PORTS SECTOR REVIEW 2015/16

PUBLIC CONSULTATION ROADSHOW
DISCUSSION DOCUMENT

Comment is invited via written submission by: 30 June 2016, addressed to: The Chairperson, Ports Regulator, Private Bag X54322, Durban, 4000
Or email submissions to: info@portsregulator.org.

Contents

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Introduction:

The South African ports system has evolved, showing both rapid growth in specific areas and maturity in others. It has also seen the democratisation of the ports system, with port level committees being formed (PCC's) and the inception of regulation in the ports sector , with the promulgation of the National Ports Act, 12 of 2005 and the subsequent establishment of the Ports Regulator of South (the Regulator). The South African ports system has progressed during the democratic era, showing rapid growth in specific areas and maturity in others. Some of these developments occurred on physical infrastructure, such as the establishment and expansion of the Port of Ngqura, the acquisition of a number of marine service vessels, especially the acquisition of nine tug boats; dredging equipment and the start of a move towards efficiency monitoring through the establishment of operational centres to administrate the Terminal Operators Performance System (TOPS) and the Marine Operators Performance System (MOPS). This review serves to provide a snapshot of the infrastructure and capacity in the South African Port system as well as an analysis of the recent performance (operational and financial) and efficiency standards over the 5 year review period.

The review uses mainly existing research previously conducted and published by the Regulator since its inception, supplemented by other sources, to give a holistic picture of the ports system, with, a focus on the Regulated entity, the National Ports Authority. The first section focuses on the capacity and performance, and also provides a financial overview of the ports system. This is followed by a more detailed snapshot of the capacity and performance of each of the eight commercial ports that form a part of this review.

Overview

Major shipping lanes serviced by the world's largest shipping lines pass along the South African coastline in the South Atlantic and Indian Oceans. Approximately 96% of South Africa's exports are conveyed by sea, and the eight commercial ports are the conduits for trade between South Africa and its Southern African partners, as well as catering for traffic to and from Europe, Asia, the Americas and the east and west coasts of Africa.

Figure 1 Global Shipping routes

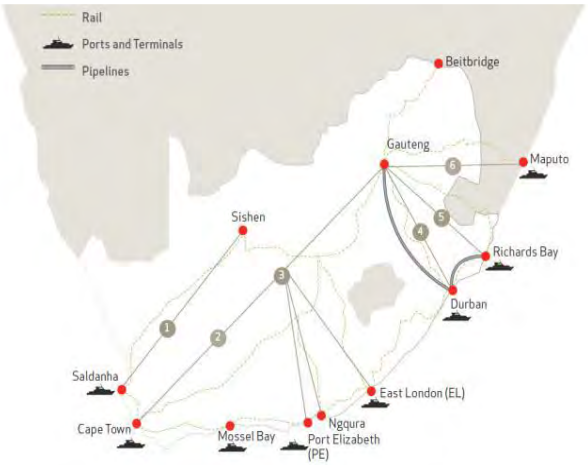
Source: www.divergingmarkets.com

South Africa has eight commercial ports. The ports of Richards Bay and Durban in KwaZulu-Natal; the ports of East London, Port Elizabeth and the Port of Ngqura in the Eastern Cape; and the ports of Mossel Bay, Cape Town and Saldanha in the Western Cape.

The South African state-owned National Ports Authority (NPA) manages the ports as a landlord, while Transnet Port Terminals (TPT) also South African state-owned, is the largest operator and has a presence throughout the ports system. All of the container and RoRo terminals are managed and run by TPT, whilst the private sector are mostly involved in the running of multipurpose terminals with the exception of the Richards Bay Coal Terminal (RBCT) situated in the Port of Richards Bay. The newest port in South Africa, the Port of Ngqura, was completed in 2006 and was developed off the coast from Port Elizabeth in the Eastern Cape. The port features a draft of 16m making it the deepest container port in the port system. In addition, Durban is the continent's busiest port and has the largest container capacity in southern Africa, while Richard's Bay is one of the world's largest bulk coal terminals.

Both the Richards Bay Port and Durban Port are situated on the coast of Kwa-Zulu Natal with strategic rail and pipeline links to the province of Gauteng, making it the main point of entry and exit for South African goods destined for the industrial hub of the South African economy, or due for world markets. More competition from the relatively close Port of Maputo is expected in future, however the increase in competition on a regional level is expected to benefit port users and drive innovation and improve efficiencies amongst the region's ports. The Ports of East London (South Africa's only river port), Port Elizabeth and Ngqura adequately service the Eastern Cape and the adjacent hinterland, especially the established motor vehicle manufacturing industries in these regions. The optimum use of port capacity remains a problem however, with the economies of the Eastern Cape arguably not yet able to fully utilise the three ports on its coast, whilst the prohibitive distance to Gauteng and no rail tariff equalisation mechanism in place, is likely to continue to result in an underutilisation of these ports unless this is adressed. This is despite attempts to refocus the port of Ngqura on transhipment, a traditionally fickle and unpredictable market, with much international competition.

