Market Demand Strategy (MDS)
Transnet remains committed to the MDS and its principle of meeting validated market demand through new capacity and infrastructure, with the Capital Investment Plan as a key enabler. The MDS, now in its sixth year, aligns with the Shareholder’s priorities in the annual Shareholder’s Compact.
MDS evolution

The principal objective of the MDS is to close the gap between the market demand for cargo transport and handling services and the capacity to satisfy this demand.

Transnet has shifted focus from expansionary to sustaining objectives. The investment in sustaining infrastructure (as a percentage of the portfolio) has increased from 40% in MDS Year 1 to 60% in MDS Year 5.

<table>
<thead>
<tr>
<th>Year</th>
<th>Infrastructure sustaining investment (% of budget)</th>
<th>Infrastructure expansion investment (% of budget)</th>
<th>Actual capital investment per year (including intangibles)</th>
<th>Capitalised maintenance (infrastructure, locomotives and wagons) (% of actual capital investment per year)1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>42.0%</td>
<td>58.0%</td>
<td>R27.6 billion</td>
<td>25%</td>
</tr>
<tr>
<td>2013</td>
<td>38.7%</td>
<td>61.3%</td>
<td>R32.3 billion</td>
<td>25%</td>
</tr>
<tr>
<td>2014</td>
<td>51.0%</td>
<td>49.0%</td>
<td>R34.1 billion</td>
<td>22%</td>
</tr>
<tr>
<td>2015</td>
<td>56.7%</td>
<td>43.3%</td>
<td>R29.8 billion</td>
<td>21%</td>
</tr>
<tr>
<td>2016</td>
<td>60.0%</td>
<td>40.0%</td>
<td>R21.4 billion</td>
<td>29%</td>
</tr>
</tbody>
</table>

Progress on mega-projects

<table>
<thead>
<tr>
<th>Mega-project</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of MDS wagons</td>
<td>2 007</td>
<td>3 281</td>
<td>2 700</td>
<td>2 100</td>
<td>100</td>
</tr>
<tr>
<td>Number of GFB locomotives</td>
<td>1064, 95 and 60</td>
<td>-</td>
<td>9</td>
<td>110</td>
<td>50</td>
</tr>
<tr>
<td>Number of coal line locomotives</td>
<td>100 and 110</td>
<td>14</td>
<td>86</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NMPP phase 1</td>
<td>68%</td>
<td>81%</td>
<td>82%</td>
<td>97%</td>
<td>96%</td>
</tr>
<tr>
<td>Manganese phase 1</td>
<td>FEL 3</td>
<td>FEL 3</td>
<td>11%</td>
<td>13%</td>
<td>93%</td>
</tr>
<tr>
<td>Manganese phase 2</td>
<td>FEL 3</td>
<td>FEL 3</td>
<td>PFMA approval</td>
<td>FEL 4</td>
<td>9%</td>
</tr>
<tr>
<td>Waterberg upgrade phase 1</td>
<td>FEL 2</td>
<td>FEL 3</td>
<td>FEL 3</td>
<td>Approval</td>
<td>FEL 4</td>
</tr>
<tr>
<td>Expansion of Cape Town Container Terminal</td>
<td>98%</td>
<td>100%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Coal line to 81 mt</td>
<td>PFMA approval</td>
<td>18%</td>
<td>32%</td>
<td>49%</td>
<td>86%</td>
</tr>
<tr>
<td>Ngqura container development (TPT and TNPA) phase 2A</td>
<td>89%</td>
<td>100%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Reconstruction of the Sheet-pile Quay Wall in Maydon Wharf</td>
<td>13%</td>
<td>14%</td>
<td>89%</td>
<td>58%</td>
<td>88%</td>
</tr>
<tr>
<td>DCT Berth deepening</td>
<td>FEL 1</td>
<td>FEL 2</td>
<td>FEL 3</td>
<td>PFMA approval</td>
<td>FEL 4</td>
</tr>
<tr>
<td>Overvaal Tunnel doubling</td>
<td>FEL 1</td>
<td>FEL 2</td>
<td>FEL 3</td>
<td>FEL 3</td>
<td>PFMA approval</td>
</tr>
</tbody>
</table>

