

# ROADMAP FOR THE FREIGHT LOGISTICS SYSTEM IN SOUTH AFRICA



REPUBLIC OF SOUTH AFRICA



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## FOREWORD BY PRESIDENT CYRIL RAMAPHOSA

Our freight logistics system is undergoing a process of rapid and fundamental change to improve its efficiency and position it for the future. This roadmap sets out a clear plan to guide this process, outlining what we aim to achieve and how we will get there.

The positive impact of these reforms cannot be overstated. By introducing competition in freight rail operations, while maintaining state ownership of the routes, we will unlock massive new investment in South Africa's rail system. This will support jobs in every sector in the economy, from mining to manufacturing to agriculture. Similarly, by upgrading and expanding our port terminals through innovative public-private partnerships, we will position South Africa as a leading player in global markets.

Every product that we buy is affected by the logistics system. If the system works well, the cost of transporting goods is cheaper and every consumer benefits. At the same time, efficient logistics networks allow South African products to compete at a global scale. This is what we will achieve through the actions contained in this roadmap.

By implementing bold, transformative reforms, we can overcome the many challenges facing our logistics system. We will spare no effort to ensure that it is executed fully and swiftly.



## FOREWORD BY MINISTER OF TRANSPORT

In the State of the Nation Address of 2023, President Cyril Ramaphosa directed government towards implementation of swift reforms to turn around the crisis in South Africa's logistics system. The instruction was clear that Government should develop a National Freight Logistics Roadmap (Roadmap) that would translate policy commitments into reality. These will be underpinned by the implementation of rail reforms in the rail sector, which will lead to the creation of a separate rail infrastructure manager, and the implementation of an open access regime for the freight rail network- with the aim of improving service quality, efficiency and promoting competition within the freight logistics systems.

On the 8<sup>th</sup> of December 2023 Cabinet approved a National Freight Logistics Roadmap (Roadmap) which is a blue print to assist and provide guidance for the country to urgently tackle the crisis that has plagued the logistics sector. The Roadmap is a response to the vision for the rail sector set out in the White Paper on National Rail Policy (Rail Policy) which was approved by Cabinet in March 2022. The Rail Policy takes a holistic view of the trajectory of the development of our rail system. The Rail Policy not only creates policy certainty but also introduces radical structural reforms in the sector. This is intended to open up space for private sector investment and effective economic regulation that enables equitable access to both the primary and secondary network.

The Roadmap sets out an evidence-based, implementable and achievable path for reform of South Africa's logistics system in a manner that effectively addresses these challenges, and thus enables economic growth and transformation. The importance of the approval of the Roadmap by Cabinet is thus seen by Government as another steppingstone placed in our very difficult path through which we must, in forward movement, navigate towards a system of transport that must serve the firm foundation we are laying for the realisation of a better freight logistics system for South Africa and African continent, with efficiencies in regional corridors especially important effective regional integration.

Both ports and rail interventions will be premised on the fundamental principles of the Roadmap. In the ports system, the

Roadmap seeks to implement existing policy and legislation through the structural reforms envisaged in the National Commercial Ports Policy and National Ports Act, both of which aim to facilitate improved port performance by enhancing the independence of the National Ports Authority and promoting competition and private sector participation in port operations.

This is critical in ensuring that transport contributes to its national task as an economic and social enabler; therefore guaranteeing that the logistics system is seamless and cost affordable. In our efforts towards effective economic recovery and getting people to work, this has not only meant we improve the freight transport system, but equally that we embark on a massive infrastructure building programme. This includes building a new and alternatively modernising rail infrastructure needed to accommodate today's very urgent demands. We must advocate and champion for a world class freight logistics system on the continent that can be globally competitive with regard to investment and development of technology. This intervention is very critical to save and preserve the much-needed jobs in various sectors of the economy such as mining, agriculture etc.

We look forward to the National Logistics Crisis Committee (NLCC) as a strategic mechanism for implementation to enable a coherent, integrated response to the challenges within the national logistics system by involving various critical role players. The role played by his Excellency the President in this regard, positions the matter of logistics centrally within government as a way to urgently address critical challenges affecting the sub-sector and thus the economy.

I wish to extend a word of appreciation to all the stakeholders who participated in the development of the Roadmap, your honest and robust engagement made it possible for the Department to reach the finish line within the stipulated time frame. We look forward to working together with the sector in implementing the Roadmap through practical pilot projects that put theory to practice.

**SINDISIWE CHIKUNGA, MP**  
MINISTER OF TRANSPORT



## FOREWORD BY MINISTER OF PUBLIC ENTERPRISES

South Africa's economy depends on an efficient, competitive, and affordable freight logistics system to support our exports and create jobs. As the custodian of our national logistics infrastructure, Transnet plays a crucial role in this regard. In delivering on its mandate, however, it has had to contend with severe challenges – including the destructive legacy of corruption and state capture, the impact of the coronavirus pandemic, natural disasters, and rising levels of theft and vandalism of its infrastructure.

The Freight Logistics Roadmap and its implementation plan, together with the Transnet Recovery Plan recently approved by the Transnet Board, set out a clear path to addressing these challenges and transforming our country's logistics system in the process. Its primary aim is to stabilize and improve Transnet's operational performance in the short term, to supporting inclusive economic growth. Through these interventions, Transnet's operational performance will be enhanced by proper maintenance, acquisition of equipment, increased revenue, and a sustainable financial position.

Over the longer term, the roadmap outlines a clear and sequenced plan of action to reform the freight logistics system, translating the policy commitments we have already made into reality. These steps include, among others, the establishment of an independent Infrastructure Manager (which is currently in development) for the rail network and the introduction of open access to rail infrastructure.

Importantly, the roadmap makes it clear that strategic infrastructure such as railway lines and ports will remain in public ownership, as assets that belong to the people of South Africa. At the same time, it paves the way for greater competition in rail and port terminal operations, in a manner that will crowd in private investment and improve our infrastructure to world-class standards. The successful restructuring of our port and rail system will put South Africa in a good position to compete both on the continent and globally in an increasingly competitive trading and logistics environment.

Above all, this roadmap will give South Africans hope. We are dealing decisively with legacy issues, while at the same time optimising performance and transforming the logistics system.

I wish to thank all the stakeholders, both within and outside government, who have engaged in a robust consultative process to produce a plan that we can all be proud of.

Our task now is to make sure that it is implemented without delay.

**PRAVIN GORDHAN, MP**  
MINISTER OF PUBLIC ENTERPRISES





## I EXECUTIVE SUMMARY

### I.1 WHY A FREIGHT LOGISTICS ROADMAP?

The efficiency of logistics systems is integral to the functioning of all economies. The services which move goods and people should be provided in a safe, efficient and cost-effective manner, and designed to address policy objectives such as promoting economic growth and eradicating economic inequality. Improved efficiency in logistics can unlock the potential of the rest of the economy, as the cost of logistics affects all other sectors.

A well-functioning logistics system is particularly important for the South African economy, given the geographical distribution of economic activity in the country, our reliance on commodity and other exports, and our distance from key export markets. For this reason, the declining performance of South Africa's freight logistics system is a binding constraint on economic growth, and must be reversed if we are to achieve more rapid growth, development and job creation. The inability to transport goods efficiently and securely has had a direct impact on sectors which rely on the freight rail network, including mining, agriculture and automotive manufacturing, among others. It has also had a cascading impact on the economy as a whole, as a result of declining tax revenues and stalled investment.

As a result of long-standing systemic challenges, which were compounded by the impact of corruption and the misallocation of capital during the state capture period as well more recent events including the COVID-19 pandemic, escalating levels of theft, natural disasters and other factors, Transnet's financial and operational performance has been on a steady decline. As a result, a number of the key industrial supply chains in the economy are confronting security of supply risks as well as declining competitiveness. At the same time, the logistics market, like most others, is undergoing significant change. New technology, new market entrants, new customer expectations, new business models and a global drive to reduce carbon emissions require constant adaptation.

In March 2023 President Cyril Ramaphosa directed Transnet to implement reforms swiftly and completely to turn around the crisis in South Africa's logistics system. This followed the President's announcement in the 2023 State of the Nation Address that Government would develop a Freight Logistics Roadmap that would translate policy commitments into reality, including the restructuring of Transnet Freight Rail to create a separate infrastructure manager, and the implementation of an open access regime for the freight rail network.

This roadmap outlines a range of actions required to restore the efficiency and competitiveness of key industry supply chains, as well as ports and rail more generally. It is also a fundamental guiding document for Transnet, which articulates both the challenges to be solved in the freight logistics system and the role and positioning of Transnet within this system as it goes through various stages of

reform. The size and complexity of the freight logistics system means that the causes of poor performance are varied and intersecting. The aim of this roadmap is therefore to set out an evidence-based, implementable and achievable path for reform of South Africa's logistics system in a manner that effectively addresses these challenges, and thus enables economic growth and transformation.

In doing so, the roadmap will implement a number of pre-existing policy initiatives. Of particular importance is the vision for rail set out in the White Paper on National Rail Policy, which was adopted by Cabinet in March 2022. The White Paper outlines a clear policy direction for the rail sector, where state ownership remains important, but efficiency is improved through the introduction of private investment and competition (together with an enabling regulatory environment). In the ports system, the roadmap similarly seeks to implement existing policy and legislation through the structural reforms envisaged in the National Commercial Ports Policy and the National Ports Act, which aim to facilitate improved port performance by enhancing the independence of the National Ports Authority and promoting competition and private sector participation in port operations.

The implementation of this roadmap will be overseen by the Department of Transport, Department of Public Enterprises, National Treasury and the Presidency, coordinated through the National Logistics Crisis Committee (NLCC) to enable a coherent, integrated response to the challenges within the national logistics system.

### I.2 THE DEVELOPMENTAL ROLE OF TRANSNET IN A REFORMED LOGISTICS SYSTEM

The National Development Plan (NDP) states that "by 2030, South Africa needs to be served by a set of efficient, financially sound and well governed SOEs that address the country's developmental objectives in areas where neither the executive arms of government nor private enterprises are able to do so effectively." The NDP further asserts a South African developmental state that intervenes to support and guide development so that benefits accrue across society (especially to the poor), and builds consensus around long-term national interests, rather than short-term, narrow concerns. A developmental state thus needs to be able to transform its economic base by promoting productive, income generating economic activities while improving the living conditions of its population. It creates and sustains a policy climate that fosters productive investment, exports, growth, and human welfare.

State-Owned Enterprises (SOEs) are an important tool in the drive towards accelerated economic development and growth in partnership with the private sector. South Africa's SOEs employ approximately 175,000 people directly. Indirectly, however, as network infrastructure providers, they enable virtually all of the 15 million jobs across the economy. Transnet, Eskom, the Post Office and Prasa account for four fifths of the public enterprises' total employment.



However, in the past decade, many SOEs have underperformed. They have underinvested in the maintenance, modernization and expansion of network infrastructure. Service quality has declined and corruption within and around these SOEs persists. While the corporatization of SOEs was intended to enable them to remain agile and responsive to changing business environments, they have largely failed to keep up with the evolving dynamics of the sectors in which they operate. Rather than adapting and reforming to remain cutting-edge, they have stagnated and remained attached to business models that are increasingly unviable and abandoned by the rest of the world. These problems have slowed growth, deterred investors and placed extraordinary burdens on the fiscus. The reality is that the state of SOEs is dire and addressing this will require difficult choices and trade-offs to ensure they fulfill their strategic purpose.

Transport and logistics infrastructure is often referred to as the “physical Internet,” requiring constant increases in connectivity and efficiency. The importance of the national logistics system to South Africa’s economic development and growth is unquestionable, and improving the country’s logistics performance is an important development policy objective. Indeed, Transnet’s developmental mandate as summarised by the Department of Public Enterprises in its strategic plan for 2020 to 2025, is to provide “*cost-effective, reliable, integrated and seamless transport solutions for the bulk and manufacturing sectors in Southern Africa.*”

Transnet includes the following key performance indicators in its “statement of strategic intent” agreed with the Minister of Public Enterprises:

- To reduce the cost of logistics as a percentage of transportable GDP;
- To implement and accelerate the shift from road to rail;
- To leverage the private sector in the provision of both infrastructure and operations where required;
- To integrate South Africa with the region and the rest of the world; and
- To optimise sustainable economic, social and environmental outcomes of all activities undertaken by the SOC.

The vision for South Africa’s freight logistics sector outlined in this roadmap takes the developmental role of the state as its starting point, and the roadmap and the structures it enables will help to create an effective bridge between the public and private sector. As the custodian of network infrastructure, the state (through Transnet) should invest in rail and port infrastructure to promote the competitiveness of key exports and enable industrial growth. It should equally maintain a degree of involvement in operations both to serve supply chains and products which might otherwise not be optimally catered for and to manage the transition to a competitive market in line with its “statement of strategic intent.”

At the same time, the pursuit of partnerships between the public and private sectors is critical for inclusive economic growth and development. The Economic Reconstruction and Recovery Plan (ERRP) explicitly calls for more partnerships with the private sector; to crowd in private investment and know-how to address the country’s developmental challenges.

A partnership model between the public and private sector must focus on how a bold, capable and well-structured Transnet can unleash the full power of markets and the private sector in building an efficient and effective logistics system that supports an inclusive economy. Transnet’s repositioning to fulfil this mandate will require a number of transformative interventions, including the commercial separation of infrastructure businesses and operations businesses, and a move towards a portfolio-based operating model.

### 1.3 THE ROOT CAUSES OF UNDERPERFORMANCE

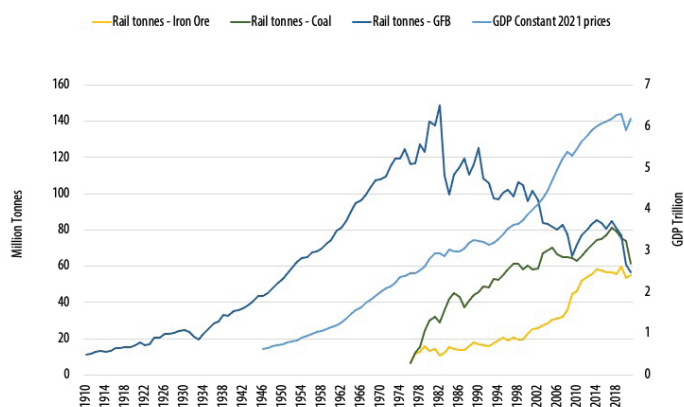
The reliability of South Africa’s freight rail network has deteriorated sharply, threatening the competitiveness of our exports. Volumes transported on the export coal line have declined to their lowest levels since 1993, and on the iron ore line to their lowest level in a decade. General freight volumes have fallen even more sharply. Volumes transported on the rail network as a whole declined from 226 million tonnes (Mt) in 2017/18 to just 149.5 Mt in 2022/23.

While the performance of South Africa’s ports has improved in recent years, the container terminals at the Ports of Durban and Ngqura were ranked 365<sup>th</sup> and 361<sup>st</sup> respectively out of 370 ports worldwide by the World Bank in 2022. As a result of the inefficiency of these terminals, cargo is increasingly being diverted to the Ports of Maputo and Luanda, resulting in a permanent loss of export traffic for South Africa.

This underperformance has left South Africa unable to fully participate in recent commodity price booms. Since 2010 South Africa has forfeited an estimated USD 26.7 billion in iron ore and coal export trade. As the rail sector has failed to keep up with growth in the South African economy, what has instead occurred is a massive shift from rail to road. More than a quarter of long-distance freight traffic has shifted to road in the past five years. Figure 1 below illustrates the extent of the decline in volumes transported on the freight rail network in recent years.



Figure 1: Comparison between South Africa's historic rail volumes and GDP



The declining performance of the freight rail network is the greatest challenge in the freight logistics system, and can be attributed to a number of factors:

- **Historical underinvestment in the network.** Many of the efficiency problems in the freight rail network are due to a backlog in infrastructure investment. Transnet has acknowledged the existence of a significant infrastructure investment backlog in rail, but to date has struggled to effectively address it. Insufficient investment in the maintenance and upgrading of network infrastructure has resulted from a number of factors, including weak implementation capability, constraints in the procurement system, and the diversion of resources from maintenance to operating requirements. This has created a vicious cycle as a lack of investment reduces availability, which in turn reduces revenue and investment. Additional investment, both public and private must be crowded in in order to close the maintenance backlog, especially on priority corridors which are experiencing security of supply challenges.
- **The lack of available rolling stock and poor maintenance of existing equipment.** Rolling stock availability is a significant source of operational challenges on the rail network. A particular problem has been experienced with the electrified locomotive fleet procured from the China Railway Rolling Stock Corporation (CRRC), with a large number of locomotives standing idle or still to be delivered as a result of disputes associated with that procurement process. A significant proportion of the current rolling stock fleet is more than 40 years old, which impairs its reliability. Transnet is required to increase the availability and reliability of its current fleet of locomotives.
- **Security issues, including theft and vandalism of network infrastructure.** The scale and frequency of cable theft has risen sharply in recent years, disrupting day-to-day operations and diverting resources from maintenance to the replacement of stolen assets. The Container Corridor and Northern Corridor have been most severely affected by this criminal activity, although the North-East Corridor was also targeted during the October 2022 strike. Security incidents account for a large proportion of total delays and cancellations on the freight rail network. In addition to increasing deployment of personnel and

technology to reduce the number of incidents, additional focus should be placed on mechanisms to better manage the scrap metal export trade.

- **Operational inefficiencies within Transnet.** The sharp decline in performance across all rail operations cannot be blamed solely on external constraints such as security incidents. Compared to international benchmarks, the South African rail system moves too little traffic, too slowly, and with low productivity, with the exception of the iron ore line which often outperforms international systems. The efficiency challenge is illustrated by the alarmingly high number of manual train authorisations, which has increased from 50,000 month-on-month in 2018 to over 250,000 in 2022.

Immediate interventions are required to address these challenges in the short term and increase volumes transported on the network. However, the causes of the crisis in the logistics system are complex and interrelated. In order to put in place structural interventions that will solve these problems, it is important to have a clear diagnosis of what has in fact gone wrong and to distinguish between proximate and root causes. Going forward, fundamental reforms are needed to ensure that the incentives of key stakeholders are aligned with social objectives, and that clear rules and governance systems are in place to deal with such misalignment as may still occur.

Three underlying structural problems in the freight logistics system have contributed to its underperformance:

- **Vague and often unfunded mandates:** For much of its history, Transnet has been governed under a vaguely defined, complex and at times unfunded set of operational mandates. In particular, Transnet has been expected to undertake explicit developmental mandates without explicit state subsidies to finance these mandates. This has created a tension between Transnet's role as a profit-maximising corporatised entity, effectively operating on a commercial basis, and its role as part of the developmental state. While the state has expected Transnet to operate the freight rail network as a self-sustaining system, insufficient steps have been taken to rationalise the size of the network to achieve commercial sustainability, and neither has the state provided subsidies for those parts of the network which are not commercially sustainable. In short, it is unreasonable to expect an SOE to deliver on development objectives which are not commercially feasible without providing adequate funding.
- **Regulation of essential facilities:** The physical infrastructure of ports and the rail network are "essential facilities", in the sense that they are natural monopolies that cannot be duplicated. From the point of view of the country as a whole, these are key national assets which are central to wider economic performance. It is thus in the national interest that this infrastructure be managed efficiently, and in a way that prioritises the volume of freight carried. At present, Transnet is both the owner of the infrastructure and undertakes operations using access to it. The current model of vertical integration in rail and ports has to a large extent prevented competitive forces from



reaching these markets, preventing efficiency gains and limiting private investment in operations. In effect, a vertically integrated firm cannot be expected to effectively foster competition in its downstream markets, without significant regulatory oversight and/or structural interventions.

- **Governance failures:** Governance problems have played a central role in causing the current crisis in rail. Key aspects of the governance failures at Transnet and PRASA are detailed in the Judicial Commission of Inquiry into State Capture Report, Part V, Volumes 1 and 2. The legacy of state capture is evident, for example, in the lack of available locomotives due to corruption in procurement processes undertaken under the previous management of Transnet. Looking ahead, given that significant infrastructure and rolling stock investment will be needed in both rail and ports, there is an urgent need to ensure that the governance failures of past investment programs are not repeated and that mechanisms are sought to crowd in private investment.

This roadmap outlines the structural reforms that will address these underlying weaknesses and fundamentally transform South Africa's logistics system in the long term, positioning it for greater efficiency and competitiveness.

#### 1.4 IMPROVING PERFORMANCE IN THE SHORT TERM

The immediate priority is to stabilise and improve the operational performance along identified priority corridors (including terminals) which currently presents a severe constraint on national exports and Transnet revenues. Transnet's Recovery Plan sets out a number of operational interventions which target rail volume growth to between 154mT – 170mT in 23/24 and to 193mT in 24/25. The target, which is a reduction on Transnet's Corporate Plan target of 183mT for 23/24, is more in line with existing operational capacity. However, key weaknesses in infrastructure and equipment condition and productivity must be overcome.

In this respect, Transnet is required to work collaboratively and with urgency with critical stakeholders including Customers, Suppliers, Lenders, Labour and Government to align behind and implement the Corridor Recovery Plans for the priority corridors.

The National Logistics Crisis Committee (NLCC) offers a unique mechanism to enable this collaboration by clarifying targets and action plans, undertaking data driven monitoring of plan implementation, and unblocking obstacles to such implementation. The role of the NLCC is to assist Transnet in stabilising and improving the performance of the priority corridors through the Corridor Recovery Teams by:

- Aligning stakeholders behind common action plans for the priority corridors;
- Mobilising resources and technical expertise from the private sector as necessary;

- Providing the enabling conditions to support Transnet in addressing current challenges, where external dependencies exist;
- Ensuring adaptation and responsiveness to circumstances as they change
- Ensuring accountability for delivery against identified interventions and resolving bottlenecks in implementation.

As a complement to the existing Corridor Recovery Plans, independent technical assessments will be undertaken for each priority corridor to assess the current state of infrastructure and recommend interventions for consideration by the Corridor Recovery Teams.

Three areas of intervention will be prioritised to improve operational performance in the short term:

- **Capital investment programme to restore the condition of infrastructure and equipment:** Transnet will target available funds towards the priority corridors and terminals and attempt to crowd in private and public investment to restore the reliability and efficiency of operations.
- **Operations and rolling stock issues:** Rolling stock availability and reliability is a significant source of operational constraints and addressing this challenge is a key priority of the Transnet Recovery Plan. Initiatives include returning long-standing locomotives to service through agreements with the Original Equipment Manufacturers (OEMs), and where necessary through the appointment of non-OEM service providers.
- **Security of the rail network:** As outlined above, cable theft and other security issues have had a severe impact on operational performance. With the exception of the sparsely-populated Sishen–Saldanha iron ore export route, all other routes, including the coal export line between Mpumalanga and KwaZulu-Natal, are heavily impacted by theft and vandalism. The South African Police Service (SAPS) has appointed a dedicated team to work closely with Transnet to protect rail infrastructure, while Transnet itself is increasing the deployment of security personnel through outcomes-based contracts that will drive a reduction in incidents on the network.

Transnet faces a financial crisis as well as an operational crisis. To enable the operational interventions outlined in the Transnet recovery plans for the corridors, steps must be taken in the short term to strengthen Transnet's financial position and enable needed investment in equipment and infrastructure. Transnet's constrained balance sheet limits its ability to invest, and partnerships are therefore necessary to fund specific capacity expansion and operational improvements. Partner-driven value chain optimization is required to turn loss-making and underperforming businesses around. A number of opportunities exist to establish partnerships with the private sector in the short term to improve the performance of priority corridors. These mechanisms will be urgently explored.

## 1.5 TRANSFORMING THE LOGISTICS SYSTEM IN THE LONG TERM

### 1.5.1 Legislation and policy framework

South Africa's logistics system is underpinned by a number of policy documents and legislation, overseen by the Department of Transport (DOT). The institutional structure of the logistics system was raised as an important issue in the National Freight Logistics Strategy (NFLS), which was adopted by Cabinet in 2005:

*"The freight system in South Africa is fraught with inefficiencies at system and firm levels. There are infrastructure shortfalls and mismatches; the institutional structure of the freight sector is inappropriate, and there is a lack of integrated planning. Information gaps and asymmetries abound; the skills base is deficient, and the regulatory frameworks are incapable of resolving problems in the industry."*

In the rail sector, the White Paper on National Rail Policy, which was adopted by Cabinet in March 2022, recognises that the sector contains "institutional dysfunctions regarding market behaviour, roles and responsibilities", and outlines a range of interventions aimed at restructuring the market. In the ports sector, the National Commercial Ports Policy, which has been in place since 2002, outlines a vision for a globally competitive, safe, and secure commercial ports system that operates at internationally accepted levels of operational efficiency while supporting South Africa's economic goals. The ports policy sets out, among others, the policy imperative for vertical separation of infrastructure ownership and terminal operations.

These two Cabinet-approved policy documents – the National Rail Policy and the National Commercial Ports Policy – together with their subsequent legislation in the National Ports Act and the Economic Regulation of Transport Bill, form the basis for this roadmap. Rather than replacing or reinventing these existing policies, the purpose of the roadmap is to translate these policies and legislative framework into practical implementation, by outlining in greater detail the actions required to give effect to national policy and the manner and sequence in which those actions should be taken.

### 1.5.2 The principles of structural reform

Structural reforms must be guided by a clear set of principles and objectives. The following principles will thus be used to inform the details of the structural reform program in the logistics system:

- **The rail network and national ports are national assets that must be managed in order to maximise social benefits:** The South African economy is deeply dependent on the national rail and ports infrastructure to perform efficiently, and it is crucial that these assets be managed in a way that serves the greater good. Profit maximisation should not be a goal for these assets, as it could be associated with an increase in price levels and decrease in volume moved. Instead, the management objective should be to run these assets at a price which is consistent with efficient cost recovery and the maintenance of the quality of the asset, and using management techniques which focus on maximising passenger and freight volume.
- **Competition as a tool to achieve efficiency:** Competitive contestation for customers can be a powerful tool for improving the efficiency of markets, and increasing social welfare. However, the introduction of competition is not a panacea for all market problems. Regulation is required to ensure that anticompetitive abuses are avoided, and non-market mechanisms will often be needed to ensure that goods and services which display positive or negative externalities are provided in a socially optimal way. The introduction of competition should thus be used as a tool to achieve policy objectives, rather than as an objective in and of itself.
- **Public service obligations (PSOs) to be clearly defined and monitored and separately funded:** Private and state owned firms can be efficient and effective delivery agents for the state, and thus it can be highly desirable to place public service obligations on such firms. However, where such PSOs are put in place, it is important that the state should monitor and evaluate the performance of the delivery agent, and that the true cost of the PSO (including the source of funding) be fully understood and publicly agreed on. In practise, this will require that any PSO obligation will need to be captured in a formal agreement, and that the cost and funding of a PSO will need to be accounted for in such a manner as to allow auditing of financial and service delivery outcomes.
- **Competitive neutrality framework for state owned firms in competitive markets:** Competitive markets are an effective way of increasing economic efficiency, but only if all firms in the market operate on a level playing field. State ownership can profoundly distort market conditions, in a number of ways. For example, the state often tolerates sustained financial losses to a degree that private investors would not, allowing inefficient, loss-making firms to continue to dominate markets. Conversely, state procurement systems can make it extremely difficult for SOEs to react timeously to changing market conditions. Efficient logistics markets are central to the success of the wider economy, and thus steps must be taken to ensure that SOEs in competitive logistics markets face the same competitive playing field as privately owned firms.
- **Private investment in logistics markets should be facilitated, but private infrastructure may then be subject to access obligations in natural monopoly markets:** In order to facilitate the introduction of competition in logistics markets, it will be necessary to facilitate the ability of the private sector to invest in these markets. Massive investment opportunities exist in logistics, but investors are unlikely to commit funds unless their market rights and obligations are well designed and clearly set out in, in a transparent and procedurally fair system. Where the private sector is invited to participate in natural monopoly components of the logistics system, it should be clearly spelled out prior to investment that this infrastructure may be subject



to price and access regulation, and thus that the investor may be required to offer access to competing firms, albeit through a process which will ensure fair compensation for such access.

### 1.5.3 Creating a level playing field in ports and rail

The introduction of a vertically separated model in rail, with above-rail competition and private sector participation on a level competitive playing field, is a key commitment of the National Rail Policy. Third-party access to national rail infrastructure is designed to increase the volume of freight moved by rail and improve the quality of rail services through the introduction of competition. However, third-party access will only be an effective means of revitalising the sector if private operators can compete with the incumbent on a level playing field. The structural interventions needed to create a level playing field are thus a key short-term priority of the rail roadmap.

#### **As a critical starting point for reform of the rail system, a separate Infrastructure Manager will be established for the rail network.**

The Infrastructure Manager will be responsible for the operation, maintenance, renewal and development of the network through a number of strategies, including crowding in private investment through concessions, leases, joint ventures and other mechanisms. It must have organisational and decision-making independence (within a framework of regulatory supervision) over train path allocation, including both the definition and the assessment of availability and the allocation of individual train paths, and infrastructure charging, including the determination and collection of access charges. This authority may however be delegated to concessionaires in some circumstances (again, within a framework of regulatory supervision).

To ensure its meaningful independence, the Infrastructure Manager must be independent from any rail operations. The Infrastructure Manager will initially be established as an operating division of Transnet separate from Transnet Freight Rail. It will subsequently transition to a subsidiary of Transnet with a separate board within a period of at most one year. Staff and management will be allocated either to the Infrastructure Manager or the rail operator; and should not receive remuneration based on the performance of the other division. Confidentiality of the sensitive data of access seekers must also be ensured by the Infrastructure Manager. At a later date, the Infrastructure Manager will be established as a standalone state-owned company separate from Transnet.

**The Infrastructure Manager will develop a network statement to facilitate access to the freight rail network and simplify contracting arrangements.** The technical interface between access seekers and the rail infrastructure manager is extremely complex, and is also affected by all other companies operating on the track. This can make the process of requesting and negotiating access in turn enormously complicated. The network statement will include the general rules, deadlines, procedures and criteria for access charging and capacity allocation, including any information required to enable applications for infrastructure capacity. The network

statement will ensure transparency and non-discrimination by the Infrastructure Manager between rail operators. It will also facilitate planning and coordination, enabling a more proactive train path planning role for the Infrastructure Manager to enhance efficiency on highly congested routes.

While the ultimate responsibility for its production will remain with the Infrastructure Manager, the network statement must be produced through a carefully governed process, including a formal requirement for industry consultation. The production of a network statement is better characterised as the establishment of an institution, rather than simply the drafting of a document. The focus of activity should thus be on producing an initial version of the network statement which is of sufficient quality to facilitate a first round of access requests; and which includes process and governance requirements which will help to ensure that the level of complexity and sophistication of the network statement will improve over time. Access seekers must be provided with a right to appeal unfair or discriminatory provisions of the network statement to the economic regulator.

#### **The successful introduction of private sector competition in rail operations will be affected by the availability of suitable rolling stock.**

The intention is for the private sector to largely self-provide rolling stock, and to make use of private sector leasing arrangements which have already begun to form in the domestic market. Private sector investment in locomotives in particular will help to address current shortfalls in rolling stock supply. In addition, Transnet will explore the establishment of a Rolling Stock Leasing Company (ROSCO) through a joint venture between Transnet Engineering and a private sector partner. As the incumbent operator, Transnet has the largest fleet of rolling stock, which includes a large number of specialised wagons required to service certain types of clients.

The establishment of a state-owned ROSCO will have the dual benefit of making a fleet of rolling stock available to private operators to enable the growth of the market, without precluding the establishment of private sector ROSCOs and self-owned fleets, while creating a new revenue stream for Transnet. Rules will be established to ensure transparent, objective and non-discriminatory access to the rolling stock controlled by the state-owned ROSCO, including a requirement for transparent, objective and non-discriminatory access to maintenance services.

**Vertical separation of infrastructure ownership and terminal operations will be undertaken in the ports sector through completing the establishment of the National Ports Authority as a subsidiary of Transnet.** As outlined in the National Commercial Ports Policy and the National Ports Act, the following principles will apply:

- The National Ports Authority will be the landlord of the South African ports and will own all the land and the port infrastructures within the port estates



- Greater private sector involvement in operations will be sought through leases and concessions
- The allocation of leases or concessions will be open to competitive bidding; and the bidding process will be transparent and based on a set of clearly stated objectives/targets, criteria and measurable deliverables.

Significant progress has been made in this regard since the announcement by the Minister of Public Enterprises in June 2021 that the National Ports Authority would be established as a subsidiary of Transnet. To complete this process, a permanent board with a majority of independent non-executive members will be appointed to ensure appropriate governance of the subsidiary. A Memorandum of Incorporation (MOI) will be finalised to complete the legal separation of the subsidiary, with all ports, land and other rights and obligations transferred to the subsidiary in terms of section 27(1)(b) of the National Ports Act. This process will be undertaken in a manner that ensures that the balance sheet of the Transnet Group remains intact, as the National Ports Authority will remain a wholly owned subsidiary of Transnet and be fully consolidated in terms of the relevant accounting standards.

**To ensure a level competitive playing field in ports and rail, an independent Transport Economic Regulator (TER) will be established.** The TER will be empowered by the Economic Regulation of Transport Bill, which is under consideration by the National Council of Provinces. In ports, the TER effectively replaces the Ports Regulator as created by the National Ports Act. The TER will continue to develop the regulatory regime already established by the Ports Regulator.

Among other roles, the TER will regulate the pricing of access to the network. The access pricing framework is a crucial component of successful vertical separation. The dominant operator and its external competitors need to face the same pricing schedule for access to infrastructure, which should be cost-based and reflect a fair allocation of overhead costs. Accounting separation is a crucial first step to implementing cost-based access pricing, and the process of price formation itself then also needs to be shielded from anti-competitive manipulation. The manner in which access prices are determined must efficiently spread costs and maximise traffic volumes. The ultimate outcome of allowing competitive access to the rail network will be predicated on whether the right pricing structure is implemented.

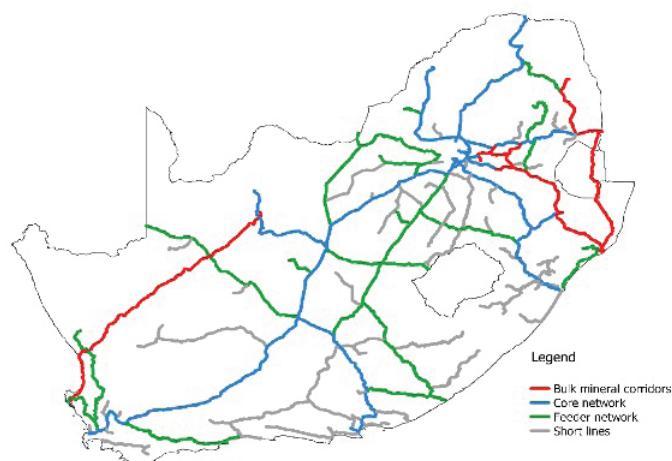
### 1.5.4 Right-sizing the rail network

As the geographic pattern of economic activity changes over time, the needs of the rail network will also change. A line built to service a particular customer or market will serve no practical purpose if that customer or market no longer exists, or can no longer provide sufficient volumes to cover maintenance costs. In order to ensure that the costs of maintaining the network remain aligned with its ability to produce income, it is thus important to close unprofitable lines and/or open new lines serving new customers from time to time.

One of the factors currently contributing to the low profitability of the South African rail network is its size. Much needs to be done to increase the modal share of rail, but even if all rail-friendly traffic is captured, many lines will continue to experience extremely little traffic. In effect there is little prospect of returning these lines to profitability, and thus they are not sustainable on a purely commercial basis. A crucial factor for the commercial viability of the core rail network is that the total system density should be sufficient to keep costs within a viable range.

The roadmap proposes a rationalisation of the rail network through a carefully planned and managed process to ensure its sustainability. Through a detailed modelling exercise, four categories were identified based principally on potential rather than current densities, as illustrated in Figure 2 below. The four categories include the “bulk mineral corridors” (such as the iron ore line), which serve as conveyor belts for bulk commodities to the ports; the “core rail network”, which connects ports and major urban centres and serves diverse products and segments; the “feeder network”, on which many goods originate; and a number of “short lines” with low volume potential. The bulk mineral corridors are only 12% of route length, but represent 61% of freight potential. In contrast the short lines are 35% of route length, but represent only 1% of freight potential. The feeder network provides additional origin and termination points to the core network, which increases network density, but is not independently viable.

Figure 2: Map of network categories







The impact of closing low density lines, both in terms of overall network density and in terms of the net impact of traffic originating or terminating on one part of the network and traversing other segments, was then calculated in order to determine what network size would be commercially viable. This analysis suggests that the iron ore and coal lines are in many ways largely stand-alone systems, with limited connections to the rest of the network. In contrast, the core network is truly dependent on the feeder lines in particular to sustain traffic density. The core is thus a more classic example of a network economy, where the value of access to the network is improved as the number of origin and termination points available to the access taker increases.

This analysis however only addresses the question of commercial sustainability. Rail can also produce significant positive externalities, which do not contribute to commercial revenues, but are extremely socially important. Even when there is no commercial case to keep a line open, there can thus still be a strong social case to keep it open, via subsidisation. The question of determining the right size for the rail network thus to some extent needs to be addressed alongside the question of how best to fund the network.

## 1.6 FUNDING THE RAIL SYSTEM

A sustainable funding framework for the rail system is central to the success of the roadmap. Following years of underinvestment in rail infrastructure, there is now a significant maintenance and refurbishment backlog which will need to be resolved in order to achieve operational efficiencies. Transnet's current debt burden renders it unable to make the investments necessary to restore the network to working condition. However, available fiscal resources are limited, and alternate options must be explored to accelerate the restoration of infrastructure quality.

South African transport infrastructure and services are to a large extent provided on a "user pays" basis. As set out in the 2021 White Paper on National Transport Policy, the principle of cost recovery from direct users was to be applied where appropriate, with the proviso that the impact on vulnerable sectors should be considered in the design of user pays systems. In addition to its impact on vulnerable groups, user pays can have some practical drawbacks in terms of system outcomes. In rail, the most notable of these centre on the existence of positive externalities – in other words, positive effects that do not accrue directly to the user, and thus that the user will not willingly pay for.

Where positive externalities exist, a user pays financing system will produce a smaller rail network than is socially optimal – because the positive externalities will effectively not be funded by users. The problem of under-provision of rail infrastructure is further complicated by the prevalence of road subsidisation and its impact on intermodal competition. In addition, when profits are under pressure and no subsidy is available, the tendency is to reduce capital spending on infrastructure, rather than to reduce operational spending, where effects will be felt immediately. Because rail assets

are so long lived, there is a temptation to withhold funding until an operational crisis occurs – which can take decades to materialise.

