)	0,000	0,000	0,000	5,300	6,000	6,300	7,500	7,500	Thuthuka will use container rail solutions for the next two years and tippler solutions thereafter. TFR Business case for these have been approved.
	COAL (DOMESTIC - OTHERS)	1,841	2,696	2,825	2,889	3,047	3,047	3,348	1,507	Coal deliveries to the Mondi and SAPPI papermills, will increase based on the growth in electricity usage over the next year.
	COAL (EXPORT DURBAN WESTS)	3,434	1,771	2,237	2,340	2,340	2,860	2,705	1,271	Transnet: SA Coal transportation system development, Export coal line, Waterberg developments, Swazi Rail link, Coal backbone capacity, Eskom Road to Rail, Cross-border connections.
	COAL (ESKOM - GROOTVLEI)	0,000	0,000	0,000	0,000	5,000	5,000	5,000	5,000	Grootvlei will use container rail solutions for the next two years and tippler solutions thereafter. TFR Business case for these have been approved.
	COAL (EXPORT RICHARDS BAY NAVITRATE)	0,638	1,046	1,183	1,854	1,854	1,854	2,992	1,354	Transnet: SA Coal transportation system development, Export coal line, Waterberg developments, Swazi Rail link, Coal backbone capacity, Eskom Road to Rail, Cross-border connections
	COAL (ESKOM - ARNOT)	0,000	0,000	0,000	2,000	2,000	2,000	2,000	2,000	Commissioning and conclusion of the Arnot Powerstation
	COAL (EXPORT RICHARDS BAY - OBT)	0,430	0,637	0,702	0,901	0,901	0,901	0,969	0,540	
	TOTAL COAL	14,826	19,918	24,527	34,543	44,806	47,897	49,535	31,680	
EXPORT IRON ORE LINE & MANGANESE	MANGANESE (EXPORT - ARCOARAY PE)	3,200	5,200	8,000	9,857	13,139	14,357	16,000	10,800	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. 16mtpa Manganese expansion in Ngqura materialises. South Eastern node & corridor development - Transnet: Ngqura Transhipment Hub, Integrated CDC development and Manganese Export Corridor.
	MANGANESE (DOMESTIC)	1,950	1,950	1,900	1,567	1,560	1,705	1,900	-0,050	
	MANGANESE (EXPORT DURBAN)	1,300	1,300	1,200	0,503	0,164	0,179	0,200	-1,100	
	FERRO-MANGANESE	0,255	0,266	0,375	0,495	0,598	0,691	0,700	0,445	
	COAL (DOMESTIC - OTHERS)	0,095	0,100	0,100	0,100	0,100	0,100	0,100	0,005	
	TOTAL EXPORT IRON ORE LINE & MANGANESE	6,700	8,716	11,575	13,047	15,560	17,032	18,900	10,200	

INTERMODAL	CONTAINERS (3M, 6M, 12M & NON-ISO STANDARD)	8.852	8.096	9.273	10.293	10.358	10.883	11.647	2.795	Linked to GDP growth. Refurbishment and establishment of terminals. Coal, iron ore and mineral products at key loading sites. Development of freight hubs in areas such as Polokwane and Mid-Marico; New Castle Terminal, Delrik Strategy: Kingsmead Yard Rail Stacks Reconfigure Bayhead Yard to push back trains, 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 in consultation with current and potential customers.
	COAL (ESKOM - CAMDEN COAL IN CONTAINERS)	2.647	2.200	2.548	4.272	4.876	5.272	5.798	3.151	Coal deliveries to the Power stations will increase based on the growth in electricity usage over the next years. Camden will also container rail solutions for the next two years and tipplers solutions thereafter. TPR Business case for these have been approved.
	COAL (ESKOM - GROOTVLEI COAL IN CONTAINERS)	0.600	1.817	2.718	4.881	0.000	0.000	0.000	-0.600	
	COAL (ESKOM - TUTUKA COAL IN CONTAINERS)	0.000	1.800	2.888	0.000	0.000	0.000	0.000	0.000	
	AUTOMOTIVE (MOTORVEHICLES)	0.490	0.310	0.414	0.438	0.483	0.493	1.274	0.784	
	COMMODITIES NOT CLASSIFIED IN GROUPS	0.026	0.026	0.029	0.034	0.036	0.037	0.040	0.014	
	STEEL (DOMESTIC)	0.014	0.019	0.015	0.017	0.019	0.019	0.022	0.008	
	CEMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	
	TOTAL INTERMODAL	12.528	14.269	18.221	19.935	15.257	16.705	18.781	6.153	
MINERAL MINING & CHROME	COMMODITIES NOT CLASSIFIED IN GROUPS	4.261	3.553	4.825	6.756	6.916	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 RICHARDS BAY)	4.270	4.293	4.782	5.300	5.300	5.300	5.300	1.130	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.
	CHROME (EXPORT RICHARDSBAY)	2.751	3.466	4.359	5.140	5.295	5.535	5.735	2.960	
	MAGNETITE (EXPORT MAPUTO)	2.405	3.567	4.250	4.615	4.839	4.839	5.000	2.595	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.
	ROCK PHOSPHATE (DOMESTIC RICHARDS BAY NAVITRATE ROC)	1.717	1.929	2.231	2.638	2.822	2.822	3.000	1.283	Building Orter 9 to support current 7 year demand
	FERRO-CHROME	1.889	1.924	2.174	2.415	2.572	2.685	2.790	0.901	
	CHROME (DOMESTIC)	0.423	0.467	0.542	0.595	0.600	0.605	0.610	0.187	
	ROCK PHOSPHATE (EXPORT RICHARDS BAY)	0.297	0.324	0.368	0.435	0.560	0.554	0.600	0.303	
	MAGNETITE (DOMESTIC PROCESSINTERSPLAAS)	0.164	0.164	0.241	0.261	0.374	0.476	0.800	0.636	
STEEL & CEMENT	COAL (DOMESTIC - OTHERS)	0.262	0.195	0.310	0.310	0.310	0.310	0.310	0.048	
	CHROME (EXPORT DURBAN)	0.198	0.207	0.238	0.250	0.260	0.260	0.270	0.073	
	CHROME (EXPORT MAPUTO)	0.025	0.040	0.057	0.072	0.064	0.054	0.100	0.075	
	CHEMICALS	0.037	0.040	0.042	0.049	0.052	0.054	0.058	0.021	
	LIME	0.010	0.016	0.016	0.019	0.022	0.024	0.027	0.017	
	FERRO-MANGANESE	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.001	
	TOTAL MINERAL MINING & CHROME	18.838	20.917	24.454	28.897	30.110	30.367	33.863	14.835	
	COAL (DOMESTIC - OTHERS)	5.240	6.831	7.800	8.483	9.024	9.024	9.511	4.271	Driven by growth in other industries, e.g. steel, cement, timber etc
	CEMENT	4.585	5.304	5.661	6.181	6.265	6.273	6.343	1.758	Volumes to increase in line with SA's GDP growth (4% on average). TPR also targeting rail-friendly volumes in this sector. There is roughly 4mt of bagged cement currently on road. The Road to Rail strategy aim is to target 300,000 tons in the 1st year and gradually capture more over the 7 year period.
	IRON ORE (DOMESTIC - SISHEN IRON ORE YARD)	3.702	4.030	4.354	4.286	4.419	4.464	4.465	0.762	
	IRON ORE (DOMESTIC SISHEN)	1.082	2.673	3.659	3.731	3.839	3.839	3.840	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 Thabazimbi to Maputo.
	COMMODITIES NOT CLASSIFIED IN GROUPS	1.774	1.848	1.937	1.328	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.
	LIME	1.451	1.536	2.148	2.417	2.501	2.497	2.595	1.144	Lime used in the production processes of the Steel Manufacturers and is linked to increased output in the production processes.
	IRON ORE (DOMESTIC ROOSSENEKAL)	1.631	2.160	2.159	2.152	2.159	2.159	2.160	0.521	
	IRON ORE (EXPORT MAPUTO)	0.000	0.000	1.832	1.945	1.999	3.999	4.000	4.000	
	IRON ORE (DOMESTIC - THABAZIMBI)	1.265	1.337	1.718	1.841	1.899	1.899	1.900	0.635	
	STEEL (EXPORT - DURBAN)	0.460	0.560	0.634	0.907	0.932	0.932	0.937	0.477	
	STEEL (DOMESTIC)	0.339	0.385	0.427	0.627	0.629	0.628	0.632	0.293	
	IRON ORE (DOMESTIC BEESHOEK)	0.209	0.215	0.247	0.263	0.270	0.270	0.270	0.047	
	STEEL (EXPORT - RICHARDSBAY)	0.078	0.068	0.088	0.104	0.104	0.104	0.105	0.027	
	IRON ORE (DOMESTIC POSTMASBURG)	0.005	0.010	0.012	0.012	0.013	0.013	0.012	0.007	
	STEEL (EXPORT MAPUTO)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.000	
	TOTAL STEEL & CEMENT	21.836	26.657	32.367	35.329	36.499	38.894	39.580	17.826	
	TOTAL MDS	61.212	104.268	127.372	151.461	160.459	170.454	180.253	88.041	

