Transnet SOC Limited proposes to expand the Saldanha Port iron ore infrastructure and operations, to increase South Africa’s iron ore export capacity. This proposal is supported by the national strategy of the government infrastructure development drive.

The proposed Port expansion forms part of an overall project to increase the throughput capacity of the Sishen-Saldanha iron ore corridor from 60 to 88 million tons per year/annum (Mtpa).

**National Context**

During his State of the Nation Address on 9 February 2012 President Jacob Zuma invited the nation for the year 2012 and beyond “to join government in a massive infrastructure development drive”. He announced a Market Demand Strategy of Transnet, which entails an investment over the next seven years of 300 billion Rand in capital projects - mainly for rail and port projects in the country.

In 2012 the South African government adopted a National Infrastructure Plan that aims to transform the economic landscape and simultaneously create jobs. The Strategic Infrastructure Plan consists of 18 Strategic Integrated Projects (SIPs). This proposed Transnet project, which aims to increase South Africa’s capacity to export more iron ore to world markets, falls under SIP5.

**Project Context**

South Africa has extensive iron ore mines in the Sishen/Postmasburg areas. Mined iron ore is transported from these mines via an 860 km railway line to the Port of Saldanha, where most of it is loaded on ships for export. (A small portion feeds the Saldanha Steel Works.) As part of SIP 5 Transnet proposes the expansion of this iron ore export corridor including the Port.

**SIP 5: Saldanha - Northern Cape Development Corridor:**

Develop the Saldanha - Northern Cape linked region in an integrated manner through rail and port expansion, back-of-port industrial capacity and strengthening maritime support capacity.

Refer to Page 12 for your opportunities to participate.
The increase in iron ore throughput to 88 Mtpa allows for an increase to about 86 Mtpa in iron ore export from the Port of Saldanha, since about 2 Mtpa will continue to be supplied to the local Saldanha Steel Works.

The proposed project is motivated by South Africa’s aspirations to remain a strong competitor in the iron ore export industry and position the country to reap the benefit from an increasing market share and revenue generated from iron ore exports.

**Iron ore price**

The price of iron ore has increased substantially since 2009, and predictions are that the value of iron ore will continue to increase. (Figure 1)

**Market share**

The market for high quality iron ore is highly competitive.

The top countries which mine and produce such iron ore include Australia, Brazil, India and South Africa. China has its own iron ore mines, but the ore is of a lower grade.

South Africa recently overtook India as China’s third largest iron ore supplier and in 2012 provided the nation with 40.6 million tons (metric), a 12% improvement on 2011’s export numbers.

The current capacity limitations of the iron ore corridor constrains South Africa’s market share.

**Increased revenue**

Current iron ore exports contribute approximately R70 billion to South Africa’s Gross Domestic Profit (GDP). The proposed expansion provides for an increase in iron ore exports by more than 40% compared to the current exports. Therefore a substantial increase in revenue from iron ore export would be achieved.

Figure 2 shows the significant contributions that iron ore mining has made compared to other mining commodities for the years 2009 to 2012.

**Job security and creation**

With an unemployment of close to 30% in South Africa, as shown by Statistics South Africa’s 2011 Census, there is an urgent need to firstly secure exiting jobs and secondly to create additional jobs for South Africans.

By employing about half a million people directly, the mining industry is one of the largest employers in the country. However, the industry faces many challenges which threaten jobs.

By increasing South Africa’s iron ore exports, many jobs will be secured and additional jobs may potentially be created at the iron ore mines. Job security/creation in the Northern Cape is of high importance.

Jobs would also be secured and/or created through the expansion of the Port of Saldanha Iron Ore Terminal.

![Figure 1: Iron Ore Fines Price Trends](Source: www.infomine.com)

![Figure 2: Annual Revenue for South Africa per Mining Commodity (R\'billions) (Source: pwc. Nov 2012. SA Mine Highlighting trends in the South African mining industry. 4th Edition)]
Transnet considers the three main components of the proposed project (emerging miners facility, rail and port terminal) interdependent for the success and sustainability of the objectives of the overall project.

However, for practical reasons, Transnet is submitting separate applications for environmental authorisation and have committed to undertaking an Environmental Impact Assessment (EIA) for each of the main project components.

GIBB will provide opportunities for Interested and Affected Parties to gain information and participate as part of each EIA.

This page serves to provide a brief overview of the project components.

### Overall Project Components

1. **Mine-side Ore Loading – Proposed New Facility for Emerging Miners**
   
   While the larger mines owned and operated by Kumba Iron Ore and Assmang have designated facilities at which trains are loaded, ‘smaller’ mines are currently not connected directly to rail. Emerging / entrant miners therefore resort to trucking their ore over long distances.