Figure 2 South African Port System



source: Transnet Port terminals

[1]The Western Cape has three ports with the Port of Mossel Bay on the south coast servicing the gas industry in the region; the port of Cape Town the largest regional port handling mostly container and high value products and the Port of Saldanha's dedicated bulk facility with a focus on Iron Ore exports from the mining activities in the Northern Cape province of South Africa. The economy of the Western Cape is focused around the city of Cape Town and surrounding hinterland with agriculture playing a dominant role. As such, the export of fruit and other agricultural commodities are an important section of the port that also features a large container terminal with a one million TEU capacity as well as multipurpose and liquid bulk facilities.

[1] **Source www.saoga.com**

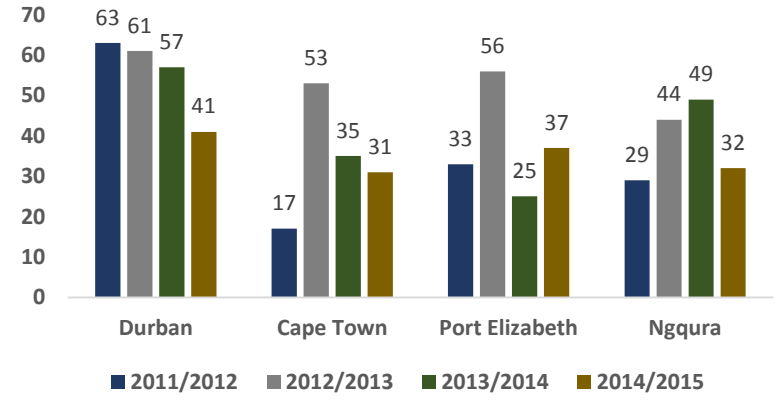
Figure 3 Ship Repair Facilities

Source: National Ports Authority

A renewed focus on ship repair in the system has also seen both Cape Town and Saldanha attracting users of ship repair facilities to these ports. New projects aiming at establishing new ship repair facilities servicing mainly the oil and gas industries of the west coast of Africa is also being mooted as part of the initiatives around Operation Phakisa.

The complimentary nature of the South African port system, with specific cargo handled at dedicated ports and little or no competition between ports in existence (with the possible exception of the ports of Ngqura and Port Elizabeth) allows an analysis of the overall spread of volumes between ports and the underlying drivers thereof. With total capacity not changing much throughout the port system during the period under review, the different roles of the ports have not changed significantly, with the possible exception of the Port of Ngqura that had refocused its strategy towards attracting transhipment cargo.

Figure 4 Time Spent at Anchorage (hours/ vessels)



Source National ports Authority

Overall, many indicators are used to measure operational efficiency in a port system. The introduction of the TOPS process and other efficiency measures should become evident through the increased efficiencies as monitored through the system. This will be an area of particular focus over the next five years. Whilst the report touches on internal measures throughout like “TEUs per meter of berth per annum”, the public mainly sees the ships waiting outside for a chance to get into the ports. This is in a sense the “public view of port efficiency” and figure 4 above provides an overview of average anchorage times for a number of ports.

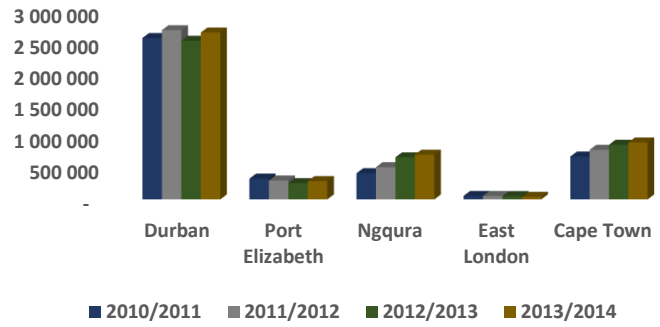
Anchorage time measures the amount of time a vessel waits outside a port before it is allowed to come into a port to commence work. The Port of Durban has consistently experienced the highest anchorage time out of all the ports, meaning that a vessel on average waits the longest in Durban before it is serviced. Although the Port of Durban has the highest anchorage time, it has shown a vast improvement since 2011/12, with a 35% reduction over the review period. It is worth noting that a busier port will likely experience longer anchorage times than a less busy port, but that is only part of the story. There are many variables influencing the period a ship is waiting and the data may be distorted by something like “slow steaming” (reducing the ship’s speed to minimise waiting time and save fuel) for example. We therefore focus rather on more robust data, like throughput etc., but would “keep an eye” on anchorage times over the next five years to see what the impact of the introduction of performance monitoring will have in years to come. This should not only increase the performance of the port from an operational point of view, but should also see significant financial efficiencies reflecting in lower unit costs over the medium to long term making the South African port system more competitive from a global perspective.