In the long term, the expectation is that the core rail network will be able to realise sufficient densities to be commercially viable and self-sustaining, particularly once the network is rationalised. However, in the short term there is a funding shortfall that will need to be addressed, as there is a significant backlog in infrastructure investment which requires expenditures that will exceed the funding capacity of Transnet. Given the crucial role that rail can play in supporting economic activity, and its impact on the freight burden on the road network, it is appropriate for the state to step in and support funding of rail network infrastructure investments where alternate options are not available.

Given that the introduction of competition will be a key policy tool used to improve the efficiency of rail, subsidisation of rail *operations* is typically undesirable because it has the potential to distort the playing field between competing operators. In contrast to the arguments against subsidising rail freight operations, however, in a number of circumstances a strong case can be made for subsidisation of rail *infrastructure*. The establishment of the Infrastructure Manager will enable state funding to be provided where appropriate without distorting the market.

Taking into account current fiscal constraints, private sector funding will also need to be leveraged to a significant degree to improve the performance of the rail system. Transnet's balance sheet limits its ability to invest, and partnerships are required to fund specific capacity expansion and operational improvements. Partner-driven value chain optimization is required to turn loss-making and underperforming businesses around. In the short term, a number of opportunities exist to establish partnerships with the private sector while the mechanisms above are put in place. The benefit of such partnerships is both to address Transnet's immediate funding constraints and to drive private sector participation in areas where efficiency gains can be made through additional investment or expertise.

**Taking these principles into account, a sustainable funding framework for rail should be based on six key funding mechanisms, each of which is described below.** These mechanisms represent a "menu" of options, the suitability of which must be determined on a case by case basis.

### 1.6.1 State subsidisation of rail infrastructure

As outlined above, some degree of public funding will be required to address the significant backlog in infrastructure investment and rehabilitate the rail network, particularly for the Container Corridor which has been substantially degraded. If the entire cost of network upgrading were to be assumed by users, access charges would need to be set at a level too high for most users to sustain. The preferred subsidisation method is a once-off subsidisation of major infrastructure investments. The recipient of such subsidies should be

the IM rather than train operators, in order to minimise the risk of distortions to competitive market conditions. Public funding should be tied directly to a reduction in access charges.

The IM will need to motivate for such funding to National Treasury. Going forward, an institutional mechanism should be established for the IM to request subsidies through the Department of Transport or the Transport Economic Regulator based on clearly defined criteria. The regulator should assess the funding request based on the interests of the system as a whole and the prudence of costs, before making a recommendation to the Minister of Transport. The Department of Transport should then refer the request together with this recommendation to the National Treasury for a funding decision to be made.

### 1.6.2 Access charges and investment in rolling stock by train operators

The primary way in which private sector investment will be enabled is through implementing **open access to the rail network**. Private rail operators will contribute to the cost of maintaining and expanding the network through access charges, which will represent a new revenue stream for the Infrastructure Manager to ensure increased investment in the network. The successful introduction of competition in rail freight operations will also require rolling stock investments by market entrants, as they build the capacity to meet client needs. This is a further way in which private sector funds can be brought into the sector. The success of this will, however, depend on the creation of a level playing field in rail, and on a successful rehabilitation program for the rail network to ensure that private sector participants are able to provide efficient rail freight services and attract customers.

Rolling stock investments involve substantial amounts of capital, and typically take 10 to 15 years to pay back. Rolling stock is often specialised for use in specific network conditions, and it is thus typically not easy to liquidate or redeploy a rolling stock investment. Private sector investments are thus unlikely to occur unless there is some assurance that operating rights will be guaranteed for long enough to pay off the initial investment. This conclusion is supported by the results of the April 2022 third party access tender process recently completed by Transnet, which guaranteed access for only 24 months.

EU precedent is instructive as regards how investor concerns can be addressed. The overarching framework for EU access regulation is based on an annual timetabling system, where the right to access is guaranteed for only 12 months at a time. However, exceptions are then made for access seekers to negotiate longer term framework agreements with infrastructure managers, with one of the grounds for such longer contract terms being the presence of specialised investments or large-scale, long-term investments.

Going forward, framework agreements guaranteeing longer term access will need to be made available to private sector market

participants, where required to trigger rolling stock investment. Provision should be made in the network statement for such agreements to be negotiated. The terms of these agreements should be negotiated on a case-by-case basis, given the specific investment case requirements on defined projects, and access rights should fall away if the specified investment does not in fact occur. The need for such framework agreements is likely to be greatest as private sector access to the rail network is initiated, and rolling stock fleets are built up. Over time it is thus anticipated that the bulk of the market should revert to an annual timetabling system.

### 1.6.3 Concessioneering

Concessioneering of network segments has the potential to bring in substantial private sector financing to reinvigorate the rail sector and strengthen Transnet's balance sheet, while retaining public ownership of railway infrastructure. Well-designed concessions would allow the state to realise additional profits, whether as upfront payments or as long-term profit-sharing mechanisms, or some combination of both. These additional profits would then be available to fund the rehabilitation of other parts of the network.

A key risk with the leasing or concessioneering of rail corridors is that of network fragmentation. The value of a network increases as the number of origin and termination points on it increases, and as the cost of interconnecting falls. If part of a network is managed and controlled by a concession, these network economies can be eroded. Given existing financial constraints, this is a necessary risk which must be carefully managed as part of the implementation of rail reform. A crucial requirement of any concession arrangement will therefore be that open access to network infrastructure is maintained.

In the immediate future, the potential for concessioneering parts of the network will be assessed against the following principles:

- The need to mobilise private sector funding, in recognition of the potential for both upfront fees and future profit share in concessions to be used to cross-subsidise the rest of the network
- The efficiency maximising potential of vertically integrated operations on bulk corridors
- Protection of third party access rights on concessioned lines
- Ensuring that concession contracts safeguard ongoing maintenance of infrastructure, to protect the quality of the asset at the end of the concession period

### 1.6.4 Private investment in feeder and short lines

There is likely to be potential for private sector investment in short lines (often referred to as "branch lines"). A number of methods can be used to enable private sector investments in the "last mile" link to the rail network. The feasibility of this method of engaging private sector funds will depend both on the commercial appetite of the private sector, and on the institutional framework which enables



such investments. Finally, where rail lines are not commercially viable, and the private sector has no interest in investing in them, there may then nevertheless be compelling public interest grounds to keep those lines open. In those cases, an institutional framework is needed to facilitate subsidisation of those lines, by national, provincial or municipal governments.

### 1.6.5 Private investment in refurbishing or expanding line capacity

Both the core network and feeder lines will require substantial maintenance and refurbishment to restore their reliability and, where necessary, expand their capacity. There are likely to be delays in refurbishing some of these lines, given the limited financial budget available to the IM. Where private sector investors wish to expedite the maintenance or refurbishment of a specific line more rapidly than the budget of the IM would otherwise allow, or where they wish the line capacity to be increased to a level that the IM is not willing to finance, a mechanism to allow private sector investment will be introduced. This mechanism could also be used to facilitate investments into any part of the network, so that private operators are not solely reliant on the IM to upgrade the network.

International precedent exists for mechanisms to enable private funding of rail infrastructure. Where an access seeker identifies a project to provide additional capacity on the network, and the Infrastructure Manager indicates that it will not fund the project (or will not fund it fully), the access seeker may notify the Infrastructure Manager of its willingness to fund the project. Where a private investor makes a capital contribution, while the Infrastructure Manager will own the assets created, the investor will make a return on its assets via a discount in the access fee it is charged. The access fee adjustment is calculated in order to ensure that the Infrastructure Manager is left economically no worse off and that the investor makes a return on their investment which does not exceed the Infrastructure Manager's predetermined rate of return, i.e. to ensure that only prudent costs are recouped.

### 1.6.6 STRATEGIC EQUITY PARTNERSHIPS

Finally, private sector capital can be mobilised through equity partnerships, for example the establishment of joint ventures between Transnet subsidiaries and private investors. Transnet is already pursuing various equity transactions which are either cash generative or would reduce capital expenditure and relieve pressure on its balance sheet. These transactions need to be urgently accelerated and expanded to other parts of the business where appropriate and in line with the policy objectives of the sector and implementation priorities outlined in this roadmap. This model is already being implemented in the Durban Pier 2 Container Terminal, and there are various opportunities to apply a similar mechanism in other parts of the business to raise capital and crowd in expertise.

Consideration should be given to the listing of minority stakes (or retention of a "golden share") in businesses within Transnet that are

relatively easily isolated and subsidiarized and are either profitable or can be made profitable relatively quickly, such as TPT. Listing on the JSE would both allow capital to be raised from the market and introduce greater transparency and discipline through the rules that apply to listed companies.

It is important to highlight that these mechanisms for raising capital from the private sector and introducing skills, expertise, and know-how, will accomplish this without relinquishing public control of these businesses.

## 1.7 KEY ACTIONS TO DRIVE IMPLEMENTATION

The actions outlined in this roadmap aim to stabilise and improve Transnet's operational and financial performance in the short term, and to reform the structure of the freight logistics system in the long term. The table overleaf summarises the key actions, indicating the expected timeframe and responsibility for each, in order to enable effective oversight. Implementation of the roadmap will be coordinated by the National Logistics Crisis Committee, which is chaired by the Presidency and includes all relevant departments as well as Transnet.

Table 1: Key actions from the roadmap implementation plan

	Action	2023		2024												2025	
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Apr	
Improve operational performance of freight rail and ports	Finalise and approve Transnet Recovery Plan (Transnet)																
	Establish Corridor Recovery Teams (CRTs) for five strategic corridors (Transnet/Industry)																
	Establish multidisciplinary Priority Committee to address crime affecting railway infrastructure (SAPS)																
	Identify urgent equipment requirements at all ports and develop plan to address critical gaps (Transnet/Industry)																
	Develop detailed delivery plans and KPIs for each CRT to achieve targeted volumes (Transnet/Industry)																
	Conclude agreements with OEMs to enable delivery of remaining locomotives, return long-standing locomotives to service (Transnet)																
	Explore the re-establishment of the Railway Police and provide recommendations to the NLCC (SAPS)																
	Introduce an integrated, dynamic, automated planning and scheduling solution for the rail network (Transnet)																
	Undertake independent technical assessment of strategic corridors; assess state of infrastructure and identify interventions (National Treasury)																
Creating a level playing field in freight rail and ports	Establish an Interim Infrastructure Manager with its own management and reporting structure (Transnet)																
	Develop a draft interim Network Statement for the rail network, including the general rules, deadlines, procedures and criteria for capacity allocation and access charges, as well as a standard access agreement and longer-term framework agreement (Transnet)																
	Develop and implement code of conduct for IM staff to establish “Chinese wall” between IM and TFR (Transnet)																
	Complete consultation with key stakeholders and finalise the Network Statement (Transnet)																
	Commence requests for access to the freight rail network (Transnet)																
	Establish the National Ports Authority as a subsidiary with a board comprising a majority of independent non-executive directors (Transnet)																
	Establish the Infrastructure Manager as an operating division within Transnet (Transnet)																
	Implement a transfer pricing regime to ensure that all commercial arrangements between the IM and TFR are conducted on an arms-length or market related basis (Transnet/IRERC)																
	Allocate capacity on the freight rail network and publish timetable (Transnet)																
Creating and enabling legal and regulatory framework	Establish a rolling stock leasing company through a joint venture with Transnet Engineering (TE), with appropriate governance and transfer pricing arrangements in place (Transnet)																
	Establish the Infrastructure Manager as a subsidiary with a board comprising a majority of independent non-executive directors (Transnet)																
	Exercise oversight of Transnet restructuring process (DPE)																
	Ensure adequate resources and capacity for IRERC to exercise an effective oversight role(DOT)																
	Initiate a market inquiry by an appropriate institution to extend regulation to rail in terms of the ERT Bill (DOT)																
	Manage consultation process on the Network Statement and provide recommendations for incorporation in final version, including on the methodology for calculation of access charges (IRERC)																
	Establish the Transport Economic Regulator (TER) following passage of the ERT Bill (DOT)																
Draft regulations in terms of the ERT Bill for the governance and oversight of the network statement (DOT)																	
Right-size the network	Finalise and submit the Rail Bill to Cabinet (DOT)																
	Develop a National Rail Master Plan identifying the appropriate size of the network and lines to be closed (DOT)																
	Release prospectus of low-density lines identified for closure and publish request for offers to purchase or subsidise those lines (IM)																



	Action	2023		2024												2025	
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Apr	
Ensure financial stability of the freight system	Pursue identified opportunities for private sector participation (PSP) (Transnet/DOT)																
	Consider PFMA approvals and/or exemptions for PSP transactions where required (DPE/National Treasury)																
	Relaunch RFP for private sector partnership at NCT (Transnet)																
	Complete establishment of partnership with private sector terminal operator for DCT Pier 2 (Transnet)																
	Develop a Private Sector Participation (PSP) Framework for the rail sector to identify further PSP opportunities (DOT)																
	Explore potential models for concessioning parts of the network where appropriate and opportunities for availability-based infrastructure concessions (Transnet/DPE/National Treasury/DOT)																
	Develop mechanism for private investment in rail infrastructure to be recouped through reduced access charge (IM/IRERC)																
	Develop a funding framework for the rail system in collaboration, including a process for the IM to request subsidies based on clearly defined criteria (National Treasury/DOT)																



## 2 INTRODUCTION

The efficiency of logistics systems is integral to the functioning of all economies. The services which move goods and people should be provided in a safe, efficient and cost-effective manner, and designed to address policy objectives such as promoting economic growth and eradicating economic inequality. Improved efficiency in logistics can unlock the potential of the rest of the economy, as the cost of logistics affects all other sectors.

In South Africa, key components of the logistics system are owned by the state. The freight rail network is owned and operated by Transnet SOC Ltd, which also acts as the ports landlord, and supplies a large proportion of port terminal services as well as the national fuel and gas pipeline network. The freight rail network in turn interconnects with the passenger rail network, the bulk of which is owned and operated by PRASA, an agency of the National Department of Transport. Transnet therefore has a critically important role to play in South Africa's national logistics system. As the custodian of ports, rail and pipelines, Transnet is responsible, either in whole or in part, for the effective and efficient functioning of many of the supply chains that underpin the economy.

As a result of long-standing systemic challenges, which were compounded by the impact of corruption and the misallocation of capital during the state capture period as well more recent events including the COVID-19 pandemic, escalating levels of theft, natural disasters and other factors, Transnet's financial and operational performance has been on a steady decline, with the entity making an annual loss of R5.7 billion in the year ending March 2023. As a result, a number of the key industrial supply chains in the economy are confronting security of supply risks as well as declining competitiveness. At the same time, the logistics market, like most others, is undergoing significant change. New technology, new market entrants, new customer expectations, new business models and a global drive to reduce carbon emissions are driving rapid change and require constant adaptation.

In March 2023 President Cyril Ramaphosa directed government to implement reforms swiftly and completely to turn around the crisis in South Africa's logistics system. This followed the President's announcement in the 2023 State of the Nation Address that government would develop a Freight Logistics Roadmap that would translate policy commitments into reality, including the restructuring of Transnet Freight Rail to create a separate infrastructure manager and the implementation of an open access regime for the rail network. This roadmap will be overseen by the Department of Transport, the Department of Public Enterprises and Operation Vulindlela through the National Logistics Crisis Committee (NLCC), to enable a coherent, integrated response to the challenges within the national logistics system.

This roadmap outlines a range of actions required to restore the efficiency and competitiveness of key industry supply chains, as well as ports and rail more generally. It is also a fundamental guiding

document for Transnet, which articulates both the challenges to be solved in the freight logistics system and the role and positioning of Transnet within this system as it goes through various stages of reform.

The size and complexity of the freight logistics system means that the causes of poor performance are varied and intersecting. The aim of this roadmap is to set out an evidence-based, implementable and achievable path for reform of South Africa's logistics system in a manner that effectively addresses these challenges to enable economic growth and transformation.

In doing so, this roadmap is designed to implement a number of pre-existing policy initiatives. Of particular importance is the vision for rail set out in the White Paper on National Rail Policy, which was adopted by Cabinet in March 2022. The White Paper outlines a clear policy direction for the rail sector where state ownership remains important, but efficiency is improved through the introduction of private investment and competition (together with an enabling regulatory environment). In the ports system, the roadmap similarly seeks to implement existing policy and legislation through the structural reforms envisaged in the National Ports Act, which aim to facilitate improved port performance by enhancing the independence of the National Ports Authority and promoting competition and private sector participation in port operations.

## 3 CONTEXT AND BACKGROUND

### 3.1 THE HISTORICAL EVOLUTION OF THE LOGISTICS SYSTEM IN SOUTH AFRICA

The rail network has been a cornerstone of South Africa's development since rail operation began in 1860. At the time the railway developed rapidly to link the three major ports (Durban, Port Elizabeth, and Cape Town) with the minerals-rich hinterland, especially diamonds in Kimberley and gold on the Witwatersrand. With the South Africa Act of 1909, the British consolidated the harbours and railways into state ownership. The South African Railways and Harbours Regulation, Control and Management Act of 1916 gave SAR&H a mandate to invest in ports and rail infrastructure and services as a means of harnessing the industrial and agricultural potential of the country. While its mandate required it to fully cover its costs from revenues, provision was made for the government to fund any major investment deemed to be in the national interest and not covered by immediate revenues. At the institution of the Union, railway and ports turnover was R24 million, about 8% of total GDP. Railway turnover exceeded total government expenditure at the time, and 40% of government salary expenditure went to railway employees.

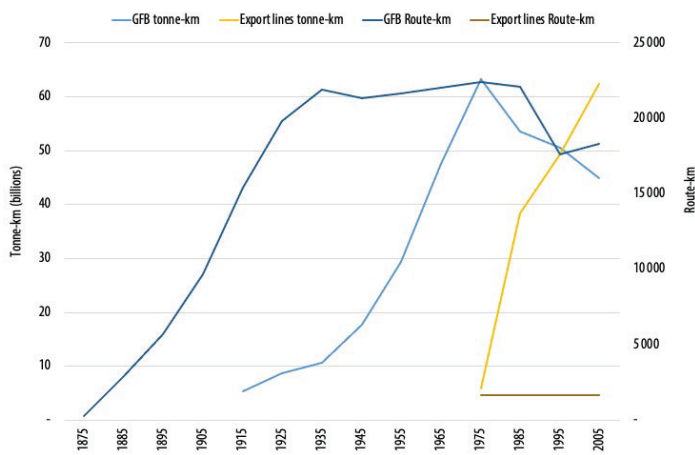
During the early years post-unification in 1910, politically powerful commercial farming and mining constituencies influenced the construction of an extensive rural branch line network. The Road Act of 1930 forced freight onto rail, ensuring that volumes in the rail network remained high. Thus, while the rail network was in principle



run on a commercial basis, political interference in operational and investment decisions was substantial and the network was largely protected from intermodal competition.

By the late 1920s most of what is today known as the general freight network had already been completed. In fact, the 1920s network was 22 000 route-km in length compared to the present national network of 20 400 route-km (the change comprises an extra 1 500 route-km heavy haul coal and iron ore corridors built in the early 1970s, less a divestiture of Namibian railway network assets and passenger rail lines to PRASA).

Figure 3: Route and tonne-km growth from 1875 to 2022



Source: Transnet

The heavy haul export lines for iron ore and coal, commissioned in 1976, have operated at higher volumes than the rest of the network, and have consequently been more profitable. As shown in Figure 3 above, the volume transported on the ore lines surpassed total general freight volumes by the mid-1990s, and today, these lines make up two thirds of all freight tonne kilometres on rail.

The De Villiers Report of 1985 highlighted that continued protection of rail freight was working against the national economic interest. In response, road freight was deregulated, which significantly increased the road freight competition faced by rail. A series of commercial reforms to rail were also undertaken, culminating in the Legal Succession to the South African Transport Services Act, 1989, which implemented the corporatisation of railway activities. Corporatisation was intended to reduce the scope for political interference and improve business practices in rail. However, the reform program failed to recognise that a resizing of the network to reduce the proportion of low-density lines, together with additional investment in the main corridors, especially intermodal services, was needed to improve the competitive position of rail compared to road. In effect, rail's footprint needed to be adjusted to reflect the new realities of road competition. Despite extensive evidence showing that freight railways have constant returns to (network) scale and increasing returns to (traffic) density, to date these reforms have not been introduced.

When corporatisation was undertaken in 1990, the newly formed Transnet restructured its business and became the holding company of five unincorporated divisionalised businesses, including Spoornet (railway) and Portnet (ports), as well as a number of supporting business units. In 2000, Transnet's port division, Portnet, was vertically separated into operations (South African Port Operations) and landlord businesses (the National Ports Authority of South Africa). In 2007, SAPO became Transnet Port Terminals (TPT) and the NPA became the Transnet National Ports Authority (TNPA), both remaining as operating divisions of Transnet.

Subsequent policy documents, which are summarised in greater detail below, have outlined the need for full vertical separation of infrastructure and operations in both ports and rail in order to modernise the logistics system and enhance its competitiveness. The National Commercial Ports Policy and the National Rail Policy, adopted in 2002 and 2022 respectively, have outlined the further reforms required to create a level playing field for public and private operators while retaining public ownership of strategic infrastructure such as ports and the rail network. However, these reforms have only been partially implemented to date.

### 3.2 THE DEVELOPMENTAL ROLE OF THE STATE

The National Development Plan (NDP) states that "by 2030, South Africa needs to be served by a set of efficient, financially sound and well governed SOEs that address the country's developmental objectives in areas where neither the executive arms of government nor private enterprises are able to do so effectively." The NDP further asserts a South African developmental state that intervenes to support and guide development so that benefits accrue across society (especially to the poor), and build consensus so that long-term national interest trumps short-term, sectional concerns. A developmental state thus needs to be able to transform its economic base by promoting productive, income generating economic activities while improving the living conditions of its population. It creates and sustains a policy climate that fosters productive investment, exports, growth, and human welfare.

State-Owned Enterprises (SOEs) must be at the centre of the drive towards accelerated economic development and growth in partnership with the private sector. South African SOEs employ approximately 175 000 people directly. Indirectly, however, as network infrastructure providers, they enable virtually all of the 15 million jobs across the economy. Transnet, Eskom, the Post Office and Prasa account for four fifths of the public enterprises' total employment.

However, in the past decade, many SOEs have underperformed. They have underinvested in the maintenance, modernization and expansion of network infrastructure. Service quality has declined and corruption within and around these SOEs persists. While the corporatization of SOEs was intended to enable them to remain agile and responsive to changing business environments, they have largely failed to keep up with the evolving dynamics of the sectors

in which they operate. Rather than adapting and reforming to remain cutting-edge, they have stagnated and remained attached to business models that are increasingly unviable and abandoned by the rest of the world. These problems have slowed growth, deterred investors and placed extraordinary burdens on the fiscus. The reality is that the state of SOEs is dire and addressing this will require difficult choices and trade-offs to ensure they fulfill their strategic purpose by remaining viable, meeting their socio-economic mandates and driving infrastructure investment.

Transport and logistics infrastructure is often referred to as the “physical Internet,” requiring constant increases in connectivity and efficiency. The importance of the national logistics system to South Africa’s economic development and growth is unquestionable and improving the country’s logistics performance is an important development policy objective. Indeed, Transnet’s developmental mandate as summarised by the Department of Public Enterprises in its strategic plan for 2020 to 2025, is to provide “*cost-effective, reliable, integrated and seamless transport solutions for the bulk and manufacturing sectors in Southern Africa.*”

Transnet includes the following key performance indicators in its “statement of strategic intent” agreed with the Minister of Public Enterprises:

- To reduce the cost of logistics as a percentage of transportable GDP;
- To implement and accelerate the shift from road to rail;
- To leverage the private sector in the provision of both infrastructure and operations where required;
- To integrate South Africa with the region and the rest of the world; and
- To optimise sustainable economic, social and environmental outcomes of all activities undertaken by the SOC.

Transnet can have a major positive developmental impact for South Africa, centered on efficiency and affordability; promoting industrialisation; and reducing emissions and transport costs by shifting freight from road to rail. Its prioritisation of services for mining and the auto industry, however, have effectively come at the cost of stronger support for new economic activities requiring mostly containerized freight, while state capture inflated the cost of capital investments and diverted resources from Transnet’s core operations.

In addition to its employment and broader development role, Transnet’s principal contribution to industrialisation was intended to ensure access to affordable freight transport especially for manufacturers, both to reduce the cost of imported inputs and to promote competitiveness in domestic, regional and global markets, allowing domestic firms to plug into global and regional value chains. In practice, Transnet equated its role in industrialisation primarily with promoting local production of rolling stock rather than prioritising services for manufacturing industries or leveraging

its relationships with mining companies to promote beneficiation and fabrication in South Africa.

The vision for South Africa’s freight logistics sector outlined in this roadmap takes the developmental role of the state as its starting point and its role in creating an effective bridge between the public and private sector. As the custodian of network infrastructure, the state (through Transnet) should invest in rail and port infrastructure to promote the competitiveness of key exports and enable industrial growth. It should equally maintain a degree of involvement in operations both to serve supply chains and products which might otherwise not be optimally catered for and to manage the transition to a competitive market in line with its “statement of strategic intent.”

This is predicated on the importance not only of a *developmental* state, but of an *entrepreneurial* state as well. In this regard, Mazzucato argues that “we have under-theorized, under-imagined the role the state can play in collaborating with business. In the end, it’s all about partnership. The debate about the market vs the state was a false dichotomy...the new focus must be on how a bold, capable and well-structured state can unleash the full power of markets and the private sector in solving the problems of our time.”

The pursuit of partnerships between the public and private sectors is critical for inclusive economic growth and development. The Economic Reconstruction and Recovery Plan (ERRP) explicitly calls for more partnerships with the private sector, to crowd in private investment and know-how to address the country’s developmental challenges.

In South Africa’s case, the repurposing, repositioning and redirecting of Transnet through partnerships and improved governance frameworks is intended to contribute positively to enabling inclusive economic growth; mobilising private capital; reducing state debt and promoting fairer competition. The introduction of private sector participation, while crucial to grow the sector and enable greater investment and competition, does not diminish the critical role of the state but rather enhances it.

In this context, Transnet’s business model and operating model is outdated and is not fully aligned with the NDP. Transnet has very strong capabilities in some market segments and very weak capabilities in others where the private sector can play a more efficient and effective role. Partnerships are necessary for Transnet to ensure that ports, rail and pipelines play their optimal role in the national logistics system. In this respect clear choices by the different businesses within Transnet on their strategic posture within the different market segments is required. A key challenge is to ensure that there is strategic coherence between the businesses within the portfolio.

Transnet has always played a central role in the national logistics system and should continue to do so. Transnet’s set of capabilities



and assets, and its infrastructure funding model, is a key strategic advantage that should not be weakened or dismantled in an effort to address short term challenges.

In addition, Transnet has developed and sustained essential know how and competencies in many aspects of rail, port and pipeline operations that are critical for the effective functioning of the economy and this capability should not be too hastily fragmented, but rather managed in a more responsible way to strengthen capabilities in priority areas. At a regional level, Southern Africa requires a large, network infrastructure-focused Logistics Service Provider (LSP) to enhance and create regional trade routes. Transnet has the potential to play a key catalysing role in this respect, primarily as an infrastructure provider.

Transnet's repositioning to fulfil this mandate will require a number of transformative interventions, including the commercial separation of infrastructure businesses and operations businesses and a move towards a portfolio and supply chain based operating model. Transnet's institutional structure is unique internationally and it has many strengths that can be leveraged in the transformation process.

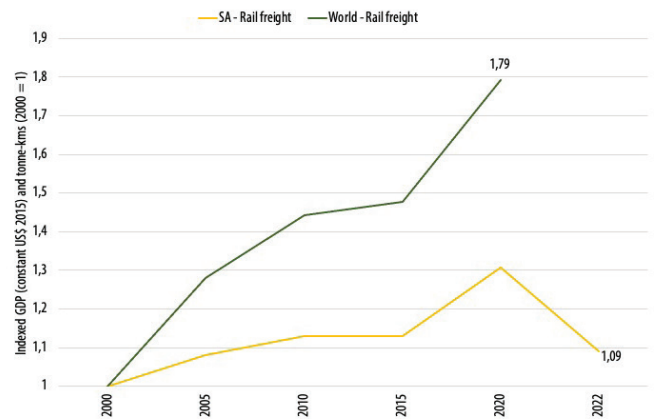
By virtue of its current capabilities and assets, Transnet has significant potential to enable South Africa's national logistics system to leapfrog stages of development and to ensure the provision of core port, rail and pipeline infrastructure, operations and related support services. The Transnet of the future is required to play multiple roles within the national logistics system and to play these roles fairly. As the reform process unfolds, Transnet will have to both provide infrastructure, and compete for access to this infrastructure. For this reason, a commercial separation of infrastructure and operations is required.

A partnership model between the public and private sector must focus on how a bold, capable and well-structured Transnet can unleash the full power of markets and the private sector in building an efficient and effective logistics system that supports an inclusive economy.

### 3.3 CURRENT PERFORMANCE OF RAIL

The performance of the freight rail network has declined sharply, presenting a serious risk to the economy as a whole. The inability to export goods via rail is the most severe constraint on economic growth after the electricity supply shortfall, and requires urgent intervention. Transnet's export coal line performance is now at its worst since 1993, and exported iron ore line volumes are at their lowest level in a decade. General freight volumes have declined even more sharply, to their lowest levels in decades. Volumes transported on the rail network as a whole declined from 226 million tonnes (Mt) in 2017/18 to just over 150 Mt in 2022/23.

Figure 4: Rail freight growth between 2000 and 2022



Source: GAIN FDM™

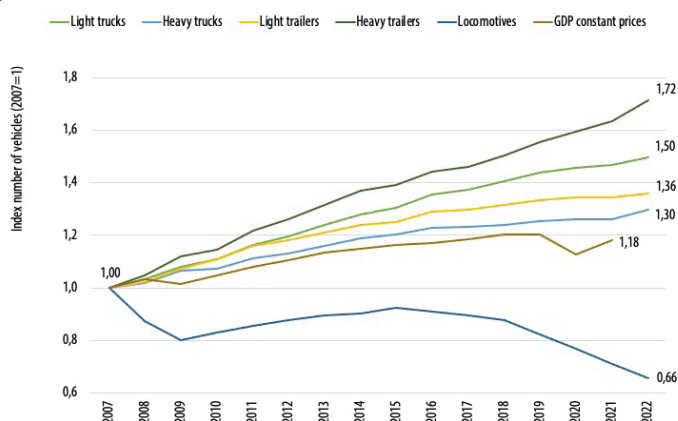
Poor rail performance has left South Africa unable to fully participate in recent commodity price booms. Efficient logistics systems, underpinned by rail, are critical enablers of mining exports. Since 2010 South Africa has forfeited an estimated USD 26.7 billion in iron ore and coal export trade. From 2000 to 2020, international rail markets experienced 80% growth in rail freight volumes, in line with total GDP growth. In South Africa, by contrast, rail volume growth was only 30%, significantly lower than the 60% growth in GDP over the same period. Moreover, since 2020 there has been a sharp decline in South African rail freight volumes, as Figure 4 above shows.

Poor operational performance in the freight rail division has also significantly compromised the financial position of Transnet itself. In the most recent financial year, losses in rail amounted to R15.4 billion (with TFR losing R12.4 billion, and Transnet Engineering a further R3 billion), a rapid deterioration from losses in the same divisions of R5.6 billion in the previous year. Losses in rail threaten Transnet's ability to continue to service its existing debt of roughly R130 billion. In the most recent financial year alone, Transnet debt servicing costs amounted to R13.1 billion. Increasing volumes and therefore revenue on the rail network is thus essential to Transnet's financial sustainability.

As the rail sector has failed to keep up with growth in the South African economy, what has instead occurred is a massive shift from rail to road. As shown in Figure 5, there has been large, sustained growth in the country's truck fleet over the last fifteen years, while over the same period the number of locomotives has decreased by a third. This shift has increased the carbon intensity of South African freight transport, as road transport emits in the region of seven times as much greenhouse gases as rail on a ton/km basis.



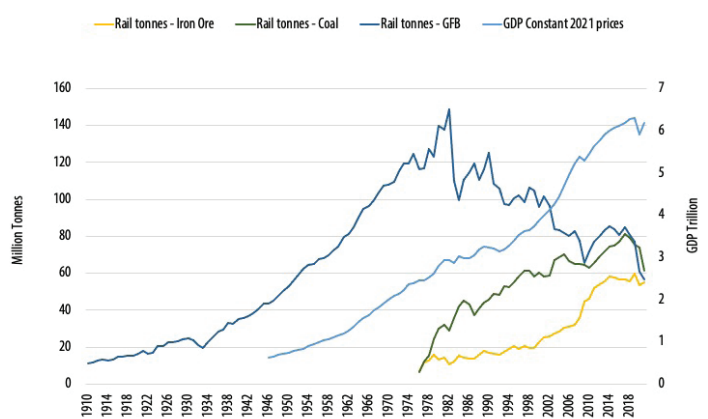
Figure 5: South Africa's investment in its road freight and rail freight fleets



Source: Updated Havenga, De Bod, Simpson, Swarts and Witthöft (2021) with 2022 data for eNaTIS vehicles, Transnet locomotives and World Bank GDP

The overall improvement in volumes to 2020 was concentrated on the export lines, as shown in Figure 6 below, which continued to grow until 2018 (the coal line) and 2020 (the iron ore line). However, peak volumes for the general freight business (GFB) were experienced in 1982, and it now carries just over one third of that peak volume.

Figure 6: Comparison between South Africa's historic rail volumes and GDP

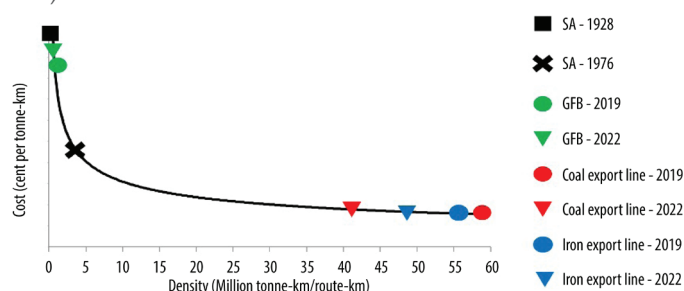


Source: Based on data from the GAIN FDM™

Rail is a high fixed cost business, which means that the fixed cost of the network per unit of traffic moved will increase sharply as total volumes fall (and vice versa). It is well understood that rail networks need to pursue a strategy of traffic densification, due to its dramatic effect on lowering rail unit fixed cost. On the general freight network in particular, a massive decrease in densification has occurred since 1976, as shown in Figure 7 below. In effect, the GFB now carries such low volumes that the per-unit fixed cost of moving traffic by rail is extremely high. In order to remain competitive with road, GFB tariffs are now typically inconsistent with cost recovery. Any attempt to increase prices to cost recovery may cause a pricing 'death spiral', where volumes fall as traffic moves to road in response to price increases, requiring an ever higher price to cover costs.

In contrast, South Africa's export coal and iron ore lines are highly densified due to significant dedicated bulk volumes and dedicated routes for these flows. While the density of the heavy-haul corridors cannot be emulated in general freight, more can nevertheless be done to improve South African general freight density. The network density achieved by the USA, Canada and India are in the order of 10 to 12 million tonne-kilometres per route kilometre. In South Africa, by contrast, general freight density has deteriorated to 2.1.

Figure 7: South Africa's historic rail freight density changes (Harris cost curve)



Source: Based on data from the GAIN FDM™

The rail network has recently experienced many external challenges, including high levels of vandalism and cable theft and a shortage of locomotives and spare parts attributable indirectly to past procurement irregularities. In addition, Transnet has had to contend with a number of one-off events such as the COVID-19 pandemic, flooding, a cyber-attack and social unrest. The impact of these challenges on system performance is detailed in section 5 below. However, the sharp decline in performance across all rail operations cannot be blamed solely on theft, historical legacies, disruptions to business as usual or 'black swan' events. In recent years, there has been a distinct downturn in overall efficiency and productivity in rail, as shown in Table 2 below.

The inefficiency of the freight rail network is illustrated by the alarmingly high number of manual train authorisations, which are required when the signalling system fails. Every time a train requires a manual authorisation, the train driver has to stop at the dead signal and contact the control centre verbally for permission to proceed to the next signal, typically adding five minutes to journey time. Manual authorisations thus greatly increase trip time, disrupt train planning, and decrease trip energy efficiency. As shown in Figure 8 below, the number of manual authorisations required has grown dramatically in recent years.

The most efficiently run line in the Transnet Freight Rail network is the iron ore line, which also experiences the lowest levels of theft and vandalism, a leading cause of signal failures. On the iron ore line, trains must nevertheless still request manual authorisations on average every 65km along the route. This rises to every 17km on the coal export line and every 6km on the general freight network. The causes of this issue include equipment run-to-fail policies, a general lack of maintenance, theft and vandalism, the age of equipment, and inefficient procurement systems.

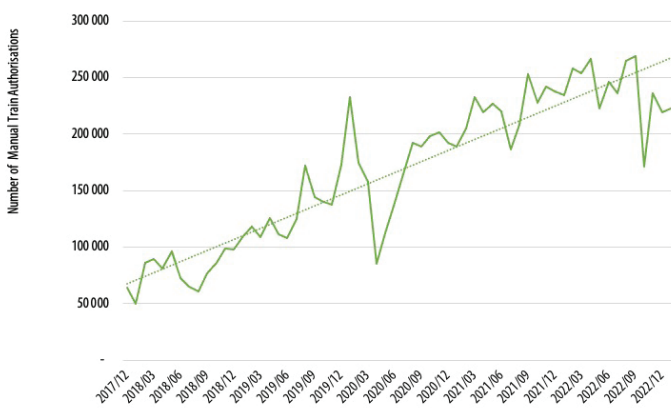


Table 2: Rolling stock performance measures

Locomotive utilisation	Unit	2020	2021	2022 Actual	2023 Target
General Freight	GTK/Loco/ Month ('000)	4177	3702	3446	2962
Export Coal		18002	17052	14161	14220
Export Iron Ore		46686	42209	42735	38235
Wagon cycle time		Unit	2020	2021	2022 Actual
Export Coal		62.4	69	70,83	80
Export Iron Ore	Hours	95	110	90,4	112
Manganese		153.7	205	187,9	180
General Freight	Days	9.8	11	13,79	15

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Figure 8: Month-on-month Manual Train Authorisations, nationally



Source: Transnet Freight Rail

### 3.4 CURRENT PERFORMANCE OF PORTS

The efficiency of the South African ports system affects South Africa's trade with the rest of the world. International comparisons strongly suggest that South African ports are failing to achieve competitive outcomes. Table 3 sets out the performance of African container ports, as evaluated by the World Bank in 2020. All of South Africa's commercial ports cluster at the bottom of 351 ports evaluated using objective data from shipping lines, and underperform all other African ports included in the survey.