1 Copex is based on annual maintenance initiatives for locomotives, rail infrastructure and wagons and is generally spent fully within a financial period.
2 Projects completed.
3 The project faced challenges due to procurement delays for critical equipment, which has impacted the schedule. The project, however, is back on track and will be completed within the 2017 calendar year.
4 Project expected to be completed in the 2017/18 period.
5 This programme has been re-baselined and optimised, and is now based on a revised schedule and cost estimate.
Progress on the MDS

Transnet invested R145 billion (excluding intangibles) in the past five years, and expects to invest a further R229.2 billion by 2024. Current capacity remains ahead of demand across much of the freight system. The MDS aims to grow rail volumes to 273 mtpa by 2024. This increased capacity will be achieved through operational efficiencies, sustaining current infrastructure and rolling stock, and by creating additional capacity for validated demand.

While still committed to a counter-cyclical investment strategy, our implementation of the MDS in the current economic climate requires more agility. Accordingly, we assess and rephase key programmes and projects in response to changes in global and domestic markets. To accelerate growth, the Board of Directors of new revenue streams, including appropriate acquisitions, and funding for the Company’s geographical expansion into the rest of Africa.

MDS strategic thrusts

Transnet’s future success is underpinned by its culture and behaviours. We must hold a clear vision of a shared and prosperous future in which we pursue excellence in all we do, have an openness to learn and the discipline to deliver consistently high performance outcomes. Transnet has introduced four MDS strategic thrusts to drive an organisational culture that can thrive amid exponential change.

Continue to grow the modal shift from road to rail – increase weekly railed tempos.


Optimise the capital portfolio and eliminate negative-return projects.

Identify cost-saving opportunities in procurement and eliminate unnecessary overhead and administrative expenditure.

Implement a capital and income statement planning system – ensure every Rand spent is justified and tied to growth.

Promote ethical leadership at all levels of the organisation.

Develop and deploy innovative customer value propositions by harnessing the knowledge, experience and strengths across Operating Divisions and functional departments.

Meet efficiency-improvement targets through a high-performance ethos, supported by the right skills at the right time.

Provide reliable and predictable services and exceed customer expectations.

Build trust through an ethical and governance-led organisation.

Maintain industry ‘legitimacy’ by practising care in the way we impact the six capitals through all our activities.

Embrace the benefits of technology to achieve interoperability, information transparency and integrated technical support systems.

Implement real-time customer feedback systems, thereby enabling stakeholders to make informed assessments of our performance.

Introduce ‘click-of-a-button’ transparency on the state of Transnet’s capital portfolio.

Implement digital dashboards that show a ‘single version of the truth’ – focus problem-solving and decision-making accordingly to shift performance.

Create new mobile applications to display operational activities and progress in real time.

Introduce appropriate ICT governance controls.
Interconnected elements of the MDS

The table below demonstrates the connectivity between our MDS strategic imperatives, commercial drivers and outcomes, and the value created for the economy through our Sustainable Developmental Outcomes (SDOs).

<table>
<thead>
<tr>
<th>MDS strategic imperatives</th>
<th>MDS thruts</th>
<th>Commercial drivers</th>
<th>Commercial outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity creation and maintenance</td>
<td>Diversify revenue sources to reduce exposure to commodity demand and associated volatility. Manage liquidity and raise cost-effective funding. Pursue stringent cost management and optimisation interventions - including re-shaping the core of Transnet’s operations - in line with activity levels - to improve productivity and efficiency, and ultimately to enhance profitability. Be resilient in the management of working capital. Generate a return on assets commensurate with the associated risk. Pursue private-sector partnerships. Implement ‘take-or-pay’ contracts and agreed escalation rates aligned with capital investment requirements. Maintain key financial ratios. Ensure the right size and agile capital portfolio to achieve strategic objectives, and to ensure the Company is sufficiently agile to respond to changing environmental factors.</td>
<td>Build a strong profile by networking with rating agencies, regulators, investors and other key stakeholders. Develop highly competent finance personnel in addition to well-rounded business leaders.</td>
<td>Continued financial stability and strength. Cost-effective funding. Collaborative private-sector participation.</td>
</tr>
<tr>
<td>Financial sustainability</td>
<td>Achieve project visibility for improved decision-making through digital project portfolio dashboards based on key performance indicators. Two sub-committees, namely the Digital Business Forum and the Cloud Governance Committee report to the CIO Council and ensure capacity and focus are created for digitalisation.</td>
<td>Drive digitalisation of the business through the CIO Council in collaboration with various line functions, including New Business Development, with an emphasis on the commercialisation of digital products and the digitalisation of the organisation.</td>
<td>Achieve project visibility for improved decision-making through digital project portfolio dashboards based on key performance indicators. Two sub-committees, namely the Digital Business Forum and the Cloud Governance Committee report to the CIO Council and ensure capacity and focus are created for digitalisation.</td>
</tr>
</tbody>
</table>