Volumes and capacity utilisation: An overview by cargo type

Container Volumes; the largest revenue generator for the Port system

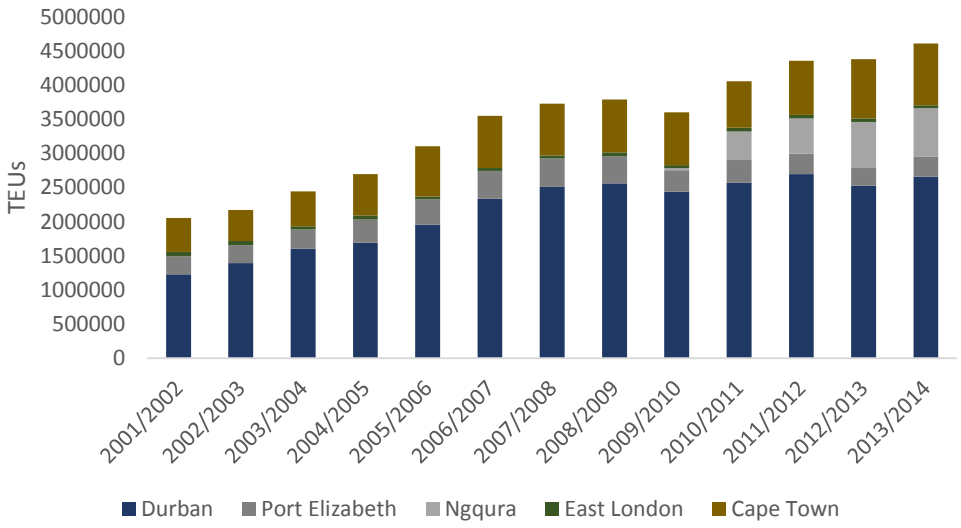
It is clear from data between 2010 and 2014 that the overall allocation of container infrastructure and capacity in the ports system has changed little, with the Port of Durban (servicing Gauteng) by far the most dominant port in the handling of container cargo.

Figure 3 Container volumes



The Port of Durban by far accounted for the highest container volumes amongst all of South Africa's ports with 57% of all container traffic in the ports system. Over the period it is interesting to note that both container exports and imports have increased over the past five years by 17% and has exceeded economic growth. The overall ratio of container imports to exports has been close to 1, with exports being higher in one year and imports being higher in others as evident in figure 5 below as rebalancing of empty container stock levels takes place.

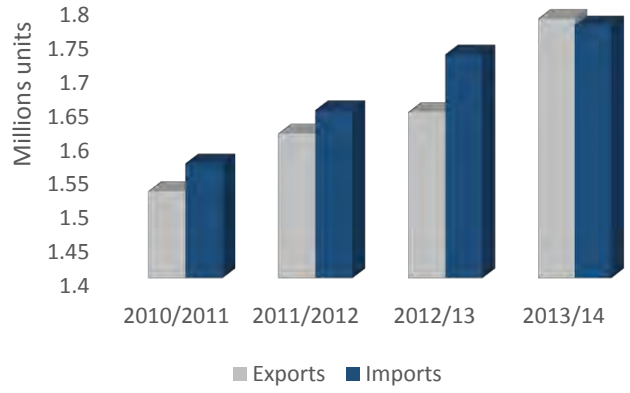
Figure 4 Container Volume contributions by Port



The container sector has experienced a steady rise in volumes over the last twelve years, slowing down only during the period of the global financial crisis. The increased container volume contribution of the Port of Ngqura has resulted in the Port of Port Elizabeth and East London contributing less towards container volumes of the overall ports system.

As cargo dues are based on a unit based charge, very little data is collected from a port perspective as to the contents of a container (customs is handled separately by the South African Revenue Service). Looking at the import export ratio of around one, whilst taking into account that for bulk commodities South Africa has large export surpluses, a conclusion may be drawn that the contents of South African exports in mainly containers are on average of lower value than imports. Contributing to this phenomenon may be the existence of the exporting of low value-by-volume bulk commodities via containers due to the recent relative reduction in container cargo dues as well as existing dry bulk bottlenecks in the supply chain and the export of empty containers to balance the movement thereof.