Table 3: African container ports rankings, 2020

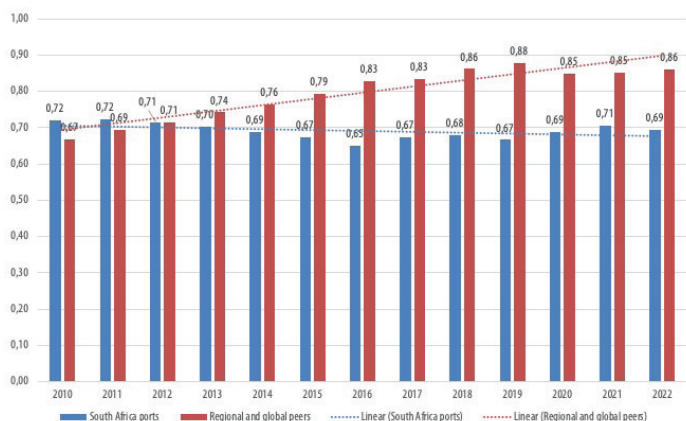
No	Name	Country	Stats Rank in World	Admin rank in World	Stats Rank in Africa	Admin Rank in Africa
1	Tangier Med	Morocco	27	15	1	1
2	Port Said	Egypt	58	70	2	2
3	Djibouti	Djibouti	61	93	3	3
4	Dakar	Senegal	177	120	4	4
5	Freetown	Sierra Leone	220	216	5	5
6	Alexandria	Egypt	234	221	6	6
7	Cotonou	Benin	244	233	8	7
8	Conakry	Guinea	238	250	7	8
9	Mogadishu	Somalia	281	260	12	9
10	Agadir	Algeria	276	267	11	10
11	Casablanca	Morocco	291	268	14	11
12	Beira	Mozambique	268	281	10	12
13	Nouakchott	Mauritania	295	292	15	13
14	Douala	Cameroon	298	302	16	14

No	Name	Country	Stats Rank in World	Admin rank in World	Stats Rank in Africa	Admin Rank in Africa
15	Maputo	Mozambique	299	306	17	15
16	Tema	Ghana	261	312	9	16
17	Algiers	Algeria	315	318	19	17
18	Dar Es Salaam	Tanzania	324	324	20	18
19	Béjaïa	Algeria	338	330	23	19
20	Lomé	Togo	288	332	13	20
21	Mombasa	Kenya	331	335	21	21
22	Walvis bay	Namibia	307	336	18	22
23	Port Reunion	Reunion	334	340	22	23
24	Lagos	Nigeria	340	342	24	24
25	Luanda	Angola	350	343	30	25
26	Pointe Noire	Congo	346	345	26	26
27	Port Louis	Mauritius	344	346	25	27
28	Cape Town	South Africa	347	347	27	28
29	Port Elizabeth	South Africa	348	348	28	29
30	Ngqura	South Africa	351	349	31	30
31	Durban	South Africa	349	351	29	31

Source: The Container Port Performance Index 2020 (World Bank and IHS Markit). Note: the index was constructed based on two methodological approaches – the 'administrative' approach, a pragmatic methodology reflecting expert knowledge and judgment, and the 'statistical approach', using factor analysis (FA).

The performance of South African ports is also deteriorating over time. Figure 9 below shows the results of a recent review of overall container terminal performance in South Africa, relative to nine comparable regional and global container ports. As can be seen, over the period 2010 to 2019, the comparator ports have shown steady improvement in efficiency scores over time, while average South African performance materially declined. The analysis shows that South African container terminals improved their performance over the past three years, though this remains below their productive efficiencies in 2010. This assessment confirms the trend of declining efficiency over time (as opposed to an upward trend for peer benchmarks), with South Africa's container terminals still operating at approximately 30% below their theoretical/ designed capacity.

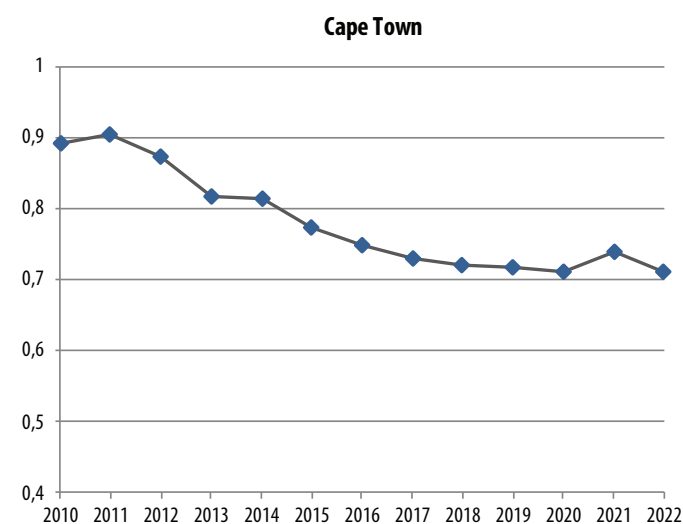
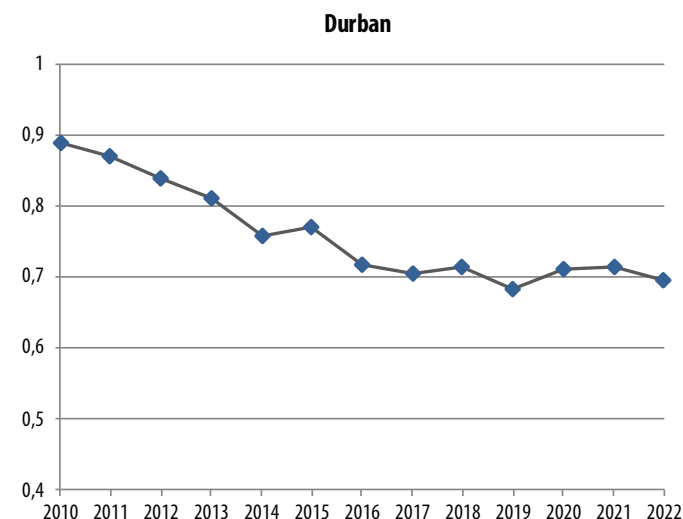
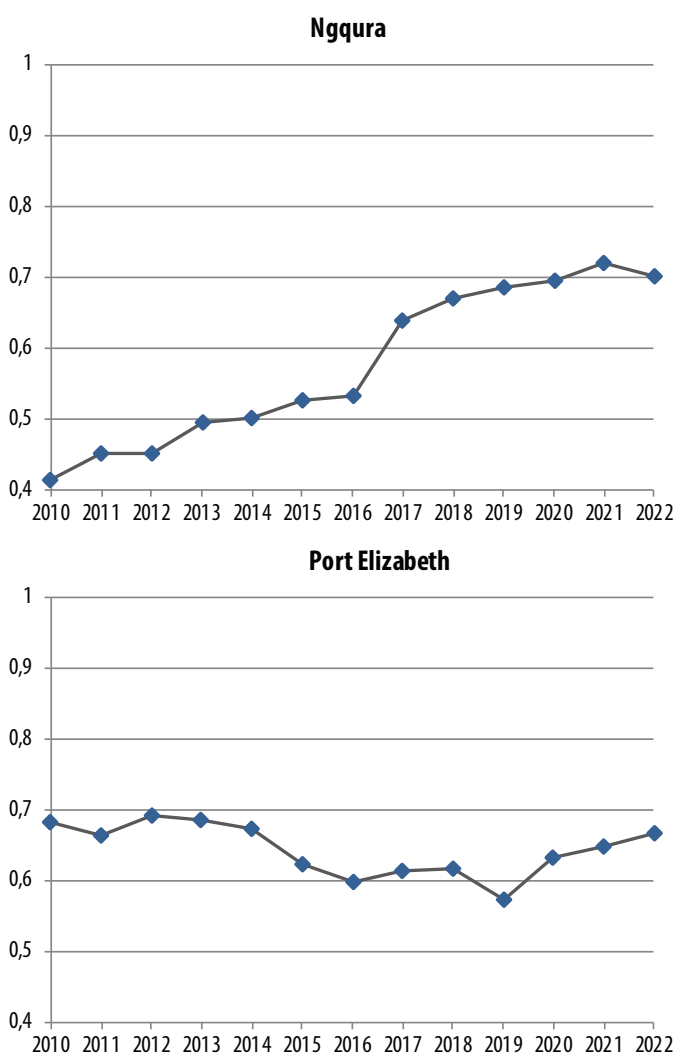
Figure 9: Yearly combined average efficiency scores of container terminals, DEA panel data analysis



Source: Prof Khalid Bichou, analysis commissioned by Operation Vulindlela

Figure 10 disaggregates this efficiency score to illustrate the performance of each container terminal. This shows that while there have been improvements at Port Elizabeth, the efficiency of the Durban, Ngqura and Cape Town container terminals is declining.

Figure 10: Disaggregated efficiency scores of container terminals, DEA panel data analysis



Source: Prof Khalid Bichou, analysis commissioned by Operation Vulindlela

A number of measures are used to track the performance and efficiency of ports, and illustrate the extent to which South African ports underperform international benchmarks:

- **Gross crane moves per hour (GCH)** is a measure of cargo handling performance. International best practice is 40 GCH. By comparison, in 2019/20, Transnet's container terminals ranged between 17 and 24 GCH. Reports attribute this performance mainly to the frequent breakdown of equipment, poor maintenance, and an inability to procure spares in a timely manner.
- **Vessel waiting time at anchorage** is a key measure, as the longer a vessel waits to be berthed, the more it spends on crew and other costs, resulting in either a larger cost absorption by the shipping line or a higher pass-through of costs to customers. In 2019/20, Transnet targeted vessel waiting times of 25-30 hours, but achieved vessel waiting times of 49 to 80 hours. Excessive wait times are usually a result of a lack of berthing slots able to accommodate specific ship classes as well as terminal productivity issues.
- **Ship turnaround time** is the average hours vessels stay in port (breakwater-in to breakwater-out), excluding force majeure



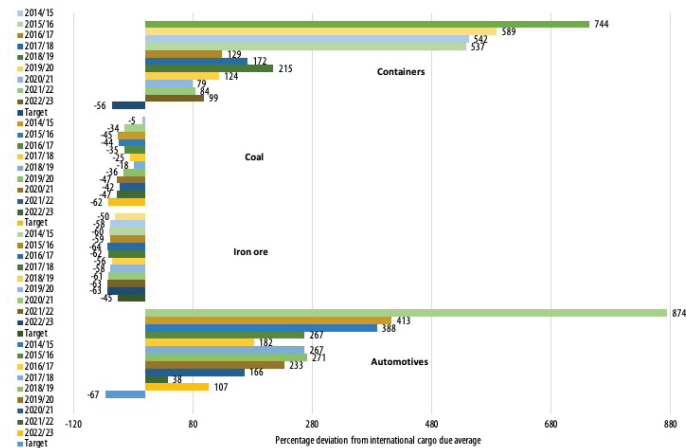
and other uncontrollable events. The World Bank Diagnostic Report 2020 compared the time in port for various ship size categories in South African ports to international measures. The analysis indicated that, except for the smallest size range (< 500 TEU/call), container ships spent between 18.5 hours and 41.3 hours longer in Durban than the median comparator ports, and between 7.1 hours and 42.1 hours longer in Cape Town.

- **Berth productivity** is the total volume handled divided by the total time that a ship spends at berth, which provides an indication of productivity. According to the 2020 World Bank diagnostic of the Port of Durban, compared to 14 ports in developing countries, the majority of ships calling at Durban spent more time at the berth (loading and unloading) than comparable ships at every other port in the sample except Dar Es Salaam. For the majority of ships, time at the berth in Durban was nearly double that of the median port in the sample (Manzanillo in Mexico).

There is variation in the performance of South Africa's ports, and some terminals have demonstrated improvements in performance in recent years. For example, the successful expansion and upgrading of the automotive terminal at the Port of Port Elizabeth has resulted in improved throughput and efficiency since 2022, indicating that a turnaround in performance is possible with continuous improvement measures and investment in equipment and infrastructure. However, the performance of South Africa's container terminals at the Ports of Durban, Ngqura and Cape Town remain of great concern.

Despite this general underperformance, for many products South African ports are also expensive when compared to international competitors. As shown in Figure 11 below, the Ports Regulator has been gradually reducing TNPA container cargo dues in real terms from almost ten times the sample global average in 2012/13. However, in 2021/22 (on a standardised vessel basis), TNPA container cargo dues were still 38% above the sample average, and automotive dues were 56% above the sample average. Coal and iron ore dues remain below global averages.

Figure 11: Cargo dues percentage deviation trend identified for all cargo types (2012/13 – 2021/22)

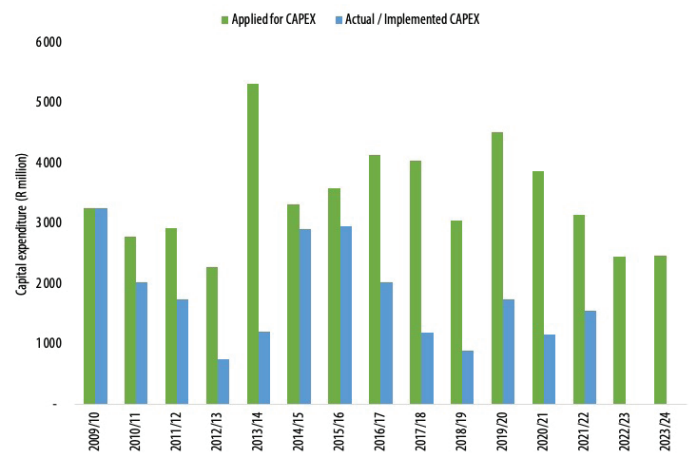


Source: Ports Regulator Global Pricing Comparator Study 2021/22

Besides TNPA cargo dues, port dues and other ports authority related tariffs, TPT terminal handling charges reflect additional costs for the handling of containers at the terminal before being loaded onboard a vessel. The Ports Regulator does not regulate TPT charges, and the lack of private sector operators in the container terminal space means that they are also unrestrained by competitive forces. The container handling tariffs charged by TPT rank among the most expensive against the sample, recording a 79% deviation above the global sample average for 2021/22, often with above-inflation price increases annually. TPT's high container handling significantly raise the overall cost of doing business in SA. With the bulk of SA's manufactured goods arguably exported through containers, high costs undermine industrial policy which aims to incentivise value addition, broadening of the manufacturing base, as well as increasing manufactured exports.

Much of the performance issues experienced in the ports system to date could be resolved through capital expenditures, for example to improve the quality of infrastructure, invest in equipment maintenance and increase the amount of equipment in use. Unfortunately, however, TNPA's capex performance in recent years has been extremely poor. As shown in Figure 12, TNPA spent only 55% of capex allowed by the Ports Regulator over the decade up to 2021/22, with capital expenditure in some years as low as 30% of what the Ports Regulator allowed. Similarly, expenditure by TPT on maintaining and replacing terminal handling equipment has been inadequate.

Figure 12: TNPA capex applied for versus capex spent (R million)



Source: Ports Regulator

Poor port performance results in cascading delays across the logistics system. If a ship berths late because a previous ship was not loaded on time, then the trains and trucks that have arrived to deliver exports and/or collect imports are delayed and create congestion in the transport networks in and around the port. The berth is then not available for the next arriving ship at the contracted time, leading to further delays. Port delays are equivalent to a tax on importers and exporters, which makes South Africa less competitive as an exporting nation (especially for containerised goods), and raises the cost of local production that relies on imported goods. The costs arising from poor port performance are ultimately passed on to

firms and consumers. This, in addition to the fact that port charges and handling fees are already high by international standards, constrains the profitability of SA firms and therefore reduces their ability to expand employment and increase production.

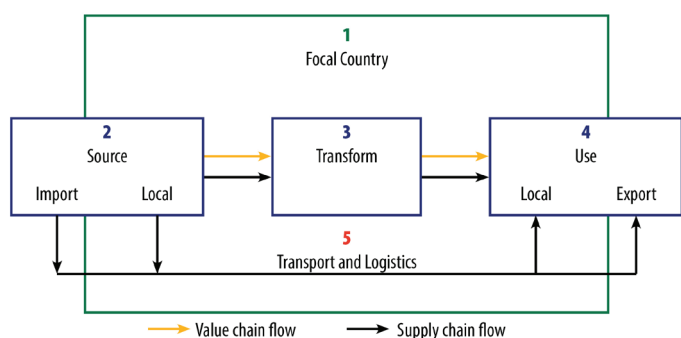
### 3.5 SUPPLY CHAINS IN SOUTH AFRICA

The geographical distribution of economic activity in South Africa, with inland mineral deposits leading to a concentration of economic activity in the interior of the country, coupled with low levels of population density, causes the country to have a high demand for long distance freight. South Africa generates less than one USD of GDP per tonne-kilometre of freight moved, compared to the world average of USD 2.40. This economic characteristic makes it particularly important for South Africa to have efficient, cost-effective logistics systems, and thus that opportunities for corridor densification to rail should be heavily exploited for commodities and other suitable products. The reduced congestion from moving heavy freight from road to rail would then in addition have a positive effect on road freight network efficiency.

As outlined above, however, the rail system in South Africa currently does not fully service the addressable market opportunity (a discussion of the characteristics of rail-friendly freight is provided in for context). In 2019, the total volume of rail-friendly freight was estimated at 181 billion tonne-km, of which only 141 billion tonne-km or 78% was transported by rail. The lost market opportunity is more severe in the general freight market, where total rail-friendly volumes were estimated at 47 billion tonne-km in 2019, but rail only delivered 18 billion tonne-km (38% of the addressable market). Reform of the freight logistics system must take as its starting point the intended purpose of the system and the supply chains that it needs to serve in order to support economic growth.

The basic value chain and supporting supply chain flows of an economy are depicted in Figure 13, which includes the import and export links with international trading partners.

Figure 13: Relationship between value chains and supply chains



Source: Havenga, Neethling, Gertenbach, Witthöft, Simpson, Swarts & De Bod (2023)

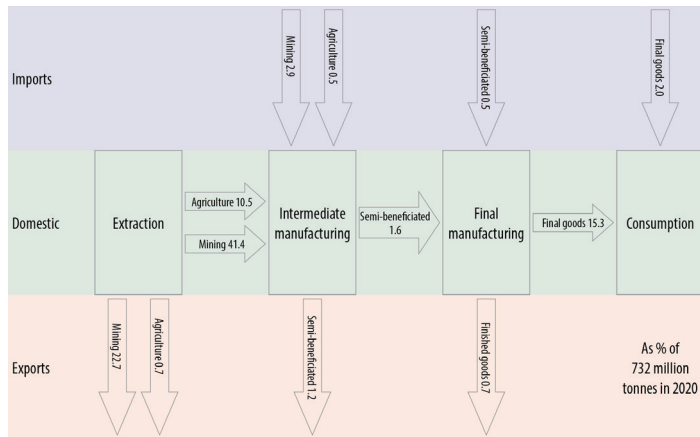
Freight flows take place from the point of extraction or manufacturing to the point of utilisation or consumption, resulting in key flow patterns. Five overarching freight-flow segments can be identified in South Africa, as follows:

1. **Agricultural flows** include both the flow of bulk agricultural goods from rural areas and the delivery of consumer goods to these areas. The collection of these commodities is dispersed, which places a heavy burden on rural infrastructure. Where freight is unitized at silos or packing centres, the further downward value chain is however exactly the same as for domestic mining.
2. **Export mining flows** refer to the bulk export of coal, iron ore and manganese. These flows are characterised by high density, long distances and limited (often single) origins connecting to ports via dedicated rail lines (e.g. for coal and iron ore). Other general mining exports include dominant flows (such as manganese on the Postmasburg – Algoa Bay route) or more common-use facilities and sharing of road and rail infrastructure with other value chains. With mining deposits typically in the deep hinterland, these movements often overburden rural facilities.
3. **Domestic mining flows** comprise the movement of bulk local minerals to domestic beneficiation centres, usually on rural routes rather than on key freight corridors. This freight is rail economical (uniform products, dense flows and large terminals), and would place a heavy burden on road infrastructure if transported by road.
4. **Flows of semi-beneficiated goods** and heavy break-bulk commodities occur mainly between intermediate and final processing facilities. These flows tend to share infrastructure with other value chains, but because factories are often closer to major cities, corridors may begin to develop. Freight movement by road and rail requires dedicated equipment and, for rail, dedicated sidings may be established. Rail movements are more complicated and require train building for wagonload traffic.
5. **Flows of finished goods** such as fast-moving consumer goods (FMCG) of higher value occur between manufacturing facilities, distribution centres and retailers. This includes the shipment of final goods to distribution centres (DCs), which are often unitized on pallets and could be containerized, therefore not needing a vast array of specialized equipment. Containers can use rail and large curtain-side interlink trucks on road. Processed foods form a large part of these value chains. These are similar to the aforementioned flows, but with highly concentrated origin-destination pairs (ODs) and mostly on corridors, meaning that it could be rail-friendly.

Figure 14 below shows how these freight flow segments interact with the basic economic value chain, and Figure 15 shows the same data when rail-only bulk export coal and iron ore are excluded. Figure 14 illustrates South Africa's dependence on local and export mining volumes, as they contribute almost two-thirds of total tonnage flows. When the bulk volumes of export coal and iron ore are excluded in Figure 15, the dominance of local mining freight flows becomes even more evident. Mining freight is typically extremely heavy and low value, and this means that it puts a lot of pressure on transport infrastructure with relatively low returns – which makes it particularly important to deliver these services efficiently.

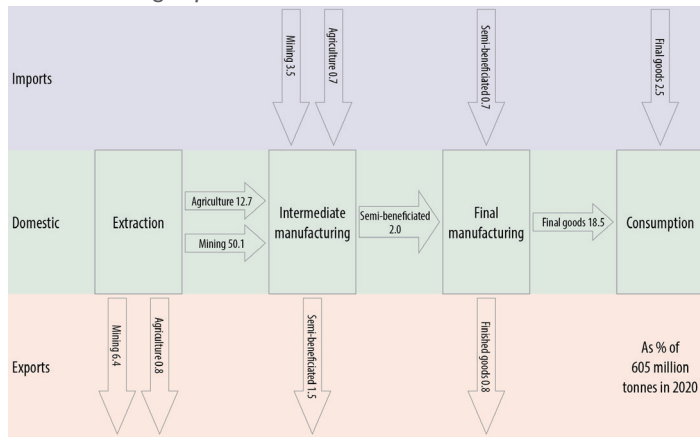


Figure 14: South African supply chains superimposed on the value chain



Source: Based on data from the GAIN FDM™

Figure 15: South African supply chains superimposed on the value chain, excluding export coal & iron ore



Source: Based on data from the GAIN FDM™

A summary of the freight volumes for each freight-flow segment (with sub-classifications of large commodities) is provided in Appendix 2, which shows freight volumes in tonnes and transport tasks (tonne-km) respectively. The salient characteristics of these overarching freight-flow segments are summarised in Table 4 below, and the current and required role of rail in each segment is described.

Table 4: Overview of supply chains and required role of rail

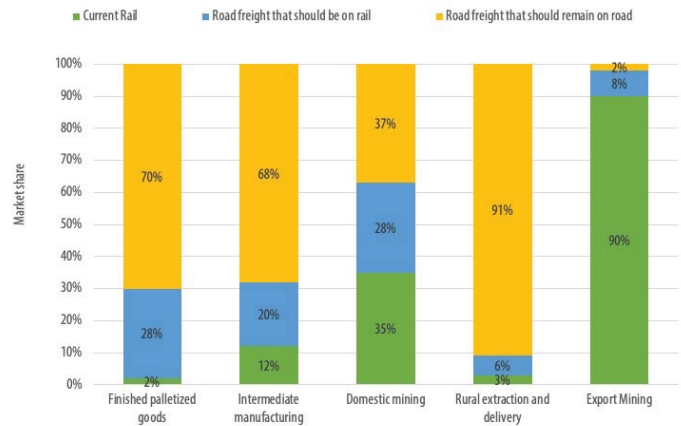
Supply chain	Current status	Required role of rail
<b>Bulk commodity exports</b>	<p>South Africa's mining commodity volumes are quite large, comprising over two-thirds of total freight. These include the export supply chains for coal, iron ore, manganese, chrome and magnetite. Mining imports are however quite small, comprising mainly hard coking coal for steel making and crude oil imports for the declining refinery sector. Around a third of mining output is exported, with a quarter of total mining volumes being exported on the coal line between Mpumalanga and Richards Bay and the iron ore line between the Northern Cape and Saldanha Bay. Other significant commodities include 45 million tonnes of manganese, chrome and magnetite, which are largely exported in the North-East of the country, whereas manganese – due to its value – is exported through most South African, and even Namibian, ports.</p> <p>Many of these supply chains are experiencing security of supply challenges due to a shortage of locomotives, deteriorating quality of infrastructure as well as high levels of cable theft and vandalism. Access to port and rail capacity for emerging miners has been a long-standing challenge. Transnet is very dominant in this market and earns good margins, particularly from rail.</p>	<p>For export mining freight-flows (which is rail's forte, with almost all freight classified as rail-friendly), only 90% of the country's export mining tonne-km were captured by rail in 2019. This equated to an 8% gap in freight that should have been on rail but was not (representing about 10.1bn missing tonne-km). Only a small proportion of these lost rail volumes can be recovered by road freight, so the gap generates a real loss of export earnings and GDP. For example, in 2022 the loss of 20 million tonnes of coal rail freight, was only replaced by 5 million tonnes on road.</p> <p>About two-thirds of domestic mining freight-flows are rail-friendly, yet only 35% was transported by rail in 2019. The gaps are mostly in the Mpumalanga coal fields and domestic manganese for the steel industry. For 2020, a 28% gap would equate to approximately 7 billion tonne-km.</p>
<b>Agriculture</b>	<p>Agricultural volumes contribute 10% to South Africa's tonnes transported. Very little raw food is imported, and the only sizeable import into South Africa is wheat. The country's staple, maize, is abundant and some is exported in bumper crop years. There is a growing fruit industry in South Africa that exports about half of its output every year. While much of the branch line network established to serve agriculture operates at impractically low densities, agricultural freight becomes significantly more rail friendly if it is consolidated, for example at silos.</p> <p>The agricultural supply chains in the country are relatively high performing, however with very low rail market share which is not ideal for those companies wishing to export to developed markets. Significant potential for regional and international growth can be harnessed with better domestic logistics as well as increased maritime connectivity. Much of the potential traffic would flow on the low density, non-core sections of the network.</p>	<p>Rail could capture almost 10% of the overall tonne-km of agriculture freight. In 2019 rail only served 3% of this market, and the gap of around 6% represents about 2 billion tonne-km in 2020.</p>



Supply chain	Current status	Required role of rail
Semi-beneficiated goods	<p>The contribution of South Africa's manufacturing sector to GDP has halved over the last three decades (with GDP currently comprised of 10% mining and agriculture, 12% manufacturing, and 78% services). A third of semi-beneficiated output is exported, and about one-eighth is imported.</p> <p>The majority of semi-beneficiated volumes are comprised of 16 million tonnes of chemicals, iron and steel and ferrochrome. Rail service delivery challenges in manufacturing have led to a shift of traffic to road, resulting in the disuse of industrial sidings. Since these sidings are costly to maintain, disuse has led to decay.</p>	<p>For semi-beneficiated freight-flows, which refer to large industrial flows between beneficiation centres, rail only had 12% of a potential 32% market share in 2019 (which translates to just over 2bn missing tonne-km in 2020).</p>
Finished goods	<p>Very few finished goods are exported from South Africa, and the country is therefore a net exporter of empty containers, in a proportion which is far above the world average. The only exception to this is on reefer containers, due to the well-developed domestic fruit industry. This unbalanced flow affects the efficiency and total cost of containerised traffic. The cost of international shipping is very high while on the inland transport side, rail market share is very low.</p> <p>Palletised freight complies with all the aspects of rail economics i.e., uniformity, long distances and density, and almost all valued added freight moves in palletised form. The segment is likely to witness significant growth on the back of greater industrialisation and intra-regional trade as a consequence of the greater regionalisation of production networks and thus shipping patterns. The establishment of hub ports and the promotion of coastal shipping will likely catalyse intra-regional trade as well as increase global maritime connectivity, which will lead to a reduction in international container shipping prices to and from South Africa. In respect of rail transport, Transnet has low market share and the segment is loss making. This the biggest growth area for rail going forward.</p> <p>The finished goods segment also includes automotive flows. While the automotive sector is one of the main industrial sectors within the economy, global competition for the location of production plants is fierce. The cost of logistics is a key factor in global OEM production location decisions and in this respect South Africa does have challenges. Rail market share for the movement of fully built units is very low and this drives up both the costs of logistics as well as the carbon footprint of automotive supply chains, which is becoming an increasingly important consideration in OEM production decisions. The growth potential for this sector is significant if a low carbon automotive supply chain can be realised.</p>	<p>Rail's biggest market share gap is related to finished goods freight-flows, where rail has only 2% of a potential 30% market share in this segment.</p>

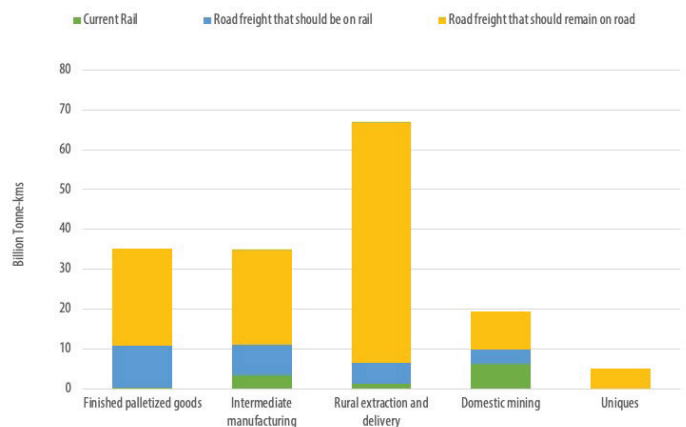
The greatest opportunity for rail services in tonne-km is therefore in the palletised long-distance freight segment, while the most significant gap relative to existing competencies is in domestic minerals. This is depicted in Figure 16 and Figure 17 below, which illustrate the current and potential market share for rail.

Figure 16: Rail's 2019 and potential tonne-km market share for each segmentation type



Source: Based on data from the GAIN FDM™

Figure 17: Rail's 2019 and potential tonne-km market share for each segmentation type, excluding export mining



Source: Based on data from the GAIN FDM™

### 3.6 LEGISLATION AND POLICY FRAMEWORK

South Africa's rail and ports environment is underpinned by a number of policy documents and legislation guiding the direction of the logistics system, overseen by the Department of Transport (DOT). The institutional structure of the logistics system was raised as an important issue in the National Freight Logistics Strategy (NFLS), which was adopted by Cabinet in 2005:

*"The freight system in South Africa is fraught with inefficiencies at system and firm levels. There are infrastructure shortfalls and mismatches; the institutional structure of the freight sector is inappropriate, and there is a lack of integrated planning. Information gaps and asymmetries abound; the skills base is deficient, and the regulatory frameworks are incapable of resolving problems in the industry."*

In the rail sector, the White Paper on National Rail Policy, which was adopted by Cabinet in March 2022, recognises that the sector contains "institutional dysfunctions regarding market behaviour, roles and responsibilities", which call for additional interventions aimed at restructuring the market. Thus, the National Rail Policy sets



out policy proposals that aim to position rail as the backbone of the national logistics system, to enhance the competitiveness of South African exports. To achieve this broad objective, several enabling interventions are recognised:

- **Economic regulation.** It is anticipated that the rail sector will become more complex as the array of actors and stakeholders expands. To protect the interests of all players, economic regulation will be required to ensure fairness, sustainability and facilitate the introduction of competition in rail. The Interim Rail Economic Regulatory Capacity (IRERC) will be utilised as an interim arrangement preparing for economic regulation until the Transport Economic Regulator is established through the Economic Regulation of Transport Bill.
- **Third party access and private sector participation.** On third party access, and private sector participation the policy pronounces that. *"...every open line whether classified as core, non-core, branch line, or shared freight and commuter line, shall be subject to third party access managed by an Infrastructure Manager (IM) appointed by the Infrastructure Owner of that open line"*. In addition, the IM, supervised by the IRERC, will be required to publish a network statement and procedures for open access to the network.
- **Market restructuring.** In terms of market restructuring, Transnet's freight rail undertakings are to be separated into infrastructure and train operations, with the infrastructure function to be further separated into Infrastructure Owners and Infrastructure Managers. This is critical not only for the accurate pricing of access to the network, but to also ensure independence of the entities within Transnet and avoid conflicts of interest.
- **Security management.** The growing trend of security-related incidents necessitates interventions to manage this risk. The policy directs the DOT to undertake "coordination and oversight to ensure that appropriate plans are developed and implemented in a timely manner". Specific interventions include the development of a rail sector security strategy and establishment of a security coordination forum.

Further work is underway by the DOT to support the implementation of the National Rail Policy, including the development of a Private Sector Participation (PSP) Framework as well as a National Rail Master Plan (NRMP). The PSP Framework aims to identify suitable areas for private sector participation in rail and outlines structural and contractual requirements to enable such participation. To drive the country's Rail Revitalisation Programme, the NRMP will enable the DOT to play a centralized role in providing long-term strategic rail network planning and oversight. This will include setting out statements on the rail market's business requirements, infrastructure, rolling stock, and policy-aligned capital investments. The critical issue of rail funding will also be addressed, with DOT to support the identification and sourcing of funding. The NRMP will be published by 2024 and will be a living plan, to be updated at least every 5 years.

In the ports sector, the National Commercial Ports Policy, which has been in place since 2002, outlines a vision for a globally competitive, safe, and secure commercial ports system that operates at internationally accepted levels of operational efficiency while supporting South Africa's economic goals. The policy emphasizes the importance of economically and environmentally sustainable port operations that serve the economy and meet the needs of port users. The vision includes the integration of ports into the transportation network and global supply chains and the development of self-sustainable ports with high levels of service and efficiency. It emphasises the need for adequate infrastructure, equipment, information technology systems, and skilled management teams. The National Commercial Ports Policy, which informed the development of the National Ports Act (2005), sets out the policy imperative for vertical separation of infrastructure ownership and operations. The guiding principles are listed as follows:

- The current Transnet National Ports Authority (TNPA) will be established as a subsidiary of Transnet with its own board in line with its restructuring programme, and may at a later date be incorporated as a separate state-owned entity;
- The National Ports Authority will be the landlord of the South African ports and will own all the land and the port infrastructures within the port estates;
- Greater private sector involvement in operations will be sought through leases and concessions;
- The allocation of leases or concessions will be open to competitive bidding; and the bidding process will be transparent and based on a set of clearly stated objectives/targets, criteria and measurable deliverables.

The National Ports Act created the institution of the National Ports Authority of South Africa to manage and administrate the National Commercial Ports System, which includes existing and future ports and offshore cargo handling facilities. The Transnet National Ports Authority (TNPA) is currently a division of Transnet, although a process is underway to meet the requirements of the Act through its establishment as a subsidiary. A Ports Regulator was also created to regulate the National Ports Authority as a state-owned monopoly. While the Act established state ownership of the commercial ports in South Africa, the intention of policy was that port operations should include both the state-owned Transnet Port Terminals (TPT) as well as private sector participants, in competition with one another. The vertical separation between the roles of the infrastructure owner ("landlord"), TNPA, and the terminal operator, TPT, contemplated in the Act is necessary to create a level playing field for the private sector. The creation of a separate subsidiary is furthermore intended to allow the National Ports Authority to make its own investment decisions to the benefit of ports, and will ensure that it treats all terminal operators (public and private) fairly and equally, without the perceived risk of preferential treatment for TPT.

## As articulated in the National Commercial Ports Policy:

*Having a national ports authority function as part of a transport company has resulted historically in the formation of several undesirable conditions that have detracted from the primary purpose of ports, skewing prices, misallocating port revenues and creating suspicion in the maritime and transport industries about the impartiality of the port entity within a transport company.*

These two Cabinet-approved policy documents – the National Rail Policy and the National Commercial Ports Policy – together with their subsequent legislation in the National Ports Act and the Economic Regulation of Transport Bill form the basis for this roadmap. Rather than replacing or reinventing these existing policies, the purpose of the roadmap is to translate these policies and legislative framework into practical implementation plan, by outlining in greater detail the actions required to give effect to national policy and the manner and sequence in which those actions should be taken.

## 4 THE CAUSES OF THE CRISIS

The causes of the crisis in rail and ports logistics are complex and interrelated. In order to put in place structural interventions that will solve these problems, it is important to have a clear diagnosis of what has in fact gone wrong. In particular, it is important to tease out the incentive structure faced by the various participants in the sector. Going forward, systems need to be redesigned to, as much as possible, ensure that the incentives faced by stakeholders are aligned with social objectives, and that governance systems are in place to deal with such misalignment as may still occur.

The causes of the current crisis can be grouped into three main areas, namely:

1. The vague and often unfunded social mandates carried by State-Owned Enterprises in the logistics sector
2. The problems associated with vertical integration of an essential facility
3. The various governance issues that are present in the sector

### 4.1 VAGUE AND UNFUNDED MANDATES

The South African economy is characterised by severe inequality which urgently needs to be addressed by the state. Part of the toolkit of the state to achieve these developmental goals has been the state owned entities, which are powerful agents of delivery. However, care needs to be taken as to how developmental mandates are included in the objectives of corporatized SOEs, to ensure that unintended consequences do not arise. In rail and ports, developmental mandates have received insufficient oversight, and the nature of and funding for such mandates has typically not been clear. The proliferation of vague, unfunded developmental mandates in the sector has considerably complicated the governance of these entities, and as a result the task of improving sector outcomes as well.

Prior to the corporatisation of what is now Transnet in 1990, rail and ports assets and operations were held within government. Corporatisation was intended to create an arms-length relationship with the state, to reduce excessive political interference in the day-to-day operations of the firm, and to encourage efficiency by making the internal governance systems of the firm fall in line with normal commercial practices. By incentivising managers to pursue profitability, and then providing them with considerable discretion as to how to achieve that objective, the intention was to create a flexible entity able to react to changing market circumstances and quickly adopt technological improvements.

In practice, however, it is quite difficult to ensure that corporatised state owned firms operate under exactly the same constraints and incentives as privately owned firms. The state is often unlikely to allow the firm to go under, creating an implicit guarantee, and the firm may also benefit commercially from its connections to the state. Additional complexity derived from Transnet's role as part of the developmental state, with implicit developmental mandates. While the entity was not given explicit state subsidies to finance these mandates, it was given monopoly control over ports infrastructure, allowing it to make substantial profits in ports that could then be used to fund activities that were not commercially viable. None of this was explicitly required by policy, and no controls were initially put in place regarding the amount of profit Transnet would be able to make from ports infrastructure, or the efficiency with which these funds would be used to meet developmental mandates.

For much of its history, therefore, Transnet has been governed under a vaguely defined, complex and at times unfunded set of operational mandates. This has had a number of undesirable effects on operational outcomes. To illustrate, we examine outcomes in the ports, general freight, and passenger rail sectors.