   Transnet proposes to provide a separate new consolidation and loading yard for emerging/entrant iron ore miners. A proposed site along the Kolomela rail line close to the Postmasburg mining area is envisaged.

   In concept this proposed facility will provide for a consolidation yard for off-loading, blending and stockpiling of various grades of iron ore to be loaded onto the trains for export via the Port of Saldanha.

   **Note:** This project component is at an early pre-feasibility stage and for this reason further background information will only be available at a later stage.

2. **Iron Ore Rail Expansion**

   The existing Sishen – Saldanha Ore Line is a single rail track with 19 crossing loops (‘stoppage tracks / bays’). The loop facilities are strategically placed to allow for fully loaded and empty ore trains to pass each other efficiently. The rail line is also used for other freight known as General Freight Business (GFB). GFB trains make use of loops to allow trains to pass each other. Some loops also house the rail service/maintenance trams and/or facilities for train drivers accommodation and rail operation. Systematic scheduling and a sophisticated signalling system are in place to regulate the rail traffic.

   Transnet’s Project Team (and their consultants) are using sophisticated modelling studies to establish and optimise the upgrade needed to increase the tonnage of iron ore transported from the mines to the port. These studies showed that a single line would still suffice to fit in all the train schedules, but that some existing loop rail sections would need to be lengthened. There is also the need for additional GFB and maintenance loops.

   In addition, a new link between the Upington rail line and the ore line is proposed to facilitate easier access to the ore line for material trains and GFB traffic. The existing Salkor Yard at Saldanha at which full and empty trains are staged and decoupled or coupled for shunting to or from the Port Iron Ore Terminal also requires expansion.

3. **Port Iron Ore Terminal Expansion**

   To facilitate the growth in iron ore export, expansion of the Iron Ore Terminal and associated infrastructure is needed at the Port of Saldanha. Details of the proposed expansion are provided on Pages 6 to 9 of this Background Information Document.
The Port of Saldanha is a deep-sea port located within Saldanha Bay in the Western Cape. This is on South Africa’s western shoreline about 110 km northwest of Cape Town.

The existing Iron Ore Terminal and associated facilities form the main operations of the Port.

The proposed expansions lie for the most part within the boundaries of the Port. However, the proposed new berth, stockyard expansion and new 4th tippler and associated infrastructure extend beyond the current footprint of the terminal.

Local Municipality

The Port lies within the Saldanha Bay Municipal Area. This municipality has a population of close to 99 000 people. Towns within the municipal area include Vredenburg, Saldanha, Hopefield, St Helena Bay, Paternoster and Langebaan.

A variety of industries are operational within the municipal area. Many are linked to the port in one way or another. The ArcelorMittal steel works depends on the Iron Ore Corridor for its supply of iron ore via the Iron Ore Terminal.

Saldanha Bay

The Saldanha Bay, originally a natural bay, has been modified to accommodate the port. A breakwater was constructed to protect port activities. A jetty and associated berths divide the bay into what is known as Small Bay and Big Bay.

Langebaan Lagoon

The Saldanha Bay entrance channel leads to the Langebaan Lagoon, a large embayment of the Atlantic Ocean, and part of the West Coast National Park. The lagoon and nearby inshore islands received RAMSAR designation on 25 April 1988, which confirms it as a wetlands of international importance.

Figure 3: Map of South Africa showing the location of the Port of Saldanha

Figure 4: Location of the Port of Saldanha
The operation of the Port of Saldanha is dominated by the Iron Ore Terminal. The Port operates 24 hours per day, 7 days a week and for 365 days of the year. Currently the terminal is operated by Transnet Port Terminals (TPT).

Operations include the following:

**Tippler** – There are currently two tipplers which serve to tip two rail wagons at a time to off-load the iron ore into a bunker from where it is conveyed to the stockyard.

**Ore Stockyard** – At the stockyard iron ore is stored in stockpiles. These are divided into various grades of ore and provide a buffer between rail off-loading and ship loading.

**Berth and Ship Loading** – Two ship-loaders at the two existing berths load the iron ore onto the ships.

**Conveyors** – A network of conveyors transport iron ore from the tipplers to the stockyard and from the stockyards to the ship-loaders at the berths.

**Seawater Desalination** – A reverse osmosis facility desalinates sea-water to produce freshwater that is used to spray down the iron ore for dust control.