2. General Freight fleet runout



Locos		OPS FLEET			Runouts and upgrades out same year				Wrecks appear 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		168	168	75	25																	
7E	7E		67	67	58	58	29																
	7E1				46	46	46	46	46	46	24												
	7E2		43	43	45	45	23																
	7E3		65	65	65	65	65	65	65	65	65	65	65	65	46	65	54	43	32	21	10		
	7E4		17					17	17	17	7												
8E	8E		38	37	37	37	37	23	13														
9E	9E																						
10E	10E		55	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	58	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	19	19	19	19	19	19	9		
12E	12E																						
14E	14E		1	1	1	1	1	1	1	1													
	14E1		7	7	7	7	7	7	4	1													
15E	15E																						
18E	18E		608	525	697	647	597	727	722	727	682	632	582	532	482	432	382	332	282	232	182	132	82
19E	19E																						
20E	20E																						
30E	NewE																						
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	100	100	204	100	175	150	125	75	25										
	34 GM		85	85	119	119	124	111	85	79	79	79	79	59	46	19							
35	35 GE		43	43	39	39	39	39	32	29	25	18	10	2									
	35 GM		110	110	107	107	107	107	107	94	80	57	33	10									
36	36 GE		94	94	86	86	86	86	86	86	66	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		80	80	70	70	56	46	34	22	10												
38	X38		38	38	38	38	38	38	38	38	38	38	19										
39	39 GM		56	56	53	53	53	53	53	53	53	53	53	53	49	49	49	49	49	49	49	49	49
43	43 GE		27	27	53	53	53	53	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
NewD	NewD																						
91	91 GE																						
Grand Total		1730	1749	1661	1690	1664	1932	1778	1699	1654	1388	1201	1051	946	842	732	657	582	507	425	358	306	
Diesel Fleet (before wrecks)		706	756	830	850	848	908	783	683	628	524	410	310	254	201	152	126	124	110	99	99	99	
Electric Fleet (Before Wrecks)		1024	990	1035	1040	1016	1024	1023	1003	922	841	791	741	691	641	580	519	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.

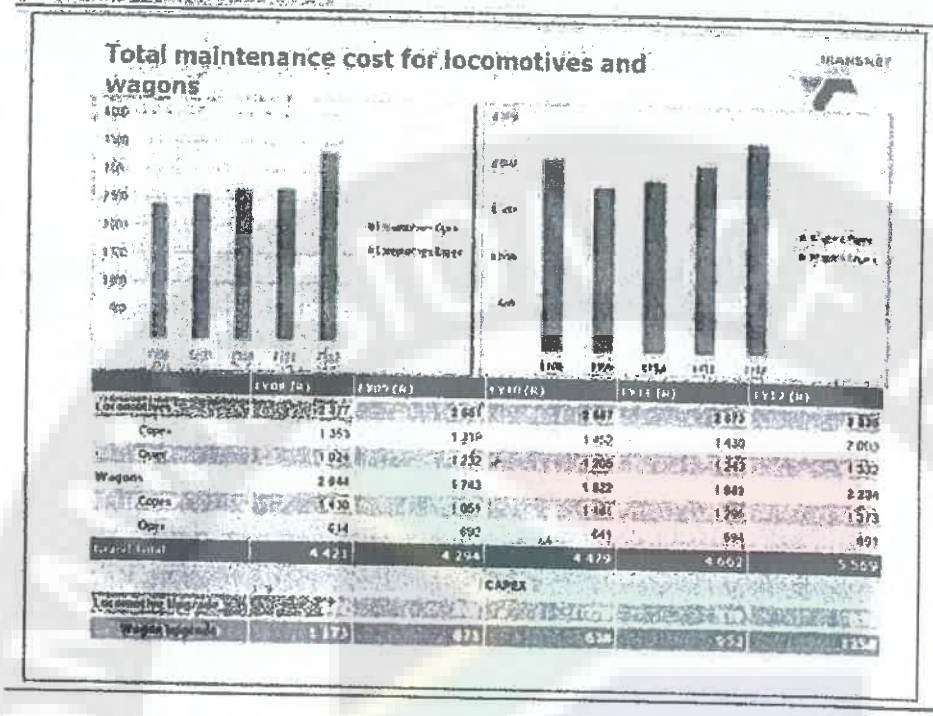
The new locomotives such as the 15E, 19E and 43D cannot be directly compared to the older locomotives as the new locomotives have not seen five full years of service but even making allowance for the shorter service, the savings in maintenance costs is evident.

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 50



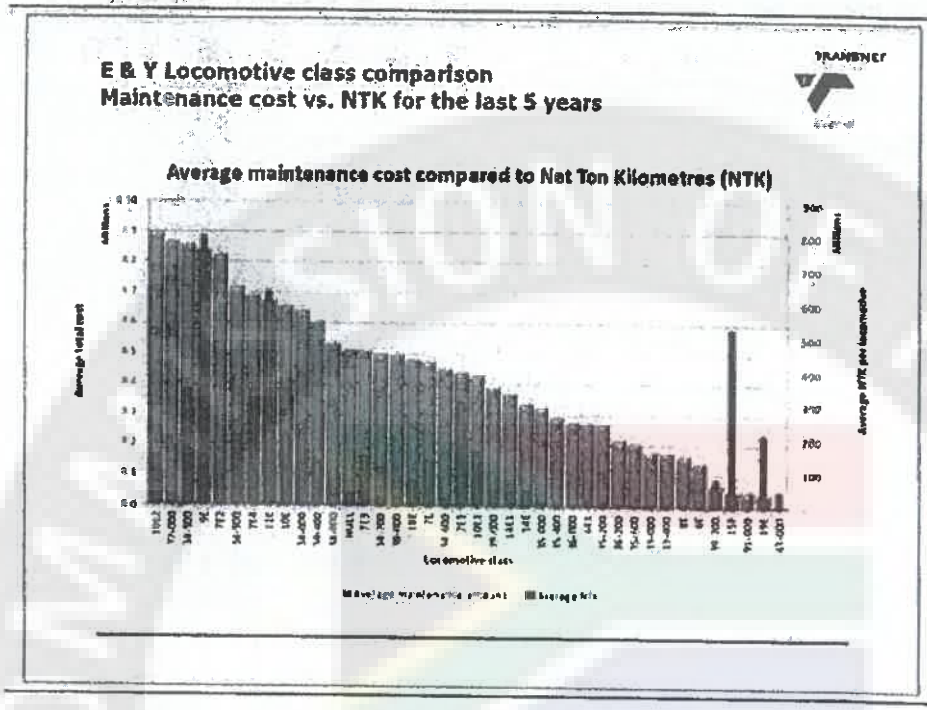
TFR has exhausted the life extension possibilities of its current "workhorse" fleet which are the primary contributors to GTK / NTK. Extending the life of "shunters" and "haulers" does not contribute to increasing GTK / NTK as the locomotives are not used and cannot be used for the heavy loads of main 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 Control 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 51