The iron ore and coal export lines have been highly profitable and self-sustaining since their construction, but volumes and profitability in general freight have always been much lower. As will be outlined in section 8, while much of the general freight network can be managed in a commercially sustainable way, many of the branch lines are simply too low volume to ever break even. For many years, it was widely assumed that Transnet would cover the revenue shortfall on these parts of the rail network through its highly profitable ports monopoly. No constraints were placed on ports pricing, and there was no clarity and no oversight over the extent to which cross-subsidisation was in fact occurring.

By 2005, it had become clear that the resulting pricing outcomes in the South African ports system were problematic, and the National Ports Act was implemented in order to introduce price regulation in this sector. Subsequent work by the Ports Regulator illustrated that South African port infrastructure access charges were substantially higher than the international norm, as described in the previous section, and needed to be adjusted in order to protect the price competitiveness of South African ports. Progress has since been made in restraining and rebalancing these tariffs, but further work



is needed to make South African ports tariffs truly internationally competitive.

It is also possible that one of the unintended consequences of port tariff regulation has been that funds designated for TNPA capex was at times diverted to the rest of the group instead of being used for its intended purpose. In effect ports capex expenditures may thus have replaced excessive profits as a source of rail funding. This was in some cases opportunistic, as TNPA could not implement what it promised and other divisions could implement beyond what they were allocated, but has become a core feature of Transnet's funding model in the absence of wider regulation.

While a cross-subsidy from ports to rail has always been assumed rather than verified, there has in the past been more explicit endorsement of a cross subsidy from the ore lines to the general freight business. In the late 1990s, serious policy consideration was given to potentially separating out and concessioning the ore lines to private operators, which would then have ended the cross-subsidisation of GFB by the ore lines. In order for a standalone GFB network to be commercially sustainable, however, many low density lines would need to be closed, and the social benefits of keeping these lines open (particularly in terms of the impact on road infrastructure) was acknowledged to be substantial. By the early 2000s, the concessioning of the ore lines had been taken off the table, in favour of allowing ongoing cross-subsidisation of a larger, lower density GFB network.

In practice, however, little seems to have been done to formalise this cross-subsidisation arrangement, leaving Transnet with an ambiguous and apparently conflicting dual mandate: on the one hand to maximise profit, while on the other to sustain a network of optimal size to support developmental objectives. The approach taken was to continue to emphasize the need for GFB lines to achieve commercial sustainability. In effect, instead of non-commercial lines being cross-subsidised by ore line revenues in order to sustain the system as a whole, Transnet attempted to either make them commercially sustainable or close them, while retaining ore line profits. Depending on the definition used, to date between 2 500 and 4 000 km of low density track has in fact been closed by Transnet in practice.

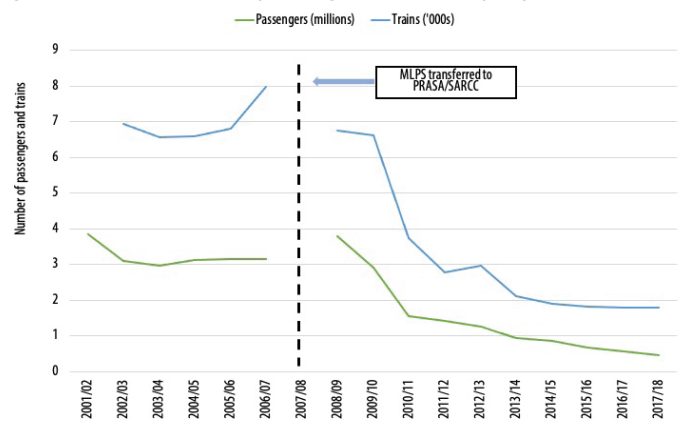
It may have been the case that profits from the ore lines (and ports) were insufficient to support these lines, and that explicit government subsidisation would have been required to keep them open. However, the vague nature of cross-subsidisation arrangements makes it impossible to assess how such funds were allocated, and whether they were sufficient. What is clear is that Transnet was implicitly pushed to utilise a fully distributed cost model, where lines that failed to cover fully distributed costs were regarded as problematic, rather than as legitimate recipients of internal cross-subsidies.

This strategic stance has also undermined attempts to revitalise branch lines through private sector participation. Sector

stakeholders suggest that Transnet typically sets access fees based on a full cost recovery framework for the line segment. Where lines are low density, therefore, the implication is that the resulting access fee is very high, which makes the branch line commercially unviable given competition from road. Long distance passenger rail operations have also been affected by vague and unfunded mandates. Passenger rail in South Africa is subsidised by the state, and the higher the access fees charged to passenger trains, the higher the level of subsidy needed to sustain passenger services. Haulage services were provided by Transnet to the Shosholozza Meyl intercity main line passenger service (MLPS) until 2008, when it was transferred into PRASA. While Shosholozza Meyl was being operated by Transnet, haulage fees were fairly modest, and the inter-group agreement allowed Shosholozza Meyl to charge Transnet penalty fees for performance issues. During the process of divesting itself of Shosholozza Meyl, Transnet began to revise its access fee approach, resulting in substantial increases in the cost of access to the Transnet network for the MLPS. In effect, Transnet divested itself of an underfunded mandate in passenger rail, and began levying what it regarded as a more closely market related fee, while prioritising freight trains as opposed to passenger trains.

As shown in the figure below, MLPS volumes declined precipitously in the years after it was transferred to PRASA. A number of factors led to this outcome, but it is clear that the unravelling of the unfunded mandate, together with the decrease in the ability of Shosholozza Meyl to penalise poor Transnet service levels, were material contributors to this outcome.

Figure 18: Trends in MLPS passengers and trains per year



Source: PRASA (data unavailable for 2007/08)

As should be clear from this discussion, vague and unfunded developmental mandates are extremely difficult for the state to monitor and implement, are prone to producing unacceptable unanticipated consequences, and when coupled with a profit maximising corporatized SOE, will be under constant pressure. A corporatized SOE will face incentives to retain profits rather than transferring them to mandated functions, to underfund the mandated function, or to reduce the volume of activity involved by making it more difficult to provide the service or function efficiently. In effect, the current approach has created a tension between optimising for the SOE's corporate interests, rather than

those of the national transport system as a whole. This has both placed the management of Transnet in a difficult position, subject to competing demands and incentives, and led to adverse outcomes for the system.

It must however also be acknowledged that it is unreasonable to expect an SOE to deliver on developmental objectives, which are not commercially feasible, without providing adequate funding. As the high tariffs in ports are managed downward by the Ports Regulator, this implicit source of funding is likely shrinking, and it becomes more urgent to introduce a clearer framework for funding the rail network as a whole on a regulated basis and identifying subsidisation requirements where the full cost of sustaining the network cannot be recouped through access charges – not least because it is also critical to ensure that such subsidies are efficiently disbursed. These issues are addressed in section 9 below.

## 4.2 ESSENTIAL FACILITIES

One of the distinguishing characteristics of rail and ports systems is the presence of essential facilities. An essential facility, simply put, is something which cannot practically be duplicated, and without access to which it is not possible to participate in a given economic activity. In ports, the essential facility is the physical infrastructure of the port, which is owned by Transnet National Ports Authority. In rail, the essential facility is the rail network itself, which is part of Transnet Freight Rail.

These facilities cannot practically be duplicated for a number of reasons. In the case of ports, the geographical features which allow for the development of a port occur fairly rarely, and thus there are a limited number of places in each country which are suitable for port development. In rail, geographical features will also tend to limit where rail can be built, although to a lesser degree. Building a port or a rail network is an expensive and time-intensive exercise, and this in itself becomes a barrier to duplication. Once the infrastructure is built, it is then typically most economically efficient to try and maximise the volumes transported on that system, rather than to build multiple competing systems. In effect, the economies of scale are such that the market is best served by only one facility, creating a natural monopoly.

The essential facilities in ports and rail are large, expensive pieces of infrastructure. They are also important components of our national logistics systems, and the bulk of our exports and imports must transit the ports system in particular (rail is of similar importance, but to a smaller number of sectors). From the point of view of the country as a whole, these are key national assets, which are central to wider economic performance. It is thus in the national interest that these assets be owned by the state and managed efficiently, and in a way that prioritises the volume of freight carried.

In both ports and rail, the owner of the essential facility also undertakes operations using access to those essential facilities. In ports, Transnet both owns the ports infrastructure, and manages

ports terminals on that infrastructure, while in rail, Transnet both owns the infrastructure and runs trains on it. However, there are costs to vertical integration. While the essential facility is by necessity a monopoly, the market for the services offered using access to that facility can be competitive, as long as all the participants in the market are able to access the facility on an equal basis. But if the owner of the facility also offers services, then it is difficult for external service providers to be assured of fair and equal access to the facility, on exactly the same basis as the vertically integrated firm. And if there is no level playing field as regards access to the essential facility, then there will be no effective competition in the downstream market either. In effect, the upstream monopoly generated by the essential facility is extended into the downstream market.

As highlighted in NDP 2030, one of the central structural challenges faced by the South African economy is low levels of competition in domestic markets, as follows:

*Uncompetitive goods and services markets are a result of the pattern of economic growth under apartheid and sanctions-induced isolation. This has led to relatively high profit margins but little new investment or innovation. Profits are shared and then consumed by both existing owners of capital and existing workers. Uncompetitive markets for goods and services and low levels of investment mean that new firms are not entering the market and employment is low.*

Competition is a powerful tool for increasing the efficiency of markets, and incentivising firms to innovate to improve service quality. The current model of vertical integration in rail and ports has to a large extent prevented competitive forces from reaching these markets, even as most countries worldwide have moved to stimulate and enable downstream competition. It is highly likely that the current crisis in efficiency and quality of services in ports and rail has in effect been fostered by the protected market position of the incumbent, driven by its ability to vertical integrate into the markets downstream of the essential facilities. At the very least, the absence of competition in operations has created a single point of failure in the system.

It should also be acknowledged that, as a corporatized entity, Transnet's complex mandate includes a requirement to maximise profits. As discussed above, from the point of view of society as a whole, it is crucial that essential facilities in transport be managed in a way which maximises efficiency and throughput. However, a profit-maximising firm which owns an essential facility has an incentive to maximise profits by raising the price of access to the essential facility. Particularly in ports, where freight owners typically have no practical alternative to move their product, and demand for port access is thus extremely inelastic, a profit maximising firm would be expected to price monopolistically. At the profit maximising monopoly price, two socially undesirable outcomes will typically occur:

- The volume of freight moved decreases, as marginal customers drop out of the market; and





- The firm is profitable no matter how inefficiently it is run, and staff are able to enjoy the “quiet life rents” of monopoly.

In a vertically integrated firm with no downstream competitors, the essential facility will in addition earn no revenue directly – all its clients are internal, and thus external revenue is earned only by downstream activities. Over time, the essential facility may thus come to be viewed as a cost centre and a burden to the firm. When profits are under pressure, it may be easiest to cut asset maintenance schedules on these long lived assets, as the impact of doing so may only be felt years later, rather than to reduce operational spending, where effects will be felt immediately. In effect the cart begins to lead the horse – the essential facility is starved of resources and neglected, while downstream operations become the focus of the firm. This has clearly been observed in South Africa’s freight rail network.

While it is possible to facilitate the introduction of competition into downstream markets, the process of doing so is typically technically complex and resource intensive. Part of the complexity is that, unless substantial interventions are undertaken, the vertically integrated firm will usually continue to protect its downstream operations, by tilting the playing field in its own favour: Control of the essential facility gives the incumbent firm wide powers to do this, as access to the essential facility is such a critical part of the ability of competitors to participate in the market. German rail in the 1990s provides a clear example of the problems that can arise in rail freight markets when introducing competition, as a ten-year review of the reform process noted:

*“Germany has opened its rail network to third parties paying track access charges so DB [Deutsche Bahn] faces competition from third-party services on its network... However, DB has pursued an aggressive strategy against competing operators because a lack of regulations enables DB Netz [track network division] to levy access charges that act against non-DB companies. Since DB Netz is closely linked with the DB operators, it gives information advantages and even privileges with regard to paths, time slots and access charges when DB Regio [regional passenger transport] bids for tendered regional train services. Moreover, when DB sells old locomotives and railcars, a special clause in the bill of sale prevents the stock being used in competition against DB; breakers are even forbidden to sell scrapped stock to DB’s competitors.”*

In effect, a vertically integrated firm cannot be expected to effectively foster competition in its downstream markets on its own, without regulatory oversight and/or structural interventions. As it is currently structured, it is unrealistic to expect Transnet to facilitate competition in ports terminals or rail operations. In addition to enabling competition, vertical separation would enable the revenues of Transnet’s infrastructure businesses to be regulated so as to ensure adequate funding of infrastructure without the risk of subsidising operations. These issues are addressed in section 7 below.

### 4.3 GOVERNANCE

Governance problems have played a central role in causing the current crisis in rail. The most visible aspects of the governance problems at Transnet are detailed in the Judicial Commission of Inquiry into State Capture Report, Part V, Volumes 1 and 2. It is noticeable that much of the corruption detailed in these volumes occurred during the procurement of high value assets, and in particular during the procurement of rolling stock. The rolling stock procurement issues in particular continue to materially affect Transnet freight capacity. Looking ahead, it is common cause that significant infrastructure and rolling stock investment will be needed in both rail and ports, and thus there is an urgent need to ensure that the procurement failings of past investment programs are not repeated.

As pointed out by Chief Justice Zondo, a central part of the governance problems at state owned entities such as Transnet has been attributable to the manner in which the board and senior management of these institutions were appointed, as follows:

*...to a very large extent, the SOEs which were captured by the Guptas were captured because some members of these Boards of those SOEs, particularly their Chairpersons, as well as the Group Chief Executive Officers and Chief Financial Officers were people who had no integrity and knowledge and experience required for their position or were people who had the right knowledge, skills and experience but simply lacked the integrity.*

Further, Chief Justice Zondo goes on to note that all of the most problematic appointments were heavily politically influenced, which “suggests that the politicians... have not shown themselves to be able to pick people of integrity and people with the knowledge, expertise and experience necessary.” The conclusion of the commission is that, while the political executive should have a role to play in the appointment of these individuals, that role must be exercised in a fair and transparent manner, and in a structure which includes strong safeguards to ensure that the quality of leaders has been thoroughly vetted.

Significant progress has been made since 2018 in rolling back the legacy of state capture, ensuring accountability for those involved, and putting in place safeguards to prevent similar abuses from occurring again. This includes the appointment of new leadership at a board and management level within Transnet which has overseen a process of renewal within the organisation, as well as various criminal prosecutions underway against the alleged perpetrators of corruption. The proposed Shareholder Bill and other recommendations of the Presidential State-Owned Enterprises Council (PSEC) aim to strengthen the process for board appointments, ensure proper autonomy of management from political interference, and enable effective oversight by the shareholder. In addition, a review of the procurement system for SOEs and the proposed changes to procurement legislation through the Procurement Bill aim to ensure accountability and integrity in

procurement processes while providing sufficient autonomy to accounting authorities, moving away from a compliance-driven to an outcomes-driven approach. While these issues are not addressed directly in the roadmap, given its focus on structural reform of the logistics system, they are essential to the performance of the system as a whole.

Finally, any governance system will benefit from a clear statement of the goals and objectives of an institution, which then provides a benchmark against which performance can be evaluated. As has already been discussed, Transnet is subject to a number of unfunded mandates which are often not explicitly set out in policy. This makes the task of monitoring the performance and efficiency of the institution much more complex. Clear mandates, increased transparency and more effective regulation can only help to prevent abuses of governance and surface them where they occur.

## 5 ADDRESSING THE IMMEDIATE CRISIS

Section 3 above described the current performance of the national logistics system, and established the “burning platform” that must be urgently addressed in order to prevent further damage to the economy while the reform process unfolds. Transnet is experiencing both an operational and financial crisis, with the two crises closely interlinked. As volumes on the network decline, so does revenue, placing Transnet’s financial sustainability at risk. Declining revenue combined with high debt leaves Transnet less able to make the investments necessary to restore the performance of the system. Effectively halting and reversing this decline therefore requires both improving operational performance and mobilising capital and skills in the short term.

In this respect, Transnet is required to work collaboratively and with urgency with critical stakeholders including Customers, Suppliers, Lenders, Labour and Government to align behind and implement Corridor Recovery Plans for the priority corridors.

The National Logistics Crisis Committee (NLCC) offers a unique mechanism to enable this collaboration by clarifying targets and action plans, undertaking data driven monitoring of plan implementation, and unblocking obstacles to such implementation. The role of the NLCC is to assist Transnet in stabilising and improving the performance of the priority corridors through the Corridor Recovery Teams by:

- Aligning stakeholders behind common action plans for the priority corridors;
- Mobilising resources and technical expertise from the private sector as necessary;
- Providing the enabling conditions to support Transnet in addressing current challenges, where external dependencies exist;
- Ensuring adaptation and responsiveness to circumstances as they change

- Ensuring accountability for delivery against identified interventions and resolving bottlenecks in implementation.

The NLCC Workstream 1 will oversee the Corridor Recovery Teams (CRTs) for priority corridors, which bring together Transnet Management, Business, Government and Labour to implement the corridor recovery plans. These short-term interventions should be clearly distinguished from the longer-term process of structural reform that is needed to put the sector on a more sustainable growth path.

### 5.1 IMPROVING FREIGHT RAIL OPERATIONS

Transnet’s Recovery Plan sets out a number of operational interventions, particularly with respect to the priority corridors, which will enable growth in rail volumes to between 154mT – 170mT in 23/24 and to 193mT in 24/25. The target, which is a reduction on Transnet’s Corporate Plan target of 183mT for 23/24, is more in line with existing operational capacity. However key weaknesses in infrastructure and equipment condition, and productivity must be overcome.

As a complement to the existing Corridor Recovery Plans, independent technical assessments will be undertaken for each priority corridor to assess the current state of infrastructure and recommend interventions for consideration by the Corridor Recovery Teams.

Figure 19: Transnet Freight Rail actual and planned volumes



Source: Transnet Corporate Plan, 2022/23

Since 2010/11 Transnet Freight Rail has systematically completed fewer million train-km per annum while increasing the average tonnes per train. General freight trains are typically smaller and lighter than bulk trains. This trend thus reflects Transnet’s reduced focus on general freight, where the potential to shift volumes from road to rail and lower the cost of doing business is greatest.

Transnet’s current plan is based on a nine-segment market strategy with short, medium and long-term initiatives across its rail and port network. This is in line with its internal management structure, which is organised into these nine segments by corridor and freight type. Successful execution of this strategy requires investment to ensure a

well-maintained, available, reliable and safe railway system operated by motivated and skilled staff executing excellent processes using modern technology.

To support the execution of this strategy, a work stream has been established under the NLCC focused on improving the operational performance of freight rail and ports. This work stream will oversee five Corridor Recovery Teams (CRTs) organised according to strategy supply chains, including the relevant Transnet managing executives as well as representatives of rail and port users, government departments and independent experts. Each CRT will develop a detailed delivery plan to improve volumes in the short and medium term, addressing three focus areas which are outlined below. An independent technical assessment will be undertaken for each corridor to assess the current state of infrastructure and identify interventions required, which recommendations will be included in the delivery plans for the CRTs.

### 5.1.1 Capital investment program

Many of the efficiency problems in the freight rail network are due to a backlog in infrastructure investment which is compounded by theft and vandalism. Transnet has acknowledged the existence of a significant infrastructure investment backlog in rail, but to date has struggled to effectively address it. Some estimates suggest that the size of the backlog is at least R27 billion. Many of the issues with operational readiness detailed in Table 5 below are associated with this backlog.

**Table 5: High-level assessment of operational readiness by major corridor as at August 2023**

Corridors	Iron Ore	Cape	Container (KZN-GP)	Central (greater GP)	North (Coal Export)	North East (Ch & Fe)
Planning & Operations		20 Sections	20 sections		7 sections	
Emergency train working @ 60% capacity						
Manual Train Authorisations (Apr 2023) FY22/23 Monthly AVG = 231 609	1 641	49 922	42 377	43 558	53 621	43 590
Temporary Speed Restrictions	59km	373km	37km	87km	90km	53km
177 Stations:		51 stations:	41 stations:	21 stations:	31 stations:	
1. Shut signals: 1 041 of 11 807	1. Nil	1. 321 of 3 496	1. 105 of 3 330	1. 294 of 1 689	1. 104 of 3 223	1. 225 of 769
2. Clamped points: 672 of 6 891	2. Nil	2. 156 of 321	2. 103 of 121	2. 181 of 815	2. 182 of 2 069	2. 80 of 749
Permanent Way	2 863 long-standing faults for a total of 1 985 089 fault-days since reporting (2018/19 – 2023/24)					
Electrical	615 faults for 312 449 fault-days					
Track	419 faults for 173 755 fault-days					
Signals	647 faults for 244 225 fault-days					
Telecommunications	1 182 faults for 1 254 660 fault-days					
Locomotives	Out of Service CRRC electric locomotives: 43 Class 20E; 21 Class 21E; 90 Class 22E OOS Causes: 8 wreck; 8 collision; 10 derailment; 160 awaiting spares; 148 vandalised					
OOS at Corridor Depots		41			118	
Security	1 000 km overhead cable stolen; 1 041 signals permanently switched off; 672 points locked; 148 locomotives vandalised					

Corridors	Iron Ore	Cape	Container (KZN-GP)	Central (greater GP)	North (Coal Export)	North East (Ch & Fe)
(Port) Terminals	- Tippler 3	- Cape Town FPT - Ngqura Mn via MTP	- DCT Evacuation by Rail			- Richards Bay: - DBT Conveyor burnt

Source: Authors' analysis

The dilapidated state of infrastructure on the rail network is the primary cause of underperformance. At least 1 000 km of electrified track is unusable due to defective substations and cable theft affecting Overhead Traction Equipment (OHTe). 73% of OHTe exceeds its 25-year lifecycle, while 347 out of 440 electrical traction substations have ageing or obsolete equipment. 70% of signalling systems are obsolete, and as many as 1 000 signals are shut off. It will not be possible to operate an efficient freight rail system with core infrastructure in a state of advanced age and neglect.

In the context of limited capital, Transnet's capital allocation methods must become far more targeted, granular and transparent, with capital gaps more clearly identified at the corridor level, thus allowing the CRTs to explore mechanisms to use private investment or concessional funding from development finance institutions (DFIs) to close infrastructure funding gaps.

These efforts will be complemented by the NLCC Financing Workstream (workstream 6) which will more systemically explore mechanisms to crowd in investment, monitor the implementation of this capital investment programme and provide technical expertise as required.

### 5.1.2 Operations and rolling stock issues

One of the direct contributing factors to a 'precision' rail to port logistical system is a consistent, constant flow of rolling stock between source and end destination (including ships). Within Transnet, there are some 327 active locomotives in the system standing for more than 24 hours daily, waiting for instructions to move. While a planning system is partially used to set the train plan, deviation management is currently being done manually on spreadsheets.

The result is misalignment in timing between trains, ports and ships, locomotive utilization figures, wagon turnaround times, train cycle times and ship berth cycle times that has been in constant decline over the past five years. As an immediate priority, Transnet should introduce an integrated, dynamic, automated technology planning and scheduling solution and move away from manual planning systems.

In addition to operational challenges, rolling stock availability is a significant source of operational issues. Between 2013 and 2015, Transnet procured 590 dual voltage locomotives from China South Locomotive and Rolling Stock Corporation, now the China Railway Rolling Stock Corporation (CRRC). These 3kVDC and 25kVAC

dual voltage locomotives can roam freely on the electrified general freight network and on the heavy-haul coal export system, where insufficient rolling stock is available currently.

95 locomotives were supplied in Class 20E, 100 in Class 21E and 359 in Class 22E. Presently, however, 161 or 27% of the CRRC locomotives are out of service (a detailed breakdown by cause is provided in Appendix 7). Of these, 99 or 61% are currently awaiting spares from CRRC before they can be repaired. CRRC was one of the companies implicated in the “1064” procurement process, and as a result of the disputes associated with that process, is at present not supplying Transnet with spares.

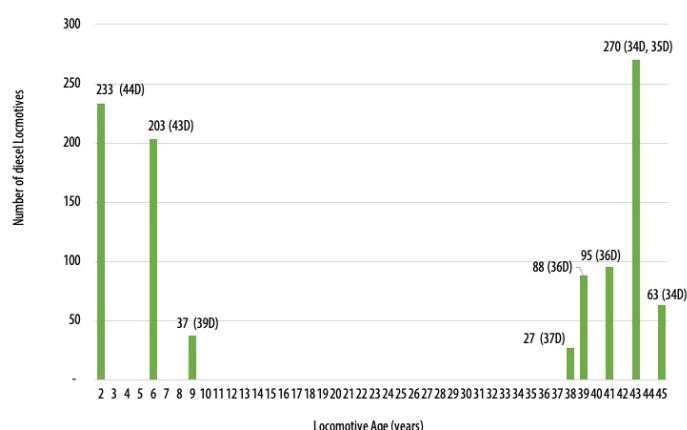
These CRRC locomotives are both relatively new, and make up at least 40% of the current electric traction fleet in all conditions. Given the high levels of theft and vandalism of the overhead traction equipment, and the 161 out-of-service dual voltage CRRC locomotives, Transnet Freight Rail is increasingly dependent on diesel-electric locomotives for traction. As shown in Figure 20 below, a significant proportion of this diesel fleet is more than 40 years old, which affects its reliability.

The two newest models of diesel locomotives, namely the 44D and 43D models, were procured from General Electric Transportation (which has subsequently been acquired by Wabtec). These locomotives currently comprise 77% of the available diesel traction power, and are used extensively in the general freight network, and to a lesser extent on the heavy haul lines. Ensuring a regular supply of spares and services for this fleet is essential to improving operational performance. A key priority of the Corridor Recovery Teams will be to secure the delivery of remaining locomotives and to return long-standing locomotives to service.

It should be noted that TFR moved 220 million tons of freight in 2017 with roughly the same number of locomotives as are available currently. In 2022, this number declined to 149 million. There has been a clear decline in locomotive utilization over the past five years, while productivity as measured by cycle time and wagon turnaround times has also declined. While the declining infrastructure condition plays a part, this also points to challenges with productivity, utilization, and scheduling in addition to availability of locomotives, and suggests that simply increasing the number of locomotives will not solve the problem on its own.

The immediate focus of the corridor recovery plans is on getting current locomotives for which maintenance is required back into the system, and increasing locomotive utilisation levels.

Figure 20: Summary age analysis of the Transnet diesel locomotive fleet

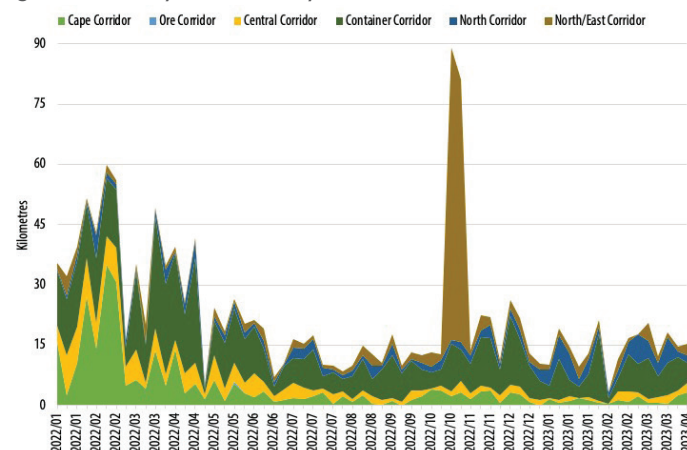


Source: OEM data

### 5.1.3 Security and safety on the rail network

Figure 21 below illustrates the level of cable theft by rail corridor since the beginning of 2022. This illustrates that the Container Corridor has borne the brunt of criminal activity, although the North-East Corridor was targeted during the October 2022 strike. These incidents both disrupt day-to-day operating activity and require Transnet to divert resources from maintenance to the replacement of stolen assets.

Figure 21: Weekly cable theft by rail corridor, in kilometres



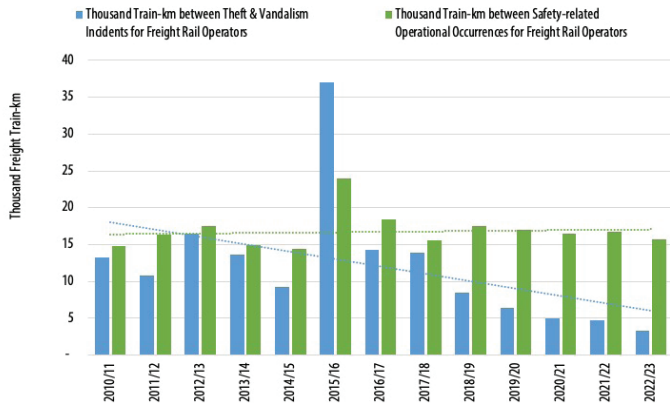
Source: <https://www.transnet.net/MediaPages/Cable-Theft-Stats.aspx>

The impact of theft and vandalism on the rail network can be illustrated by contrasting security-related incidents, as reported to the Rail Safety Regulator (RSR), with safety-related operational occurrences. The figure below shows that the incidence of safety-related occurrences per train-km is holding steady over time, while the frequency of security-related incidents has been steadily increasing. By 2022/23 security-related theft and vandalism incidents were occurring every 3 train-km.





Figure 22: Train-km executed per safety-related operational occurrences and security-related theft and vandalism incidents



Source: Railway Safety Regulator

Cable theft and vandalism are major obstacles to the efficient operation of freight rail. With the exception of the sparsely-populated Sishen–Saldanha iron ore export route, all other populated routes, including the coal export line between the Mpumalanga and KwaZulu Natal provinces, are severely impacted by organised crime and community encroachment on track.

While Transnet has recently taken steps to address these challenges, such as through the implementation of outcomes-based contracts with private security providers and the granting of peace officer status to Transnet security personnel, effectively protecting railway infrastructure requires a coordinated approach across government. A dedicated Priority Committee has therefore been established under the National Joint Operational and Intelligence Structure (NATJOINTS) focusing on securing Transnet’s infrastructure, including the SAPS, the SANDF and the SSA. This should be complemented by additional demand side measures to better manage the export of scrap steel from South Africa.

### 5.2 IMPROVING PORT OPERATIONS

As in the rail sector, the immediate focus in the ports system will be on improving operational performance. Appendix 8 provides a detailed assessment of proposed interventions in ports, based on recommendations from a recent study commissioned by Transnet and undertaken by the World Bank.

In relation to port terminals, the Transnet Recovery Plan is focused on the following critical priorities:

- Implementing short term equipment solutions to address immediate operational needs
- Integrating business intelligence tools and processes to enhance data driven decision making
- Recruiting critical skills in operations, planning and technical areas
- Procuring critical spares to conduct maintenance and minimise operational interruptions due to equipment shortages

- Implementing an updated incentive scheme to drive performance

As with rail, the NLCC will support recovery plan through stakeholder alignment, the mobilisation of resources, unblocking implementation challenges and ensuring accountability for delivery against the plans.

It is clear that Transnet needs to address ‘soft’ infrastructure issues such as skills, shift arrangements and staff productivity as well as ‘hard’ infrastructure issues such as investment in equipment and capacity at key ports. Operational capacity has been reached at most ports, and thus further investment is needed to enable increased volumes. Recent investments in ports such as the Port of Port Elizabeth have showed positive results in terms of improved operational performance, while others have lagged behind.

A pervasive lack of modern equipment at terminals operated by TPT has a substantial impact on operational performance, and must urgently be addressed in order to improve operational performance in the short to medium term. These shortages include ship-to-shore (STS) and mobile cranes, tugs, pilot boats, helicopters, rubber-tyred-gantry (RTG) cranes, straddle carriers and haulers. A recent audit of equipment identified the most urgent equipment requirements at each port as set out in the table below, which should be assessed and validated by TPT.

Table 6: Equipment requirements by terminal

Equipment required	DCT 1	DCT 2	CTCT	MCT	NCT	PECT
STS cranes			1		1	
RTGs	5		11		6	
Straddle carriers				4		8
Mobile cranes				2		1
Reach stackers	4	3		1	3	2
Haulers	45	32	72	14	72	
Forklifts				2		
Empty handlers	6	12		2	2	
Plug points	50	600		100	360	300
Tug boats					1	
Pilot boats			2			
Helicopters			1			

TPT needs to focus on the replacement of equipment operating past its useful life, and refurbish existing equipment to increase reliability. The following actions should be prioritised to address these issues:

- Review the equipment spare parts inventory and churn to ensure that sufficient high-quality spares are always available to repair machines
- Implement the equipment replacement programme to phase out equipment that is beyond its useful life to improve equipment reliability
- Execute equipment refurbishment programmes at all terminals to extend equipment life and reliability



With regard to 'soft' issues, anecdotal evidence suggests that low levels of employee morale (associated in many cases with equipment failure and underinvestment), high staff turnover and loss of some critical functional skills, are some of the factors that have resulted in declining performance over recent years. The manner in which staff is deployed in operations also requires attention, in order to ensure that operating efficiency is maximised. For example, Durban Container Terminal (DCT) Pier 2 typically operates with fewer work gangs than cranes, artificially reducing its capacity. To operate at optimal capacity, an additional three gangs are required at Durban Pier 2; four gangs at the Cape Town Container Terminal (CTCT); one gang at the Cape Town Multipurpose Terminal (MCT); two gangs at the Ngqura Container Terminal (NCT); and one gang at the Port Elizabeth Container Terminal (PECT).

A review of operational methodologies should be undertaken and optimisation of gang-to-equipment ratios should be pursued to improve operational efficiencies and maximise output per employee. TPT needs to invest in training and development of its people for the future, and improve employee experience and morale. In addition, phased implementation of semi-automation should be implemented in container terminals to improve productivity.

Declining performance can only be enhanced by accepting customer feedback and building good customer relations. TPT needs to rebuild and restore customer and stakeholder confidence in the business, strengthen the Customer Interaction Centre (CIC) to improve customer communication, and roll out the Cargo Connect Platform to improve collaboration in the container supply chain. Ultimately, efficient, integrated logistics systems require continuous communication between all parties in the supply chain, and the ports system needs to improve its customer communications systems to achieve efficiency.

Private sector participation in port terminal operations has the potential to address the challenges above and improve operational efficiency, by enabling greater investment in equipment and infrastructure and introducing enhanced systems and management expertise. In the short term, supported by the separation of infrastructure and operations in the port system (outlined in section 7.5 below), the priority will be to introduce competition in container terminals, inland terminals, and back-of-port facilities. Significant progress has already been made in this regard is the selection of an international terminal operator to partner with TPT in the Durban Pier 2 container terminal, which handles 72% of the Port of Durban's throughput and 46% of South Africa's port traffic. This will be achieved through a joint venture between TPT and the selected partner, in terms of which a special purpose vehicle (SPV) will be established with TPT retaining ownership of 50% plus one share and the private operator assuming management control of the terminal for a period of 25 years. An important feature of this partnership is that current employees will be seconded to the new entity and will retain the same terms and conditions before and after the introduction of the private sector partner. This model will be implemented, with modifications where necessary, at the Ngqura Container Terminal in the next phase.

The Transnet Recovery Plan for Port Terminals is focused on amongst others, the following critical priorities:

- Implementing short term equipment solutions to address immediate operational needs;
- Integrating business intelligence tools and processes to enhance data driven decision making;
- Recruiting critical skills in operations, planning and technical areas;
- Procuring critical spares to conduct maintenance and minimise operational interruptions due to equipment shortages.
- Implementing an updated incentive scheme to drive performance.

As with rail, the NLCC will support recovery plan through stakeholder alignment, the mobilisation of resources, unblocking implementation challenges and ensuring accountability for delivery against the plans.

### 5.3 STABILISING TRANSNET'S FINANCIAL POSITION

Transnet's constrained balance sheet limits its ability to invest, and partnerships are therefore necessary to fund specific capacity expansion and operational improvements. In addition, partner-driven value chain optimization is required to turn loss-making and underperforming businesses around. A number of opportunities exist to establish partnerships with the private sector in the short term, in addition to the investment that will be enabled by the reform process. The benefit of such partnerships is both to address Transnet's immediate funding constraints and to drive private sector participation in areas where efficiency gains can be made through additional investment or management expertise. It is a condition of the additional guarantee facility extended to Transnet by the National Treasury that it pursue cash-generative transactions to strengthen its balance sheet.

At present Transnet has several private sector participation (PSP) initiatives in the market, across both the rail and port portfolios. Many of these initiatives contain new and innovative elements, and thus represent a departure from previous practice. They include the following:

- Concessioning of the dry bulk terminal as well as a planned LNG terminal and container terminal in Richards Bay
- Establishment of partnerships with private terminal operators through joint ventures for the Durban Container Terminal Pier 2 and Ngqura Container Terminal
- An operating lease for the Container Corridor
- Development of port and rail infrastructure at Boegoebaai
- Development of a new 16 mtpa manganese export terminal at the Port of Ngqura (NMET), as well as rail capacity expansion to 16 mtpa to Ngqura
- Development of a high-capacity rail corridor for automotive exports from Tshwane to Port Elizabeth
- Establishment of a rolling stock leasing company through a joint venture with Transnet Engineering



These and other private sector participation initiatives which are already underway must be prioritised and accelerated. In addition, the establishment of concessions or joint ventures with the private sector for parts of the rail network where such models are appropriate would have the benefit of unlocking much-needed capital for Transnet upfront in addition to dividend payments as a shareholder, while enabling improvements in operational performance and investment in infrastructure and rolling stock. However, this model is not suitable for all corridors, and must be implemented in a manner that supports open access and avoids fragmentation of the rail network. These issues are discussed in greater detail in section 9 below.

Finally, Transnet will explore the potential for strategic equity partnerships in its various subsidiaries once established, while ensuring that the state retains majority ownership of its infrastructure businesses. Such partnerships would provide capital for investment in equipment and infrastructure as well as skills and management expertise, while upholding the principles outlined in section 6 below.

## **6 THE PRINCIPLES OF STRUCTURAL REFORM IN STATE OWNED LOGISTICS**

It is clear that, in addition to the immediate interventions outlined above, wide ranging structural reform in South Africa logistics systems is needed. While the key elements of this reform are outlined in existing policy documents, their success will depend on how they are implemented. Before designing the details of a structural reform program, however, it is useful to set out a clear set of principles and objectives for that program, both to ensure that reforms are implemented to achieve specific goals and to enable ongoing evaluation and adjustment of program design and implementation. The following principles will thus be used to inform the details of the structural reform program:

### **1. The rail network and national ports are national assets that must be managed in order to maximise social benefits**

The South African economy is deeply dependent on the national rail and ports infrastructure to perform efficiently, and it is crucial that these assets be publicly owned and managed in a way that serves the greater good. Profit maximisation should not be a goal for these assets, as it could be associated with an increase in price levels and decrease in volume moved. Instead, the management objective should be to run these assets at a price which is consistent with efficient cost recovery and the maintenance of the quality of the asset, and to maximise passenger and freight volumes.