**Roads** – There are a number of paved service roads throughout that provide easy access.

**Administration and Services** – Includes administration buildings and staff facilities.

**Other Port Operations**

In addition to the Iron Ore Terminal port operations include the following:

- Multipurpose quay for breakbulk cargo
- Oil tanker quay
- Port control/ vessel traffic services centre
- Navigation and docking
- Pilotage and tugboats
- Yachting marina

![Figure 5: Existing Iron Ore Terminal (Photo Source: www.moneyweb.co.za)](image-url)
In order for South Africa to further increase its iron ore export, the Port of Saldanha Iron Ore Terminal needs to be expanded. This is to accommodate the increased frequency at which the trains will deliver iron ore to the Port, the increased frequency of ships docking at the Port as well as the need to ensure the efficient transfer of iron ore onto ships.

The current capacity at the Iron Ore Terminal is limited by the tippler capacity, available stock yard area; and the number of stacker-reclaimers, ship-loaders and berths. Transnet’s proposal therefore addresses these limitations.

### Port expansion components

The proposed Port Iron Ore Terminal expansion covers the following main components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Existing Capacity</th>
<th>Proposed Expansion Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tippler Units</td>
<td>1st, 2nd (3rd proposed; separate EIA process)</td>
<td>4th</td>
</tr>
<tr>
<td>Stock Yard</td>
<td>About 4.8 million tons</td>
<td>About 7 million tons</td>
</tr>
<tr>
<td>Stacker-reclaimers</td>
<td>4</td>
<td>2 additional</td>
</tr>
<tr>
<td>Berths</td>
<td>2</td>
<td>1 additional</td>
</tr>
<tr>
<td>Ship Loaders</td>
<td>2</td>
<td>2 additional (on the new berth)</td>
</tr>
</tbody>
</table>

Other components and activities that form part of the iron ore terminal expansion include:

- New rail lines to and from the 4th tippler
- Conveyor system extensions
- Extension of stockyard by reclamation (of man-made pond and dune area)
- Stock yard service road extension
- Stockyard wind barrier/wall (potential)
- Electricity infrastructure upgrade
- Seawater desalination plant expansion (to be confirmed)
- Berth and inner navigation channel dredging
- Use of dredge material for infill

**Note:** At this stage all Transnet’s proposals are based on pre-feasibility investigations and are therefore preliminary and may be adjusted during detail design.

### 4th Tippler

Each tippler consists of three main components:

1. Rail Tracks (short sections)
2. Tippler
3. Dust Extractor and Filter Unit

The tipplers have the function to off-load the iron ore from the trains at the port. A section of the loaded train known as a train rake moves through the tippler unit. The tippler takes two wagons at the same time, turns them upside down and thereby tips the ore out into a bunker underneath. From the bunker the ore is moved towards the terminal stockyard and/or loading area via a conveyor belt.

Dust is generated when the trucks are tipped out and therefore each tippler unit is provided with a dust extractor and associated filter unit to reduce dust pollution. The dust waste from the filter is disposed to landfill, but opportunities to sell the product as pigment or filler arise periodically.

Currently there are two tippler units. A 3rd tippler unit is proposed to provide operational security for the current iron ore export capacity as it would allow one of the existing tipplers to be taken off-line for maintenance or overhauling. (The application for Environmental Authorisation for the 3rd tippler does not form part of the overall capacity expansion and is being undertaken separately.) The 4th tippler forms part of Port Expansion.

The proposed site for Tippler 4 (and Tippler 3) is to the east of the rail tracks leading to Tippler 1 and Tippler 2.
Figure 7: Aerial Map of the Port of Saldanha

Figure 8: Schematic of the Ultimate Rail Line Configuration for Tipplers 1 to 4 (preliminary)
Stockyard

The stockyard provides for buffer stockpiles between the ore that is railed in and the ore that is loaded on ships. Various grades of ore are railed in at different times and from a number of mines and then stored in many designated and allocated stockpile areas within the yard.

As a result of the proposed increase of iron ore export the stock yard needs to be expanded by an area of about 27 hectares. To continue with the organised staking and reclaiming from the range of designated stockpiles in accordance with the customer’s demands, there is a need to expand the area for stockpiles. This expansion also caters for stockpiles allocated for the emerging miners.

Transnet proposes that the stockpile area be expanded to an area immediately adjacent and parallel to the existing stockyard. Project Engineers calculated that this would optimise the size of the required area and the operational logistics and efficiencies. Capital investment would be minimised. It also allows for smooth integration with the existing stockyard and minimising additional conveyors and transfer points. As such this expansion will involve the reclamation of a manmade pond and loss of dune area to the east of the current stockyard.