4. Locomotive 7-year locomotive requirement

GFB 7 YEAR LOCOMOTIVE REQUIREMENT

GFB	GROUP												
082M21	6M	189	172	134	63								
18B	18E	906	823	662	744	760	715	715	665	615	565	515	465
7E	7E	84	68	42	42	42							
7E1	7E1	0	-	21	21	21	46	46	46	46	46	46	46
7E2	7E	132	94	94	94	94	94						
7E3	7E	11	65	65	65	65	65	65	65	65	65	65	65
8E	8E	58	54	37	33	24	12	12					
8E	8E		30	4	4								
10E1	10E	73	26	26	26	26	55	62	45	45	45	45	45
10E2	10E	58	58	62	62	62	62	62	62	62	62	62	62
14E1	14E	8	8	8									
33	6E	17	-	-	-	-	-	-	-	-	-	-	-
34	6E	115	188	188	188	188	142	142	142	120	120	120	120
34	6M	82	90	94	94	94	94	94	94	94	94	94	94
35	6E	66	66	74	79	79	79	79	79	79	79	79	79
36	6M	79	86	93	93	96	96	96	96	96	96	96	96
38	6E	87	90	90	98	98	98	98	98	98	98	98	98
38	6M	81	84	84	92	92	92	92	92	92	92	92	92
37	6M	48	50	50	50	25	25						
38	43M	34	38	38	38	38	38	38	38	38	38	38	38
39	6M	55	50	50	50	50	50	50	50	50	50	50	50
43	6E	94	62	113	113	113	126	113	113	113	113	113	113
44D REW		0	-	-	82	279	279	362	393	465	515	535	548
39E		0	-	-	81	202	332	462	599	671	721	771	821
Total		1641	1641	1579	2148	2392	2442	2542	2681	2751	2832	2932	2932

5. Deployment plan

EXHIBIT 52

Table of Contents

EXHIBIT 53

GLOSSARY

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

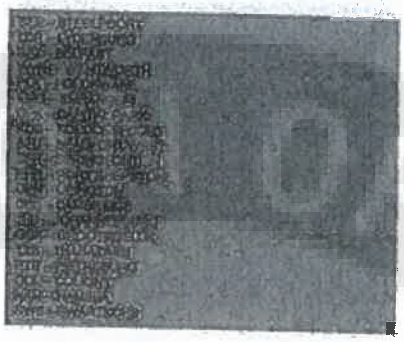
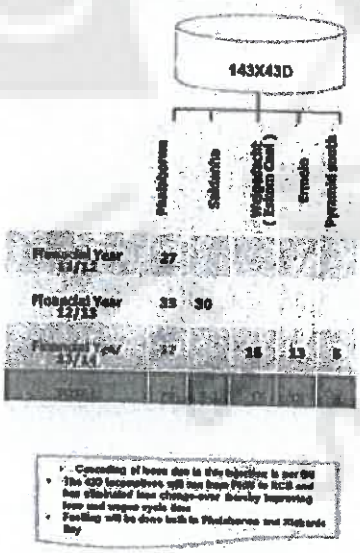