### **2. Competition as a tool to achieve efficiency**

Competitive contestation for customers can be a powerful tool for improving the efficiency of markets, and increasing social welfare. However, the introduction of competition is

not a panacea for all market problems. Regulation is required to ensure that anticompetitive abuses are avoided, and non-market mechanisms will often be needed to ensure that goods and services which display positive or negative externalities are provided in a socially optimal way. The introduction of competition should thus be used as a tool to achieve policy objectives, rather than as an objective in and of itself.

### **3. Public service obligations to be clearly defined and monitored and separately funded**

Private and state owned firms can be efficient and effective delivery agents for the state, and thus it can be highly desirable to place public service obligations (PSOs) on such firms. However, where such PSOs are put in place, it is important that the state should monitor and evaluate the performance of the delivery agent, and that the true cost of the PSO (including the source of funding) be fully understood and publicly agreed on. In practice, this will require that any PSO will need to be captured in a formal agreement, and that the cost and funding of a PSO will need to be accounted for in such a manner as to allow auditing of financial and service delivery outcomes.

### **4. Competitive neutrality framework for state owned firms in competitive markets**

Competitive markets are an effective way of increasing economic efficiency, but only if all firms in the market operate on a level playing field. Efficient logistics markets are central to the success of the wider economy, and thus steps must be taken to ensure that SOEs in competitive logistics markets (for example in rail and port operations) face the same competitive playing field as privately owned firms. Conversely, procurement and other regulations should be designed in such a way that enables SOEs in competitive markets to operate on a commercial basis and thus compete effectively with their private sector counterparts.

### **5. Private investment in logistics markets should be facilitated, but private infrastructure may then be subject to access obligations in natural monopoly markets**

In order to facilitate the introduction of competition in logistics markets, it will be necessary to ensure the ability of the private sector to invest in these markets. Massive investment opportunities exist in logistics, but investors are unlikely to commit funds unless their market rights and obligations are well designed and clearly set out in, in a transparent and procedurally fair system. Where the private sector is invited to participate in natural monopoly components of the logistics system, for example through concession arrangements, it should be clearly spelled out prior to such investment that this infrastructure may be subject to price and access regulation, and thus that the investor may be required to offer access to competing firms, albeit through a process which will ensure fair compensation for such access.

### Box 1: International precedent in rail reform

As part of a commitment to producing evidence-based structural reform policies for the South African logistics system, this roadmap draws extensively on international experience of rail reform. As not all countries have rail systems, and those that do often differ substantially in their operating characteristics from the South African rail system, it is not possible to find international examples which perfectly match South African circumstances.

One useful comparator, however, is the German railway system, which underwent a similar process of reform from a vertically-integrated state-owned railway operator to an open access regime. The German railway reform or *Bahnreform* began on 1 January 1994, when the two state railways of the Federal Republic of Germany and the German Democratic Republic were merged to form Deutsche Bahn, a corporatized entity wholly owned by the German state. From 1996, Deutsche Bahn was separated into an infrastructure manager – DB Netz – and a rail operator – DB Cargo – in order to introduce above rail competition. At the introduction of the reform, rail's share of the intermodal market in Germany had declined from 56% in 1950 to 21% in 1990, and Deutsche Bundesbahn (the predecessor to Deutsche Bahn) faced an operational crisis. In the two decades following the reform, between 1994 and 2012, rail traffic volumes increased by 36% in passenger transport and 58% in freight transport. Employment in the rail sector has also increased significantly since the reform was introduced. The German railway market now comprises 470 railway operators operating on 33 400 km of track as well as a variety of rolling stock leasing companies and a diverse range of other businesses.

Clear rules govern the separation of the infrastructure manager from the train operating company within Deutsche Bahn, including for the appointment of board members (who cannot serve on the supervisory board of both companies at once) and for the sharing of information. The Federal Network Agency acts as an economic regulator and regulates access charges as well as arbitrates disputes. The infrastructure manager allocates capacity to train operating companies on an annual basis, receiving capacity requests in April of each year and making allocations in July for commencement in December of the same year. If more requests are received than there is capacity available, rules govern the allocation of capacity according to objective criteria such as the length of trains and number of connections. Cancellation fees discourage train operating companies from sterilising capacity that they are not likely to use, while penalties for delays are levied on the infrastructure manager or the train operating company based on the cause of the delay. The infrastructure manager dispatches trains and manages deviations from the schedule based on clearly defined rules and criteria.

## 7 A LEVEL PLAYING FIELD IN PORTS AND RAIL

The introduction of open access to national rail infrastructure is designed to increase the volume of freight moved by rail and improve the quality of rail services through the introduction of competition. However, open access will only be an effective means of revitalising the sector if private operators can compete with the incumbent on a level playing field. The structural interventions

needed to create a level playing field are thus a key short-term priority of the rail roadmap.

### 7.1 PRECEDENT FOR VERTICAL SEPARATION

Analysis of EU precedent for vertical separation in rail provides insight into which functions need to be vertically separated from rail operations to ensure proper market functioning. EU Directive 2012/34/EU defines the essential functions which the infrastructure manager (IM) must have organisational and decision-making independence over, as follows:

*'Essential functions' of infrastructure management means decision-making concerning **train path allocation**, including both the definition and the assessment of availability and the allocation of individual train paths, and decision-making concerning **infrastructure charging**, including determination and collection of charges, in accordance with the charging framework and the capacity allocation framework established by the Member States pursuant to Articles 29 and 39 [emphasis added].*

In addition, the IM must be responsible for the network's operation, maintenance, renewal and development. As regards the essential functions, no rail operator must be able to "exercise a decisive influence" over them, or influence "appointments and dismissals of persons in charge of taking decisions of the essential functions."

Full vertical separation of the infrastructure into an entirely separate entity from the rail undertaking is not required in the EU. However, the IM must be "organised as an entity that is legally distinct from any railway undertaking and, in vertically integrated undertakings, from any other legal entities within the undertaking," which in effect requires that it be corporatized as a separate legal person. Staff and management must be allocated either to the IM or the rail operator, and should not receive remuneration based on the performance of the other entity. Confidentiality of the sensitive data of access seekers must also be ensured by the IM.

The vertically separated infrastructure manager in the EU then exercises its autonomy in a manner which is carefully bounded by procedural requirements and consultation processes. The intention of the regulation is thus to create an IM with full decision-making independence from the rail undertaking, but whose wider independence is exercised within the bounds of a process which ensures procedural fairness and rigour.



### Box 2: Openserve precedent for vertical separation

In South Africa, the Openserve case of vertical separation in telecommunications provides insights as to the practical experience of implementation, albeit in another sector. Openserve is the name which was eventually given to the infrastructure division of Telkom, which was separated out of Telkom in terms of a 2013 settlement agreement between the firm and the Competition Commission. The settlement agreement followed years of complaints by Telkom's downstream competitors in the internet service provider (ISP) market that Telkom was abusing control of upstream telecoms infrastructure to their competitive disadvantage. The goal of the settlement agreement was thus explicitly to create a level playing field in the downstream market, and to enable fair competition for provision of those services. This is what makes it directly relevant precedent for vertical separation in rail.

The settlement agreement required Telkom to institute a transfer pricing program between its wholesale and retail divisions, as well as a pricing policy for its retail division. Transfer prices were required to be based on cost plus a reasonable margin. Implementing this policy required a difficult shift in staff behaviour; to embed the understanding that internal clients should be treated in the same way as external customers. Implementation of the transfer pricing program was enforced by the Commission for five years.

The transfer pricing process itself had to be implemented more formally. Telkom was required to develop "a wholesale/retail product matrix, so that for each external wholesale and retail product it is possible to identify the network product inputs that are needed in order to provide the external product." The process of notifying Telkom retail divisions of wholesale price changes itself also needed to be formalised.

Internal competition law compliance education and enforcement mechanisms were an integral part of the settlement. The settlement agreement required Telkom to institute a Code of Conduct for staff. The Code of Conduct includes two key commitments: (a) a commitment to non-discrimination, or treating competitors as customers; and (b) a commitment to protection of customer information through the construction of Chinese walls between the wholesale and retail divisions.

The boundaries used in the Chinese walls to protect customer confidentiality also served as the basis on which vertical separation was implemented. The Code of Conduct set out the expected, competition-compliant behaviour for employees and internal procedures when dealing with each other and external firms, including how to treat commercially confidential internal and customer information. The over-arching goal of the Code of Conduct was to ensure that staff interactions were fair, transparent and non-discriminatory and that "Telkom must treat itself and other licensees who want to use Telkom's services in a similar manner when providing specified services (i.e. Telkom must not discriminate in the provision of services)." Staff in the relevant business units were then required to receive training on the Code.

Monitoring of implementation of the programme was undertaken by the Competition Commission for five years, to entrench the behavioural changes. The monitoring program included audits by independent reviewers and an internal audit process. Telkom was also required to provide the Commission with access to its accounts and other documents, which improved the Commission's ability to monitor its compliance.

## 7.2 IMPLEMENTATION OF VERTICAL SEPARATION IN RAIL

Drawing on international and local precedent, a number of conclusions can be reached:

- **The access pricing framework** is a crucial component of successful vertical separation. The currently vertically integrated operator and its external competitors need to face the same pricing schedule for access to infrastructure, which should be cost-based and reflect a fair allocation of company overhead costs. Accounting separation is a crucial first step to implementing cost-based access pricing, and the process of price formation itself then also needs to be shielded from anti-competitive manipulation. Importantly, as outlined in greater detail in section 9, access charges should be regulated and determined in a manner that ensures the sustainability of the network as a whole.
- **Behavioural change** in how the IM treats access seekers is also a central component of vertical separation. In the Openserve case, the primary mechanism for implementing this change was the competition compliance training and code of conduct, which educated staff on the expectations for their changed roles in the newly created market structure. In the EU directive, this is implied by the emphasis on independence in train path allocation activities and on ensuring that IM staff are not rewarded for the financial performance of train operating activities.
- It is also noticeable that in both cases, the **programme of vertical separation was overseen by a regulatory body, not left to the firm itself**. Given the potential for vertically integrated firms to use control of an essential facility to skew the playing field in their favour, it is not realistic to expect the firm itself to design an effective vertical separation program with no oversight. The implication is thus that external oversight needs to be exercised on how vertical separation should be implemented and what the expectations are for the market structure ultimately produced. This guidance then needs to be backed up by monitoring of implementation outcomes, and potential sanctions for non-compliance. Transnet itself will benefit from policy and regulatory clarity in this regard.

In line with these principles, an independent Infrastructure Manager will be established for the rail network.

The Infrastructure Manager will assume ownership of rail infrastructure on behalf of the state, and will be responsible for the operation, maintenance, renewal and development of the network. For non-concessed sections of the network, the IM must

have organisational and decision-making independence (within a framework of regulatory supervision) over train path allocation, including both the definition and the assessment of availability and the allocation of individual train paths, and infrastructure charging, including the determination and collection of access charges. Some of these responsibilities may be delegated to concessionaires (again within a framework of regulatory supervision), as negotiated.

Transnet, with supervision from the Department of Public Enterprises, will determine the personnel, assets and systems to be transferred to the IM from TFR. A code of conduct will be developed that will apply to all IM staff, with clear rules as to the confidentiality of information available to the IM to create a Chinese wall between the IM and the rail operator. A transfer pricing regime will be established to ensure that all commercial arrangements between the IM and the rail operator are conducted on an arms-length or market related basis.

The IM will initially be established as an operating division of Transnet functionally separate from TFR, with its own management. This is intended only as a transitional arrangement in the short term, to enable functional separation while the process of establishing the IM as a wholly-owned subsidiary of Transnet with its own board is completed. This transition should take no longer than one year, in order for the subsidiary to be in place at the latest by April 2025. Crucially, the board of the IM subsidiary, while appointed by Transnet, should contain a majority of independent non-executive members who are not also members of the Transnet board, and there should be no overlap between members of the IM board and the board of the rail operator.

Over time, the Infrastructure Manager will be established as a state-owned company separate from Transnet, governed by a legislative framework set out in the forthcoming Rail Bill, and reporting to the Department of Transport. This will strengthen and enhance the independence of the Infrastructure Manager and build confidence among market participants. However, functional and legal separation as a subsidiary (as outlined in the paragraphs above) is sufficient to ensure meaningful independence of the IM while this process is completed, as in other jurisdictions.

The IM will fulfil two roles, as infrastructure owner and infrastructure manager. While the ownership function is inseparable, the IM will be able to concession the infrastructure management function for segments of the network to private sector concessionaires, who would then be responsible for carrying out the functions of the IM for the relevant part of the network. This is analogous to the model adopted by SANRAL, in which SANRAL is the owner of the national road network (on behalf of the state), and directly manages some roads while concessioning out the management of others. This is addressed in greater detail in chapter 9 below.

National Treasury imposed a requirement on Transnet to implement vertical separation in freight rail as a condition of funding provided in the 2023/24 budget (specifically, the condition required Transnet to “complete the commercial separation of infrastructure

and operations within Transnet Freight Rail by 31 October 2023 and demonstrate meaningful operational independence of the Infrastructure Manager”). Any future funding support to Transnet will include similar conditions related to the full implementation of the vertical separation requirement.

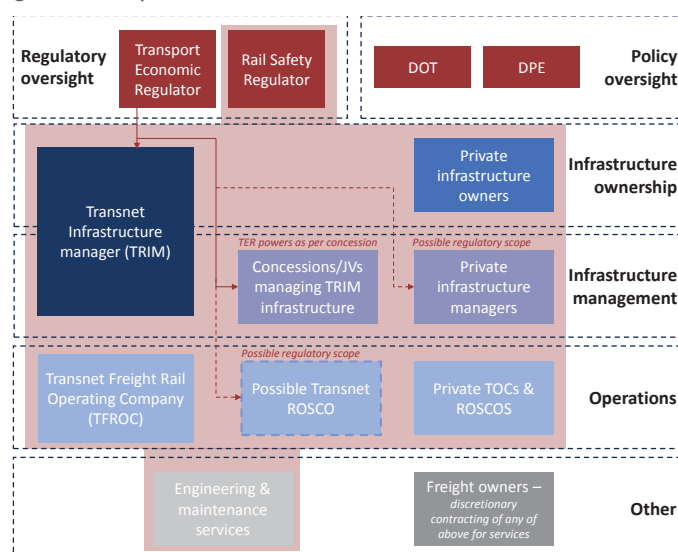
The process of implementing the vertical separation programme will be overseen in the first instance by the Department of Public Enterprises as the shareholder department, until such a point as the role of shareholder is transferred to the Department of Transport. To ensure rigorous oversight by a sufficiently independent body, the Interim Rail Economic Regulatory Capacity (IRERC), as a precursor to the eventual Transport Economic Regulator (TER), will continuously evaluate implementation and provide recommendations to the Minister of Public Enterprises and the Minister of Transport in this regard. It will be necessary to ensure that the IRERC has adequate capacity and receives support from all stakeholders to play this role.

It should be noted that the DPE will have primary control over the task of implementing vertical separation. The role envisaged for the IRERC will thus concentrate mainly on ensuring that the design of the vertical separation program is consistent with the desired market outcomes, and providing expert competition, regulatory and legal expertise to strengthen the implementation process.

While the independent IM will report to Department of Transport once separated from the Transnet group, it is acknowledged that policy processes around the National State Enterprises Bill are still underway, which may influence the ultimate shareholder of the IM.

These reforms, underpinned by the vertical separation of Transnet, will result in a market structure with many more players, as illustrated in the figure below.

Figure 23: Simplified market structure for the future rail sector







### 7.3 A RAIL NETWORK STATEMENT

The technical interface between access seekers and the rail infrastructure manager is extremely complex, and is also affected by all other companies operating on the track. This can make the process of requesting and negotiating access in turn enormously complicated. A key mechanism used to simplify access contracting arrangements in international rail environments is the production of a network statement. The network statement is defined in EU Directive 2012/34/EU as “the statement which sets out in detail the general rules, deadlines, procedures and criteria for charging and capacity-allocation schemes, including such other information as is required to enable applications for infrastructure capacity.” One author characterises it as “a compendium of technical and operational information necessary for planning interoperability,” and Denmark’s infrastructure manager describes it simply as its product catalogue.

The principal role played by the network statement is to reduce information asymmetry and by doing so, reduce the time and effort associated with completing access contracts. Because the network statement is an important component of facilitating network access, its implementation is also central to the process of creating a level competitive playing field in rail. In effect, the network statement can be thought of as one of the “behavioural obligations on Infrastructure Managers to ensure transparency and non-discrimination in access to infrastructure.”

The contents of a network statement thus provide a detailed overview of access and operational practices at the IM. While the IM is best placed to produce the network statement, the powers of the IM are exercised within a regulatory framework. Access seekers are provided with a right to appeal unfair or discriminatory provisions of the network statement to the economic regulator, and there are process and consultation obligations on the IM during the preparation of the network statement. Several of the key components of the network statement, including the formulation of access charges and procedures for allocation of network capacity, are furthermore covered in some detail in the EU Directive. Legislative requirements thus further constrain the discretion of the IM in preparing the network statement.

One of the roles played by the network statement is as regards the facilitation of planning and coordination. For example, planning of network maintenance and development can be included in the network statement, which means that it is then exposed to consultation during annual revision processes. Another coordination role that can be to some extent embedded in the network statement is as regards planning of train paths. A more proactive train path planning role for the IM can enhance efficiency considerably on highly congested routes.

The detailed technical information contained in the network statement establishes technical standards for the operations of the IM. This allows the IM to communicate its expectations for technical

practices to industry and enable interoperability, managing the complexity of multiple operators co-existing on the network. It also creates a shared understanding with the regulator as regards the standard to which infrastructure will be maintained and operated. In effect, the technical standards in the network statement may provide a baseline for acceptable infrastructure expenditures by the IM, which then can be included in the regulatory asset base and recovered in access fees.

The production of a network statement is better characterised as the establishment of an institution, rather than simply the drafting of a document. The focus of activity should thus be on producing an initial version of the network statement which is of sufficient quality to facilitate a first round of access negotiations; and which includes process and governance requirements which will help to ensure that the level of complexity and sophistication of the network statement will improve over time. A useful comparator in this regard is the Grid Code that governs access to the electricity transmission network on a non-discriminatory basis, and which is overseen by a Grid Code Advisory Committee comprising the transmission operator as well as industry stakeholders.

One of the first tasks of the Infrastructure Manager will be to produce a network statement along the lines above. This network statement should include, at a minimum:

- The legal basis for the document, the period for which it is valid, and the timetable for the next update
- A detailed description of the network, including:
  - Maps and diagrams (or links thereto)
  - Signalling and control systems
  - Details of any traffic restrictions
  - Train design limits (weight/length/speed)
  - Planned infrastructure maintenance and development
- General access conditions and details on how to apply for capacity
- Contract templates, for both standard access terms and longer term framework agreements
- Details on how access seekers can achieve IM acceptance of rolling stock and staff
- Capacity allocation rules and procedures, including dispute resolution processes
- Access charges, including a minimum access package and charges, the underlying charging principles on which they are developed, and charges for additional services
- A penalty regime, outlining the penalties (including cancellation charges) that will apply to the Infrastructure Manager and to access seekers depending on responsibility for delays and disruptions to planned services
- Operational rules, including how to deal with operational disturbances, and obligations as regards train monitoring systems
- Details of service facilities offered by the IM

In 2022 Transnet issued a request for proposals for slots available on two routes. A network statement was prepared for these routes

and circulated to applicants, but was subject to strict confidentiality requirements. This document will now be the starting point for the process of developing a full network statement. In order to do so the document will be put into the public domain, and structured consultations with industry participants on its contents will be undertaken.

This consultation will include a presentation by the IM on the draft network statement and an opportunity for formal responses by industry. A draft of the network statement will be circulated for comment prior to discussion at an industry workshop.

The ultimate responsibility for producing a network statement will thus remain with the IM. However, Transnet should be required to make a formal commitment to industry consultations on the document, conducted with a high level of transparency. The IRERC should guide the development of the network statement, in a process of consultation with the IM and private sector stakeholders. Consultations on specialist topics in rail network operations, access pricing and contract law should include skill representatives of the public and private sector, as appropriate.

The process should be conducted in a rigorous and transparent manner, with the schedule of meetings and any underlying research and consultation documents made publicly available. As appropriate, the various research initiatives on network assets which are currently being undertaken by various parties should be coordinated, to ensure that any available overlap in content with the network statement can be utilised.

Regulations drafted in terms of the ERT Bill will flesh out the formal regulatory role that will be played by the TER in the governance and oversight of the network statement, and will be finalised in consultation with industry. Once the TER assumes responsibility for rail, the role played by IRERC in the development of the network statement will be transferred to the TER. The regulatory framework will be designed with the intention of facilitating a level playing field in rail operations.

In established regulatory regimes, the industry regulator is the ultimate arbitrator when industry and the IM are unable to resolve disputes on the contents of the network statement. It would therefore be appropriate for the IRERC to play this role until such time as the TER is established, subject to the constraints discussed in **Box 2** below. The IRERC should however not be seen as one of the parties drafting the network statement – that role is ultimately the responsibility of the IM, although consultations with industry and external experts should play an important role in refining the contents of the network statement.

### **Box 2: Arbitration powers and the IRERC**

Arbitration is a legal process which can be used to resolve disputes privately. In many ways, it resembles a court hearing: claims are formally filed, documents are discovered, witnesses are called to a hearing, and the arbitrator's decision is binding. It differs substantially from mediation processes, where the mediator helps to facilitate a mutually agreeable outcome for the parties concerned, and thus agreement can only be reached by mutual consent.

Arbitration powers can be granted by statute, or by the terms of a normal commercial contract. For example, a contract may enjoin the parties to it to attempt to resolve disputes amicably, while allowing for arbitration where an amicable resolution is not achieved. This type of clause should be included in an agreement between access seekers and the IM, granting the IRERC the ability to appoint an arbitrator in the event of a dispute (with such arbitrator's time being paid for by the contracting parties). The decision of the arbitrator appointed by IRERC would then be binding on both parties in the event of a dispute.

This kind of contractual provision would help to ensure that the chosen arbitrator has suitable economic regulation and rail experience, and is informed as to the goals and objectives of rail policy and intended economic regulation. It would further help to ensure that arbitration of disputes is undertaken in a manner which facilitates the development of the sector, and produces outcomes which are more predictable and technically competent.

These contractual clauses represent a bridging mechanism in preparation for the introduction of full economic regulation. It may be the case that the expedited introduction of the TER precedes the need for use of this mechanism. If the mechanism is employed, contracts should include an expiry of the provision once the TER assumes regulatory oversight of the rail sector, at which point the TER will be able to arbitrate disputes.

## **7.4 RAIL ROLLING STOCK LEASING FACILITIES**

The successful introduction of private sector competition in rail operations will require the availability of suitable rolling stock. The policy position on rolling stock is spelled out in the National Rail Policy as follows:

*Government supports the provision of own rolling stock by freight and passenger train operators as an additional funding source in kind, to close the gap between existing funding sources and overall funding requirements, as well as the provision of extra capacity by private sector rolling stock leasing companies (ROSCOs).*

The intention is thus for the private sector to largely self-provide rolling stock, and to make use of leasing arrangements which have already begun to form in the domestic market. Private sector investment in locomotives will help to address current rolling stock supply shortfalls. The policy neither requires nor prohibits Transnet from establishing a ROSCO of its own.



In late 2022, Transnet Engineering announced that it had received board approval to establish a ROSCO in a joint venture with a private sector partner. In April 2023, TE went to market with a request for proposals on this approach. While the details of the joint venture have not been finalised, the proposed intention of the initiative is to enable private sector participation in above rail markets, by improving the availability of rolling stock. The JV structure will establish a separate juristic identity for the leasing company. The intention is then to cede existing Transnet Engineering leases of rolling stock to the JV, and in addition supply the JV with stock from the existing Transnet fleet. Transnet Engineering intends to strip and refurbish 20 diesel locomotives, and is also looking at B fleet wagons. The three new Trans Africa Locomotives (TALs) may also be included in the JV fleet.

International evidence suggests that a number of different rolling stock market structures are possible, including the following:

- **United Kingdom:** Under the Railways Act of 1993, British Rail was fragmented into more than a hundred separate companies, many of which were then subsequently privatised. The newly established market structure included three privatised rolling stock companies (ROSCOs), which own the rolling stock used by the train operating companies providing regional passenger services.
- **Russia:** A structural reform programme initiated in 2001 aimed to implement vertical separation with above rail competition. Private sector operators are permitted to own or lease freight wagons, and receive discounts on their access fees for doing so, which has encouraged private investment in rolling stock. As of 2014, 85 percent of freight wagons in Russia were estimated to be privately owned.
- **United States:** The multiple competing vertically integrated rail operators in the United States owned only 37% of wagon rolling stock as of 2012, with the balance privately owned.
- **Germany:** A wide variety of rolling stock ownership and management models are evident in the German rail sector. While long distance passenger trains are more often owned by the train operating company itself, privately and publicly owned rolling stock leasing companies are also present in the market, for both passenger and freight services.

There is also some evidence that rolling stock markets may be vulnerable to various kinds of competitive abuses, or market failures. In the Russian market, the incumbent has been accused of a number of abuses including, for example, discrimination in the provision of repair and other services to privately owned rolling stock, or in the allocation of return traffic. These abuses seem to have clustered in freight markets. A 2009 report by the UK Competition Commission points to the practical ability of TOCs to substitute different rolling stock for their existing fleet as a key barrier to competition.

In Spain, the incumbent rail operator has been split into a number of operating companies, including a state-owned ROSCO similar to what is contemplated in South Africa. As per EU guidance,

Spain is committed to a vertically separated model in rail, with above rail competition and private sector participation on a level competitive playing field. One of the safeguards of this level playing field is an amendment to the Spanish Railways Act which requires that transparent, objective and non-discriminatory access be provided to the rolling stock controlled by the state ROSCO. This provision includes a requirement of transparent, objective and non-discriminatory access to manufacturing and maintenance services, the institution of an independent board at the ROSCO, and a guarantee that the confidentiality of customer information will be protected.

What is clear from the international evidence is that rolling stock leasing markets do present some practical difficulties, and are often not particularly liquid markets. The high cost of the equipment and its often specialised nature means that lease agreements are often very long term in duration, to ensure that the risk of investments is counterbalanced by some guarantee of associated income. For example, in the US rail car leases are often in the order of seven years' duration. There may be bottlenecks on certain kinds of rolling stock, and conversely there may be periods of over-supply of rolling stock. Significant delays also occur between ordering and delivery of new rolling stock.

At present, Transnet owns the largest rolling stock fleet in South Africa. This both represents a source of considerable competitive advantage and generates significant maintenance and storage costs. The financial sustainability of the sector (and of Transnet itself) requires that these assets be appropriately deployed and efficiently utilised. Current low levels of utilisation are thus problematic.

As freight is shifted from road to rail, the demand for rolling stock will increase. Some of the increase in volume will be associated with private sector train operating companies, and it would thus be useful to have a mechanism in place to allow these new market entrants to make use of the existing rolling stock fleet at Transnet, in addition to enabling private investment in new rolling stock.

The proposed Transnet JV has considerable potential to improve the efficiency of fleet deployment in this manner. However, some of the level playing field considerations that occur as regards access to the rail network will also factor into the design of rolling stock markets. If Transnet has preferential access to leased rolling stock as compared to its competitors, this could be a source of competitive advantage. The rolling stock market should thus also be included in the market inquiry process as described in section 7.6, to determine whether regulatory oversight is needed. If regulation of this market is found to be needed, the following safeguards could then be put in place for dominant operators in the rolling stock market:

- Ensuring an appropriate transfer pricing system, with leasing rates available to Transnet being functionally equivalent to those offered to other operators
- Appropriate protocols for the allocation of highly contested rolling stock, to safeguard fair competition

- Safeguards for customer confidentiality

In addition, it may be desirable to evaluate whether components of the existing fleet at Transnet are suitable for sale to the private sector. Transnet is under financial constraints, which limits its ability to refurbish and deploy existing rolling stock. Private sector investment in this fleet could thus help to speed its redeployment.

These rolling stock market dynamics will become more evident as the roadmap is implemented, necessitating a further review of this issue as the reform programme is implemented.

**Box 3: Local content requirements in rail**

As a Schedule 2 public entity, Transnet is subject to a National Treasury instruction note on the minimum threshold for local production and content in the procurement of rail rolling stock. These requirements do not apply to private sector train operating companies. To the extent that they affect the cost of rolling stock, they may affect the ability of Transnet to compete on a level playing field with private operators, and will thus need to be addressed.

Engagements will be held with National Treasury and DTIC to assess the available evidence base as regards the impact of these programs to date, and their possible future impact on a level playing field.

**7.5 VERTICAL SEPARATION IN PORTS**

While state ownership of the commercial ports in South Africa is established in terms of the National Ports Act, the intention of policy was that port operations should include both the state-owned Transnet Port Terminals (TPT) as well as private sector participants, in competition with one another. The vertical separation contemplated in the National Ports Act was however not fully implemented. As a result, TPT has retained substantial market share in port operations, as shown in Table 7 below. While these figures are from 2010, the only substantial change to the portfolio of operators since then has been the addition of Ngqura's container terminal, which is 100% TPT operated.

**Table 7: Market shares in ports segments, 2010**

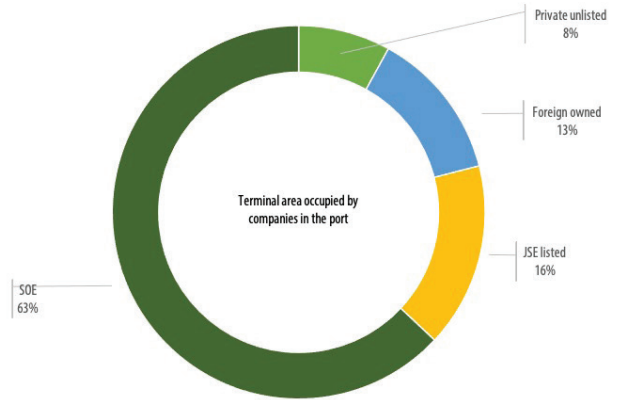
Type of service	Transnet		Private sector
	TNPA	TPT	
Marine services	100%	0%	0%
Bulk cargo handling	0%	37%	63%
Break bulk cargo handling	0%	78%	22%
Container handling	0%	97%	3%
Car on wheels	0%	100%	0%

Source: Ports Regulator of South Africa. Economic Review of Participation in Ports Operation and Services in South Africa. August, 2010.

TPT as the state-owned Port Operator has 24% of operator licenses but, as shown in the figure below, occupies 63% of South African terminal area. TPT has a dominant position in the case of container terminals, the vehicle trade, iron ore, and manganese, where it controls nearly 100% of all such terminal business. There are, however, a number of private sector terminal operators and

lessees managing the remaining 37% of terminal area, including for oil and liquid bulk, sugar, coal, fruit and other commodities.

**Figure 24: Terminal area occupation by ownership category**



Source: Ports Regulator of South Africa

An underlying cause of weak port performance is the lack of independence between TPT, TFR and TNPA. The result is that the costs of inefficiency can be passed on to customers. TNPA is unlikely to play an effective role as an independent ports authority in terms of penalizing TPT for not meeting service standards, because TNPA and TPT are currently divisions of the same company and report to the same board, and there is no independent body for port users to ensure TPT compliance with standards. Similarly, it is difficult for TNPA to enforce strict rules and guidelines on late export container arrival from TFR, which is also a cause of delay in the loading of ships. There is a need for a National Ports Authority that can credibly commit to introducing competition to TPT, and hold TPT to contracted performance standards to address the underlying cause of inefficiency. This is particularly the case as greater private sector participation is introduced in terminal operations.

The structural reform of the national ports system is codified in the National Ports Act 2005. Section 3(2) of the Act specifically requires the implementation of vertical separation through the creation of the National Ports Authority (Pty) Ltd, a state-owned company wholly owned by Transnet. Some of the related provisions of the Act are as follows:

- Section 3(2) provides that the Shareholding Minister must create the NPA (Pty) Ltd, a state-owned company wholly owned by Transnet
- Section 27 states that assets and liabilities related to the ports must be transferred from Transnet to the NPA (Pty) Ltd
- In order to ensure that section 3(2) corporatisation is workable, sections 6 and 7 of the National Ports Act allow for any necessary deviations from the Companies Act
- Section 4(1) states that the Shareholding Minister may take a further step of making the NPA a state-owned company separate from Transnet (i.e. not a subsidiary), but this is not mandatory



On 22 June 2021, President Ramaphosa, together with the Minister of Public Enterprises announced as follows:

*“... we are today announcing the establishment of the Transnet National Ports Authority as an independent subsidiary of Transnet, in line with the National Ports Act of 2005. This will mean the establishment of an independent National Ports Authority as a wholly-owned subsidiary of Transnet, with its own board appointed by the Minister of Public Enterprises.*

*An essential part of addressing the challenges in our ports is to create a clear separation between the roles of the infrastructure owner, which is the Transnet National Ports Authority, and the terminal operator, which is Transnet Port Terminals.*

*At the same time, Transnet will remain the sole shareholder of the subsidiary to prevent any negative impact on the group's balance sheet, and to ensure that the ports authority remains an important part of the Transnet group. To implement this reform, the Minister of Public Enterprises will appoint an interim board ... to oversee the establishment of the new subsidiary, ensuring that this process is concluded as quickly as possible.”*

In order to provide the ports authority with sufficient independence and enable improved management of and investment in ports infrastructure, the establishment of the National Ports Authority as a subsidiary of Transnet will be completed in terms of section 3(2) of the Act. As outlined in the National Commercial Ports Policy and the National Ports Act, the following principles will apply:

- The National Ports Authority will be the landlord of the South African ports and will own all the land and the port infrastructures within the port estates
- Greater private sector involvement in operations will be sought through leases and concessions
- The allocation of leases or concessions will be open to competitive bidding; and the bidding process will be transparent and based on a set of clearly stated objectives/targets, criteria and measurable deliverables.

Significant progress has been made in this regard since the announcement in June 2021. A permanent board has been appointed with a majority of independent non-executive members to oversee the establishment process and ensure appropriate governance of the subsidiary. A Memorandum of Incorporation (MOI) will be finalised to complete the legal separation of the subsidiary, with all ports, land and other rights and obligations transferred to the subsidiary in terms of section 27(1)(b) of the National Ports Act. This process will be undertaken in a manner that ensures that balance sheet of the Transnet Group remains intact, as the National Ports Authority will remain a wholly owned subsidiary of Transnet and will be fully consolidated in terms of the relevant accounting standards.

## 7.6 ESTABLISHING THE TRANSPORT ECONOMIC REGULATOR

A level competitive playing field in ports and rail will need to be monitored and regulated by an independent regulator to be truly successful. In the long term, this role will be played by the Transport Economic Regulator (TER), which will be empowered by the Economic Regulation of Transport (ERT) Bill. The Bill is currently going through the legislative process, and is expected to be promulgated before March 2024.

The TER will introduce significant changes to the economic regulation of road, airports, ports and rail. In road and airports, economic regulation functions which are currently largely entrusted to the Minister of Transport, as per the South African National Roads Agency Limited Act, the National Roads Act and the Airports Company Act, will now be conducted at arms-length by an independent regulator, with the aviation Regulating Committee rolled into the TER.

In ports, the TER effectively replaces the Ports Regulator as created by the National Ports Act. The TER will continue to develop the regulatory regime already established by the Ports Regulator. The legislation does however introduce significant differences as regards the treatment of terminal operations and concessioning and service licencing agreements in ports, as per sections 56 and 57 of the National Ports Act. Specifically, the TER is provided with considerably more authority over agreements and licences. In particular, if an agreement or licence includes, as a party, an entity that is part of the same corporate structure as the National Ports Authority, the agreement/licence must be approved by the TER, and the TER can require its conditions to be varied. In addition, operating agreements must now be lodged with the TER, and licensees and parties to agreements must report significantly more data to the TER.

In rail, there has to date been no economic regulation empowered by legislation. In this circumstance, section 4 of the ERT Bill requires that the Minister of Transport can establish regulatory jurisdiction if one of the following two circumstances apply:

4. (2)(a) a single operator controls more than 70% of the market concerned; or

(b) the preconditions for efficiency and cost-effectiveness do not exist in the market concerned.

The first path to establishing jurisdiction simply requires a finding that the firm is super dominant in its market (with the boundary for super dominance set at 70%). However, establishing this requires that analytical work be undertaken to define the markets concerned, and also to ensure that the extent of regulation introduced is proportionate to the competition problems in the market, which is also required by the ERT Bill.



The second path to establishing jurisdiction, by determining that the preconditions for efficiency and cost-effectiveness do not exist in the market concerned, requires a finding from the Regulator that at least one firm operating in the market has market power; or that a facility or resource in the market is an essential facility. The essential facility finding can then be based on three possible courses of action, as follows:

- (i) *an opinion from the Competition Commission—*
  - (aa) *after conducting a market inquiry in terms of chapter 4A of the Competition Act; or*
  - (bb) *on the basis of the Competition Tribunal finding that anti-competitive abuses have occurred within the relevant market; or*
- (ii) *a report from the market inquiry, conducted by the Regulator in terms of section 43(2)(b).*

The immediate priority will therefore be to fully establish the Regulator following the enactment of the Bill, including all necessary institutional arrangements and regulation, as well as to extend regulation to the rail sector. The NLCC will monitor progress in implementation of these objectives.

At present, preparatory work for the introduction of rail regulation is being undertaken by the Interim Rail Economic Regulatory Capacity (IRERC). The IRERC is established in terms of a Memorandum of Understanding between the Ministers of Public Enterprises and Transport, and independent regulatory and rail experts have been appointed to its board. IRERC is a focal point for the development of rail regulation, in anticipation of the establishment of the TER. It will continue to operate for a period after the enactment of the ERT Bill, until such a time as the TER has established jurisdiction over rail.

In this interim period, the IRERC will play a role in advising the relevant Ministers on the interim measures necessary to prepare the industry for regulated open competition. The IRERC will also help to facilitate the introduction of competition in rail operations, for example by providing input into the development of the network statement and access pricing, and oversight of the governance arrangements for the IM.

In the longer term, the establishment of the regulator through statute, alongside the Infrastructure Manager, is crucial to enable effective price regulation in the rail sector. As has already been noted, the implementation of an independently managed access pricing regime for rail is also a crucial component of the creation of a level playing field in rail. A key regulatory task will be to guide the manner in which the user pays principle is translated into a rail access price regulation framework based on a regulated asset base (RAB) model.

Rail is a high fixed cost network, and will only fully cover its costs if the network moves a high volume of goods. Many of the potential customers of rail can also instead use the road network, and will

only switch to rail if prices are competitive. It may thus be the case that if every customer is charged the same price, these price sensitive customers will switch to road. Without price sensitive customers, the network may then not move high enough volumes to cover its overall costs.

These dynamics mean that some care will need to be taken in designing an efficient access pricing framework for rail. While all access seekers should pay a price that at least covers their operating costs, it is likely that not all users will pay a price that fully covers fixed costs as well. The regulator will need to oversee the way in which such price differentiation is applied, in order to mitigate against excessive pricing abuses in particular. The overall goal of pricing differentiation should be to maximise the volume moved on rail, in order to share the cost of the fixed network as widely as possible. While price insensitive customers will be asked to pay higher prices, which may create a perception of unfair treatment, they will benefit in the long term from the improved financial sustainability of the network.