- Promote efficiency through capital optimisation and a flexible project resourcing and delivery model.
- Create critical logistics infrastructure and capacity ahead of validated demand for cargo transport and handling services.
- Continuous enhancement of the project lifecycle programme methodology.

- Deliver cost-effective solutions that are benchmarked to the market and quality projects that deliver a return on investment while improving productivity and efficiency.
- Meet and exceed customer expectations by delivering projects within agreed commitments.
- Create value for the customer through specialised advisory services, and the development and implementation of both capital and non-capital solutions.

- Promote collaboration with stakeholders and promote customer-centricity in delivery to co-create optimal solutions.
- Optimised capital portfolio and asset utilisation.
- Creation of capacity ahead of validated demand.
- Provision of critical logistics infrastructure.
### MDS strategic imperatives

#### Operational excellence
- Build operational readiness and infrastructure reliability by ensuring right skills at the right time, appropriate digital innovation and strong governance capability.
- Provide ‘Project Factory’ support for large and complex programmes.
- Mitigation of programme and project risks through:
  - The Integrated Capital Projects/Programme Assurance Framework (ICPAF), and
  - Transnet’s Integrated Assurance Model.
- Leverage the complementarity of our Operating Divisions by optimising what makes Transnet unique and gives us our competitive advantage.
- Consistently transport record tonnages by rail and heavy haul operations to achieve global standards.
- Grow capability in container and manufacturing sector transport and develop Transnet academies for skills development to reinforce our status as a trusted, innovative SA brand and a top employer in South Africa.
- Align reporting systems, measurements and dashboards with business processes to provide integrated customer and operational perspectives.
- Utilise advanced data analytics to create ‘one version of the truth’ for performance.
- As a digital organisation, avail analytics to end-users through multiple digital platforms to support agile decision-making.
- Implement best practice reference models for digitalisation to serve as common platforms for all Operating Divisions, thereby ensuring uniformity and standardisation across the organisation.
- Succeed together by living the Transnet culture, promoting shared practices and aligning measures and scorecards to build common standards to meet customer expectations.
- World-class operations in rail, ports and pipelines.
- Infrastructure reliability.
- Capital projects on time and within budget.
- Business continuity.

#### Market segment competitiveness
- Promote an integrated and aligned regional infrastructure network that allows for value chain optimisation at network and industry levels.
- Identify and pursue new business opportunities in existing and new markets by developing innovative products and logistics solutions.
- Reduce the total cost of logistics as a percentage of transportable GDP.
- Promote end-to-end logistics solutions by partnering with private-sector logistics providers.
- Grow Transnet’s brand reputation and credentials in existing and new markets.
- Develop market/segment-specific brand positioning strategies.
- Develop capabilities for improved and integrated branding, marketing and sales capacity.
- Promote Transnet’s commercial contribution to economic growth and job creation.
- Become a sustainable contributor to domestic and regional growth.
- Increase our levels of responsiveness to the needs of our current customers.
- Develop digital solutions to improve the ease of doing business with Transnet.
- Implement systems to increase the visibility of customer engagements and the resolution of customer issues.
- Information and data will become the core building blocks required to become a logistically enabled organisation.
- Unite the people of Transnet around the common purpose of serving our customers with pride.
- Streamlined and effective contract management activities across the Company to promote compliance with legal and contractual terms.
- Market competitiveness.
- Customer satisfaction.
- Integrated intermodal system.
- Increased volumes.
- Large-scale shift from road to rail.