EXHIBIT 54

43D Deployment Plan

Efficiency and Volume Growth

Financial year 11/12 – 13/14



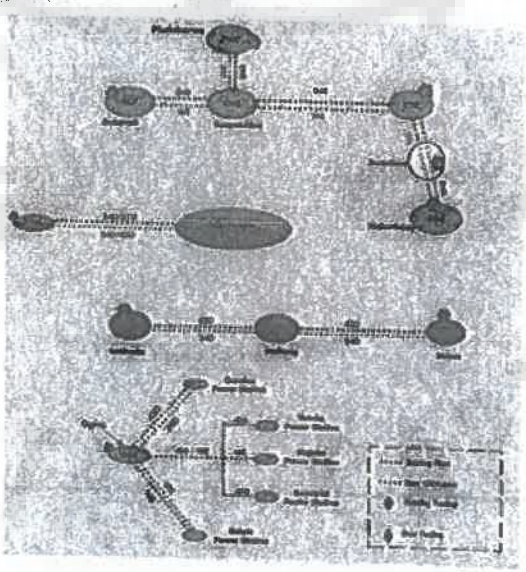


EXHIBIT 55

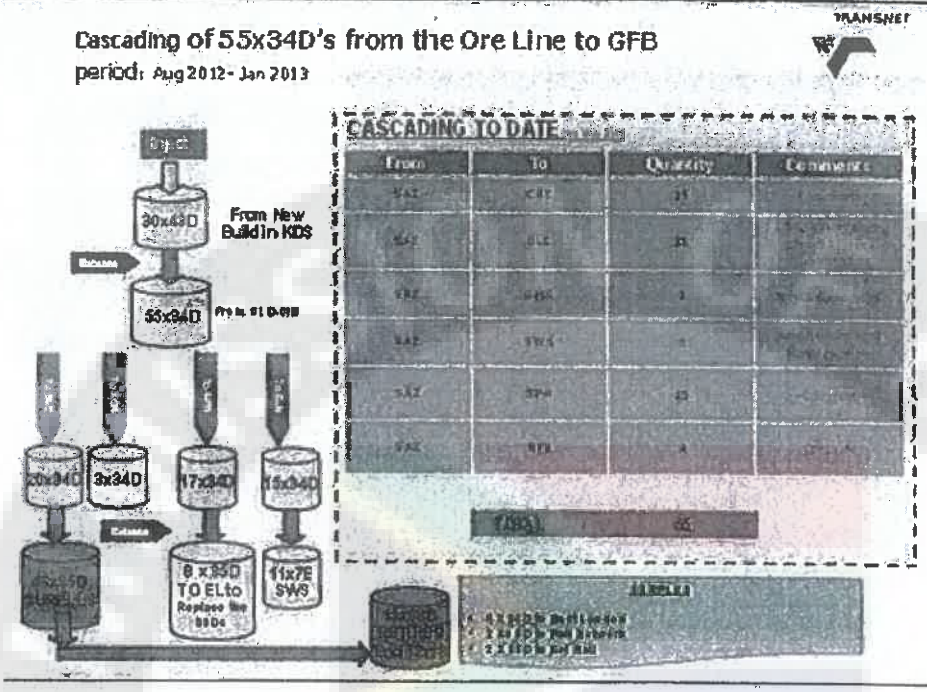


EXHIBIT 56

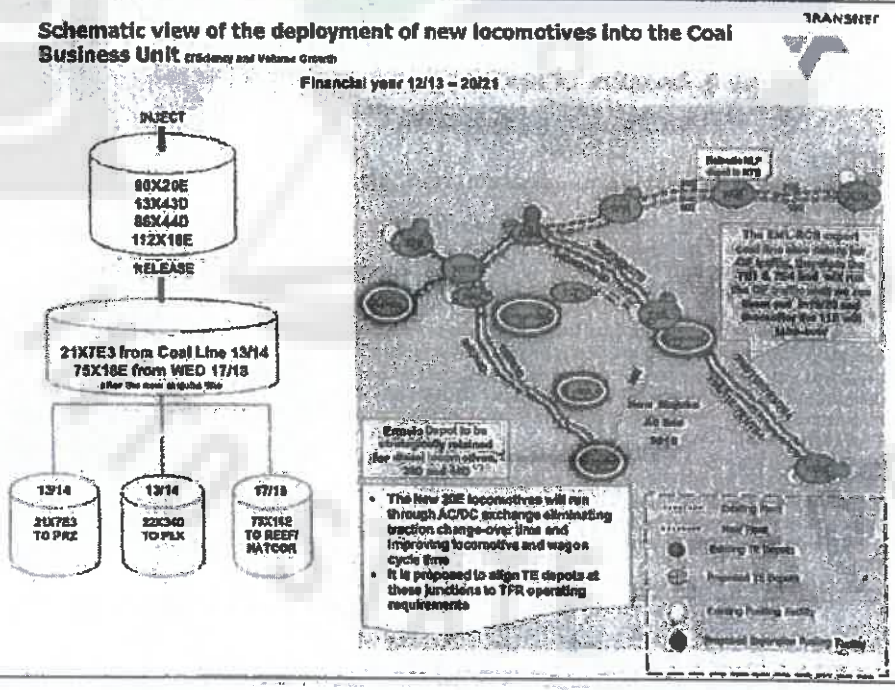


EXHIBIT 57

New Locomotives Deployment Plan

Efficiency and Volume Growth

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
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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Grand Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

EXHIBIT 58

Deployment Strategy & Benefits : Coal

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 82 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 59

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 60

Deployment Strategy & Benefits : Coal

- 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 61

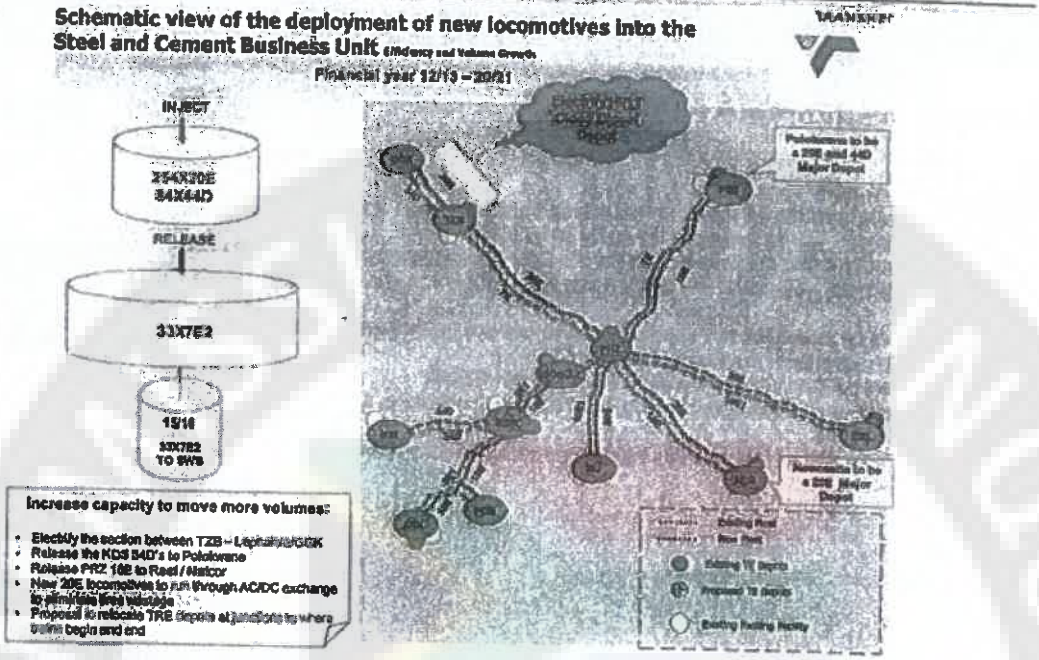

EXHIBIT 62

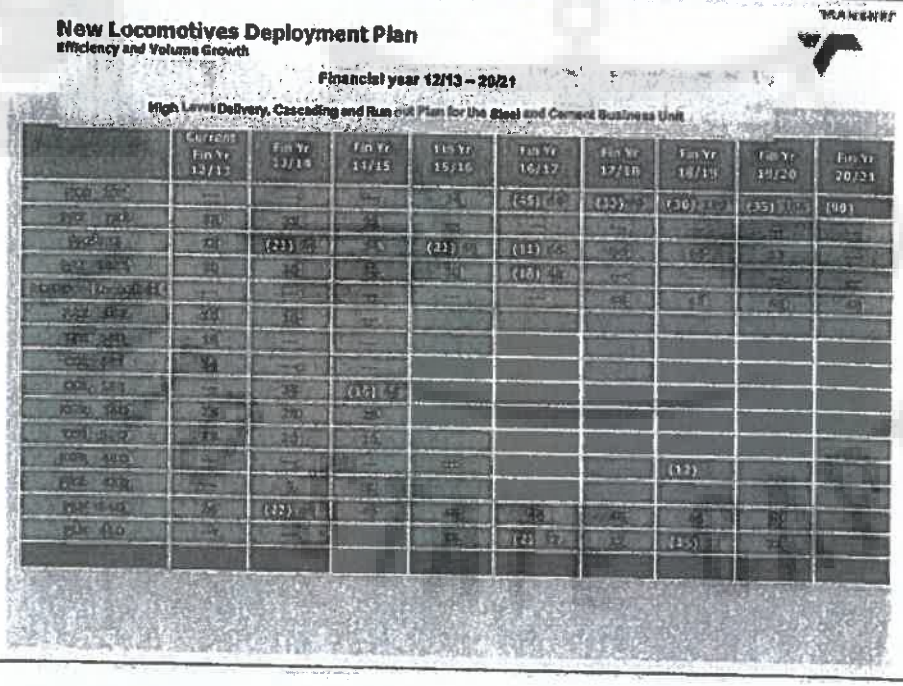

EXHIBIT 63

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 19E1's in its current form, this calls for the 19E1'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, Bijlxor 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

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EXHIBIT 64

Deployment Strategy & Benefits : SAC

TRANSNET

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 65

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

TRANSNET

Financial year 12/13 – 20/21

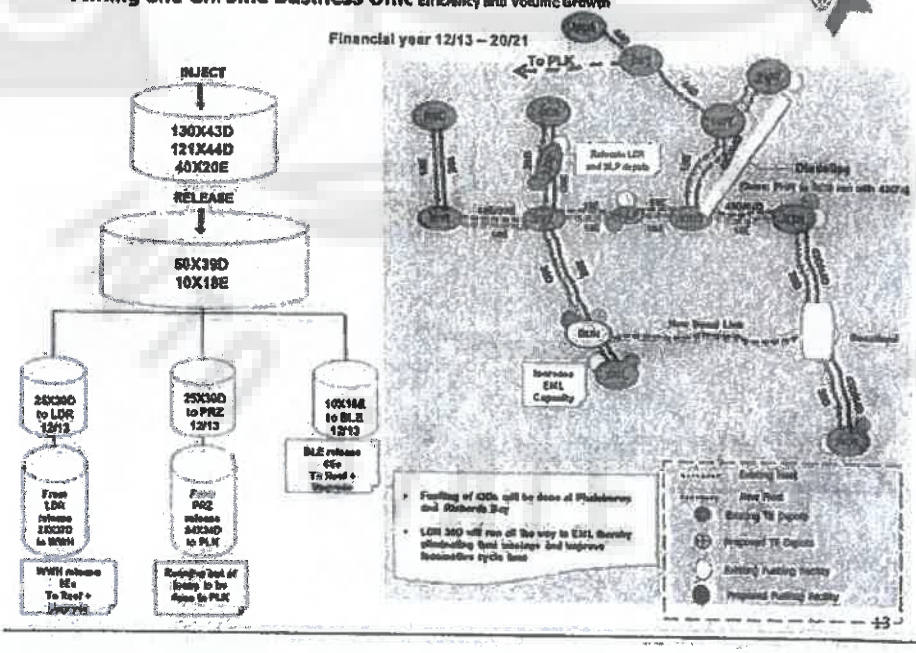

EXHIBIT 66

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

EXHIBIT 67

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 56 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 68