Figure 5 Total Container Imports & Exports (Source NPA)



Container traffic is handled through installed capacity of about 4.8 million TEUs in the system and dedicated terminals in the Ports of Durban, Ngqura, and Cape Town. The Port of East London does not have a dedicated terminal, and containers are handled at the break-bulk terminal and berths instead. Container traffic that is also handled at the Port of Richards Bay and the Port of Saldanha break-bulk terminals is not included in the analysis and is negligibly small.

Table 1 Container Capacity

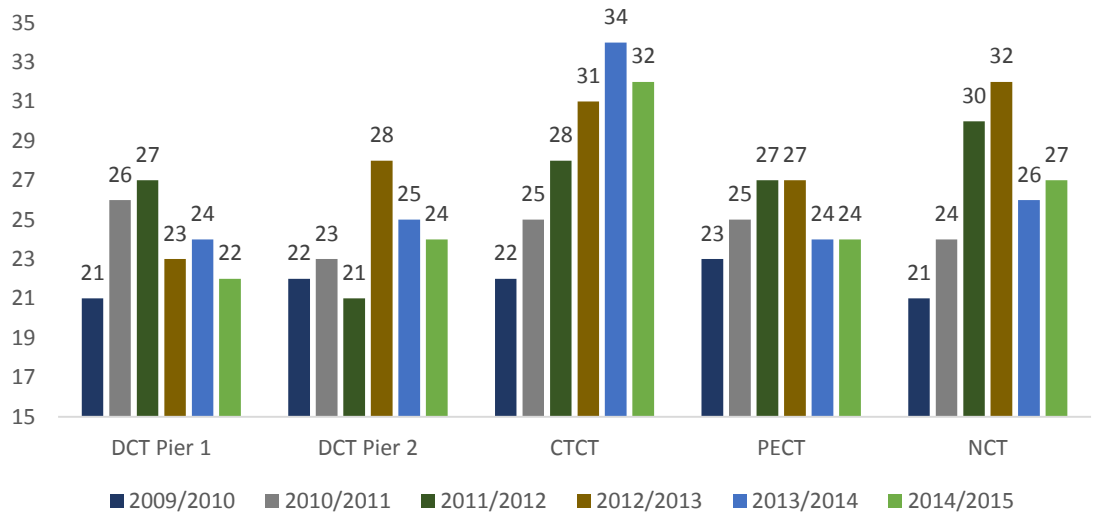
Container terminals	Installed Capacity (TEUs pa)	Design Capacity (TEUs pa)	Installed capacity as a percent of design capacity
Durban (DCT)	3 020 000	3 020 000	0%
Port Elizabeth (PECT)	325 211	600 000	54%
Ngqura (NCT)	491 442	2 800 000	18%
East London (ELCT)	53 390	93 000	57%
Cape Town (CTCT)	900 000	1 500 000	60%
Total	**4 790 043**	**8 013 000**	**60%**

Source: PRSA data/NPA

The Table above shows that overall installed capacity at South Africa's container terminal stands at 60% of design capacity. Reportedly, only in the Port of Durban's container terminals does the installed capacity match the design capacity, which shows full enablement of the design capacity for utilisation. The Port of Ngqura, on the other hand, has design capacity of 2,8m TEUs per annum with installed capacity for only 491 442 TEUs meaning that only 18% of its design capacity is enabled. The Ports of East London and Port Elizabeth are capacitated for operations at just above half their design capacity at 57% and 54% respectively, with the container terminal at the Port of Cape Town at 60% of the terminal's design capacity.

A common way to measure efficiency of the installed capacity existing at container terminals is GCH or gross crane moves per hour.

Figure 6 Gross Crane Moves per Hour



Source: National ports Authority TOPS Data

Gross crane moves per hour indicates how many boxes are moved per hour by an average crane at a respective terminal. The number of crane moves per hour can be used as a composite for productive and efficient port operations. Looking at Figure 6 above, most of the terminals have not changed significantly in terms of gross crane moves per hour. At the country's busiest container port, the Port of Durban which is almost at full capacity, gross cranes moves per hour have been static over the review period. Solving the underlying operational challenges would go a long way towards unlocking capacity at the Port of Durban which may allow a delay in the introduction of expensive new infrastructure by utilising existing capacity more efficiently.