#### Sustainable Developmental Outcomes
- Employment
  - Measurable direct, indirect and/or induced employment.
- Skills development
  - Enhanced or improved human capabilities.
  - Productive capacity of people within and outside the Company.
- Industrial capability building
  - Industrial development for South Africa.
  - Improved competitiveness.
- Investment leveraged
  - Private-sector investment in the country’s freight logistics system.
- Regional integration
  - Improved freight logistics connectivity on the continent.
- Transformation
  - Employment equity within the Company.
  - Black Economic Empowerment within supplier entities.
- Health and safety
  - Improved physical and mental health and safety of employees.
  - Improved physical and mental health and safety of communities.
- Community development
  - Measurably improved economic, social, cultural and environmental well-being of communities.
- Environmental stewardship
  - Enhanced capacity of the natural environment to meet the resource needs of future generations.
Strategic planning

Transnet’s strategic planning occurs at various levels. While each level addresses capacity planning differently, efforts are fundamentally aligned and geared towards the same objectives.

The Company’s Long-term Planning Framework is a critical link between national and provincial masterplans and policy, and Transnet’s MDS.

The frameworks informing Transnet’s strategic planning and goal-setting are outlined in Figure 8. At each level, the Company ensures appropriate resourcing that is both aligned with targets, and able to adapt to changing market conditions and other external impacts.

The MDS medium-term planning horizon

To meet long-term demand, Transnet must invest for long-term growth prospects, but be mindful of short- to medium-term volatility in the domestic and international markets. This approach is reflected in the reduction of the Capital Investment Plan from R277.8 billion to R229.2 billion over the next seven years, in response to the lower-than-planned freight demand.

Seven-year targets for the MDS strategic imperatives are shown below:

<table>
<thead>
<tr>
<th>Regional Integration</th>
<th>(Africa revenue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freight Rail</td>
<td>R million</td>
</tr>
<tr>
<td>0</td>
<td>750</td>
</tr>
<tr>
<td>1 000</td>
<td>2 268,8</td>
</tr>
<tr>
<td>2 000</td>
<td>3 190,3</td>
</tr>
<tr>
<td>3 000</td>
<td>4 015,0</td>
</tr>
<tr>
<td>4 000</td>
<td>4 894,9</td>
</tr>
<tr>
<td>5 000</td>
<td>5 731,8</td>
</tr>
<tr>
<td>Total Africa</td>
<td>R million</td>
</tr>
<tr>
<td>0</td>
<td>18 601,1</td>
</tr>
<tr>
<td>10 000</td>
<td>21 864,9</td>
</tr>
<tr>
<td>20 000</td>
<td>25 128,3</td>
</tr>
<tr>
<td>30 000</td>
<td>28 391,6</td>
</tr>
<tr>
<td>40 000</td>
<td>31 655,0</td>
</tr>
<tr>
<td>50 000</td>
<td>34 918,3</td>
</tr>
<tr>
<td>60 000</td>
<td>38 181,6</td>
</tr>
<tr>
<td>70 000</td>
<td>41 445,0</td>
</tr>
<tr>
<td>80 000</td>
<td>44 708,3</td>
</tr>
<tr>
<td>90 000</td>
<td>47 971,6</td>
</tr>
<tr>
<td>100 000</td>
<td>51 235,0</td>
</tr>
</tbody>
</table>

Read more

More information on Transnet’s short- to medium-term commercial outlook
Transnet long-term planning principles

1. **Provide** capacity marginally ahead of demand to enable and promote economic growth in South Africa and in the region

2. **Adopt** sustainability principles as part of development plans, including improved energy efficiency and reducing carbon emissions

3. **Integrate** rail, port and pipeline planning within Transnet

4. **Pursue** alignment with national road and electricity supply planning

5. **Assume** that operational efficiency is optimised first, then consider infrastructure-based capacity solutions

6. **Target** rail suitable freight to shift from road to rail

7. **Benchmark** internationally on world-class handling services, new technologies and best practices

8. **Plan** to improve South Africa’s global competitiveness by reducing the total cost of freight transport and logistics

9. **Identify** opportunities in Africa and leverage the economies of scale in global trade

10. **Provide** responsive infrastructure that meets South Africa’s economic needs in line with the New Growth Path and the National Development Plan