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

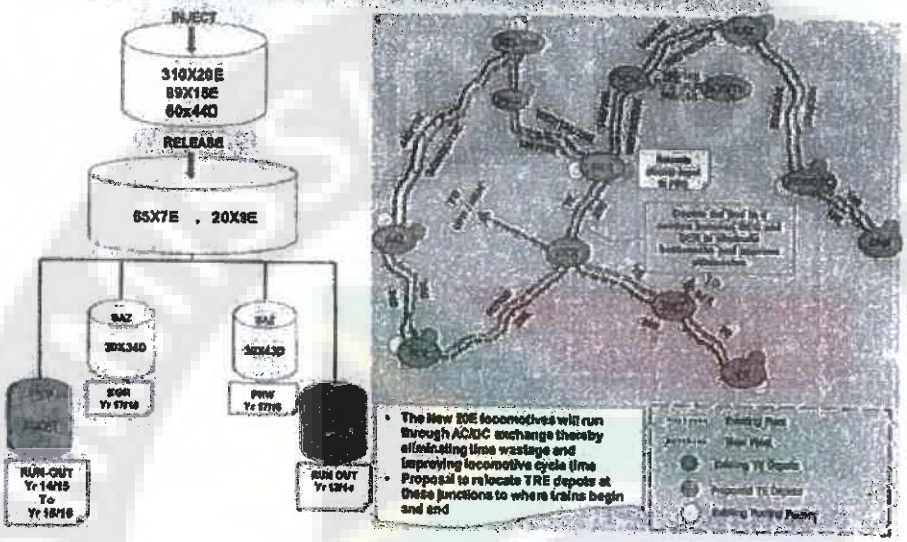

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EXHIBIT 69

New Locomotives Deployment Plan

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
Grand Total	363	374	367	429	472	512	542	567	589

EXHIBIT 70

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 71

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 72

Deployment Strategy & Benefits : IOM

TRANSNET

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 73

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 Container and Automotive 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

EXHIBIT 74

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 Bloemfontein 34D by 2017/2018: SAVING

EXHIBIT 75

Schematic view of the deployment of new locomotives into the Agriculture, Timber, Bulk Liquids and Africa Trade Business Unit Efficiency and Volume Growth

Financial year 12/13 – 20/21

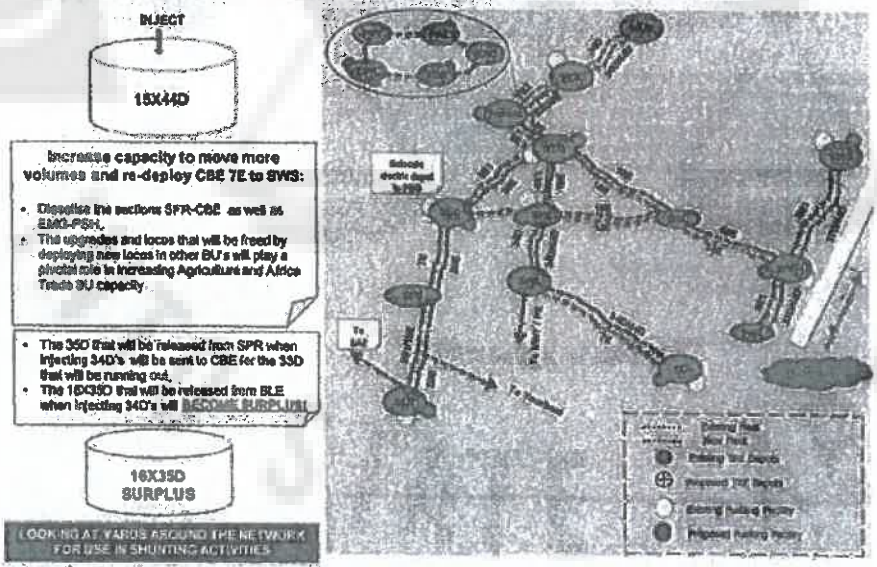


EXHIBIT 76

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 Agriculture and Africa Trade Business Unit