As such, container throughput in the system in 2013 is summarized in the second column of Table 2 below. Based on 2013 throughput levels, with throughput of 4,6million TEUs through

the system, overall container terminals are operating at 58% of their design capacity which suggests sufficient capacity in the terminal. This contrasts with the same throughput measured against installed capacity where the terminals are operating at 96% of installed capacity. Rather than an indicator of new terminals, this high figure reflects the extent to which urgent improvements need to be made in installed capacity at some ports to handle more throughput in the system, further providing an opportunity to delay expensive infrastructure in favour of using what we have now better.

Table 2 Container Terminal Performance

Container terminals	13/14 Total TEUs	Throughput against design (%)	Throughput against installed capacity (%)
Durban	2 660 144	88%	88%
Cape Town	907 796	61%	101%
Ngqura	713 306	25%	145%
Port Elizabeth	291 233	49%	90%
East London	41 080	44%	77%
Total	**4 613 559**	**58%**	**96%**

Source: capacity utilisation Report 2014/15 PRSA

In addition, the averages mask the situation in the individual ports. The Durban Container Terminal, based on 2013 throughput against design capacity, is operating at 88% of its design capacity. The least used container terminal when considering throughput against design capacity is the Port of Ngqura with only a quarter (25%) of its design capacity reportedly being used. Because the terminal is designed as a four berth operation, but in 2013 was operating with installed capacity of a two berth terminal, this registers the Port of Ngqura's container terminal as using 145% of its installed capacity. The same trend applies with the Port of Port Elizabeth which is only utilizing 49% of its design capacity but throughput against installed capacity reflects a higher rate of 90%. This points to the need for further analysis of all the factors around installed capacities in the terminals to determine the extent to which use of the design capacity can be optimized before terminals are said to have run out of capacity as suggested by these reported figures. The next five year period will see greater focus on this area, including the prudence of projects and how the licence terms of terminal operators impact on the utilisation of existing capacity.

A further measure of utilisation and productivity is "berth productivity" that indicates how productively a berth is used by dividing the number of units over the metre of berth length per

annum only for vessels that are able to call a port. It is calculated as throughput per berth length.

Figure 7 Berth throughput

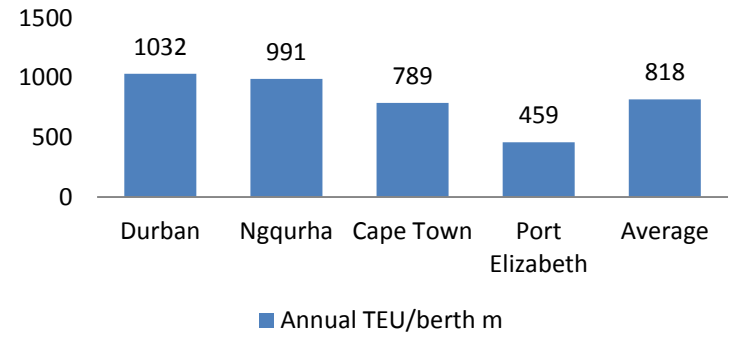
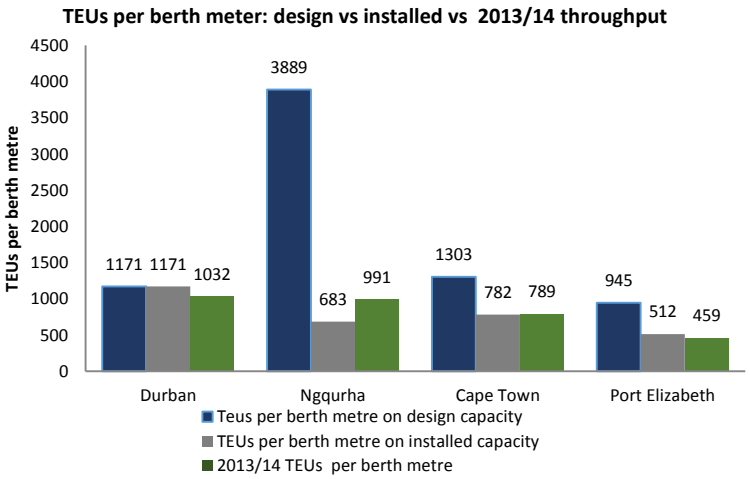