United Nations Sustainable Development Goals

1. **No Poverty**
2. **Zero Hunger**
3. **Good Health and Well-being**
4. **Quality Education**
5. **Gender Equality**
6. **Clean Water and Sanitation**
7. **Affordable and Clean Energy**
8. **Decent Work and Economic Growth**
9. **Industry, Innovation and Infrastructure**
10. **Reduced Inequality**
11. **Sustainable Cities and Communities**
12. **Responsible Consumption and Production**
13. **Climate Action**
14. **Life Below Water**
15. **Life on Land**
16. **Peace and Justice, Strong Institutions**

Transnet’s long-term strategic perspective

The world stands on the brink of a technological revolution that will fundamentally alter the way we live, work and relate to one another. The digital 4th Industrial Revolution will see a fusion of technologies poised to disrupt almost all industries and transform production, management and governance systems. Transportation and communication costs will likely drop, and logistics and global supply chains will become more effective, with the cost of trade diminishing at a rapid rate, all of which will drive new markets and economic growth. The 4th Industrial Revolution promises a systemic transformation that impacts civil society, governance structures and human identity in addition to having solely economic and manufacturing ramifications.

Maximising the penetration of Transnet’s current market with existing products is a key focus of the MDS. Equally important will be the diversification of business with new services and markets. Digitalisation is an opportunity to accelerate diversification and to realise new business models for Transnet.

Two baseline fundamentals are apparent:

- The customer is at the centre of all that is conceived, designed and executed, and informs all efforts, powered by both new and current technologies; and
- Technology is a key enabler to realise short-, medium- and long-term objectives.

As the custodian of competitiveness of the country’s transport and logistics industry, Transnet will look at replicating and possibly leading disruptive industrial innovations by consuming new technologies such as AI, 3D printing, Internet of Things (IoT) and robotics, which exponentially increase the pace of change. Transnet’s Digital Transformation strategy is focused on innovation that supports investments in technology, business processes and business model review to create value for customers, employees and the Shareholder.
**Transnet 4.0 – ‘Transnet of tomorrow’**

Management has adopted the Transnet 4.0 vision for accelerating growth in the context of the 4th Industrial Revolution. The aim is to deliver on MDS outcomes, while fundamentally reinventing the existing business model to acclimatise to the challenges and opportunities of this emerging paradigm.

Transnet 4.0 has three main growth areas:

1. **Geographic expansion**
   - Accelerate efforts to extend the Company’s footprint in the fast-growing regions of Africa, Middle East and South Asia.

2. **Product and service innovation**
   - Transform from being a business primarily focused on transport and cargo handling towards becoming a fully integrated logistics service provider, offering end-to-end solutions to key partners.

3. **Expanding the scope of Transnet’s manufacturing business**
   - Establish an advanced manufacturing capability in rail, ports and transport as an original equipment manufacturer (OEM) for Africa through the provision of customer-focused asset lifecycle solutions.

**Transnet International Holdings focus areas**

**Rail**

The sector’s primary aim is to grow cross-border volumes and enable regional integration, focusing on the:

- Maputo Corridor (South Africa, Swaziland, Mozambique);
- East/West Corridor (South Africa, Namibia, Botswana, Lesotho); and
- North/South Corridor (South Africa, Zimbabwe, Zambia, Democratic Republic of Congo, Tanzania).

It is anticipated that rail operators will execute a unified railway system per corridor, as if no boundaries exist between countries involved. The increase in cross-border volumes is the largest revenue driver of the Transnet International Strategy.

**Engineering**

As economic growth in Africa unfolds, the need for a road-to-rail modal shift in transportation becomes more urgent, and the demand for rolling stock and associated maintenance will increase. Engineering already operates in this space and is well positioned to meet increased demand. Capacity of its extensive manufacturing facilities is easily increased by initiating additional shifts. The development of the TransAfrica Locomotive is expected to satisfy a market need at a competitive price.

**Ports**

The basis of Transnet’s geographic expansion for the ports sector lies in port concessions, which remain lucrative in the region. The low incidence of distressed or cancelled contracts demonstrates that this route has achieved the desired outcome. Excluding South Africa, approximately 69% of all containers are shipped through terminals operated by the private sector. While port concession opportunities are limited, Transnet is well positioned to compete in this arena.