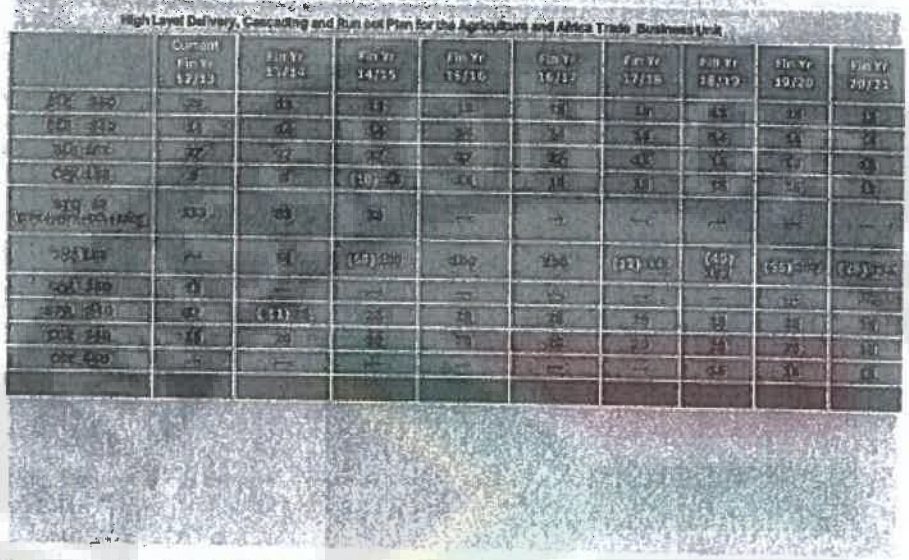


EXHIBIT 77

Deployment Strategy & Benefits : ABL

TRANSNET

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

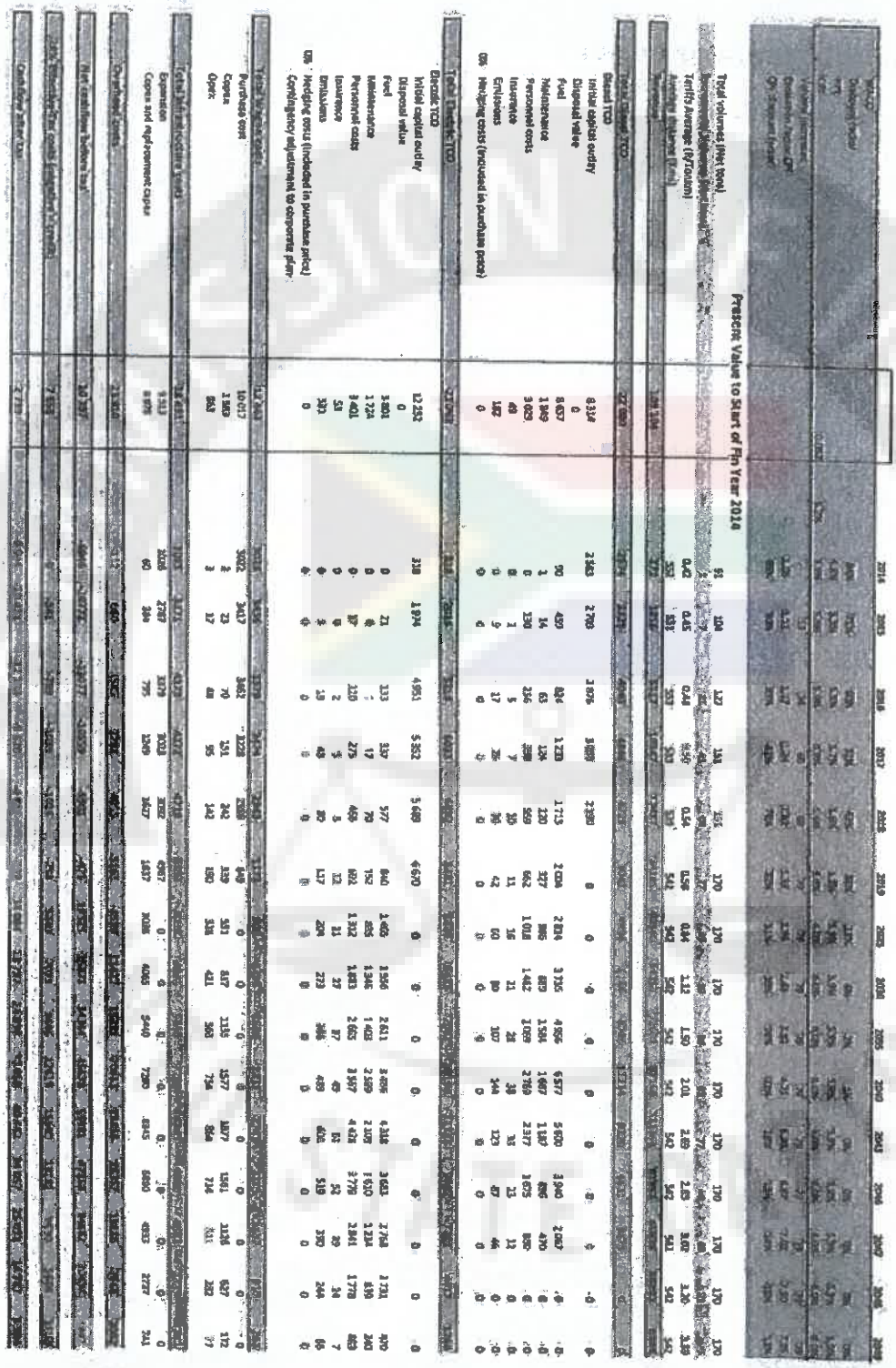
Impact on Crew and maintenance depot

- 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



8. Risk register

No	Risk/Threat	Risk Description	Impact	Cause	Control
1	Change Management Risk	Ineffective change management in implementing the strategies as encompassed in the	• Lack of buy in from users • 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 of 1064	• Loss of Revenue (R78,9bn) • Loss of Tonnages	• Current planned studies may be at risk for local productions and suggest annual increases shortages peaking at: 59 electrics and 70 diesels in 2015	• Close monitoring of the delivery schedule • 1064 Loaners
3	Planning Risk	Incorrect fleet life cycle planning	• manages 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 OEM's. The number of OEM's 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 • Fruitless 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 Inco owner 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 flo • 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

Ref	Risk Description	Risk Description and Cause	Impact resulting in...	Cause caused by...	Control currently in place
4	Market Risk	Inherent risk that the commercial sectors that the wagons and locomotives are built for do not achieve the anticipated market growth	• Damages 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 asset handling 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 on plans to address shortage of capacity (including contractual agreements with Eskom) • Compile list of TFR projects submitted to Eskom. • Contract clauses • Contracts 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	[illegible]	Risk [illegible]	Impacts [illegible]	Causes [illegible]	Controls [illegible]
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 approvals 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 materials 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 knowledge and expertise to provide correct specified technologies.	Technology management section with experts

9. Fraud risk management plan

				Fraud Risks			
Initial 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 Pact to 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.
				Controls			
- Establishment of a Locomotive Acquisition Steering Committee (LSC) - Finalise 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 vendors that supplied for 1064 locomotives, including any other parties 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 research and Narrative Analysis on all internal stakeholders involved in the 1064 Locomotive Acquisition process.		Forensic Champion / TIA Forensic OD Leader				Internal/ 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 78

Track / Perway – Axle loading (Current status)

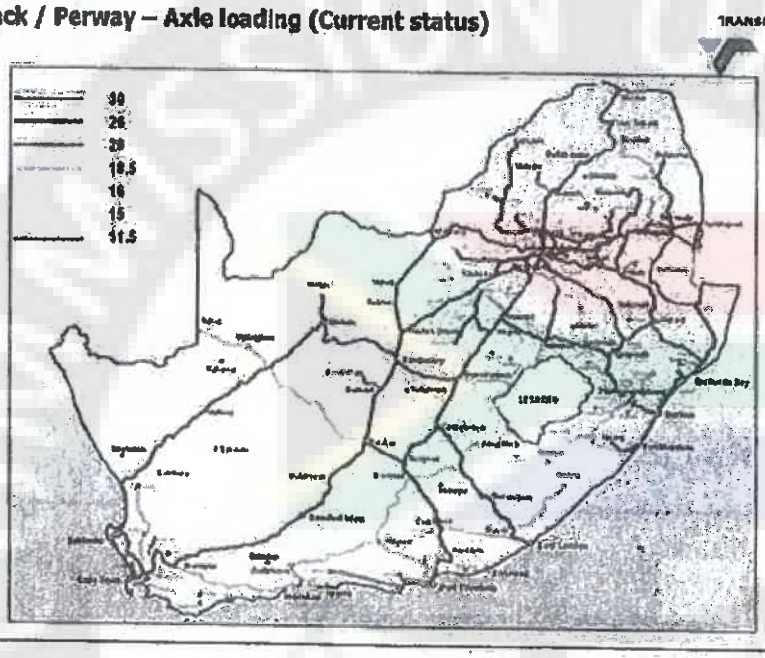


EXHIBIT 79

Electrification (Current status)

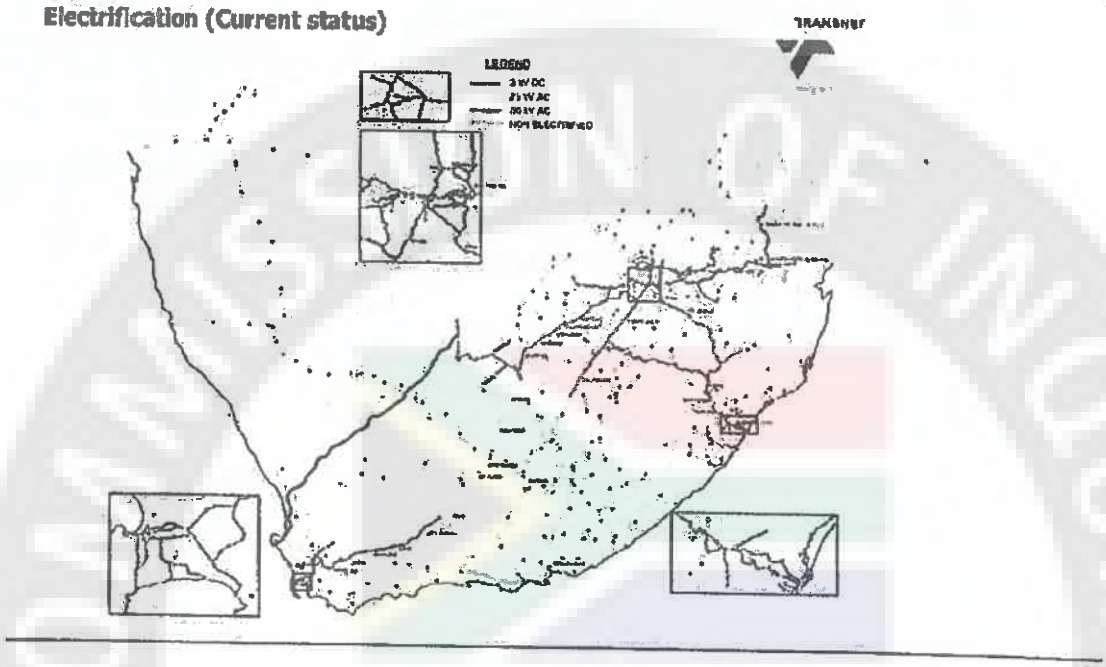


EXHIBIT 80

Expansionary infrastructure expenditure timeline

Business focus	Preparation for growth (zero 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 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 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 5 (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) pilot installation • Manganese 16mtpa	• Commence with the re-signaling of the coal line (CBA)