Figure 7 shows the number of containers moved per metre of berth in each of the terminals. The average performance across the system was 818 TEUs per metre of berth. With 1032 TEU/m the Port of Durban moves the highest number of TEUs per metre of berth. This is followed by the Port of Ngqura at 991 TEUs per metre of berth. Both the Ports of Cape Town and Port Elizabeth performed below average. Although the averages allow for comparisons to be done per terminal, as done in international studies (see Drewry: 2014), in the South African case, the measure of how the terminals are performing in relation to their design capacity – an indicator of what is possible based on infrastructure already provided – as well as the installed capacity – an indicator of what is possible based on superstructure provided and operational standards for the terminals provides a more comprehensive picture of the South African port system and the opportunities for utilising latent capacity. As a result, the figure below (figure 8) provides a more comprehensive picture of berth productivity based on design capacity, installed capacity and 2013/14 throughput for each of the terminals. The difference between current throughput and maximum throughput based on design and installed capacity highlights where additional throughput is possible by addressing installed capacity issues. It is assumed that design and installed capacity account for the effects of terminal layout, the alongside depth and vessels sizes accommodated at each port, as well as superstructure and port operating systems in each of the terminals.

Figure 8 Berth Throughput Installed vs Design Capacity



The Port of Durban's container terminals, which handled 1032 TEUs per metre of berth, were only 39 TEUs short of the full design and full installed capacity. The challenge is with the Port of Ngqura, which based on design capacity, has the potential to handle 3 889 TEUs per metre of berth against the 991 TEUs per metre of berth that the port achieved in 2013/14. The productivity of its installed capacity is 683 TEUs per metre of berth which is 17.5% of overall design capacity. In simple terms this points to significant latent capacity in the Port of Ngqura (away from the large supply chains feeding the economy of Gauteng) and raises questions and presents challenges about installed capacity as well as total volumes and projected growth of containers handled by the Port.

The provision of container capacity is crucial to the future economic growth of South Africa and will greatly impact on the future structure and expansion of the port system. Much can certainly and are being be done to better utilize existing assets and push out expensive capex. Productivity needs to improve drastically and the NPA's implementation of the TOPS system should see benefits feeding through to users over the next few years. In addition, with the current capacity structure, a major concern arises with the geographic location of the bulk of the additional spare capacity in the South African port system in the form of Ngqura that requires some lateral thinking in using that capacity (or bringing it into the broader South African supply chain) outside of just depending on transhipment cargo.

The automotive trade; a cornerstone of the South African economy

South Africa's automotive industry plays a large role in the South African port sector through the manufacture and export of vehicles and components as well as the volume demand driven by domestic requirements through imports. A number of major multinational firms use South Africa to source components and assemble vehicles for their local and international markets with a very Africa focused strategy evolving in many OEMs over the last five years as an area of growth. The sector contributes at least 6% to the country's GDP and accounts for approximately 12% of South Africa's manufacturing exports. In 2014/15, 391 000 vehicles were imported, whilst 265 000 units were exported.

The automotive and components industry is well placed for investment opportunities. A growing number of vehicle manufacturers such as BMW, Ford, General Motors, Mercedes Benz, Nissan, Renault, Toyota and Volkswagen have production plants in South Africa, while many component manufacturers have also established production bases.

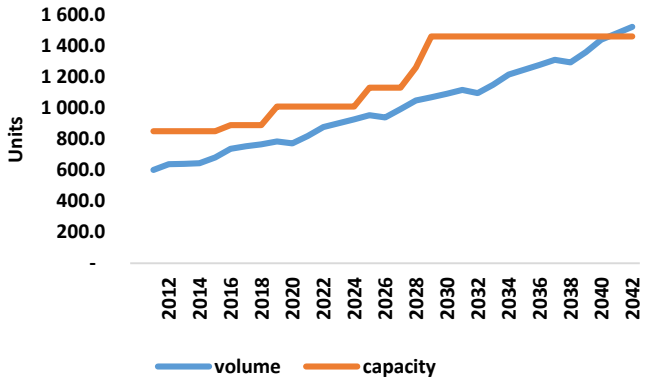
Automotive trade volumes are based mainly on the geographic location of the automotive manufacturing sector in South Africa with manufacturing largely located in three provinces, the Eastern Cape and KZN (coastal) and Gauteng (inland) with VW and GM utilising the port of Port Elizabeth and Daimler Chrysler, the port of East London. Most other manufacturers (including Toyota that has a manufacturing plant in Durban) and importers use the Port of Durban as can be seen in the volume distribution table below.

Automotive terminals account for 681 022m^2 of terminal area in the system. As with containers, automotive operations are licensed exclusively to TPT in the Ports of Durban, East London and Port Elizabeth. Although at full capacity the ro-ro terminals can handle 810 000 units per annum, the available or installed capacity is 681 041 unit per annum. Since 2008/09, growth in ro-ro volumes has seen a 2.04% increase at an annual rate, a slow recovery from the financial turmoil of 2008 when global vehicle sales dropped by 5.3%. However, over a longer period since the turn of the century, growth in the import and export of South Africa's automotive industry has been impressive, as can be seen in the table below.