Stacker-reclaimers

The proposed stacker-reclaimers, like the ones currently used at the Port of Saldanha, are dual function heavy machines that move on fixed rails along rows of wide stockpiles. They are used to organise the stockyard through stacking and reclaiming the various grades of iron ore in accordance with the specifications of the mining houses. The mining houses, in turn, base these specifications on their customer’s requirements.

The use of the dual function machines improves efficiency and throughput as it provides the port operators with a low cost arrangement, minimising the number of stackers and providing a high storage to area ratio.

Iron ore stocks

The proposed operating strategy provides for about 14 different iron ore product grades railed in from the mines.

Product grades are dependent on what the mines can produce and what the customers need. Product grades typically range in iron content of between 63.5% and 66% and comprise of fine, direct reduction sinter and lumpy ores.

Service roads

Existing service roads will be extended along the proposed new stockpile areas.
An additional berth is required in order to support the proposed increase in export capacity as well as to then maintain the system for longer term refurbishment outage periods.

Transnet chose the location of the berth in Small Bay close to the existing iron ore berths as their preferred option. Their selection was made after the consideration of a number of alternatives, as part of the proposed project’s pre-feasibility stage.

Various alternative structures of the berth are being considered. Engineering prefeasibility studies favour a piled steel structure with a full concrete deck. However, alternatives such as a caisson structure (similar to the current berth structure) will be considered based on further geotechnical investigations and engineering considerations.

Dredging will be required in the new berth area in order to facilitate the navigation and loading of the various ship sizes (Figure 12). Some hard rock may potentially require blasting to allow for the required deepening. The total estimated dredge area is about 23 hectares. This will result in about 1.8 million m$^3$ of dredge material. The dredged material will be used as in-fill material.

Two new shiploaders are proposed to be located on the new berth.

The system will be designed so that loading will be as continuous as possible and ship-waiting time will be minimised.
NEMA is the primary South African legislation governing the requirements for environmental assessment. The Environmental Impact Assessment (EIA) Regulations published on 18 June 2010 under NEMA as Government Notices No. R543 to 546 prescribes Basic Assessment Processes and Scoping and Environmental Impact Reporting Processes (“Full” EIA) that need to be followed. This is prior to certain listed activities receiving Environmental Authorisation from the relevant competent authorities. An Applicant, who intends applying for such an authorisation for a listed activity, must appoint a suitably experienced independent Environmental Assessment Practitioner (EAP) to manage the application. The EAP must then determine whether a Basic Assessment or “Full” EIA is required.

**A “Full” EIA must be applied to an application with two or more listed activities if any one or more of the activities trigger a “Full” EIA, even if the other activities trigger only a Basic Assessment.**

### Basic Assessment Process

Basic Assessments are legally required for certain listed activities where the impact is typically relatively moderate. Such activities are listed in:

- GNR544 - ‘Listing Notice 1’
- GNR546 - ‘Listing Notice 3’, which identifies activities that require environmental authorisation within specified geographical areas.

### “Full” EIA - Scoping and EIA

Activities listed as requiring a “Full” EIA process are typically more detrimental than those requiring a Basic Assessment. “Full” EIAs apply for activities listed in:

- GNR545 - ‘Listing Notice 2’

### Public Participation Process

**Environmental Management Programme (EMP)**

PPP and EMP are prescribed for both Basic Assessments and “Full” EIAs.

### Purpose of an EIA

The purpose of an EIA is to identify and assess the potential environmental impacts and develop a set of appropriate mitigation measures for any impacts rated as significant.

The mitigation measures can then be incorporated as a set of environmental specifications in a project specific EMP or an organisational Environmental Management System (EMS).

A Public Participation Process (PPP) will be run as part of the EIA, the PPP will include identification and notification of potential Interested and Affected Parties (I&APs), public review of draft and final documents and public meetings.

### Listed Activities Triggered by the Proposed Port Expansion

Due to the many components of the proposed Port expansion project several Listed Activities are triggered. Note that at this stage the identification of Listed Activities is preliminary since the engineering feasibility studies are still in progress. At this stage potential listed activities include amongst others:

<table>
<thead>
<tr>
<th>Listing Notice</th>
<th>Activity Number</th>
<th>Pertaining to</th>
</tr>
</thead>
<tbody>
<tr>
<td>GN 544</td>
<td>2, 28</td>
<td>Atmospheric Emission License</td>
</tr>
<tr>
<td></td>
<td>10, 38</td>
<td>Electricity Infrastructure</td>
</tr>
<tr>
<td></td>
<td>14, 43</td>
<td>Construction in costal public property</td>
</tr>
<tr>
<td></td>
<td>16, 45</td>
<td>Construction or earth moving in the bay</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Dredging and depositing of material in the bay</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>Extension of stockyard service roads</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>Transformation of vacant land for the stockyard expansion</td>
</tr>
<tr>
<td></td>
<td>54</td>
<td>Expansion of the berth on the sea bed</td>
</tr>
<tr>
<td>GN 545</td>
<td>14</td>
<td>Construction of the new berth on the sea bed</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>Physical alteration of undeveloped land - stockyard</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>Construction of facilities in the bay associated with ships</td>
</tr>
</tbody>
</table>
The NEMA EIA Regulations prescribe the legally required procedures in detail.