**Pipelines**

The discovery of new oil and gas reserves in Africa has resulted in a significant demand for new infrastructure capacity and new-build project opportunities. Oil and gas commodity prices remain low and, in some instances, below project hurdle rates, placing a damper on new-build plans. Numerous new-build opportunities are likely to reach final investment decision in 2018, and will be issued to the private sector on concession. This signals a strong political desire to drive oil revenues and provide frontier economies an opportunity to enter the global oil and gas sector. Transnet is well placed to participate in such concessions.
1 Geographic expansion

As custodian of the South African ports, rail network and pipeline infrastructure, enhanced connectivity of the regional freight system is a priority, and is embedded in the Statement of Strategic Intent and the Shareholder's Compact. Transnet International Holdings (TIH) will co-ordinate all activities beyond the borders of South Africa. TIH was approved by the Transnet Board of Directors, DPE and the Minister of Finance. It is envisaged that TIH will be operational during the financial year.

2 Product and service innovation

Key initiatives to support Transnet's focus on product and service innovation include:

• Introducing portfolio management to develop solutions from ideation to concept launch;
• Supporting the growth of the natural gas sector in South Africa by developing and implementing a business case for Transnet's role as a national LNG and gas infrastructure developer and operator;
• Encouraging PSPs through a combination of efforts such as separating the terminal and rail haulage business; creating digital track-and-trace; and sharing asset utilisation with the private sector;
• Intensifying Transnet's footprint regionally and globally with competitive supply chains on corridors;
• Creating and enhancing logistics ecosystems to accelerate economic growth through our property portfolio;
• Establishing Transnet as Africa's own rail, ports and transport OEM; and
• Driving property/spatial development and innovation.

• Pursuing digital solutions and other exponential growth opportunities in the context of the 4th Industrial Revolution.

3 Expanding the scope of Transnet's manufacturing business

We intend to expand the scope of our manufacturing capabilities as well as seek new markets for existing products. Engineering will soon launch a shunting locomotive targeted at the African market and, additionally, develop a mainline locomotive. The Operating Division has also expanded into the ports sector, focusing on the maintenance and enhancement of cargo-handling equipment.

Digitally enabled growth

The above three converging growth areas will be underpinned by the optimal use of technology to drive service proficiency and reliability. Transnet 4.0 requires that we become a multi-faceted and service-oriented manufacture-driven, digital organisation. The rapid incorporation of leading technologies into new and existing products and processes will be a key characteristic as Transnet moves forward.

Resourcing for the long term: Transnet of tomorrow

The current linear model of growth, founded on resource consumption and pollutant emissions, is unsustainable. Transitioning towards a more circular economy will require fundamental changes to Transnet's business model. Disruptive innovation is already reshaping our existing business model and how we prepare for the ‘Transnet of tomorrow’.

The United Nations Environment Programme (UNEP) commissioned an analysis of the options for a green economy transition for selected key economic sectors in South Africa, at the request of the South African Department of Environmental Affairs. The findings reflect that longer-term sustainable growth is related to the management of natural resources. Increasing the efficiency of use and curbing waste of such resources would reduce the decline – and support the growth – of some capitals.

Transnet has developed the Sustainability Risks and Opportunities Assessment (Transnet SROA©) methodology to:

• Identify risks and trends that have a likelihood of occurring over Transnet's long-term planning period (30 years), that would have a high impact on Transnet's ability to deliver on its mandate; and
• Identify and recommend opportunities to enhance value creation over the long term.

Analysis of Transnet's long-term sustainability risks and trends identified six key emerging risk areas, with their parallel emerging opportunities, namely:

• Circular Economy
• Disruptive Technology
• Energy
• Water
• Biodiversity
• Social Inequality

Read more

More information on emerging risks and trends.