Table 3 RoRo Volumes

RoRos	2001/2002	2013/2014	CAGR
Durban	89 407	501 456	15.45%
Port Elizabeth	13 215	133 194	21.23%
East London	51 361	56 193	0.75%
Total	**153 983**	**690 843**	**13.32%**

Figure 9 RoRo volume vs Capacity



The infrastructure required to handle the volumes remained fairly constant over the review period and is not expected to change significantly in the near future see Figure 9, which illustrates the NPA's future proposed RoRo capacity projections.

Table 4 RoRo Capacity

Port	Terminal	Berths	Usable Berths	Installed Terminal Capacity	Berth Length (m)	Berth Draft
Port Elizabeth	PE Motor Vehicle	100,101	1	133 552	342	12.2m
East London	EL West Quay	P,R	1	67 489	559	9m
Durban	DBN Cato Creek	F,G,M,R and Q	3	480 000	1149	10.1m to 10.6m

Whilst Durban is seeing increasing competition from other ports, including Maputo in the Ro-Ro market, the capacity available should ensure that it will remain the port of choice for vehicle imports and exports in the foreseeable future.

The smallest ro-ro draught in the ports system is at the Port of East London with a 9m draught and the deepest draught is found at the Port of Port Elizabeth at 12.2m. The Port of Port Elizabeth's berth length is the shortest of the three and given the size of vessels below, it can only work one vessel at a time, yet, it has more installed capacity than the Port of East London. All three South African ro-ro terminals are able to accommodate the largest ro-ro vessels based on the terminal capacity and vessel dimension. Since October 2015 the Port of Durban's roro terminal has been berthing the largest car carrier in the world (Hoegh Target).

Table 5 Frequent large RoRo Vessels

Name	GRT	Profile of vessel
Figaro	74,258	• 228 x 32m • 7.5 to 10.7m
Tiger, Titania	74,255	• 228 x 32m • 9.3m current
Tulane	72,295	• 230 x 32m • Draught 10.25
Aniara	71,673	• 232 x 33 m • Draught 11.3m
Faust, Fidelio	71,583	• 228 x 32m • Draught 9.5m
Hoegh Shanghai, Tokyo, Seoul, London and Detroit	68,871	• 229 x 32m • Draught 9m – 10m

Taking a snapshot of the year 2013/14 the dominance of the Port of Durban remains evident. With imports totalling 326 000 units through Durban and exports of 161 000 making up approximately 70% of all ro-ro volumes clearly reflecting the port capacity and proximity to the vehicle manufacturing sector.