EXHIBIT 81

Track / Perway – Axle loading (Future status)

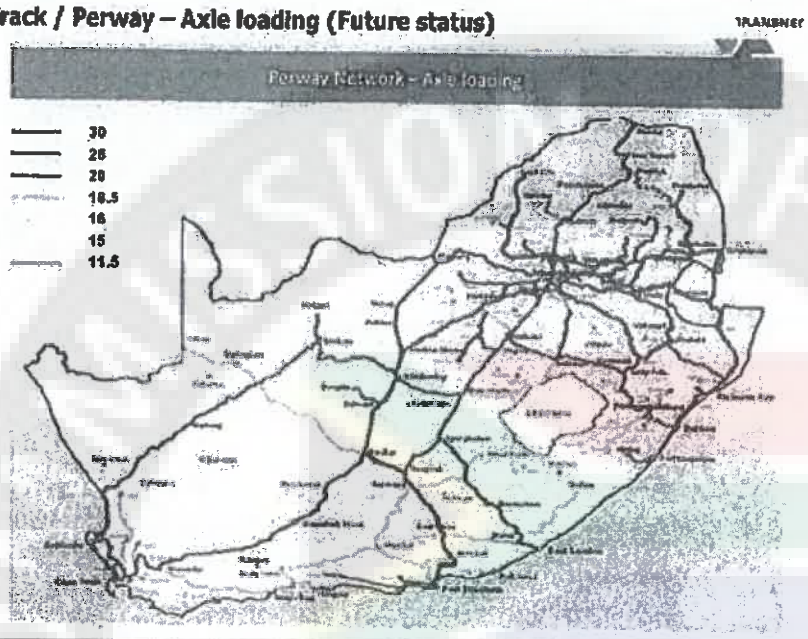


EXHIBIT 82

Electrification (Future status)

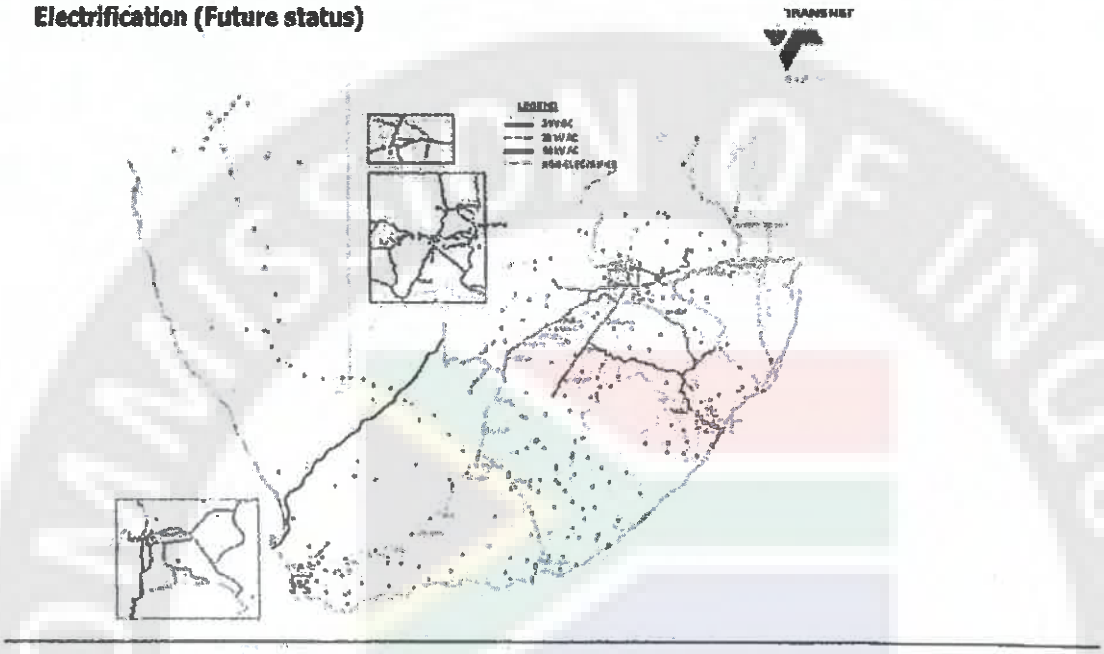


EXHIBIT 83

Maintenance infrastructure expenditure timeline (1/3)

Business focus	Preparation for growth (zero to two years)	Sustained growth (two to five years)	Consolidate (five to seven years)
Infrastructure maintenance: sustaining Perway	• 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 Longarms 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 • Tredi® 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

2

EXHIBIT 84

Maintenance infrastructure expenditure timeline (2/3)

Business focus	Preparation for growth (zero to two years)	Sustained growth (two to five years)	Consolidate (five to seven years)
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
Infrastructure maintenance: Sustaining signaling	• 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, Witbank, Sentrarand area, Houtheuwel – Klerksdorp) • Installation of electronic interlocking systems (three pilot sites) • Resignalling of Kaaimansdam – Postmasburg • Resignalling of Bolville – 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) • Remodeling track layout and resignalling Gauteng area (Elsburg – India – Jupiter – Wattles) • Resignalling of Bolville – 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, remote 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 85

Maintenance infrastructure expenditure timeline (3/3)

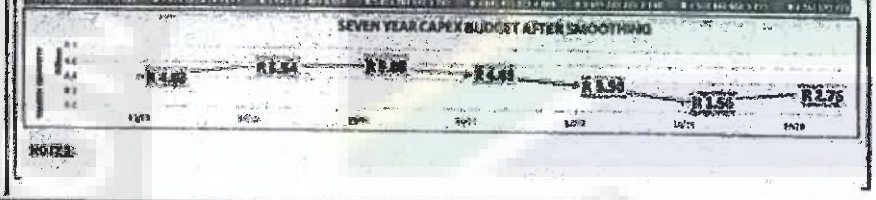
Brazil use focus	Preparation for growth (zero to two years)	Sustained growth (two to five years)	Consolidate (five to seven years)
Infrastructure maintenance: Sustaining telecoms	• Upgrade national optical fibre cable network • Upgrade and replace access multiplexers • Improve train communication in 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

12. Wagon requirements

EXHIBIT 86

TRANSNET

PROPOSED CAPEX BUDGET OVER SEVEN YEARS AFTER SMOOTHING



NOTE:

13. Locomotive types and capacity

EXHIBIT 87

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 88

General locomotive specifications

TRANSNET

PRELIMINARY

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	Co-Co	Bo-Bo	Co-Co
	267	400	267	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

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

[9] Two-wheel configuration

[10] Three-wheel configuration

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.

- 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.