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2 The SROA process was driven by a 27-participant team from multiple disciplines, of which 17 were Transnet employees. The SROA team performed a scenario analysis on the six risk areas to determine how each risk may evolve over the next 30 years. A valuable outcome of the process was a set of recommendations for diversifying revenue streams, harnessing co-benefit opportunities and reducing operating costs based on re-imagining the ‘Transnet of tomorrow’ from a sustainability perspective.
3 An alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them while in use, then recover and regenerate products and materials at the end of each service life.
4 Technological innovations that create new market and value networks and eventually disrupt an existing market and value network.
Rail infrastructure

Our vision for improved rail services includes new elements of service reliability, while rolling stock models will be upgraded and refined to provide a better representation of journey times, dwell times and turnaround times. Corridor services will offer end-to-end solutions, thus aligning mainline upgrades with train-handling requirements at the endpoints.

30-year rail infrastructure investment: R167 billion

30-year rolling stock infrastructure investment: R283 billion

Resourcing fundamentals

- Align infrastructure with freight type.
- Improve operational characteristics.
- Ensure network connectivity.
- Standardise infrastructure.
- Align with Prasa/non-Transnet operator requirements.
- Match capacity to demand.
- Develop regional integration.

Port infrastructure

We envisage new port sites along South Africa’s coast, with sustainable approaches for future port development. Ports will harness the value of leading-edge emerging digital technologies. Durban’s container capacity planning will be revised and a more comprehensive suite of import options will be devised for natural gas through the port system. This landscape will also consider the potential port and pipeline infrastructure required to import and distribute gas in South Africa, including Floating Storage and Regasification Units (FSRUs) power barges and land-based power generation.

30-year port infrastructure investment: R226 billion

Resourcing fundamentals

- Improve infrastructural and operational efficiency.
- Maximise port zone functions.
- Develop back-of-port logistics areas to increase port capacity.
- Integrate and align port and rail capacity planning.
- Maintain flexibility to respond to changing technological and economic conditions.
- Respond to environmental opportunities and constraints.
- Develop regional integration.
- Align with planning initiatives of key stakeholders.

Pipeline and Gas infrastructure

Transnet will identify new pipeline, terminal and storage investment opportunities in South Africa. We envisage much improved planning across the liquid fuel system as a result of better engagement with key stakeholders such as Government, oil majors and historically disadvantaged South Africans. Sustainable infrastructure will consider rehabilitation, reuse and optimisation of existing infrastructure. Transnet will enjoy successful partnerships with other gas roleplayers. Transnet Infrastructure Planning will also be upgraded to meet the fast-evolving gas energy landscape, with due consideration for the drivers of natural gas use and other Government initiatives.

30-year pipeline and gas infrastructure investment: R38 billion

Resourcing fundamentals

- Align with the planning initiatives of local, provincial and national Government, and other key stakeholders.
- Maintain flexibility to respond to changing technological and economic conditions.
- Respond to environmental opportunities and constraints in a sustainable manner.
- Follow a common user principle in developing an integrated liquid fuels supply system.
- Provide a logical range of facilities to meet local as well as hinterland demand.
- Integrate and align pipeline with port and oil terminal capacity planning.
- Maintain the flexibility to respond to changing technological and economic conditions.
- Meet the market demand and provide equitable access and capacity for all parties that want to participate in the oil and gas business sector.
- Facilitate the DoE’s security of supply objectives to comply with the Petroleum Pipeline Act and the Gas Act.
- Improve infrastructural and operational efficiencies and reduce transport and logistics costs.

Africa expansion

Transnet envisions multiple rail, port and pipeline projects on the continent, facilitated through Transnet International Holdings. Specific strategies are developed around areas of interest. The regional freight system benefits from deeper integration and enhanced connectivity. Transnet continues to participate in the New Partnership for Africa’s Development (Nepad) Business Foundation, Southern African Railways Association, Port Management Association of Eastern and Southern Africa and other regional forums.
Risk mitigation

The following list represents trends and events that require continuous assessment and have the potential to pose risks and/or opportunities:

- 'Uberisation' of mobility systems
- Structural changes in commodity demand
- Autonomous road freight systems
- Social activism: 'must fall' campaigns
- Automation impacts on job opportunities
- Rapidly advancing environmental regime
- Changing demand for petroleum
- Energy system transformation
- New competencies required to navigate the 4th Industrial Revolution

Electrons

Diversification of revenue streams by leveraging property portfolio for:
- Rooftop solar PV