**Flow diagramme**

EIA Regulations - Sections 26 to 35

### Scoping Phase
- Authorities meetings
  - Notice boards
  - Newspaper advert
  - 40 day comment period on BID
- Submit Application to DEA
- Conduct PPP
  - Notify stakeholders
  - Distribute Background Information (BID)
- Prepare Draft Scoping Report (DSR) including Plan of Study for EIA
  - Solicit comments on DSR from I&APs and Authorities
  - Submit Final Scoping Report (FSR) to Authority
- 40 day Comment period on DSR
- Acknowledge receipt within 14 days

### Assessment Phase
- Prepare Draft Environmental Impact Report (EIR) & draft Environmental Management Plan (EMP)
- Solicit comments on the Draft EIR / EMP
- Submit final reports to Authority
- Decide within 60 days: Accept EIR or Refer for reviews or Request amendments or Reject EIR
- Grant or refuse authorisation within 45 days of acceptance

### Public Participation

EIA Regulation – Chapter 6, Regulation 54 to 57 describes how an EAP must give notice to all potential interested and affected parties of the application.

### EMP

EIA Regulations – Regulation 33 requires an EMP to detail information on any proposed management or mitigation measures that will be taken to address the environmental impacts.

The EAP conducting the EIA process must complete the following Public Participation Process (PPP):

1. Display site notices at the proposed development site
2. Giving written notice to:
   - The land owner and owners or occupiers of land adjacent to the site
   - The municipal councillor of the ward the site is located in and any organisation of ratepayers that represent the community in the area
   - The municipality that has jurisdiction in the area
   - Any organ of state having jurisdiction in respect of the activity
   - Any other party as required by the competent authority
3. Placing advertisements in one local newspaper and one provincial newspaper

All I&APs will be given the opportunity to review and comment on draft and final reports including specialist reports and the EMP.

### Environmental Impacts

The EIA will describe and identify the environmental impacts in detail. Key environmental impacts that will be assessed include the following:

- Increase in revenue
- Increase in jobs
- Loss of portion of Saldanha Bay due to berth expansion
- Loss of portion of dune habitat
- Siltation during dredging
- Disposal of contaminated dredged material (if any)
- Dust pollution
- Stormwater management
- Potential spillage of hazardous substances
- Generation/storage/disposal of waste
- Noise
- Visual
- Traffic
Public participation

Public Participation is an important part of an EIA process. It provides Interested and Affected Parties (I&APs) with an opportunity to engage by sharing information, comment and raise issues and concerns related to environmental impact.

Your opportunities to engage are:

- View available information
  - The GIBB website [http://projects.gibb.co.za](http://projects.gibb.co.za)
  - On request by contacting the GIBB Public Participation Office

- Public meetings in your area
  - GIBB will arrange meetings for the proposed Port Iron Ore Terminal Expansion Project. These meetings will be announced through media notices, notice boards and through distribution of information leaflets.
  - These meetings will provide Interested and Affected Parties (I&APs) with an opportunity to listen to presentation on the project and the EIA process. Opportunities to ask questions, share information, comment and raise issues and concerns will also be provided.

- Focus group meetings

- Comments
  - Please:
    - Register as an I&AP and submit your comments in writing or by completing the available Comment Sheet
    - Label your topic line with: Transnet Port Iron Ore Terminal Expansion
    - Send your comments to:
      GIBB Public Participation Office: Transnet Iron Ore Port
      GIBB (Pty) Ltd, PO Box 3965, Cape Town, 8000
      Fax: 086 242 0278
      Email: oreexport@gibb.co.za

  - **PLEASE PAY ATTENTION TO THE COMMENTS CLOSING DATE THAT WILL BE ANNOUNCED**

- Contact Number
  - A contact number line is also available to log your comments:
    - **Contact Number: 021 469 9294 (9h00 to 16h00)**
    - **PLEASE QUOTE TRANSNET PORT**

GIBB invites you to engage and participate.

**Note:** Should you wish to participate, it is important to register as an Interested and Affected Party with GIBB in writing.