It will also be desirable to ensure that prices are standardised across different parts of the network. If prices are calculated for each segment of the network based on the volumes carried by that segment, then customers on high volume segments will be offered very low prices, while customers on low volume segments will typically face prices that are much higher than those offered by road freight. This would tend to increase congestion on busy routes, while making it impossible to entice freight onto rail across the rest of the network. More uniform pricing across the network will improve volumes and support the financial viability of the network, and by doing so help to protect the national road network.

Ultimately the TER will have regulatory authority of the access pricing regime. However, given that initial third party access initiatives are likely to be undertaken prior to full implementation of the TER, an interim oversight mechanism will be needed. Pricing oversight should aim both to achieve the policy goals outlined above, and to do so in a way which is predictable and tries to mitigate unnecessary pricing disruptions. The IRERC will provide interim guidance to the IM as the access pricing regime is being developed.

## 8 RIGHT SIZING RAIL

As the geographic pattern of economic activity changes over time, the needs of the rail network will also change. A line built to service a particular customer or market will serve no practical purpose if that customer or market no longer exists, or can no longer provide sufficient volumes to cover maintenance costs. In order to ensure that the costs of maintaining the network remain aligned with its ability to produce income, it is thus important to close unprofitable lines and/or open new lines serving new customers from time to time.

One of the factors currently contributing to the low profitability of the South African rail network is its size. Much needs to be



done to increase the modal share of rail, but even if all rail-friendly traffic is captured, many lines will continue to experience extremely little traffic. In effect there is little prospect of returning these lines to profitability, and thus they are not sustainable on a purely commercial basis. A crucial factor for the commercial viability of the rail network is that the total system density should be sufficient to keep costs within a viable range.

In order to determine the extent to which a resizing of the South Africa commercial rail freight network is required, a detailed analysis was undertaken as follows:

**Step 1:** A freight demand model (see Appendix 2) was utilized to analyse freight density per line in the existing rail network. This calculation excluded passenger traffic. Although some railways around the world receive a density contribution from passenger travel, due to the geographical and demographic characteristics of South Africa's population, passenger transport won't be able to meaningfully contribute to density.

**Step 2:** The model was then used to determine all rail friendly freight in the South African market, using rail economic principles as described in Appendix 3. This was used in order to identify the potential future size of the rail freight market.

**Step 3:** A rail line classification system was developed, based principally on potential rather than current densities. The classification system was determined in consultation with various levels of management within Transnet.

**Step 4:** The impact of closure of low density lines, both in terms of overall network density and in terms of the net impact of traffic originating or terminating on one part of the network, and traversing other segments, was then calculated, in order to determine what network size would be commercially viable.

The results of performing steps 1 and 2 resulted in the following line segmentation approach, as described in Figure 25.

Figure 25: Rail network density categories

<p><b>Bulk mineral corridors</b></p> <p>Heavy haul conveyor belts to bulk ports Dominant logistics' challenged commodities Requires high density and homogeneity</p>	<p><b>Core rail network</b></p> <p>Major economic connections (ports and metro's) Mostly high density or strategic connection role Diverse commodities and segments Critical in road to rail effort Efficient, predictable role in important supply chains</p>
<p><b>Feeder network</b></p> <p>Functionally and technological different Important support for the core Strategic role Can sometimes replace the core in emergencies</p>	<p><b>Short lines</b></p> <p>Low volume potential Could have important sustainability uses Minimum approach is ROW protection Fair and equitable dispensation should be sought</p>

The route length and assessed freight potential of each category is shown in Table 8 below. The bulk mineral corridors (BMC) are only 12% of route length, but have 61% of freight potential. In contrast the short lines are 35% of route length, but have only 1% of freight potential.

Table 8: Network category route length and freight potential

	Route length	% assigned route length	Assessed potential, billion tonne-km	% assessed freight potential
<b>Bulk mineral corridors (BMC)</b>	2 241	12%	127,5	61%
Coal	846	4%	53,9	26%
Iron ore	939	5%	64,3	31%
Magnetite	574	3%	9,3	4%
<b>Core rail network (CRN)</b>	4 818	25%	70,9	34%
Feeder lines	5 316	28%	8,2	4%
Short lines	6 532	35%	1,3	1%
<b>Total assigned routes</b>	18 907	100%	207,9	
<b>Unassigned lines (PRASA/private/sold/uplifted)</b>	1 876		n/a	

The classified network is depicted in Figure 26 below. As can be seen, the bulk mineral corridors are geographically separate from each other, while the core network extends across the country as a whole.

Figure 26: Map of network categories

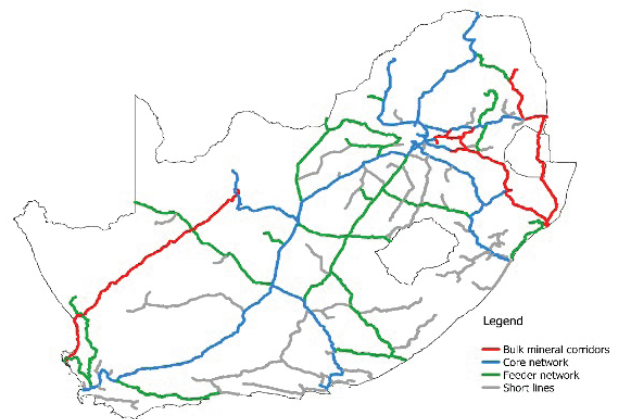
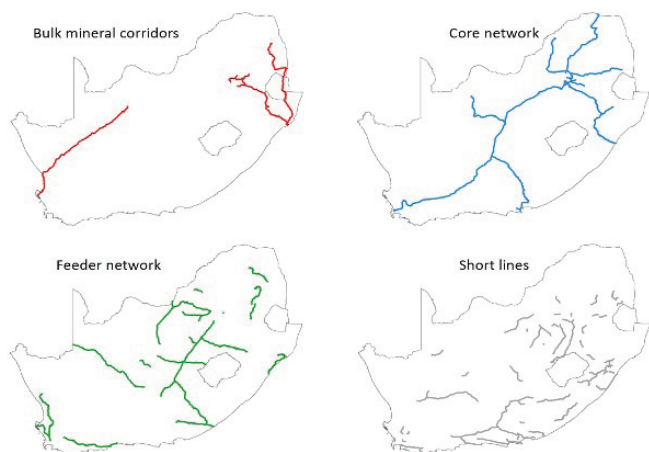


Figure 27 then shows each category of line separately, to illustrate the differences in these network components. The core rail network plays an important independent role by connecting the geographically separated major economic hubs in South Africa. This is typical when compared to economically viable and supportive rail systems in any country. The feeder network provides additional origin and termination points to the core network, which increases density on the core network, but is not independently viable. The short lines are mostly (but not always) shorter than the feeder lines, playing a smaller economic role in originating and terminating traffic.

Figure 27: Deconstructed categories



## 8.1 COST ANALYSIS

The most important parameter for a deeper analysis into right sizing rail in South Africa is understanding cost. The cost estimates below include both operating costs and the longer term cost of maintaining and sustaining infrastructure investments. Lines which have enough traffic to cover their costs are commercially viable in their own right, and should always remain open. Lines which do not have enough traffic to cover their costs may nevertheless be worth keeping open, for a range of reasons including the following:

- If the traffic that originates or terminates on them contributes significantly to traffic density on the rest of the network
- If the line is of strategic significance, for example because it connects to a rail network in a neighbouring country
- If the line carries traffic that would otherwise switch to road, and thus cause significant congestion and/or damage to road infrastructure
- If other positive externalities are associated with the line, for example to achieve social or economic development objectives

However, where there is a rationale to keep such lines open, there is then also a funding problem which will need to be solved. In contrast, commercially viable lines do not require subsidisation if operated efficiently.

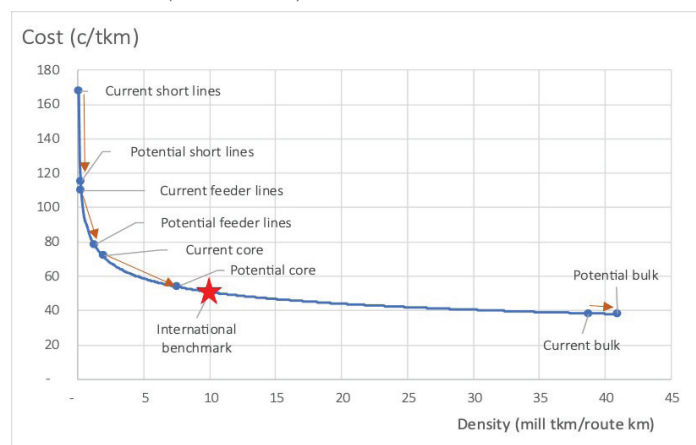
### Box 3: Indicative cost estimates

Indicative costs are used for this analysis, due to the difficulty in accurately determining rail costs. TFR itself has over the years developed a variety of activity-based cost systems, none of which were completely successful in attributing costs accurately. This is because it is intrinsically difficult to attribute the costs associated with maintaining a long lived asset to each specific train which passes over it.

The indicative costs used in this exercise are calculated using Harris principles and knowledge of the South African market. These costs are useful, broad indications of the current situation for purposes of network classification. Use beyond understanding the categories should however be limited and more work will be required for in-depth funding and feasibility work. Harris cost curve indication typically includes both variable and fixed cost, i.e. if funded, contribution to the funding mechanism will pay for fixed costs over time. This also theoretically means that rehabilitation could be funded from future income.

For the purpose of this exercise, South Africa rail costs are evaluated in comparison to an indicative international benchmark of approximately 51 cents per tonne-km. This is based on the densities and costs achieved by the railways of the USA, Canada and India, which provides a useful benchmark of what is necessary for a thriving and sustainable railway. Figure 28 below illustrates where each of the four line categories sit on the Harris curve at present, given actual volumes; and where they would sit if all potential traffic could be moved to rail. These are the cost conditions if each category is segregated – i.e. the core network if it only carries traffic which originates and terminates on the core network, and so on.

Figure 28: Cost versus density per line category, at current and potential future volumes (Harris curve)



As can be seen, only the bulk lines achieve (and indeed exceed) the benchmark. If all potential traffic is realised, the core network begins to approach the benchmark at 54c per tonne-km. However, the feeder and short lines remain well above the cost benchmark, even if all potential traffic is shifted to rail. As mentioned, this analysis is based on segregating traffic, and only estimating densities for traffic that stays on each category. Density calculations improve once the effect of contributory traffic from other categories is included. As



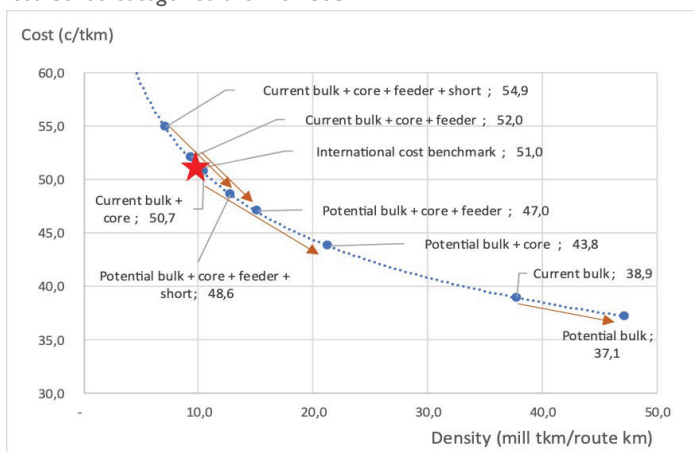
shown in Table 9 below, even at current densities, the impact of contributory traffic from feeder and short lines on the density of the core is substantial, taking cost from 72 c/tkm to 61 c/tkm.

**Table 9: Impact of contributory revenue on core densities**

	Density (million tkm/route-km)	Cost (c/tkm)
<i>Current density</i>		
Core	1,9	72
Core with contributory traffic from feeder	4,1	61
Core with contributory traffic from feeder & short	4,2	61
<i>Potential density if road to rail shift occurs</i>		
Core	7,5	54
Core with contributory traffic from feeder	12,0	49
Core with contributory traffic from feeder & short	13,2	48

In practice, the rail system is owned by a single operator and managed on an integrated basis. What is important for the commercial viability of this integrated system is thus that the total system density should be sufficient to ensure that cost stays in the viability range. Figure 29 below illustrates the average cost per tonne-km for an integrated network, starting with a network comprising just the bulk lines, and then adding in each category in order of density. As can be seen, a standalone bulk network at current or potential volumes is well below the international cost benchmark. A network consisting of just the bulk and core lines is also below the international benchmark, for both current and potential volumes.

**Figure 29: Harris curve, integrated network average density and cost as less dense categories are included**



Once the feeder and short lines are added to this integrated network, however, on current volumes the international cost benchmark is not met. If all potential rail volumes are realised, though, an integrated network with all four categories of line does just pass the cost benchmark. In effect, the feeder and short lines are not in most cases viable stand-alone businesses, but in the case of the feeder lines in particular, make commercial sense as part of an integrated rail network.

This analysis illustrates the impact on the commercial viability of the network as a whole of the inclusion of lower density lines, and the potential commercial benefit arising from closing very low-density lines. If the rail network was currently operating at full efficiency and realising all potential freight volumes, it could afford to support its current size. However, under current conditions, and given the funding difficulties faced by the sector, there is a clear case at this point for closing the short lines to improve network viability. Given that these lines comprise 35% of route length and could carry at full potential only 1% of freight traffic, this rationalisation of the network will have a limited impact in terms of shifting traffic from rail to road, while significantly improving network maintenance costs.

## 8.2 CONTRIBUTORY TRAFFIC

A key test of the risk associated with closing a specific line segment is to assess the extent to which densities on other parts of the network are affected by traffic which also utilises the closed line. In effect, a train which starts on a short line may do the bulk of its tonne-km journey on the feeder, core or bulk network, and thus contributes to the density of those lines.

Table 10 below summarises the extent to which each line category is affected by contributory traffic (see Appendix 6 for full details of the source of contributory traffic for each line category). As can be seen, the line category which is least affected by contributory traffic is the iron ore line. 92% of traffic on this category never leaves the category. The coal line is similarly dominated by volumes which do not leave the coal line. In contrast, almost half of the traffic carried by the core network at some point travels on another line category. Interestingly, while volumes on the feeder and short lines are much smaller, they often do not leave the feeder or short line category.

**Table 10: Extent to which each line category is affected by contributory traffic**

	Proportion of traffic which does not leave the category	Contributory traffic
Bulk mineral corridor - Coal	86%	14%
Bulk mineral corridor - Iron ore	92%	8%
Bulk mineral corridor - Magnetite	65%	35%
Core rail network (CRN)	53%	47%
Feeder lines	77%	23%
Short lines	79%	21%

This analysis suggests that the iron ore and coal lines are in many ways largely stand-alone systems, with limited connections to the rest of the network. In contrast, the core network is truly dependent on the feeder lines in particular to sustain traffic density. The core is thus a more classic example of a network economy, where the value of access to the network is improved as the number of origin and termination points available to the access taker increases. Any structural reform which increases fragmentation of the core network thus will risk the integrity and sustainability of the network, to a much greater extent than would be evident for iron ore or coal.



### 8.3 WAY FORWARD

The analysis illustrates the effect on network commercial sustainability of continuing to operate very low density lines. Conversely, it demonstrates that closure of very low density lines can increase the profitability and sustainability of the network. This analysis however only addresses the question of commercial sustainability. Rail can also produce significant positive externalities, which do not contribute to commercial revenues, but are extremely socially important. Even when there is no commercial case to keep a line open, there can thus still be a strong social case to keep it open through subsidisation. The question of determining the right size for the rail network thus to some extent needs to be addressed alongside the question of how best to fund the network.

Right-sizing of the network also raises questions regarding the management of right of way, and the overall governance structure of the rail network. Freight customers can be profoundly affected by the closure of a rail line, and should be allowed to participate in consultation on potential line closures, and afforded the ability to offer to subsidise the line themselves, should they so choose. In addition, in future it may be desirable to re-open closed lines. Years after a line has been closed, new potential freight customers may come into operation and revive the business case for a line. There should thus be a mechanism in place to safeguard the rights of way associated with the track, to allow its reopening in future. While there is a strong case for a right-sizing of the rail network as part of the broader reform of the logistics system, therefore, this must take place within a clearly defined funding framework. These questions are dealt with in the next section.

## 9 RAIL FUNDING FRAMEWORK

A sustainable funding framework for the rail system is central to the success of the roadmap. Following years of underinvestment in rail infrastructure, there is now a significant maintenance and refurbishment backlog which will need to be resolved in order to achieve operational efficiencies. Transnet's current debt burden renders it unable to make the investments necessary to restore the network to working condition. However, available fiscal resources are limited, and the strategic options available are thus also limited.

Internationally, passenger rail operations are frequently heavily subsidised, and this is the case in South Africa as well. The commercial viability of freight rail operations differs substantially between countries and regions. In the EU for example, where the traffic mix and journey length are often not well suited to rail, freight traffic more often requires state subsidies than is the case in countries such as the United States and Australia, where rail-friendly freight is more widespread. It is however uncommon internationally for freight rail to be entirely unsubsidised, as it is in South Africa.

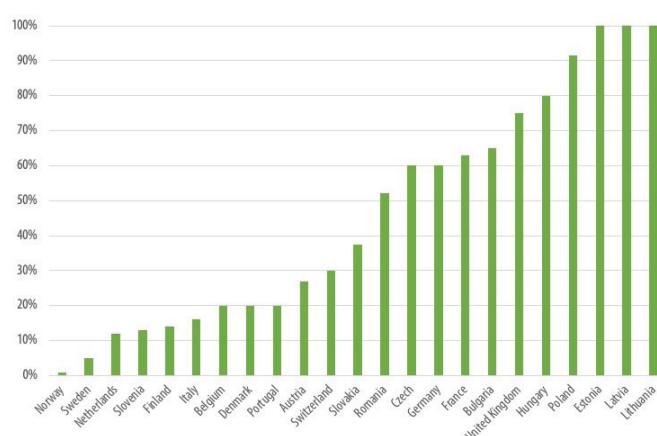
Given that the introduction of competition will be a key policy tool used to improve the efficiency of rail, subsidisation of freight operations is typically undesirable because it has the potential to distort the playing field between competing operators. In contrast

to the arguments against subsidising rail freight operations, in a number of circumstances a strong case can be made for subsidisation of rail infrastructure, as will be discussed below. However, where fiscal resources are limited, there are many areas of the rail system where private investors are likely to be willing and able to fund investments. There are also potentially areas where private sector funding can help to release resources that can then be utilised to fund other rail assets.

### 9.1 INTERNATIONAL RAIL FUNDING PRECEDENT

The European Union recommends that member states should set rail track access charges at marginal cost, to promote efficient use of the infrastructure. Allowances are however made for member states to set prices high enough to cover the fixed costs of infrastructure, as required for financial sustainability. The financing gap created by marginal cost access pricing in the EU is typically covered, at least partially, by state subsidization. Figure 30 illustrates the extent of state subsidization of rail in the European Union in 2004, which varies substantially depending to some extent on the ability of each state to afford financing the network. As a rule of thumb, the available literature suggests that marginal costs in rail amount to approximately 15–20% of total costs. In Norway and Sweden, therefore, subsidization levels in 2004 were such that it is likely that not even the full marginal costs of rail were covered by infrastructure charges. In the Netherlands, Slovenia, Finland, Italy, Belgium, Denmark and Portugal, most or all of fixed costs were covered by the state. Only three countries in the sample aimed for total cost recovery from the customer; namely Estonia, Latvia and Lithuania.

Figure 30: Percentage of total cost covered by infrastructure charges in 2004



Source: (Nash, Matthews, & Thompson, 2005)

Article 8.4 of Directive 2012/34/EU requires states to ensure that infrastructure managers are able to balance income and expenditures for a period of at least five years. In practice, however, this requirement has not always been strictly implemented, and as a result a number of infrastructure managers have experienced funding shortfalls, and have accrued significant debts. Private sector funding could potentially help to bridge the funding gap, but to date





very little private sector funding of rail infrastructure has occurred in the EU.

In Australia, the bulk of rail infrastructure is owned by different arms of the state, although there have also been private sector investments in export freight lines for mining products. State owned rail is financed through a combination of user access fees and state subsidies. As shown in Table 11 below, the current rail infrastructure investment plan of the Australian government is significant, and by 2024-25 is envisaged as comprising more than a quarter of total infrastructure investment.

**Table 11: Total infrastructure expenditure on rail in Australia**

	AUD m	% total infrastructure investment	ZAR m
2021–22	2 321,5	18%	27 858,0
2022–23	3 211,1	19%	38 533,2
2023–24	3 425,1	23%	41 101,2
2024–25	3 096,9	26%	37 162,8

Source: [https://www.aph.gov.au/About\\_Parliament/Parliamentary\\_departments/Parliamentary\\_Library/pubs/rp/BudgetReview202223/InfrastructureExpenditureOverTheNextDecade](https://www.aph.gov.au/About_Parliament/Parliamentary_departments/Parliamentary_Library/pubs/rp/BudgetReview202223/InfrastructureExpenditureOverTheNextDecade)

The primary legal framework for the subsidisation of rail infrastructure in Australia is the National Land Transport Act, 2014. This Act applies to the financing of major road, rail and intermodal facilities. A National Land Transport Network is first defined, which comprises road and rail links between major urban and economic hubs. Once a road or railway is included in the National Land Transport Network, it is then eligible to apply for funding as an Investment Project in terms of the Act. Investment Project funding can be used for the construction or maintenance of assets. The authority to approve an Investment Project vests at Ministerial level.

The legislation places a number of reporting and transparency requirements on the recipient of funding. The funding recipient must provide the Minister with annual audited financial statements on the Investment Project, must allow inspections of the project to be carried out by persons authorised by the Minister, and must supply information on the project to the Minister on request.

There has also been successful private sector funding of rail infrastructure in Australia, concentrated mainly in the mining sector. The Hunter Valley Coal Network Access Undertaking is notable in this regard. The Hunter Valley rail system primarily serves coal miners exporting through the port of Newcastle, but carries some non-coal traffic as well. The system is run by the Australian Rail Track Corporation Limited (ARTC) under a long term lease agreement, and the access rights of coal and non-coal users are set out in the access undertaking agreement between the ARTC and the Australian Competition and Consumer Commission.

The Hunter Valley system achieves good volume densities, which makes it sufficiently profitable to self-fund infrastructure maintenance and investment. The access undertaking does however also set out a mechanism for additional private sector investment in

system capacity. This mechanism includes the following three steps:

- 1. Project initiation:** New projects to provide additional capacity can be identified by the IM, access seekers, or existing customers, at any time. The party which initiates a project must then fund a Concept Assessment Report.
- 2. Industry consultation:** Formal consultations are held during the development and implementation of a project. Stakeholders are represented by a Rail Capacity Group (RCG), representing all access holders. At each of five project stages (concept assessment, project feasibility, project assessment, project implementation and project close out) the IM may then seek endorsement of the prudence of costs incurred from the RCG before proceeding.
- 3. Under funding option:** If at any of the five project stages the IM advises that it will not fund the project (or will not fund it fully), user funding options are available. An applicant or access holder can notify the IM of their willingness "to fund the Project in whole or in part through a Capital Contribution such that ARTC's financial position is no worse off," after which the parties will negotiate a way forward.

Where a private investor makes a capital contribution, the IM manages the construction of additional capacity and owns the assets created. The investor is typically not prioritised in capacity allocation decisions on the assets created by its investment (unless the capital expenditures made by the IM are judged to not have been prudent). The investor then makes a return on its assets via a discount in the access fee it is charged. The goal of the access fee adjustment is to achieve two outcomes:

- The IM is left economically no worse off
- The investor makes a return on their investment which does not exceed the IM's predetermined rate of return

The net effect of these provisions is that, if the investment yields a rate of return that is in excess of the hurdle rate, these profits go to the IM, and if the project is unprofitable, the IM is not affected and the investor takes all the downside. In effect the IM is insulated from the commercial risks associated with the project, but remains incentivised to maximise the volumes moved on the network.

Further precedent on how to manage the funding of rail is available from the United States. Rail freight infrastructure in the US is primarily privately owned, by a number of competing operators. Prior to the enactment of the Staggers Rail Act of 1980, the railroad industry in the United States was heavily regulated, and by the late 1970s, the industry was facing financial challenges, declining freight traffic, and outdated infrastructure. The Staggers Rail Act was enacted to address these issues and promote greater efficiency and competition.

One of the issues that had contributed to the poor financial performance of rail prior to the Staggers Act was the limits placed on the ability of railways to close unprofitable lines. Line abandonment

was only possible if the railway could obtain a certificate from the regulator, which was only issued if “present or future public convenience and necessity permit of such abandonment.” While most abandonment applications were granted, the process itself was so time consuming that operators often did not apply to close unprofitable lines. Under the Staggers Act, the legal grounds for abandoning a line remained the same, but strict time limits were introduced into the process, which greatly simplified and expedited it. This was then counterbalanced by placing a requirement on the operator to offer the abandoned line for sale or subsidy, so that shippers could potentially step in to purchase a line, or so that local government could offer to take over the line. This sale or subsidization process itself was then subject to a number of requirements, as follows:

- The operator needed to provide considerable information on the line, including the estimated “annual subsidy and minimum purchase price required to keep the line or a portion of the line in operation,” a report on the physical condition of assets, and traffic and revenue data
- If agreement could not be reached on the purchase price, or the required subsidy, the regulator then had the authority to determine this compensation:
  - o In the case of a subsidy, “the Commission shall determine the amount and terms of subsidy based on the avoidable cost of providing continued rail transportation, plus a reasonable return on the value of the line”
  - o In the case of a purchase offer, the decision should be based on fair market value, which was established by the regulator as comprising “the net liquidation value, taking into account net land valuation and net improvements”
- Strict time limits were placed on all steps of this process

Regulation of the abandonment process remained in place for a number of reasons. The most fundamental of these is that when a rail operator abandons a route the potential for rail freight service disappears, in a way that does not happen when a road operator stops servicing a route. Given the potentially drastic effect on shippers, it is thus appropriate to retain a public consultation process around line closure. Public consultation also provides an opportunity for any party which might have an alternative use for the corridor to step in, which is important because it is often very difficult to reconstitute the corridor after it has been abandoned.

Further safeguards on the rights-of-way associated with abandoned lines are contained in the National Trails System Act. This Act sets out an alternative to line abandonment, commonly known as “railbanking,” where the line is instead converted for interim use as a recreational trail. In this case, as the rights-of-way have not been abandoned, the trail can in future potentially be more easily returned to use as a rail line.

## 9.2 THE ROLE OF PUBLIC AND PRIVATE FUNDING IN THE SOUTH AFRICAN RAIL NETWORK

South African transport infrastructure and services have historically been provided on a “user pays” basis. As set out in the 1996 White Paper on National Transport Policy, the principle of cost recovery from direct users was to be applied as far as possible in all elements of economic infrastructure and operations which provide a measurable economic or financial return. This was interpreted as including all freight transport operations, and thus no subsidisation of freight transport was to be provided.<sup>1</sup>

The advantage of a user pays approach is that the financial burden falls to the person who benefits the most (the user), and the provider remains incentivised to stay focused on user needs. Possibly most importantly, no burden is placed on government resources. However, user pays also has practical drawbacks. In rail, the most notable of these relate to the existence of *positive externalities* – in other words, positive effects that do not accrue directly to the user, and thus that the user will not willingly pay for. There is strong evidence that investment in rail infrastructure produces positive externalities through a reduction in road damage and congestion, decrease in road safety, increased local income and employment, and reduced pollution.

Where positive externalities exist, a user pays financing system will produce a smaller rail network than is socially optimal (i.e. a network size that is smaller than is socially or economically optimal) – because the positive externalities will effectively not be funded by users. This is why almost all freight rail infrastructure globally is subsidised to some extent, with few exceptions.

The problem of under-provision of rail infrastructure is further complicated by the prevalence of road subsidisation and its impact on intermodal competition (as summarised in Appendix I below). While parts of the road network are tolled, very few road freight journeys are conducted entirely on tolled roads. Rail freight services thus compete with an intermodal service where most services are at least partially undertaken on subsidised road infrastructure. This issue is of most concern where intermodal competition between road and rail is strongest.

Intermodal competition from road is fairly weak on the ore and coal lines, where the technical characteristics of the freight load make it difficult for road freight to be truly competitive (although the current operating crisis proves that even this freight will attempt to move by road, if rail capacity is not available). Moreover, the large, consistent volumes of freight on these lines mean that they have considerable commercial potential, and can produce revenues sufficient to cover their costs.

On the core and feeder network, however, much of the freight which could be taken by rail could also fairly competitively move by

<sup>1</sup> This position has since been moderated in the 2021 updated White Paper, which acknowledges that user pays needs to take into account the impact of policy on vulnerable groups, and may be affected by the existence of externalities. In practice this new policy insight has yet to be fully implemented.



road. These are customers who will respond to changes in service quality, or uncompetitive pricing, by switching to road. The more volume switches off rail onto road, the less the rail network will be able to realise economies of scale, and the higher the average cost of moving freight by rail will rise.

**If rail volumes fall to a point where average costs are now higher than the road tariff, then rail activities may effectively enter a death spiral.** Prices will only cover average costs if they are increased to a level which will drive some customers off rail, which then in turn increases the per unit cost of service provision. Alternatively, tariffs can be kept at a level which is competitive with road, but without subsidisation the entity will then no longer be able to fully fund infrastructure maintenance, and the quality of the network will degrade over time.

**Where this dynamic holds, partial subsidisation of infrastructure costs may be necessary to prevent a death spiral from forming.** Subsidisation of a proportion of infrastructure costs may then be sufficient to allow rail to effectively compete with road, realising the positive externalities associated with rail freight. Whether or not this dynamic holds will depend on the operating conditions in rail in the country concerned. In countries such as the United States and Australia, freight flow characteristics have been more likely to allow rail to be commercially viable, and subsidisation needs have been more limited. In Europe, shorter freight distances seem to have made rail less likely to be commercially viable, and created a stronger case for subsidisation.

**However, the first and most pressing issue as regards subsidisation of South African rail is that of fiscal affordability.** Fiscal resources are currently constrained and there are many other demands being made on public funds. As is illustrated in the international evidence presented above, even where governments commit to funding rail infrastructure there is often significant underfunding in practice. Because rail assets are so long lived, there is a temptation to withhold funding until an operational crisis occurs – which can take decades to materialise. While a solution to Transnet's current debt burden must be implemented in order to support structural reform, this cannot rely only on public funding and should be designed with the end state of the logistics sector in mind.

**Subsidisation can also significantly reduce sector efficiency,** by reducing exposure to market forces. Funds derived from user fees must be earned by providing a competitive service, in a way that state funds are not. In recent years it has become clear that South Africa has severe problems with misuse and diversion of state funds, including at State-Owned Enterprises. Where these abuses occur, the deadweight efficiency losses associated with state funding of infrastructure can become particularly severe. Any move towards subsidisation therefore needs to be accompanied by a strengthening of the governance systems overseeing the use of funds.

The final funding source considered is the private sector. Private sector funding has a number of advantages, in addition to reducing

pressure on Transnet's balance sheet. Private sector funded projects are not subject to restrictive procurement regulations, and as a result can usually be designed and implemented more rapidly and more efficiently. Exposure to market forces also usually makes private firms better at keeping costs under control, and more focused on keeping assets utilised. Private sector investors bring capital, know-how and expertise.

Private sector funding does however come with some risks and limitations. Private investors are motivated by profit, and will only invest in projects which will make an attractive return on investment. Private sector funding will thus only be available for profitable parts of the rail network, or where profit shortfalls are made up by government subsidisation.

The focus on profit maximisation can also produce socially undesirable outcomes, particularly if the asset involved is a natural monopoly. A private firm which controls a natural monopoly asset will typically raise its prices to maximise profits (and as a consequence of doing so, reduce the volume it sells) – although a possible alternative outcome is detailed in Box 4 below. This socially undesirable outcome is ideally prevented by **effective economic regulation** of monopoly pricing.

Profit seeking behaviour can also be associated with other socially suboptimal outcomes, and it may take years before long term issues with the **design of concession contracts**, for example, become fully evident. Specific problems that can arise include the following:

- The design of the contract may allow the concessionaire to realise excess profits
- The concessionaire may be able to maximise short term profits by underinvesting in network maintenance and renewal, leading to the collapse of the network in the long term
- Concession design may not fully incentivise the concessionaire to realise technical efficiency

The design of the concession contract, potentially reinforced by regulatory oversight, is thus crucial to ensure that private sector investment produces socially desirable outcomes.

Finally, depending on the way in which private sector investment is facilitated, it may contribute to an increase in the **fragmentation of the network**. For example, if access to a concessioned segment of the network is governed by the terms of the concession agreement, and it interconnects onto a network where access is governed by regulation, an access seeker may need to navigate two separate access regimes. All of these risks need to be taken into account in considering areas in which private sector participation is suitable.

#### **Box 4: Natural monopoly assets in vertically integrated supply chains**

Economic theory suggests that monopolists will raise prices to the monopoly level and restrict volumes sold to maximise profits. However, this may not in fact occur in vertically integrated rail supply chains, if the commodity owner owns the rail asset. If the profits associated with the commodity being moved by rail are much higher than the profits that would be realised from the rail asset itself, the incentive structure of the vertically integrated firm may change. In order to maximise commodity revenues, rail may instead be managed for maximum efficiency, on a purely cost recovery basis. Excess profits are still being realised by the vertically integrated firm, but only on commodity sales. If the state remains the owner of the rail asset, it may be difficult to structure a compensation model that allows the state to share in the excess profits which the rail asset is allowing the vertically integrated firm to realise.

### **9.3 IMPLEMENTING A COHESIVE FUNDING SYSTEM FOR RAIL**

As discussed in section 8, the expectation is that the core rail network will ultimately be able to realise sufficient densities to be commercially viable and self-sustaining, particularly once the network is rationalised. However, in the short term there is nevertheless a funding shortfall that will need to be addressed, as there is a significant funding backlog on the rail network, which requires expenditures which will exceed the funding capacity of Transnet Freight Rail. Transnet currently has extremely limited ability to take on additional debt, or to fund additional assets from operating revenues.

Given the crucial role that rail can play in supporting larger economic activity, and its impact on the freight burden on the road network, it is appropriate for the fiscus to step in and support the funding of these network infrastructure investments. However, given many competing fiscal priorities and limited resources, it will be necessary to utilise private sector funding as far as possible.

The primary way in which private sector investment will be enabled is through implementing **open access to the rail network**. Private rail operators will contribute to the cost of maintaining and expanding the network through access charges, which will represent a new revenue stream for the Infrastructure Manager to ensure increased investment in the network. The successful introduction of competition in rail freight operations will also require rolling stock investments by market entrants, as they build the capacity to meet client needs. This is a further way in which private sector funds can be brought into the sector. The success of this will, however, depend on the creation of a level playing field in rail, and on a successful rehabilitation program for the rail network to ensure that private sector participants are able to provide efficient rail freight services and attract customers.

**Concessioneering of network segments** has the potential to bring in substantial private sector financing to reinvigorate the rail sector and strengthen Transnet's balance sheet, while retaining public

ownership of railway infrastructure. Well-designed concessions would allow the state to realise additional profits, whether as upfront payments or as long-term profit sharing mechanisms, or some combination of both. These additional profits would then be available to fund the rehabilitation of other parts of the network. However, a key feature of any concession arrangements in the rail system must be the requirement of open access to all lines, whether leased or concessioned.

There is likely also to be potential for **private sector investment in feeder or short lines**. A number of methods can be used to enable private sector investments in the "last mile" link to the rail network. The feasibility of this method of engaging private sector funds will depend both on the commercial appetite of the private sector, and on the institutional framework which enables such investments. Finally, where rail lines are not commercially viable, and the private sector has no interest in investing in them, there may then nevertheless be compelling public interest grounds to keep those lines open. In those cases, an institutional framework is needed to facilitate subsidisation of those lines, by national, provincial or municipal governments.

Finally, private sector capital can be mobilised through **equity partnerships**, for example the establishment of joint ventures between Transnet subsidiaries and private investors. This model is already being implemented in the Durban Pier 2 Container Terminal, and there are various opportunities to apply a similar mechanism in other parts of the business to raise capital and crowd in expertise.

As these funding mechanisms are developed, it is important to outline certain fundamental principles to ensure that future design and implementation is coherent and effective.

#### **(a) Coherent, integrated transport network planning and access management**

While it is likely to be desirable to involve private sector participants and multiple components of government in the funding of various parts of the rail system, care must be taken to ensure that doing so does not fragment the manner in which network planning and management are undertaken. Coordination between road and rail planning should be prioritised, and the infrastructure manager, under regulation from the Transport Economic Regulator, should remain the primary authority as regards network access management.

#### **(b) Enabling competition in above rail operations**

Competition in rail operations will be a central component of improved rail system performance. The rail funding system must not distort the competitive operation of this market. Where the state funds rail, public funding should be used for infrastructure rather than operational funding, to prevent a distortion of competition between rail operators. Operational subsidies should only be used in exceptional circumstances, and with rigorous accounting separation of public service obligations and strong financial oversight.



(c) **Maintaining incentives for efficient operation and maintenance of infrastructure assets**

Funding arrangements should be designed to incentivise the manager of a line to maximise the volume moved on it, and to safeguard the maintenance of the infrastructure asset to an appropriate standard (while avoiding gold-plating). Where feasible, the Transport Economic Regulator should play a role in reviewing funding conditions and outcomes to ensure that these objectives are met.

(d) **Safeguards against excessive profits**

The rail network is a national asset, the purpose of which is to facilitate national economic development. Funding mechanisms should thus include safeguards against excessive profit-taking by all parties. Structural and funding decisions should be cognisant of and mitigate against the incentive of all parties to cherry pick the most profitable components of the network, to the detriment of overall system sustainability.

(e) **Timeous decision making**

Funding systems should be designed in a manner which expedites speedy decision-making. Processes should be as transparent and rigorous as possible, and should as much as feasible include public consultation requirements. However, processes should also include time limits, and the number of parties with the ability to delay or veto a decision should be strictly limited.

**Taking these principles into account, a sustainable funding framework for rail should be based on six key funding mechanisms, each of which is described below.** These mechanisms represent a “menu” of options, the suitability of which must be determined on a case by case basis.

### 9.3.1 State subsidisation of rail infrastructure

As outlined above, some degree of public funding will be required to address the significant backlog in infrastructure investment and rehabilitate the rail network, particularly for the Container Corridor which has been substantially degraded. If the entire cost of network upgrading were to be assumed by users, access charges would need to be set at a level too high for most users to sustain. The preferred subsidisation method is a once-off subsidisation of major infrastructure investments. The recipient of such subsidies should be the IM rather than train operators, in order to minimise the risk of distortions to competitive market conditions. Public funding should as much as possible be tied directly to a reduction in access charges.