Wind energy

Concentrated solar power

Electric vehicle recharge centres

Co-benefit opportunities:
- Support road-to-rail initiatives through collaboration with car manufacturers through provision of EV centres

Advanced manufacturing of upstream energy infrastructure

Reduce operating cost by:
- Pursuing renewable energy cost at price parity with grid electricity
- Minimising energy cost volatility

Data

Diversification of revenue streams by leveraging digital innovation:
- Extension of fibre backbone to value-added service such as broadband, cellular and WiFi opportunities

Digital service offerings

Customer loyalty programmes (e.g., Discovery drive loyalty programme)

Co-benefit opportunities:
- Provision of digital access to communities in proximity to Transnet network

Reduce operating cost by:
- Removing intermediary costs through digital replacement

Preventing theft through drone surveillance

Minimising time wastage via real-time augmented reality

Increasing efficiency via automation and autonomous processes

Molecules

Diversification of revenue streams by leveraging core competence in infrastructure to:
- Tolling model for LNG infrastructure
- Identify revenue-generating potential across the biofuel value chain
- Rent port space for desalination facilities (or diversify into this market)
- Secure partnership to supply renewable energy to desalination facilities
- Rent access to water pipelines within corridors

Co-benefit opportunities:
- Integrate biodiversity ecosystem services into biofuels industry
- Position SA ports as leading gas bunkering on the continent
- Build competency in desalination and sell on into other markets

Reduce operating cost by:
- Lowering exposure to oil price volatility through biofuel switching
- Lowering carbon tax exposure through biofuels
- Securing water supply via access to desalinated water for usage in operations
**Freight**
- Diversification of revenue streams by leveraging property portfolio for: Distributed power technology for most corridors
  - Dual voltage locomotive fleet
  - Road-to-rail freight
  - Drone freight system
  - **Co-benefit opportunities:** Freight node optimisation
  - Improved energy generation and distribution (low carbon)
  - Reduced cost of moving things
  - Reducing operating cost by: Creating economies of scale by optimising flow densities over long distances

**Manufacturing**
- Diversification of revenue streams by leveraging core competence in manufacturing to: WESS can be sold into the SADC and Africa market
  - Participate in upstream emerging renewable energy market in South Africa and Africa
  - Establish and dominate local drone market and scale up to reach African markets
  - Leverage existing decentralised property portfolio to launch an agnostic EV recharge infrastructure
  - **Co-benefit opportunities:** Skills and competencies in the energy manufacturing space and move downstream to maintenance
  - Opportunity to establish a business around the training of drone pilots
  - **Reduce operating cost by:** Optimising waste management initiatives
  - Lowering energy cost through waste-to-energy conversion

**Service**
- Diversification of revenue streams by leveraging core competence and strategic assets: South African tourism industry has growth potential
  - Advisory services can be targeted to public sector areas where capabilities are lacking
  - Biodiversity revenue-generating opportunities are emerging, especially where there is a linkage into the food value chains
  - The meteorological big data analytics capability will provide information relevant to multiple industries (e.g. insurance industry)
  - **Reduce operating cost by:** Utilising ecological infrastructure instead of civil infrastructure wherever viable
  - Optimising waste management initiatives

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**Rapidly advancing**
- **New competencies**
  - **Autonomous road freight system**
  - **Road-to-rail modal shift**
  - **‘Uberisation’ of mobility system**
  - **Conversion to 25k Kv AC traction strategy**
  - **Distributed power technology adopted for mass corridors to provide the most optimal operating model**

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**Energy system**
- **Rapidly advancing on job opportunities**
  - Automation impacts job opportunities
  - Upstream energy infrastructure
  - Advanced manufacturing
  - Drone manufacturing

**Wayside energy storage system**
- Locomotive manufacturing

**Service**
- **Co-benefit opportunities:**
  - **Biodiversity ecosystem services**
  - **Advisory services**
  - **Tourism marketing**

**2017 Financial year**
- 2017

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**2024 MDS period**
- 2024

**2024 LTPF period**
- 2024

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**Meteorological big data analytics**
- Waste trading digital platform

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**Freight of tomorrow**
- **Declining commodity demand**
  - **Road-to-rail modal shift**
    - Well advanced

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**Freight**
- **Manufacturing**
  - **Service**