16. Change management plan

Area	Scope	Responsibility and Plan
1 New Train Crew	Train 3065 drivers over life of MDS	Responsible: School of Rail and Logistics Integration Current there is a capacity of 505 drivers and 500 train assistants per year. This will be continuously reviewed based on the following lean initiatives: 1. One man crew project that will allow TFR to fast track trained assistants to become train drivers 2. Continuous Professional Learning program being put in place of the current relicensing program. This will reduce the relicensing program from 22 days per 2 years down to 6 days per 2 years as per international alignment best practice. 3. Improving train running times with the injection of the new, more reliable and operationally flexible fleet of locomotives will require a review of number of drivers required. 4. Create sufficient capacity for additional new recruits. Caveat: start training immediately Plan: • Training maximum number of drivers possible to close shortfall and create excess supply for years where SoR cannot meet demand • Supplement new drivers by fast tracking trained assistants to become train drivers
2 Existing Train Crew	• Retrain existing crew onto new locomotives.	Responsible: School of Rail and Logistics Integration Conversion takes place according to rollout Diesel – Diesel and Electric – Electric: 8 working days and three supervised "quarantined" trips under local section manager Diesel – Electric and Electric – Diesel: 15 working days and three supervised "quarantined" trips under local section manager: • Phalaborwa – Richards Bay: completed for class 43D • Saldahna: completed for Class 43D • Welgedag and Orlies – underway for Majuba
3 New train operating p	• Consult train crew on new operating practise's	Responsible: General Manager: Logistics integration supported by Change Leadership Plan: • Already implemented Phalaborwa – Richards Bay (Use lessons learned to prepare consultation material) • Prepare consultation material based on deployment plan – end April 2013 • Prepare roll-out countrywide based on loco deployment plan. • Consult with labour on trains running through and bypassing yards. Crew change in-line. • Conduct face to face engagements with Train Crew Staff (Section Managers/Train drivers, Train Assistants and loco prep-crews) based on deployment plan timelines.
4 Current Locomotive T	• Electronic Control Pneumatic Braking • Radio Controlled Power • On Board Computers with speed profile and limit of authorisation movement control	Responsible: School of Rail and Logistics Integration Current technologies being further rolled out Plan: • Plan developed to bring current drivers and personal to the latest technologies being deployed • Continuously update training material with the later technologies being deployed to deliver new recruits to the new technologies • Included in conversion course where required. • Points above apply to School of Engineering

5	New Locomotive Technologies - Driver		
5.1	Cab Based Authorisatio	• Similar to the On Board Computer but with additional features to fully replace lineside signalling systems	Responsible: Development: Technology Management Implementation: Capital Program Training Material: Technology Management (Technical Lead) Rail Directives (Train Working Regulations) School of Rail (Compile Training Material) Training: School of Rail Plan: As the new technology is rolled out by corridor. Not directly linked to the 1064 but will require retro-fitting as and when....
5.2	Trip Optimisers	• Computes the best match for throttle / notch position against preloaded speed and gradient profile	Responsible: Development: Technology Management Implementation: Capital Program Training Material: Technology Management (Technical Lead) Rail Directives (Train Working Regulations) School of Rail (Compile Training Material) Training: School of Rail Plan • Incorporated into driver training. As the new technology is accepted and rolled out.
6	Locomotive Commissi	• Ensure sufficient skilled technical staff to receive and commission locomotives on delivery	Risk: Identified as a Key Risk Responsible: Capital Program Plan: • Sufficient skilled technical staff exist within Transnet, particularly in Transnet Engineering as Locomotive Fleet managers and similar. • Identify the Transnet pool of skilled staff competent to commission / accept locomotives – Capital Program • Compile commissioning schedule – Capital Program • Initial liaison with TE for secondment of staff for the duration of locomotive commissioning process – TFR CE and TE CE • Detail and dynamic liaison with TE according to delivery schedule – Capital Program
7	Locomotive Planning TFR		
7.1	TFR - "Loco Control"	• Monitoring and Oversight of locomotive planning and utilisation • Accountable for locomotive allocation to Business Units • Final accountability for locomotive utilisation • Accountable for locomotives meeting maintenance schedules • Receive, analyse and utilise info from on board Loco Monitoring System • Receive, analyse and utilise info from wayside Acoustic Bearing Monitor System • Direct extra-ordinary maintenance	Responsible: General Manager, Logistics Integration Plan • Develop Staff structure – complete • Approve Structure – Chief Opt Off - complete. • Approve structure – CE and GM Human Capital – awaiting final signature • Appoint staff – Target commence 1 June 2013 – complete Dec 2013 Note: Many staff with requisite skills exist within Transnet and TE.
7.2	TFR - Loco Resource Pl	• Strategic, tactical and operational planning and deployment of locomotives • Deviation monitoring and corrective action	Responsible: General Manager, Capital Program and Information Technology for system capability General Manager, Logistics Integration for planning (see Loco Control) Business Units for operational execution Plan • Integrated Asset and Train Planning capability being revamped and upgraded – Capital Program – 24 months. (Business Case, Tender, Procure, Commission and Train, Implement)
7.3	Loco Condition and Log	• Current condition of locomotive • Planned maintenance schedule • Loco history	Responsible: General Manager, Capital Program and Information Technology for system capability General Manager, Logistics Integration for operational use Plan: • Integrate with TE systems • Load maintenance programs • Integrate with track and wayside monitoring equipment. o Hot Box detectors o In motion weigh bridge o Acoustic Bearing Detectors

8	Locomotive Maintenance TE	
8.1	Align maintenance par	• Workshop new maintenance paradigm with TE	Responsible: CE TFR with CE TE on high level implications General Manager, Capital Program, COO and General Manager, Logistics integration on practical implementation with their TE counterparts Paradigm: Time determined condition based maintenance, fit-on: fit-off, OEM / specialised repair of fit-on: fit-off components and not workshop repair, predictive analysis from monitoring systems, spares ready for called-in locomotive, technician to locomotive and not locomotive to workshop/depot, impact on skills, impact on staff numbers, impact on depots. Plan: • Workshop maintenance paradigms, skills transfer from OEM, skills training, staff requirements and workshop locations • Plan engagement with labour • Complete in line with award process (Adjudication informs the process)
8.2	Skills	• To have sufficient and proper skills in place to maintain new technology locomotives	Responsible: TE COO and GM Locomotives Supported by General Manager, Capital Program and General Manager, Logistics integration. Plan: • In conjunction with OEM's, determine required skill set/s • Informed by maintenance plans, determine number of technicians required and skills • Assess current artisans for skills migration (from mechanic and electrician to diagnostician) • Determine staffing per depot based on locomotive deployment (Two months after adjudication) • Have technical support from the relevant OEMs for a defined period to ensure that maintenance activities remain relevant and to required standard. This ensures that there is a smooth transition of technology understanding as well as reducing the risk of fleet reliability diminishing due to poor quality maintenance.
8.3	Depots	• To optimise maintenance depots based on maintenance workload and new practices	Responsible: TE COO and GM Locomotives Informed by General Manager, Capital Program and General Manager, Logistics integration. Plan: • TFR informs required maintenance facilities based on deployment and workload – done – see deployment plan • TFR and TE align on final depot location, facilities required – end June 2013 • TE consolidates depots to final plan – according to rollout and deployment and consolidation of current fleet.
8.4	Labour	• Consult with labour on impact of maintenance practises and skills on staffing requirements	Responsible: TE COO and GM Locomotives Supported by General Manager, Logistics integration and General Manager, Capital Program, Executive Manager Employee Relations Plan: • Workshop with labour based new maintenance paradigm and requirements (end July 2013) • Ongoing consultation on affected depot by depot basis
8.5	Spares	• To ensure correct and sufficient spares	Responsible: TE COO and GM Locomotives Supported by General Manager, Logistics integration and General Manager, Capital Program Plan: • Determine spares holdings based on OEM maintenance schedules • Initial spares supply to be negotiated as part of contract • Adjust requirements based on practical experience • With Procurement, set up mechanisms to minimise delivery delay • On basis of pending maintenance work, ensure spares are on the workshop floor to await arrival of locomotive. • Have full OEM support for the fleets deployed

Project Authorisation Signatures

Transnet Freight Rail

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**