The IM will need to motivate for such funding to National Treasury. Going forward, an institutional mechanism should be established for the IM to request subsidies through the Department of Transport or the Transport Economic Regulator based on clearly defined criteria. The regulator should assess the funding request based on the interests of the system as a whole and the prudence of costs, before making a recommendation to the Minister of Transport. The Department of Transport should then refer the request together with this recommendation to the National Treasury for a funding

decision to be made.

In addition, rail lines can be critically important to regional economies, and the positive externalities associated with keeping a line open can exceed the commercial case for operating it. The largest of these positive externalities is frequently the prevention of damage to road infrastructure associated with keeping heavy freight on rail. Low density lines can also facilitate regional economic development. In these cases, subsidisation of specific flows may be justified to enhance the competitive position of a strategic commodity, to support a regional economy, or to reduce the cost of rail to a level that is competitive with road and fill the budgetary deficit of the IM.

The National Rail Master Plan, once implemented, will provide an avenue for more centralised planning of rail infrastructure subsidisation, but it will likely continue to be useful to provide a variety of stakeholders with a way to initiate subsidisation processes.

Finally, the establishment of the IM should enable the rail network to receive significantly cheaper funding linked to its regulated asset base. Some of this funding, including concessional loans from development finance institutions, may require state guarantees. Crucially, however, the IM will be an “investable” entity with a steady revenue stream which can be borrowed against to fund network infrastructure. The IM should be able to raise capital in the market on the strength of its ring-fenced revenue from access charges in order to fund network improvements.

### 9.3.2 Rolling stock investments

The introduction of open access to the freight rail network will result in private sector firms participating on the core network as operators of trains, on a network owned by the state. These firms will need rolling stock to operate, and will either invest in their own fleet or lease rolling stock (locomotives and/or wagons) from leasing companies. As discussed in section 5, rolling stock availability is currently poor, and this is a major factor contributing to the operational crisis in rail. As outlined in the National Rail Policy, it would be highly desirable to see additional private sector investment in rolling stock, both to address the current constraints and to enable new private sector entrants to effectively compete in rail operations.

Rolling stock investments involve substantial amounts of capital, and typically take 10 to 15 years to pay back. Rolling stock is often specialised for use in specific network conditions, and it is thus typically not easy to liquidate or redeploy a rolling stock investment. Private sector investments are thus unlikely to occur unless there is some assurance that operating rights will be guaranteed for long enough to pay off the initial investment. This conclusion is supported by the results of the April 2022 third party access tender process recently completed by Transnet, which guaranteed access for only 24 months but failed to enable investment in new rolling stock.



EU precedent is instructive with regard to how such concerns can be addressed. The overarching framework for EU access regulation is based on an annual timetabling system, where train slots are allocated for only 12 months at a time. However, exceptions are made for access seekers to negotiate longer-term framework agreements with infrastructure managers, with one of the grounds for such longer contract terms being the presence of specialised investments or large-scale, long-term investments. These agreements guarantee access to the network for a longer period, such as 10 or 15 years, without guaranteeing a specific slot in the annual timetable, and with clear performance requirements for access seekers.

Going forward, framework agreements guaranteeing longer term access will need to be made available to private sector market participants in order to facilitate rolling stock investment. Provision should be made in the network statement for such agreements to be negotiated. The terms of these agreements should be negotiated on a case-by-case basis, given the specific investment case requirements on defined projects, and access rights should fall away if the specified investment does not in fact occur or if the access seeker fails to meet the requirements outlined in the agreement. The need for such framework agreements is likely to be greatest as private sector access to the rail network is initiated, and rolling stock fleets are built up. Over time it is thus anticipated that the bulk of the market should revert to an annual timetabling system.

### 9.3.3 Concessioning

Concessioning has considerable potential to crowd in private sector funds to reinvigorate the rail sector, but also poses a number of risks. A key risk is that of network fragmentation. The value of a network increases as the number of origin and termination points on it increases, and as the cost of interconnecting falls. If part of a network is managed and controlled by a concession, these network economies can be eroded. For example, it may be more difficult and expensive to complete a train journey if two separate access regimes and infrastructure managers need to be dealt with, as compared to negotiating with a single IM. A single IM may also be better placed to plan and coordinate the expansion of infrastructure. However, these coordination challenges are not insurmountable.

As set out in Appendix and 6, the extent to which each line category is affected by traffic from the other categories varies substantially. While the core network is highly dependent on traffic from other categories, the iron ore and coal lines are largely self-contained. This dynamic is most pronounced on the iron ore line, where 92% of traffic does not leave the category, and where there is some degree of geographical separation from the rest of the network as well. This suggests that a concession of the iron ore line in particular would have relatively little impact as regards network fragmentation. Such a concession, which could be pursued through a joint venture (JV) model, would have the benefit of providing much-needed capital for

Transnet upfront in addition to dividend payments as a shareholder, while enabling improvements in operational performance.

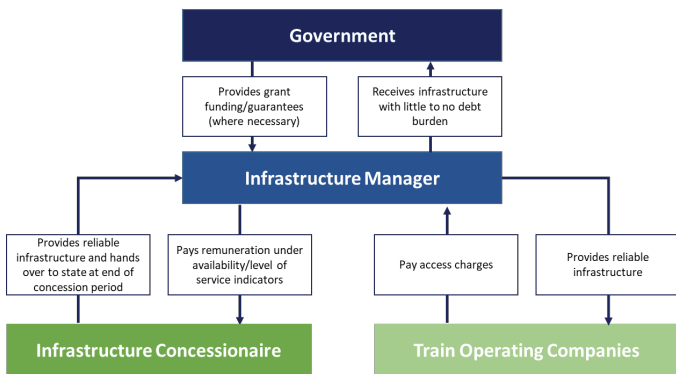
There may also be efficiency advantages to concessioning of the bulk mineral lines. As discussed in Appendix 4, a growing evidence base suggests the case for vertical integration of rail operations and infrastructure is strongest where traffic density is very high. It would be possible to construct a concession arrangement in order to facilitate vertically integrated management of track and operations, in a manner which could be beneficial to the efficiency of ore export lines.

A second key risk of concessioning is financial in nature. The dense ore corridors are potentially attractive concessioning opportunities, but are also the most profitable part of the rail network, and loss of these revenues would thus affect the profitability of the remaining network. Care should be taken when structuring any concession to ensure that commercial benefits are shared by the rest of the network and that the network can be sustained as a whole.

A further possibility exists for the Infrastructure Manager to structure a concession for infrastructure investment and maintenance on segments of the network, as opposed to a vertically integrated concession. In this case a private sector firm would be granted a concession contract for upgrading and maintaining the rail infrastructure, which is used by multiple rail operators. The advantage of this approach is that it allows each participant to focus on its field of expertise with appropriate risk allocated to each specialist firm.

The manner in which this structure could be implemented, under an availability-based rail infrastructure concession, is shown in Figure 31 below. The Infrastructure Manager, acting on behalf of the government, would enter into an availability-based contract with a private sector concessionaire, shown at the bottom left of the diagram. The private sector concessionaire would maintain and upgrade the rail infrastructure to a required level of service. At the end of the contract the infrastructure would be handed over in a pre-determined condition to the Infrastructure Manager. The Infrastructure Manager, in turn, would remunerate the private sector concessionaire during the contract for the effective availability of the rail infrastructure at the specified level of service. Train operators would pay the Infrastructure Manager, who retains signal and train control on the network, an access fee for using the rail infrastructure. There would thus be no contractual arrangement or flow of money directly between the train operators and the infrastructure concessionaire.

Figure 31: Availability-based rail infrastructure concession



Source: Boting, A., from African Development Bank, 2015

The infrastructure concessionaire assumes full responsibility and risk for the state of the rail infrastructure under this contractual arrangement. Deductions would be made to the remuneration from TFR should this infrastructure not be at the specified level of service or if delays are incurred. While the infrastructure concessionaire bears full risk for the performance of the rail network it does not assume any of the traffic or commercial risks (African Development Bank, 2015, p. 121). Traffic risk is borne by the TFR infrastructure manager and commercial risk by the train operators. This contractual arrangement requires transparency regarding the condition of the rail infrastructure and the sharing of related data between the concessionaire and TFR. Any problematic conditions regarding the rail infrastructure should be apparent to either party, which in turn would lead to the appropriate remedial action.

The concession model detailed above is not the only available option, and the full details of any contract would need to be finalised in negotiations. In the immediate future, the potential for concessioning of segments of the network will be explored, including through engagement with market participants. With regard to the bulk mineral corridors, the options of a concession or an equity partnership through a joint venture for the iron ore corridor should be considered as a priority. This process will be undertaken by work streams 4 and 6 of the NLCC, within a framework which emphasizes the following principles:

- The need to mobilise private sector funding, in recognition of the potential for future profit share in concessions to be used to cross-subsidise the rest of the network
- The efficiency maximising potential of vertically integrated operations on bulk corridors
- Protection of third party access rights on concessioned lines
- Ensuring that concession contracts safeguard ongoing maintenance of infrastructure, to protect the quality of the asset at the end of the concession period

**Box 5: Network fragmentation and the scope of the infrastructure manager**

Given that the value of a network increases as the number of origin and termination points on it increases, a strong argument can be made for setting the scope of the infrastructure manager as widely as possible. There is no intention to widen this scope to include privately owned assets. Should any decision be made to concession lines going forward, however, the infrastructure manager should remain the beneficial owner of those lines, and the party with which the concessioning contract is concluded.

In the short term, the policy priority will be to undertake vertical separation of infrastructure management at Transnet to facilitate freight rail. Vertical separation is also being undertaken on the PRASA network. The Department of Transport will undertake further research on the practical implications of integrating these Transnet and PRASA assets into a single IM, to determine whether doing so is advisable, and what would be required to do so. Integration into a single IM likely has considerable potential to facilitate more efficient network management and design practices.

**9.3.4 Feeder or short line investments**

As set out in section 8, as an immediate priority the commercial viability of the rail network needs to be safeguarded by closing extremely low-density short lines. However, this process needs to be undertaken in a structured manner, including mechanisms which will allow private sector investors to take over such lines if so desired. This is consistent with the objectives of the Rail White Paper, which requires that policy “[a]ccommodate prospective rail freight investors who are able and willing to fund their rail access and service requirements when incumbent entities are unable to fund the required capacity or unwilling to bear the investment risk.”

For these reasons, there needs to be a formal consultation mechanism in place, whereby the IM is required to consult with provincial and municipal authorities when material changes to the rail network are being contemplated. Private investors should equally be afforded the opportunity to purchase and take over short lines, for example where they serve a particular industry or customer. Where the infrastructure manager proposes to close a line, a public announcement must be made of this intention, providing a period of at least three months to respond with an offer to purchase or subsidise the line. Where an offer to purchase or subsidise the line is received, the infrastructure manager must then respond within a period of not more than six weeks with a detailed sale or subsidisation proposal. If agreement cannot be reached with the sale or subsidisation counterparty, disputes may then be resolved by the regulator, which will need to be provided with statutory powers to play this role. Prior to the enactment of the ERT Bill, the IRERC may be able to provide an arbitration function on such disputes.

The manner in which these mechanisms are designed must take into account the need to minimise network fragmentation. In

particular, there must be clarity as regards available access to the network before short line purchase or subsidisation agreements are concluded. The sale agreement for a short line should provide the IM with an option to repurchase, in the event of a future sale by the investor concerned.

### 9.3.5 Private investment in refurbishing or expanding line capacity

Both the core network and feeder lines will require substantial maintenance and refurbishment to restore their reliability and, where necessary, expand their capacity. There are likely to be delays in refurbishing some of these lines, given the limited financial budget available to the IM. Where private sector investors wish to expedite the maintenance or refurbishment of a specific line more rapidly than the budget of the IM would otherwise allow, or where they wish the line capacity to be increased to a level that the IM is not willing to finance, a mechanism to allow private sector investment will be introduced. This mechanism could also be used to facilitate investments into any part of the network, so that private operators are not solely reliant on the IM to upgrade the network.

This mechanism to enable private funding of rail infrastructure will be designed in line with international precedent. Where an access seeker identifies a project to increase reliability or provide additional capacity on the network, and the Infrastructure Manager indicates that it will not fund the project (or will not fund it fully), the access seeker may notify the Infrastructure Manager of its willingness to fund the project. Where a private investor makes a capital contribution, while the Infrastructure Manager will own the assets created, the investor will make a return on its assets via a discount in the access fee it is charged. The access fee adjustment is calculated in order to ensure that the Infrastructure Manager is left economically no worse off and that the investor makes a return on their investment which does not exceed the Infrastructure Manager's predetermined rate of return, i.e. to ensure that only prudent costs are recouped.

Where investments are made into the core network or feeder lines, it should be clear that the IM retains ownership of the line, and that the investor will recoup their investment through access price concessions.

### 9.3.6 Strategic equity partnerships

As outlined in section 5.3 above, private sector participation can be utilised to enable the necessary investments in port and rail infrastructure while Transnet's financial position remains constrained. Transnet is already pursuing various equity transactions which are either cash generative or would reduce capital expenditure and relieve pressure on its balance sheet. These transactions need to be urgently accelerated and expanded to other parts of the business where appropriate and in line with the policy objectives of the sector and implementation priorities outlined in this roadmap.

An example of such a transaction is the equity partnership which Transnet is putting in place for the Durban Container Terminal

(DCT) Pier 2. In July 2023, Transnet announced that it had concluded the process of selecting an equity partner for DCT 2, namely International Container Terminal Services Inc. (ICTSI). This forms one of many initiatives by Transnet to allow private sector participation to bolster performance of its biggest terminal, which handles 72% of the Port of Durban's throughput and 46% of South Africa's port traffic. Private participation is expected to crowd in much needed investment and management expertise.

The partnership will see Transnet Port Terminals (TPT) enter a 25-year joint venture with ICTSI under a new entity (NewCo) which is being established for the operations of the DCT Pier 2. The terminal will revert to TPT at the end of the term, however for the duration of the contract, it will operate with its own board and executive committee. In addition to the best-practice management to be leveraged from the terminal operator, the partnership will catalyse and accelerate investments into increasing the availability of equipment, enhanced technological capability and improved operations. It is anticipated that ICTSI will increase DCT Pier 2's capacity from its current levels of 1.9 million twenty-foot equivalent units (TEUs) to 2.8 million TEUs over the coming five years. Improving the efficiency of operations will not only support competitiveness of South Africa's ports, but it will stimulate exports and imports.

This model should be extended to the Ngqura Container Terminal and to other terminals currently operated by TPT. The proposed rolling stock leasing company will also be established through a joint venture with a private sector equity partner, enabling greater investment in the refurbishment of Transnet's rolling stock fleet.

Finally, consideration should be given to the listing of minority stakes (or retention of a "golden share") in businesses within Transnet that are relatively easily isolated and subsidiarized and are either profitable or can be made profitable relatively quickly, such as TPT. Listing on the JSE would both allow capital to be raised from the market and introduce greater transparency and discipline through the rules that apply to listed companies.

It is important to highlight that these mechanisms for raising capital from the private sector and introducing skills, expertise, and know-how, will accomplish this without relinquishing public control of these businesses.

## 9.4 OVERSEEING PRIVATE SECTOR PARTICIPATION (PSP) INITIATIVES

For PSP initiatives to succeed commercially and be produce socially desirable results, they must be designed carefully, in a manner that enables commercial viability while creating efficiencies and guarding against excessive profits. Various efforts have been made to initiate private sector participation in rail over the last 20 years, which are summarised in Appendix 9. While limited success has been realised in this regard, a number of lessons can be derived.

Many of the earlier attempts at concessioning branch lines were undermined from inception by an inherent tension, in that Transnet



wished to concession the lines because they were not profitable, but often no subsidy was provided to support the line. The concessionaire would thus need to grow volumes on the line substantially to make the line sustainable. In addition, the concessionaire was typically not able to access the rest of the network, which in effect made it more difficult for them to grow volumes than it had been for Transnet prior to concessioning. In more recent concession offers, Transnet has also required that concessionaires use Transnet services for train operations and management (the Branch Line Operations and Management model, or BLOM). In effect this would leave the concessionaire with very little control over the efficiency and cost effectiveness of their operations, and little ability to compete with Transnet on the quality of the service offering.

These conditions made the available concessions commercially unattractive, and private sector interest has therefore been low. The failure of the slot sales pilot initiated by Transnet in 2022, as outlined in greater detail in previous sections, was similarly caused by a failure to design the RFP in a manner that was commercially viable for prospective applicants, with conditions that were too onerous to enable meaningful participation.

Moving forward, greater oversight of these initiatives needs to be provided by the state to ensure that they properly balance the interest of all parties. The ERT Bill provides a basis for such oversight, and sets out the following three types of regulated rail access requests:

6. (1) *The following types of access requests may be regulated:*
- (a) *use of infrastructure that has been determined in terms of section 4, to run trains;*
  - (b) *requests to physically interconnect infrastructure with infrastructure that has been determined in terms of section 4; or*
  - (c) *requests to make investments in order to increase the capacity of infrastructure that has been determined in terms of section 4, where the owner of the said infrastructure has declined to make the requested investment to the requested specifications.*

While these ERT mechanisms will likely cover the bulk of PSP initiatives in rail, different oversight mechanisms will be needed for other forms of PSP, such as concessions. The initial focus will be on ensuring that PSP initiatives are designed in a manner which is consistent with national policy. Section 54 of the PFMA already requires public entities to secure approval for significant transactions from the Minister of Public Enterprises, and to notify National Treasury. What is needed is additional oversight during the design phase. This must be undertaken in a manner which does not slow down decision-making unnecessarily, or burden the transaction approval process with excessive red tape. The oversight mechanism will thus be a requirement on Transnet to notify DPE of significant PSP transactions while they are being designed, so that consultations can be held before the publication of RFPs. DPE will exercise oversight of Transnet's PSP initiatives in consultation with DOT and National Treasury, in order to ensure consistency with the National Rail Policy and the provisions of the Economic Regulation

of Transport Bill. No additional formal sign-off will be added to the process, but Transnet will receive an early indication of whether such major transactions are regarded as aligned to national policy and supported by the state as the shareholder:

In addition to improving oversight of the design of PSP initiatives at an earlier stage, it will be important to ensure that a fully resourced set of technical skills is available to assist in the design, negotiation and contracting of projects. The DOT will establish a PSP unit within the department for this purpose, which will include the necessary legal and financial expertise to support the structuring of PSP transactions. This unit will not, however, be responsible for the implementation or procurement of such initiatives directly.

It should also be noted that the ERT Bill introduces amendments of sections 56 and 57 of the National Ports Act, which are designed to improve the governance of PSP in ports, specifically where the NPA is empowered to make decisions affecting other parts of the Transnet group. Ultimately these amendments empower the TER to take action "to ensure a fair, equitable, transparent, competitive and cost-effective operation of the market." DOT is in the process of drafting regulations to build on these elements of the ERT Bill, and to ensure that the regulator will be empowered to play this role in terms of the Bill.

Crucially, any PSP transactions should not undermine the long-term objectives outlined in this roadmap. For example, concessions in rail must be designed in a manner that ensures open access to the network, including on concessioned lines. Finally, the introduction of private sector partnerships should not result in job losses or worsen conditions of employment for current workers. Consideration should be given to requiring private rail operators and/or concessionaires to participate in the Transnet Bargaining Council to ensure that competition does not drive down wages or working conditions.

## 10 AN ENABLING LEGISLATIVE FRAMEWORK

The establishment of a meaningfully independent infrastructure manager will be central to ensuring a level competitive playing field in rail, and an independent sector regulator is needed to provide oversight of that system. Additional governance requirements for the infrastructure manager will also be needed to provide a framework for a newer, more complex funding system. This governance framework will be set out in the forthcoming Rail Bill. The objectives of this legislation, among others, will be as follows:

- To ensure that the board and management of the IM are appointed in a manner which is designed to prioritise technical competence and outline rules to protect the independence of the IM
- To ensure transparency in the management of rail infrastructure as a public asset, and particularly in the management of public funds where subsidisation occurs

- To clarify that the primary objective of the IM is to maximise the volume of traffic on the rail network, in an efficient manner

The legislation should provide for the establishment of the IM as an incorporated company separate from Transnet, on a date determined by the Minister of Transport. Upon its establishment as a standalone entity, the Department of Transport should be the shareholder of the IM and should exercise a similar role to its oversight of SANRAL. These arrangements do not rule out the possible eventual inclusion of the IM into the proposed State Asset Management Company, or holding company, in terms of the forthcoming National State Enterprises Bill.

As has been discussed, a strong case exists for right-sizing the rail network by closing lower volume lines. Rigorous process and governance arrangements will however need to be in place to do this, given the positive externalities generated by rail, and the importance of the rail network as a national asset. The Rail Bill must thus include a process for transferring assets into and out of the IM's network asset portfolio. This should include expectations for how closed assets should be managed, and deal with the question of whether assets can be devolved to the management control of municipal or provincial authorities. In general the IM's asset management plan must align with the national rail masterplan developed by the Department of Transport.

The obligation should be placed on the IM to manage its assets in such a way as to achieve operational efficiency and maximise volume moved, and that it will have the ability to request additional state funding, fund assets via private sector investments, or concession assets, as necessary to meet a predetermined set of policy objectives.

For assets owned by the IM, the legislation must then set out a process for requesting subsidies. This should include the following:

- Which entities have standing to request subsidisation of rail assets
- Which part of government decides on such requests (for example the Minister of Transport, after receiving advice from the Transport Economic Regulator)
- Process and transparency requirements
- The manner in which provincial and municipal authorities are to be consulted

The legislation should also set out the process whereby private sector investments into the network may be made. This should include the following:

- A statement that the IM has right of first refusal to fund an asset, but that private sector investors have the right to fund an asset if the IM refuses to do so
- Where private sector investment is used, the IM will retain ownership of the asset, and the IM must be left economically no worse off by the terms of the transaction

- Where private sector investors contribute funds to developments on lines managed by the IM, the investor will receive no more than a predetermined rate of return on the investment, typically in the form of a reduced access fee (these arrangements will need to be determined in consultation with the Transport Economic Regulator)
- Where the IM wishes to abandon a line, it should be required to offer that asset for sale or subsidy, and the TER should have the ability to adjudicate disputes as regards the value
- Where lines are concessioned, the contract will provide the IM with significant profit share, past a predetermined hurdle rate

The IM will be allowed to use funds earned from concessions to fund its operations in other areas of the network – there will thus be no expectation that earnings in one part of the network are ringfenced to those lines, as is the case for SANRAL. However, there will be a ringfencing requirement for subsidies and for private investments into specific lines. The IM will be subject to rigorous reporting requirements, to the Transport Economic Regulator and the Department of Transport.

As a rule the right for third parties to request access to concessioned and privately financed lines will remain, and the IM will continue to determine access requests as per the normal capacity allocation process set out in the network statement. The concessionaire will also have some discretion to develop different operating practices and standards on the concessioned line. The investing party should be able to choose whether to use the IM as the project manager, or an independent contractor.





## II THE FUTURE ROLE AND STRUCTURE OF TRANSNET

The reforms outlined in this roadmap, which seek to implement the policy commitments made by government, will require significant changes to Transnet’s structure and operating model. The Transnet shareholder’s compact, as the primary governance tool setting out the mandate of the organisation, will be revised to take into account the commitments outlined in this roadmap, and the implementation of these changes will be overseen by the Transnet board.

The Transnet of the future will continue to play an important role within the national logistics system. As the custodian of ports, rail and pipelines, Transnet will act in a manner that enables globally competitive supply chains, facilitates industrialisation, and crowds in private resources. At the same time the company will actively shape and make logistics markets in order to improve South Africa’s competitiveness.

As outlined in the sections above, Transnet has experienced serious problems with its rail business, Transnet Freight Rail, as well as in its port operations. Ongoing attempts to support an inappropriately sized network have spread available capital and resources too thinly for the railway to be competitive and sustainable in its current form, while the market structure has prevented competition, limited new investment and created inefficiencies. This problem has spilled over into the ports space, as excess capital was channelled into rail at the expense of the ports.

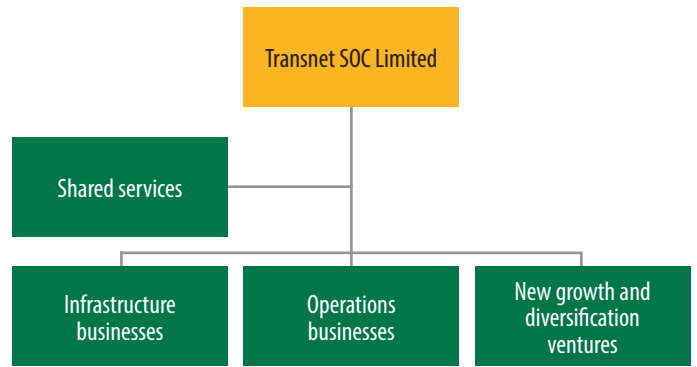
Transnet’s priority is to restructure the rail network to create a financially viable core network and to enable open access to this network. This entails a transformation of the rail sector from one of the oldest monopolies in the country into a multi-company sector, as is the case in most countries to a greater or lesser extent. The new industry architecture will encompass multiple railways, train operating companies, rolling stock leasing companies, infrastructure maintenance and construction companies and accredited training institutions. This represents a significant restructuring of the rail sector and a repositioning of Transnet’s role within that sector. Importantly, it will revitalise and grow the rail sector in South Africa, resulting in additional volumes on the network and more jobs – not simply carving up the existing market among multiple operators. This is borne out in the experience of other countries which have embarked on a similar process of reform.

Going forward Transnet will have to both provide world class infrastructure, as well as be an important user of this infrastructure. For this reason, a commercial separation of infrastructure and operations is required. Transnet’s repositioning will require a number of transformative interventions, including the commercial separation of infrastructure businesses and operations businesses within Transnet, a reconfiguration of the business portfolio to place a greater emphasis on industry sectors, and a move towards a more decentralised operating model.

The immediate priority will be the establishment of a separate Infrastructure Manager for the rail network, along the lines detailed above. The Infrastructure Manager will initially be established as an operating division of Transnet with its own management, leaving rail operations in Transnet Freight Rail. Within six months, it will be converted into a wholly owned subsidiary of Transnet with its own independent board. Over time, the Infrastructure Manager will be established as a state-owned company separate from Transnet. In parallel, the establishment of the National Ports Authority as a subsidiary of Transnet (as opposed to an operating division) will be completed in terms of the National Ports Act. These two processes will result in the creation of infrastructure-focused network businesses whose revenues are regulated.

Transformation towards a portfolio based operating model with a holding company and wholly-owned subsidiaries provides the widest range of strategic options for Transnet, and will facilitate the transition to an SOE holding company if so desired in future. It also provides for the widest range of financing options implementing the roadmap. The future corporate form of Transnet is as a portfolio company with three main portfolios of Network Businesses, Operations Businesses and New Ventures as shown below. This corporate structure will evolve further once infrastructure business such as the Infrastructure Manager are established as standalone entities.

Figure 28: Future corporate structure of Transnet



By following this path, Transnet’s corporate form will evolve to enable the company to position itself strategically within various market segments, while enabling access to infrastructure and the improvement of the competitive environment within which it currently operates.

Balancing organisational change while at the same time attempting to drive operational improvements is a significant challenge and one which calls for a more agile, entrepreneurial and collaborative management approach, characterised by transparency and a partnership-based approach which embraces joint accountability. Transformation of the organisational culture through appropriate change management is thus fundamentally important.

## 12 INSTITUTIONAL ARRANGEMENTS

The National Logistics Crisis Committee (NLCC), which is chaired by the Presidency and includes Transnet, PRASA, the Department of Public Enterprises, the Department of Transport, National Treasury, the South African Police Service and other relevant government departments and agencies, will coordinate the implementation of this roadmap and monitor the implementation plan below. However, this coordination role does not replace the primary responsibility of the Transnet Board or the relevant government departments for their respective obligations and mandates.

The NLCC has established eight work streams in total which are responsible for coordinating various aspects of the roadmap. Work stream 1 focuses on driving operational improvement in the port and rail system, as outlined in Chapter 5. Work stream 4 focuses on structural reform, and includes Transnet, the Department of Public Enterprises (DPE), the Department of Transport (DOT), and National Treasury. This work stream will monitor and support reform implementation, including the establishment of the IM, the finalisation of the network statement, and the facilitation of open access to the rail network. Work stream 6 focuses on financing, and includes Transnet, DPE and National Treasury. This work stream will oversee the various mechanisms contemplated in Chapter 9, enable more effective oversight of PSP transactions, and expedite the necessary approvals from DPE and National Treasury.

Many of the actions required to implement the roadmap are the responsibility of Transnet, and ultimately the Transnet Board. As the shareholder department, the Department of Public Enterprises (DPE) will oversee the execution of these responsibilities and will ensure that they are reflected in its mandate to the Board, including through the shareholder's compact. This includes the proposed restructuring of Transnet through the establishment of the Infrastructure Manager and the National Ports Authority as subsidiaries, and the various governance requirements associated with this transition.

The Department of Transport (DOT), as the policy department, will oversee the establishment of an enabling legislative, regulatory, and policy framework for the logistics system. This includes the establishment of the Transport Economic Regulator, as well as interim regulatory oversight through the IRERC. The DOT will further strengthen its role in supporting private sector participation in the transport sector through the establishment of the PSP Unit detailed above.

National Treasury will work closely with Transnet on issues related to funding of the logistics system, in line with its statutory mandate. In addition, through the Office of the Chief Procurement Officer, it will be responsible for putting in place an enabling, fit-for-purpose procurement system for Transnet and other Schedule 2 entities.

The reform of the logistics system contemplated in this roadmap is a complex, multi-year process that will require carefully sequenced

and often interdependent actions to be taken by a wide range of actors in the system. This in turn necessitates effective central coordination, monitoring, and oversight, while ensuring that responsibilities are set out clearly and allocated appropriately. The next section outlines a detailed implementation plan with this purpose in mind.

## 13 IMPLEMENTATION PLAN

The actions outlined in this roadmap aim to stabilise and improve Transnet's operational and financial performance in the short term, and to reform the structure of the freight logistics system in the long term. The table below summarises the key actions, indicating the expected timeframe and responsibility for each, in order to enable effective oversight. Implementation of the roadmap will be coordinated by the National Logistics Crisis Committee, which is chaired by the Presidency and includes all relevant departments as well as Transnet.

The commitments in the roadmap will be reflected in the shareholder's compact with Transnet, which is agreed annually between the Minister of Public Enterprises as the executive authority and the Transnet board as accounting authority. In order to ensure that continuous oversight of the reform process is enabled by the shareholder's compact, it will include monitoring structures with appropriate expertise in economic regulation and rail reform during the reform period.

**Table 12: Implementation plan**

No.	Action	Responsibility	Timeframe
<b>1</b>	<b>Improve operational performance of freight rail and ports</b>		
1.1	Finalise and approve Transnet Recovery Plan	Transnet	November 2023
1.2	Establish Corridor Recovery Teams (CRTs) for five strategic corridors	Transnet/industry	November 2023
1.3	Establish multidisciplinary Priority Committee to address crime affecting railway infrastructure	SAPS	November 2023
1.4	Identify urgent equipment requirements at all ports and develop plan to address critical gaps	Transnet/industry	November 2023
1.5	Develop detailed delivery plans and KPIs for each CRT to achieve targeted volumes	Transnet/industry	December 2023
1.6	Conclude agreements with OEMs to enable delivery of remaining locomotives and return of long-standing locomotives to service	Transnet	January 2024
1.7	Explore the reestablishment of the Railway Police and provide recommendations to the NLCC	SAPS	March 2024
1.8	Introduce an integrated, dynamic, automated planning and scheduling solution for the rail network	Transnet	April 2024
1.9	Undertake independent technical assessment of each strategic corridor to assess state of infrastructure and identify interventions required	National Treasury	April 2024
<b>2</b>	<b>Create a level playing field in freight rail and ports</b>		
2.1	Establish an interim Infrastructure Manager with its own management and reporting structure	Transnet	November 2023



No.	Action	Responsibility	Timeframe
2.2	Develop a draft interim Network Statement for the rail network, including the general rules, deadlines, procedures and criteria for capacity allocation and access charges, as well as a standard access agreement and longer-term framework agreement	Transnet	November 2023
2.3	Develop and implement a code of conduct for IM staff to establish a "Chinese wall" between the IM and TFR	Transnet	April 2024
2.4	Complete consultation with key stakeholders and finalise the interim Network Statement	Transnet	April 2024
2.5	Commence requests for access to the freight rail network	Transnet	April 2024
2.6	Establish the National Ports Authority as a subsidiary with a board comprising a majority of independent non-executive directors	Transnet	April 2024
2.7	Establish the Infrastructure Manager as an operating division within Transnet	Transnet	September 2024
2.8	Implement an interim transfer pricing regime to ensure that all commercial arrangements between the IM and TFR are conducted on an arms-length or market related basis	Transnet/IRERC	September 2024
2.9	Allocate capacity on the freight rail network and publish timetable	Transnet	September 2024
2.10	Establish a rolling stock leasing company through a joint venture with Transnet Engineering (TE), with appropriate governance and transfer pricing arrangements in place	Transnet	April 2025
2.11	Establish the Infrastructure Manager as a subsidiary with a board comprising a majority of independent non-executive directors	Transnet	April 2025
<b>3</b>	<b>Create an enabling legal and regulatory framework</b>		
3.1	Exercise oversight of Transnet restructuring process	DPE	Ongoing
3.2	Ensure adequate resources and capacity for IRERC to exercise an effective oversight role	DOT	January 2024
3.4	Initiate a market inquiry by an appropriate institution to extend regulation to rail in terms of section 4 of the ERT Bill	DOT	February 2024
3.3	Manage consultation process on the interim Network Statement and provide recommendations for incorporation in final version, including on the methodology for calculation of access charges	IRERC	April 2024
3.5	Establish the Transport Economic Regulator (TER) following passage of the ERT Bill	DOT	April 2024
3.6	Draft regulations in terms of the ERT Bill for the governance and oversight of the network statement	DOT	April 2024
3.7	Finalise and submit the Rail Bill to Cabinet	DOT	June 2024
<b>4</b>	<b>Right-size the rail network</b>		
4.1	Develop a draft National Rail Master Plan identifying the appropriate size of the network and lines to be closed	DOT	October 2024
4.2	Release prospectus of low-density lines identified for closure and publish request for offers to purchase or subsidise those lines	Infrastructure Manager	November 2024
<b>5</b>	<b>Ensure the financial sustainability of the freight logistics system</b>		
5.1	Pursue identified opportunities for private sector participation (PSP)	Transnet/DOT	November 2023 to April 2025
5.2	Relaunch RFP for private sector partnership at NCT	Transnet	January 2024

No.	Action	Responsibility	Timeframe
5.3	Complete establishment of partnership with private sector terminal operator for DCT Pier 2	Transnet	April 2024
5.4	Develop a Private Sector Participation (PSP) Framework for the rail sector and implementation plan	DOT	April 2024
5.5	Explore potential models for concessioning parts of the network where appropriate and opportunities for availability-based infrastructure concessions	Transnet/DPE/ National Treasury/ DOT	April 2024
5.6	Develop mechanism for private investment in rail infrastructure to be recouped through reduced access charge	Infrastructure Manager/IRERC	September 2024
5.7	Develop a funding framework for the rail system in collaboration, including a process for the IM to request subsidies based on clearly defined criteria	National Treasury/ DOT	September 2024
5.8	Consider PFMA approvals and/or exemptions for PSP transactions where required	DPE/National Treasury	Ongoing

Table 13: Implementation plan timelines

		2023					2024								2025	
Action		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Apr
Improve operational performance of freight rail and ports	Finalise and approve Transnet Recovery Plan (Transnet)															
	Establish Corridor Recovery Teams (CRTs) for five strategic corridors (Transnet/ Industry)															
	Establish multidisciplinary Priority Committee to address crime affecting railway infrastructure (SAPS)															
	Identify urgent equipment requirements at all ports and develop plan to address critical gaps (Transnet/Industry)															
	Develop detailed delivery plans and KPIs for each CRT to achieve targeted volumes (Transnet/Industry)															
	Conclude agreements with OEMs to enable delivery of remaining locomotives, return long-standing locomotives to service (Transnet)															
	Explore the re-establishment of the Railway Police and provide recommendations to the NLCC (SAPS)															
	Introduce an integrated, dynamic, automated planning and scheduling solution for the rail network (Transnet)															
	Undertake independent technical assessment of strategic corridors; assess state of infrastructure and identify interventions (National Treasury)															
Creating a level playing field in freight rail and ports	Establish an Interim Infrastructure Manager with its own management and reporting structure (Transnet)															
	Develop a draft interim Network Statement for the rail network, including the general rules, deadlines, procedures and criteria for capacity allocation and access charges, as well as a standard access agreement and longer-term framework agreement (Transnet)															
	Develop and implement code of conduct for IM staff to establish “Chinese wall” between IM and TFR (Transnet)															
	Complete consultation with key stakeholders and finalise the Network Statement (Transnet)															
	Commence requests for access to the freight rail network (Transnet)															
	Establish the National Ports Authority as a subsidiary with a board comprising a majority of independent non-executive directors (Transnet)															
	Establish the Infrastructure Manager as an operating division within Transnet (Transnet)															
	Implement a transfer pricing regime to ensure that all commercial arrangements between the IM and TFR are conducted on an arms-length or market related basis (Transnet/IREC)															
	Allocate capacity on the freight rail network and publish timetable (Transnet)															
Creating and enabling legal and regulatory framework	Establish a rolling stock leasing company through a joint venture with Transnet Engineering (TE), with appropriate governance and transfer pricing arrangements in place (Transnet)															
	Establish the Infrastructure Manager as a subsidiary with a board comprising a majority of independent non-executive directors (Transnet)															
	Exercise oversight of Transnet restructuring process (DPE)															
	Ensure adequate resources and capacity for IREIC to exercise an effective oversight role(DOT)															
	Initiate a market inquiry by an appropriate institution to extend regulation to rail in terms of the ERT Bill (DOT)															
	Manage consultation process on the Network Statement and provide recommendations for incorporation in final version, including on the methodology for calculation of access charges (IREIC)															
Right-size the network	Establish the Transport Economic Regulator (TER) following passage of the ERT Bill (DOT)															
	Draft regulations in terms of the ERT Bill for the governance and oversight of the network statement (DOT)															
	Finalise and submit the Rail Bill to Cabinet (DOT)															
	Develop a National Rail Master Plan identifying the appropriate size of the network and lines to be closed (DOT)															
	Release prospectus of low-density lines identified for closure and publish request for offers to purchase or subsidise those lines (IM)															



		2023					2024					2025				
Action		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Apr
Ensure financial stability of the freight system	Pursue identified opportunities for private sector participation (PSP) (Transnet/DOT)															
	Consider PFMA approvals and/or exemptions for PSP transactions where required (DPE/National Treasury)															
	Relaunch RFP for private sector partnership at NCT (Transnet)															
	Complete establishment of partnership with private sector terminal operator for DCT Pier 2 (Transnet)															
	Develop a Private Sector Participation (PSP) Framework for the rail sector to identify further PSP opportunities (DOT)															
	Explore potential models for concessioning parts of the network where appropriate and opportunities for availability-based infrastructure concessions (Transnet/DPE/National Treasury/DOT)															
	Develop mechanism for private investment in rail infrastructure to be recouped through reduced access charge (IM/IRERC)															
	Develop a funding framework for the rail system in collaboration, including a process for the IM to request subsidies based on clearly defined criteria (National Treasury/DOT)															



## APPENDIX I: STATE AND PRIVATE FUNDING OF ROAD INFRASTRUCTURE

Analysis of South African road infrastructure financing is relevant for two reasons:

- It is an example of a local model for transport infrastructure financing
- The capacity and efficiency of the rail system affect congestion on the road system, and it would be desirable for infrastructure planning of these two transport systems to be more closely coordinated going forward

Road infrastructure is managed and financed by all three spheres of government in South Africa. At national level, SANRAL is tasked by its founding legislation, the South African National Roads Agency Limited and National Roads Act, 1998, ("SANRAL Act") with "financing, management, control, planning, development, maintenance and rehabilitation of the South African national roads system." The Act allows the Minister of Transport to declare any road a national road (and thus part of the SANRAL portfolio), with the agreement of the relevant provincial Premier. Since its founding in 1998, the road network controlled by SANRAL has grown considerably, from 6 800 to more than 22 200 kilometres.

As shown in the table below, road transport was allocated R60 billion in the national budget in 2022/23, as compared to R20 billion for rail (of which only PRASA received capital transfers in the rail sector). In road, SANRAL received capital transfers of R11.3 billion (with transfers of another R4.4 billion from national government for the Gauteng Freeway Improvement Project accounted for as a current transfer). Provincial road maintenance grants of a further R12.7 billion were made.

**Table 14: Road and rail adjusted appropriations, 2022/23**

Rm	2022/23 adjusted appropriation
Rail transport	20 012,4
PRASA capital transfers	12 618,5
Road transport	59 954,5
SANRAL capital transfers	11 304,4
Provincial roads maintenance grant, capital	12 665,4

Source: Estimates of National Expenditure 2023, Vote 40: Transport

Additional funding of roads occurs at municipal level. National government provided municipalities with a R17 545 million municipal infrastructure grant in 2022/23. 27% of this grant was estimated to be spent on roads and storm water infrastructure as at June 2014, which would be equivalent to R4.7 billion as at 2022/23. Municipalities may also use funds collected from rates and taxes to fund road infrastructure.

Private sector funds are also used to finance national road infrastructure. In 2022, SANRAL received R4.5 billion in toll revenues, which comprised 30.5% of its total revenue. This includes funds received from toll roads run by SANRAL itself, as well as from

its concessionaires. The three concessionaires invested a further R2.275 billion on capital road improvement projects in 2021/22.

It should be noted that passenger vehicles are estimated to cause less than 1% of damage to roads. While trucks pay 3 to 7 times more in toll fees than passenger vehicles do, this does not fully reflect the disparity in damage caused to infrastructure. Toll fees collected from passenger vehicles are thus to a large extent cross-subsidising the infrastructure damage caused by heavy freight vehicles. Estimates suggest that this cross subsidisation of road freight is in the region of R67 billion annually, which equates to around 41c per tonne-km. As average tonne-km trucking fees in 2020 were around 94c per tonne-km, this is equivalent to a passenger cross-subsidy of around 30% of total road freight cost.

In terms of the South African National Roads Agency Limited and National Roads Act, 1998, ("SANRAL Act") SANRAL is required to keep funds raised from tolls separate, and use them only for the toll roads themselves. In effect the principle of user pays has been strictly interpreted in the road sector. The user pays only for the infrastructure they have used, and cross-subsidisation of other parts of the road network is not permitted. In addition, non-toll revenues may not be used to pay for the toll road. Finally, SANRAL is not allowed to borrow to finance its non-toll operations, or to budget for a cash deficit on non-toll operations.

The SANRAL Act provides SANRAL with the power to declare any national road as a toll road, with the Minister of Transport's approval. Because the funding of toll roads has to be kept completely separate from the funding of non-toll roads, a crucial consideration when declaring a toll road is whether the traffic it carries is able to generate enough revenue to finance the road. The main metric used by SANRAL to evaluate this is the loan supportable by revenue calculation, as follows:

*... the loan supportable by revenue calculation [is] completed biannually to determine the ability of the portfolio and its revenue flows to repay its debt. The debt service cover ratio (greater than 1) and the traffic volumes of a road are considered before conducting feasibility studies to ascertain the viability of the road to operate as a toll road. If the loan supported by revenue value is positive, the declaration will be considered.*

In addition SANRAL takes into account non-financial aspects of declaring a toll road, including the likely impact on the economy and social development. Consultations are then required before declaration of a toll road. The Premier of the province concerned, and every municipality through which the road passes, must be formally asked for comment in writing. Public consultations must also be held.

SANRAL manages a number of toll roads itself, and can revise the tolls on these roads as needed. It has also issued concessions to three companies, namely N3 Toll Concession RF Pty Ltd (N3TC), N1/N4 Bakwena Platinum Corridor Concessionaire (Bakwena) and



N4 Trans African Concessions (TRAC). The toll charges on these roads are governed by the terms of the concession contracts. SANRAL summarises the significant terms of these contracts as follows:

*For the N3 toll route, SANRAL received an upfront payment of R1.380 billion and an additional payment of R52 million during the 2008 financial year. The concessions are for a specified period of 30 years. For the N1/N4 route no payment was received from the concessionaire because SANRAL was responsible for the initial construction. ....*

*The concessionaires on the N3 and N4 Maputo toll roads are also required to pay SANRAL a highway usage fee (HUF) in certain circumstances ... The HUF is a mechanism for limiting the return on the project which can be distributed by the concessionaire to its shareholders. On the N4 Platinum Corridor a revenue-share mechanism is achieving the same objective.*

*SANRAL does not guarantee the minimum third-party revenue that the concessionaire will collect. SANRAL is not required to compensate the concessionaire if the traffic on the highway is less than expected.*

The concessionaire is expected to take custody and control of the assets for the period of the concession, but “no title to, ownership interest in, or liens or leasehold rights or any other rights” accrues to them, and at the end of the concession period the road is handed back to SANRAL, with no additional charges levied. During the concession period, the concessionaire is responsible for the design, financing, construction, maintenance and operation of the road.

## APPENDIX 2: SOUTH AFRICA'S FREIGHT DEMAND MODEL AND SSA MODEL

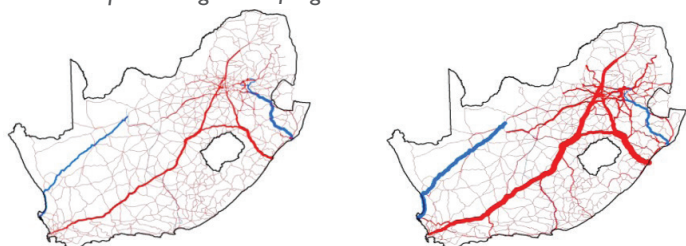
The GAIN Freight Demand Model (FDM™) is used to describe this data for South Africa. The concept model was developed between 1995 and 1998, while the full-blown model was developed in 2006 and has since been updated annually. The data has been extensively used as a strategic tool in South Africa, specifically for capital planning related to rail and ports. It has also been utilized by various provinces and cities throughout the country.

The FDM™ estimates freight flows for all transport modes, up to a 30-year forecast, based on tonnes, tonne-km, costs and externality costs. The detailed output metrics allow for trade-offs and measurements that enable decision-making in most policy, infrastructure and spatial planning areas for logistics across transport modes (road, rail, sea, etc.). The FDM™ **output metrics** are summarised below:

- 83 commodities
- Cargo and packaging types
- Bulk and containerised
- 372 geographic origins or destinations
- (local places, ports and borders)
- Modes of transport – road, rail, pipe, conveyor belt
- Tonnes per mode
- Tonne-kms per modes, and rail equivalent
- Costs per mode – incl. road cost components
- Externality costs - various
- Freight flows: Import, export, domestic
- 30-year forecasts – annually for 5 years, and long term
- Assigned to corridors, rural, metro; and provinces
- Market segmentation and rail suitability
- Rail branch line classification – actual vs market

A **visual representation** of all freight flows for South Africa, as well as a 30-year future projection, shows how all freight for the whole country is accounted for in the FDM™ (see Figure 32). On the left are the base year volumes, and on the right, are the 30-year future projections, both to the same scale. The complete FDM™ data of approximately 1.5 million unique data lines is collated to generate this visual. While the formation and development of corridors are visible on the future map, the underlying detailed data can provide in-depth details.

*Figure 32: South Africa's freight flows: base year (left) and 30-year future projections (right) – blue represents dedicated rail export lines, and red represents general freight road and rail*



Source: GAIN Group – [www.gaingroup.co.za](http://www.gaingroup.co.za)



### APPENDIX 3: RAIL ECONOMIC PRINCIPLES

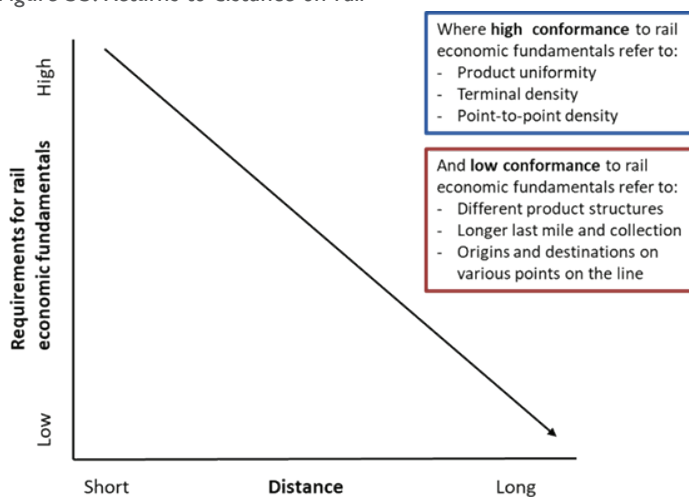
Rail economic principles are determined by a few factors notably:

- **Product/commodity uniformity:** The standardisation of freight to facilitate handling and transport, such as bulk iron ore or containerised commodities. This requires large uniform fleets with focussed loading equipment such as evacuators and tippers for ore; and cranes and ridge stackers for containers.
- **Terminal density:** The more freight is loaded and offloaded in the same district the more possible it becomes to create super terminals, logistics hubs and freight villages. These terminals create ideal opportunities for freight consolidation, intermodal and synchromodal operations.
- **Line density:** Consolidation of flows on the same route improves line density. High line density greatly favours rail; road trucks mostly pay for infrastructure variably as the road industry does not invest in road pavement directly (indirectly through the fuel levy and toll fees). Rail fixed infrastructure is 'really' fixed; it must be paid by rail even if not in use. In a scenario where rail has low market share on rail-friendly routes, returns to density for rail can be phenomenal and large shifts can easily see new marginal freight only attract a fraction of the cost of the original load.
- **Distance** is another important consideration in the identification of rail-friendly freight because of the low distance sensitivity of rail transport versus road transport. There is however a trade-off between distance and all three of the above-mentioned factors (Figure 33). This observation is important, because distance is often perceived as a key determinant of rail friendliness of freight, but it is merely easier to deal with other unfavourable conditions provided that a minimum distance is achieved.

that inventory) will carry a R17 per tonne per day opportunity cost charge, meaning that everything else being equal a R 20 per tonne discount on total cost if rail is inserted in the value chain will be favourable for rail if the delay is one day or less.

For each of the freight-flow segments identified in section 2.3, a rail target market share can be determined based on these rail economic principles and rail's current performance against the target measured.

Figure 33: Returns to distance on rail



Source: Havenga, de Bod, Simpson, Swarts & Witthöft (2021).

- The last consideration is value, however value is also a trade-off with time. Inventory has an opportunity cost, but often high-value freight has a relatively low daily opportunity cost. Freight, for instance, valued at R 50 000 per tonne and attracting an opportunity cost of 12% per annum (i.e., the cost of carrying

## APPENDIX 4: EFFICIENCY IMPACT OF VERTICAL SEPARATION IN RAIL

While multiple road freight operators can occupy the same road at any given time, only one train can occupy a given piece of track. Trains need to be carefully scheduled in order to ensure that accidents do not happen, and congestion is limited. Ultimately, the total capacity of a line is affected by how efficiently this scheduling is undertaken, as well as by how closely each train path adheres to the plan – which in turn is affected by how well the track infrastructure itself is managed and maintained.

These technical characteristics of rail systems imply that there are likely to be economies of scope in rail. In other words, it is likely that it will be technically more efficient to run a railway as a vertically integrated entity, where a single company owns the track and runs trains on it, and thus has full control over the operating schedule and track management.

However, it is also well known that absence of competition in a market is often associated with decreased efficiency. A vertically integrated monopolist in above and below track activities experiences no competition in the provision of rail services, and is only effectively disciplined by competition in those types of freight which can easily switch to road. The current efficiency crisis in South African rail is arguably an illustration of the dangers of such a market model. Vertical separation in contrast allows for the introduction of competition at operator level.

A number of researchers have undertaken analysis of technical efficiency in rail in conditions of vertical integration versus vertical separation. Pittman (2020) summarises this research, and concludes that there is now a fairly clear consensus in the literature that full vertical separation does lead to a real increase in operating costs. In terms of the quantum of that increase, however, he acknowledges that the estimates produced to date vary extremely widely, and are “very much in dispute”. However, he also acknowledges that the introduction of competition above the rail, which requires some degree of vertical separation, fairly clearly has been found to increase system efficiency in rail.

In effect, the literature does not produce a clear result as regards the optimal structural choice for rail. Vertical separation both tends to increase operating costs, and allow efficiency-increasing above rail competition. The net effect in any given rail system will depend on the unique market conditions in which it operates, the manner in which vertical separation is implemented, and the extent to which above rail competition is enabled.

In current South African conditions, the case for the introduction of vertical separation is strong. Inefficiency in rail has been caused both by the lack of competition in rail operations, and by the governance issues which have become systematic at state owned entities in South Africa. The levels of operational inefficiency associated with these factors are at present likely multiple times the levels

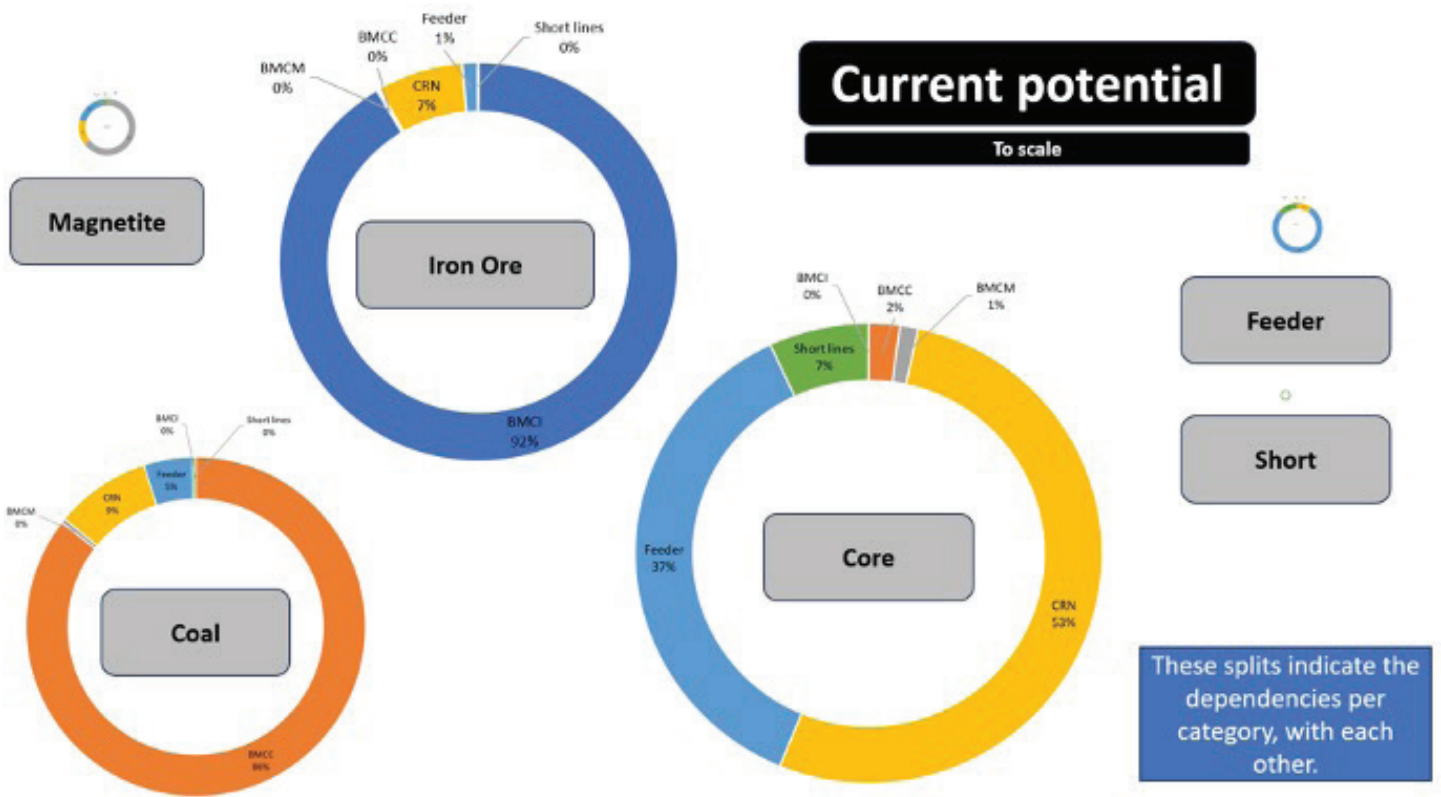
of inefficiency associated with vertical separation (which Pittman suggests are in the ballpark of 4-5% of operating costs). In effect, the efficiency risks posed by vertical separation are simply much smaller than the potential efficiency gains associated with an introduction of competition, and an associated improvement in governance systems.

However, these efficiency risks are not distributed equally in the rail system. A number of researchers (see for example Mizutani et al (2014)) have now confirmed that the efficiency losses associated with vertical separation are most likely to be of material size when levels of traffic density are very high. This makes intuitive sense – in order to run a very large number of trains on a given piece of track, it becomes very important to be able to coordinate between infrastructure and operations, because the margins of error become very narrow. In the South African context, this implies that any efficiency losses associated with vertical separation are likely to be largest on the iron ore and coal export lines. It is thus appropriate to consider whether a different structural approach is needed on these high density lines.





APPENDIX 5: POTENTIAL FREIGHT IN TONNE-KM BY CATEGORY; CONTRIBUTORY TRAFFIC, SIZE TO SCALE



## APPENDIX 6: CONTRIBUTORY TRAFFIC BY LINE CATEGORY, POTENTIAL FREIGHT FLOWS IN TONNE-KM

### Acronyms:

BMCI	Bulk mineral corridor – Iron ore
BMCM	Bulk mineral corridor – Magnetite
BMCC	Bulk mineral corridor – Coal
CRN	Core rail network

The figures below show the proportion of traffic on each category of line which also is carried at some point on another category of line. Thus for Figure 34 below, 86% of traffic on the coal line only travels on the coal line, 9% at some point also travels on the core network, and 5% travels on the feeder lines as well. None travels on other segments.

Figure 34: Contributory traffic on coal category rail line

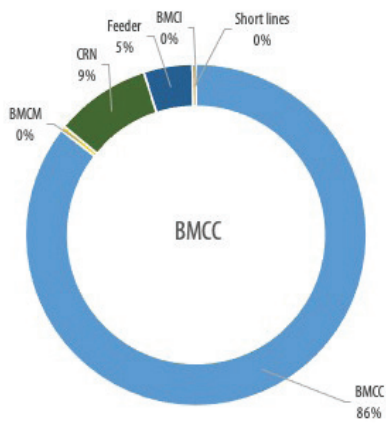


Figure 35: Contributory traffic on iron ore category rail line

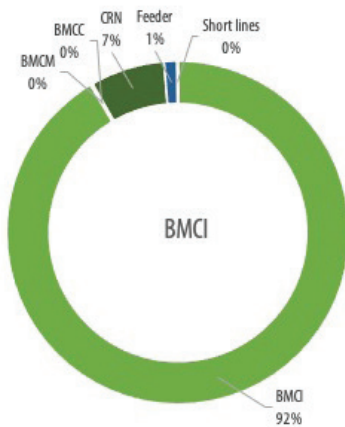


Figure 36: Contributory traffic on magnetite category rail line

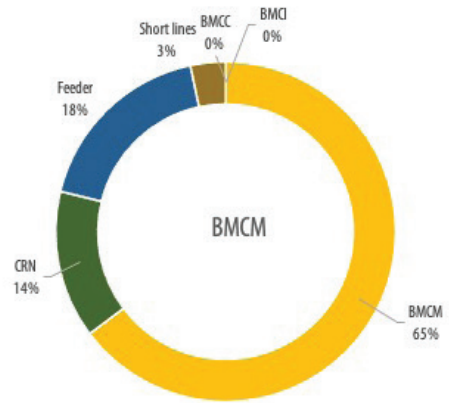


Figure 37: Contributory traffic on core rail network category

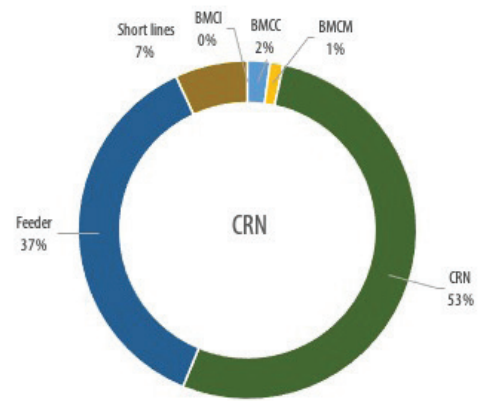


Figure 38: Contributory traffic on feeder line category rail

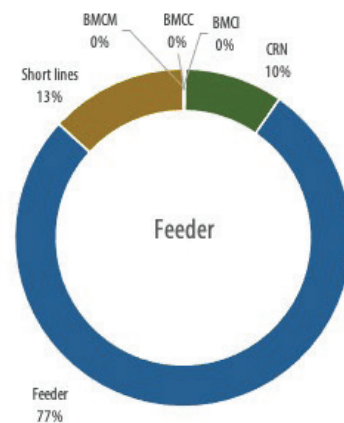
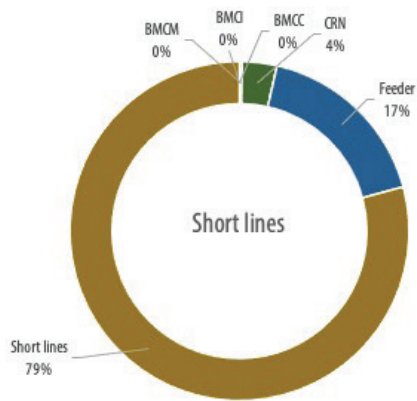




Figure 39: Contributory traffic on short line category rail



## APPENDIX 7: AUDIT OF CRRC DUAL VOLTAGE LOCOMOTIVES OUT OF SERVICE, MARCH 2023

CRRC Dual Voltage Locomotives Out of Service (OOS)				EC	GP	GP	GP	GP	KZN	KZN	MP	NC	RSA
Out of Service Category	20E	21E	22E	Swartkops	Koedoespoort	Pyramid South	Sentrand	Welgedag	Richards Bay	Vryheid	Ermelo	Kimberley	Total OOS
Collision	5			1	4								5
Derailment													0
Spares	31		26	3								2	31
Spares & vandalism													0
Vandalism	6				4							2	6
Wreck					1								1
Wreck & vandalism													0
Wreck, collision & vandalism	1												0
<b>Total 20E OOS</b>	<b>43</b>			<b>27</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>43</b>
Collision		1							1				
Derailment		1							1				
Spares		15			2				13				
Spares & vandalism		1			1								
Vandalism		6			4						2		
Wreck		1			1								
Wreck & vandalism		3			3								
Wreck, collision & vandalism													
<b>Total 21E OOS</b>		<b>28</b>		<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>28</b>
Collision			2		1			1					2
Derailment			9		4	2				1	2		9
Spares			46		3		1		41		1		46
Spares & vandalism													0
Vandalism			30		13				10		7		30
Wreck			3	1					2				3
Wreck & vandalism													0
Wreck, collision & vandalism													0
<b>Total 22E OOS</b>			<b>90</b>	<b>1</b>	<b>21</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>53</b>	<b>1</b>	<b>10</b>	<b>0</b>	<b>90</b>
<b>TOTAL</b>	<b>43</b>	<b>28</b>	<b>90</b>	<b>28</b>	<b>44</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>68</b>	<b>1</b>	<b>12</b>	<b>4</b>	<b>161</b>

Source: Grové et al 2023



## APPENDIX 8: PROPOSED OBJECTIVES FOR PORTS EFFICIENCY CRISIS INTERVENTION – DCT EXAMPLE

Port Performance Improvement Initiatives	Current Status	Targeted Quantum	Unit of Measure	Expenditure estimate (Rands)	Date of start of delivery	Achievement target Date	Quantum Achieved to date	Expenditure to date
<b>Employees:</b>								
<ul style="list-style-type: none"> <li>Conduct a comprehensive Employee Engagement Survey for the executive staff to determine overall engagement levels and short term and quick fix focus areas</li> </ul>								
<ul style="list-style-type: none"> <li>Create focused employee engagement improvement work groups to tackle some of the major causes of disengagement</li> </ul>								
<ul style="list-style-type: none"> <li>Engage the labour work-force in monthly sessions to learn of their suggestions for improvements to safety and efficiency</li> </ul>								
<ul style="list-style-type: none"> <li>Implement KPI's and scorecards for all executive workers, and build into the performance management systems</li> </ul>								
<b>Management Information Systems:</b>								
<ul style="list-style-type: none"> <li>Establish a new set of KPI's for both Operations and Engineering, to create more focus on the primary challenges being faced in terms of overall terminal and port efficiency. These KPI's should be updated weekly and published for all internal stakeholders</li> </ul>								
<ul style="list-style-type: none"> <li>Collect data and time-stamps for the Start-Up and Finish processes to identify steps where time can be reduced</li> </ul>								
<b>Stakeholders:</b>								
<ul style="list-style-type: none"> <li>Strengthen the Customer Interaction Centre (CIC) to improve customer communication</li> </ul>								
<ul style="list-style-type: none"> <li>Roll out of the Cargo Connect Platform to improve collaboration in the container supply chain</li> </ul>								
<ul style="list-style-type: none"> <li>Create structured metrics for all customer inspired delays and set-up structured monthly reviews and improvement sessions to look for mutual wins. Implement stowage quality parameters and measurement</li> </ul>								
<ul style="list-style-type: none"> <li>Eliminate late arriving export containers through dialogue with customers</li> </ul>								
<ul style="list-style-type: none"> <li>Discuss IMO container direct discharge requirements with Port Authority and reduce the quantity of IMO classes and UN Nos to be discharged directly to external trucks</li> </ul>								
<b>Supervision:</b>								
<ul style="list-style-type: none"> <li>Empower pier supervisors and tally clerks to load containers without delay which arrive at the QCs out of sequence. Simple rules such as: same bay, same discharge port, same size and similar weight (+/- 3 metric tons) containers can be loaded in any order. On deck containers cannot be more than 3 metric tons heavier than those underneath them. The on-board clerks need to document the actual loading position once the containers have been loaded</li> </ul>								
<ul style="list-style-type: none"> <li>Install a tablet in the QC checkers cabin to record the reasons for all crane delays;</li> </ul>								
<ul style="list-style-type: none"> <li>Redefine the roles and responsibilities of the pier supervisors</li> </ul>								
<b>Maintenance, facilities and systems:</b>								
<ul style="list-style-type: none"> <li>Fix and/or install CCTV camera across all berths and yards and provide access to the Operations Centers</li> </ul>								
<ul style="list-style-type: none"> <li>Install large screens in the Operations Centers to display current shift targets and performance</li> </ul>								
<ul style="list-style-type: none"> <li>Review equipment spare parts inventory and churn to ensure that sufficient high-quality spares are always available to repair machines</li> </ul>								
<ul style="list-style-type: none"> <li>Fix the quay apron surface at the rear crane rail on Pier 1</li> </ul>								
<ul style="list-style-type: none"> <li>Phased implementation of semi-automation in container terminals to improve productivity by at least 20%</li> </ul>								
<ul style="list-style-type: none"> <li>Implement the equipment replacement programme to phase out equipment that is beyond its useful life to improve equipment reliability</li> </ul>								
<ul style="list-style-type: none"> <li>Execute equipment refurbishment programmes at all terminals to extend equipment life and reliability</li> </ul>								
<b>Training:</b>								
<ul style="list-style-type: none"> <li>Assess QC Operator skills and set-up additional training</li> </ul>								
<ul style="list-style-type: none"> <li>Improve the landing skills of the SC operators</li> </ul>								
<ul style="list-style-type: none"> <li>Implement a leadership development training program</li> </ul>								
<ul style="list-style-type: none"> <li>Training of employees to enable operators to operate more than one type of equipment (multi-skilling)</li> </ul>								



Port Performance Improvement Initiatives	Current Status	Targeted Quantum	Unit of Measure	Expenditure estimate (Rands)	Date of start of delivery	Achievement target Date	Quantum Achieved to date	Expenditure to date
<b>Organisation/re-engineering processes</b>								
<ul style="list-style-type: none"> <li>Review the shift pattern and roster structure</li> <li>Implement a new shift pattern and roster: <ul style="list-style-type: none"> <li>Change the shift start times for the bus drivers to be +/- 1 hour (or even 30 minutes) different to the shift times for the general work-force</li> <li>Reduce shift change-over times (measured as last move to first move) to below 10 minutes as an initial target</li> <li>Ensure that in-shift relief changes are being conducted as "hot-seat", with the hand-overs being conducted at the cab of the machinery</li> </ul> </li> <li>Change QC Operators to be pooled and not dedicated to specific QC's</li> <li>Capture the QC PLC data for on-going cycle time analysis</li> <li>Implement dual-cycling</li> <li>Implement SC/Truck pooling for all discharge operations</li> <li>Improve the handover processes between DCT and TFR for the shunting of trains</li> <li>Improve the coordination between the in-gate and the truck staging areas to better segregate trucks and to improve the flow between these two touch points</li> <li>Introduce mobile bulk handling equipment to reduce manual operations processes (e.g. mobile ship loaders at Saldanha), which results in overall reduction in cost per unit</li> <li>Review operational methodologies and optimise gang/equipment ratios to improve operational efficiencies and maximise output per employee</li> </ul>								
<b>Yard and flow re-organisation</b>								
<ul style="list-style-type: none"> <li>Eliminate external truck queuing on the bridge at Pier 2</li> <li>For external trucks transporting containers for different ITZ's, have them call at each ITZ in sequence</li> <li>Commence rail trucking from ITZ 109</li> <li>Place temporary sleepers at the rear crane rail on Pier 1</li> <li>Change the quay-side priority at Pier 2 whereby the SC operator does not enter the landing area when the QC spreader has crossed through the front QC legs</li> <li>Fully implement the pre-gate at Pier 1</li> <li>Plan and sequence heavy 20ft containers (in excess of 28 metric tons) for loading on deck to be loaded as singles and not twins</li> <li>Implement Prime Route and Truck/SC triangulation</li> <li>Implement predictive analysis to avoid yard clashes and idle yard equipment</li> <li>Implement landing platforms at Pier 2 at which lock removal and fitting can take place</li> <li>Deploy fork-lift trucks to position gear boxes to all points of crane work and always keep unused locks in the bins</li> </ul>								



## APPENDIX 9: KNOWN TRANSNET PSP INITIATIVES

### *Previous PSP initiatives in rail*

1. Kei Rail - the Kei Rail project aimed to rehabilitate the line from AmaBhele to Mthatha and resume passenger and freight services on it, as part of a regional development initiative. Rehabilitation of the line started in 2003, and the first passenger was transported in 2008. Transnet leased the line infrastructure to the Eastern Cape Department of Roads & Transport (ECDRT), and Grindrod-Sheltham were contracted to provide haulage services on behalf of the ECDRT. In practice the passenger and freight services were unpopular, as Transnet did not allow services to terminate in East London, so the last 70km of every trip needed to be completed with another transport provider. ECDRT financing of the project also appears to have been problematic. Operations finally ceased in October 2012.
2. Tambo Springs Inland Container Terminal – a tender was launched by Transnet in 2016 for the Private Sector to design, build, operate, maintain and hand over an inland container terminal at Tambo Springs, adjacent to the mainline linking Durban and Johannesburg. The total capacity of the terminal was 250 000 TEU in phases, with the potential of doubling in size during phase 2, creating a terminal bigger than City Deep. The award was done to a consortium of South African Black companies together with the Italian Railways. The concession process failed in 2020 when Transnet failed to meet its development deadlines. The project continued as a private sector initiative.
3. Belmont Douglas branch line – Transnet issued an RFP to concession this line in 2015. The concession documents required that "For train operations and management, the Concessionaire will be obliged to use the services of Transnet Branch Line Operations and Management entity (BLOM), a division within TFR." There is no available public record of any success achieved in this process.
4. Addo Kirkwood branch line – an RFP was issued in 2021 for a 25 year concession to integrate terminal development, branch line network and train operations on this branch line. There is no available public record of any success achieved in this process.
5. Cookhouse Blaney branch line – an RFP was issued in 2021 for a 25 year concession for network and freight train operations on this branch line. There is no available public record of any success achieved in this process.
6. Elgin Fruit Terminal – an RFP was issued in 2021 for a 25 year fund, design, build, operate, transfer contract for a terminal at Elgin. There is no available public record of any success achieved in this process.
7. Empangeni-Nkweleni branch line – an RFP was issued in April 2022 for a 25 year concession for network and freight train operations on this branch line. There is no available public record of any success achieved in this process.
8. George Knysna branch line – an RFP was issued in April 2022 for a 25 year concession of Transnet heritage rolling stock for tourism purposes, and freight train operations on this branch line. There is no available public record of any success achieved in this process.
9. Gqeberha Narrow Gauge branch line (Humewood) – an RFP was issued in 2021 for a 15 year concession of Transnet heritage rolling stock for tourism purposes on this branch line. There is no available public record of any success achieved in this process.
10. Pretoria tourism concession – in 2020 Transnet advertised a concession of Transnet owned heritage rolling stock, use of permanent way and real estate for tourism purposes for a period of 20 years. The Transnet 2022 annual financial report states that "The Pretoria Heritage passenger tourism opportunity was awarded to a concessionaire." There is no available public record of any success achieved in operationalising this concession.
11. Upington Kakamas branch line – an RFP was issued in 2022 for a 25 year concession for the branch line and train operations, as well as to fund, design, build, operate, maintain and transfer a terminal at Kakamas. There is no available public record of any success achieved in this process.
12. Harmony Gold, Welkom – since at least 2009, Harmony Gold's gold mining operations have been able to access a 20km stretch of the Transnet network between Allen Ridge and Welkom. Harmony has a private siding which connects its mine and its crushing plant in the area. This private siding crosses, and for a small stretch runs alongside, a TFR line. Transnet requires that Harmony should contract directly with Transnet, with Transnet then subcontracting the service provider. The most recent RFP was issued in 2021, for a three year term.
13. Rovos Rail provides luxury tourist services via rail, via access to the Transnet rail network, and has done so since the 1980s. In 2015, Rovos had a contract with Transnet for trackage access from Pretoria to Krugersdorp, Germiston and Rayton, and along this route Rovos could use its own locomotives and drivers. Haulage access with Transnet drivers was then offered on other routes.
14. Ceres Rail Company – the company has a concession agreement with Transnet for the railway line between Wolseley and Prince Alfred Hamlet, as well as a freight agreement with Transnet Freight Rail. Since 2015, Ceres Rail has run steam train sets which offer tourist services on weekends, while on weekdays, freight services are offered using diesel train sets.

15. Mthatha-Amabele branchline – a 20 year concession was awarded to Sbhekuzi Rail in 2018, to provide freight and passenger rail services. There is no available public record that Sbhekuzi has to date operated any trains on this line. In 2021, the company suggested that key problems in the implementation of the concession included failure to agree on a commercially feasible access fee with Transnet, and access to Transnet rolling stock (the plan is to use the BLOM model to commence operations).
16. Alicedale-Port Alfred concession – the 2022 Transnet annual financial report states that the “Alicedale-Port Alfred long-term concession was awarded.” There is no available public record of any success achieved in operationalising this concession.
17. Paarl – Franschhoek – the Franschhoek Wine Tram is a combined tram and bus tourist service which runs wine tours in and around Franschhoek. The tram services utilise a long-term lease on Transnet infrastructure.
8. New 16 mtpa Manganese Export Terminal at the Port of Ngqura (NMET): RFP responses by end of March 2023; Estimated commissioning by Dec 2027
9. Rail capacity expansion to 16 mtpa to Ngqura: 16Mtpa rail investment case prepared to source funding and scope validation near completion. RFP stage two bidding to market by May 2023; Partner selection and approvals by March 2024; Conclude agreements May 2024
10. Project Ukuvuselela: Fast tracking the delivery of rail infrastructure through an EPC – Turnkey construction solution. Construction complete by Dec 2026 with interim capacity progressively released to operations
11. TE Lease Co (National): Transaction approved by internal governance structures; Partner selection strategy adoption and RFP to market: April 2023

#### ***Current PSP initiatives in rail and ports***

1. Richard's Bay Dry Bulk Terminal: Engagements have commenced with a private partner on the next phase of the project. Estimated implementation date: Mar 2026
2. LNG Terminal in Richards Bay: RFP issued to market, extended to 14 July 2023. Concession award and negotiations: Sep 2023; Construction to be completed in Sep 2026
3. Port of Richard's Bay Container Terminal: RFP issued to market, extended to 14 July 2023. Concession award & negotiations: Sep 2023; Construction to be completed in Sep 2026
4. Durban Container Terminal (DCT) – Pier 2 & Ngqura Container Terminal (NCT): RFP issued to pre-qualified bidders on 31 Aug 2022 and close 31st March 2023. Conclude agreement with preferred partner: Aug 2023
5. Container Corridor Operating Lease (Incl. City Deep Kaalfontein Terminal): RFQ issued to market on the 27th January, closing on the 31st June 2023 - Extended. Partner selection & approvals by March 2024; Conclude agreements May 2024
6. Boegoebaai Port and Rail Development: RFQ closed on 05 December 2022; three shortlisted respondents announced July 2023.
7. Wagon Sale: RFP issued to market 26 November 2022, closed on the 28th February 2023; planned award by end of March 2023. No publicly available information on whether award took place