Figure 10 2013/14 Volume snapshot

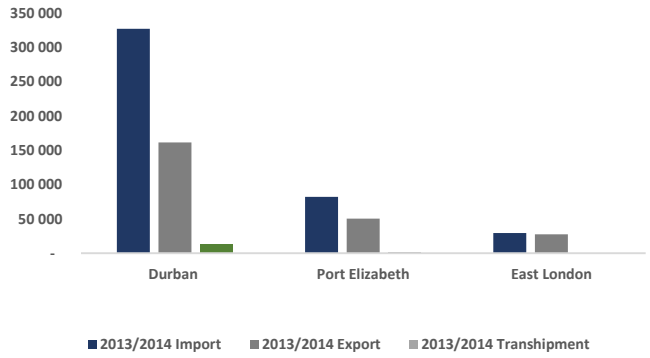


Figure 11 By port Roro Annual Volumes

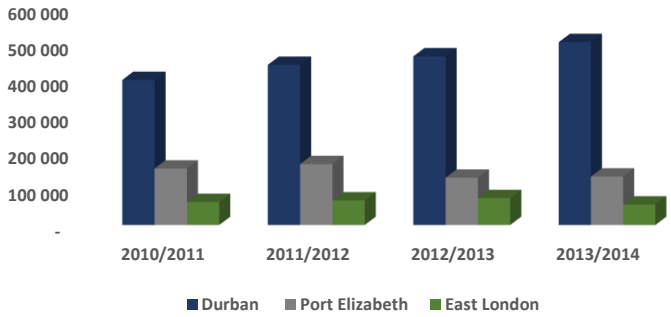
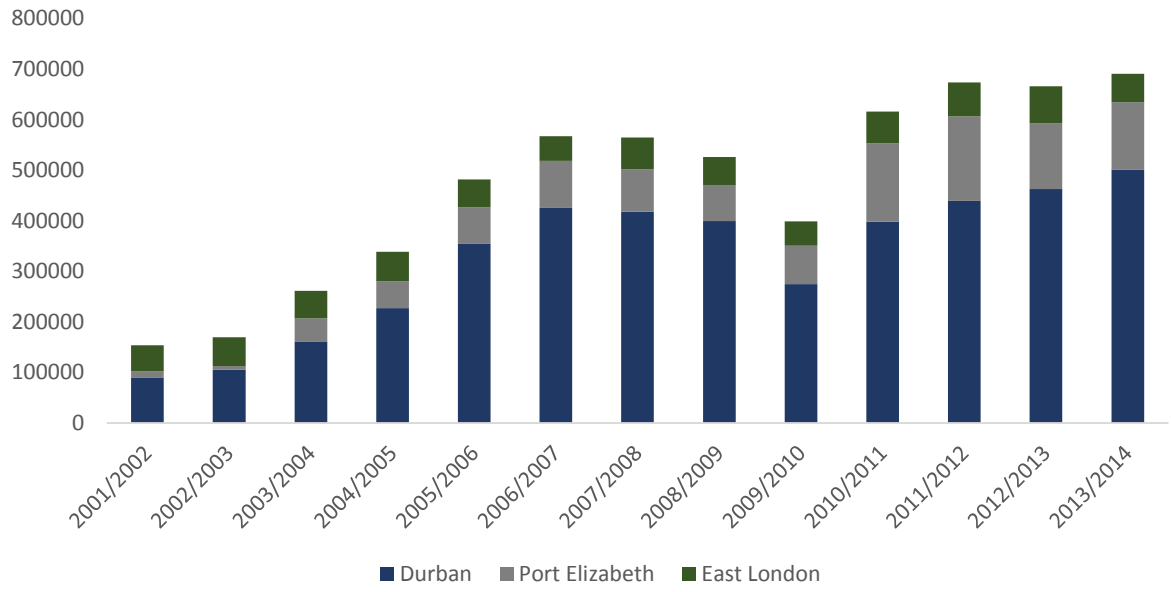


Figure 12 Historical RoRo Volumes

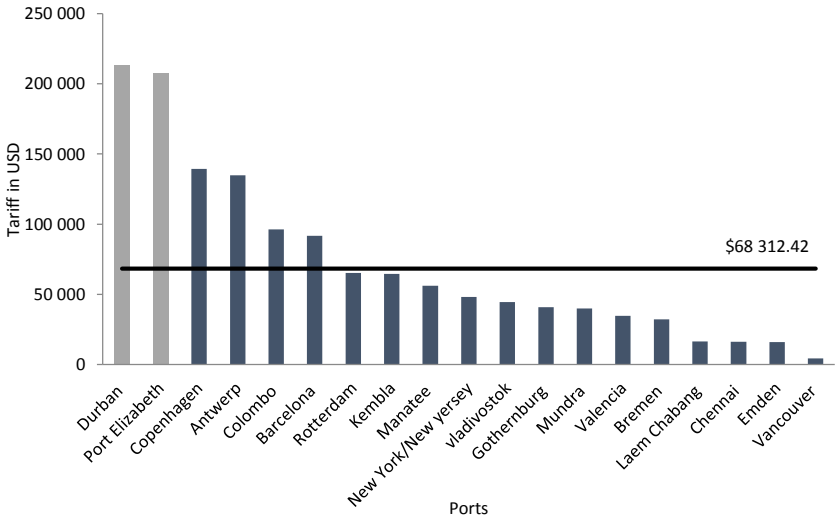


Ro-Ro volumes over the past twelve 12 years have increased steadily, with the Ports of Durban and Port Elizabeth responsible for most of this growth. It was only in the years following the global financial crisis that a fall in Ro-Ro volumes was experienced.

Of the three ports handling automotive cargo, the Port of Durban ranks in the top position with 73% of total automotive volumes. Overall automotive volumes have increased but there have been mixed results for the different ports. Imports of automotive cargo are higher than exports, at a ratio of 1.8:1 reflecting the growth in the demand for new vehicles in South Africa (in general second hand vehicles cannot be imported into South Africa for resale) as well as a high manufacturing rate for local consumption. Durban also serves as a main port of entry for vehicles destined for other Southern African countries, including second hand cars that move “in-bond” through the country to neighbouring states.

Installed capacity in ro-ro terminals is 80% of the published design capacity. Of the installed capacity, annual utilisation computed from annual TEUs handled in the system shows that terminals are at full utilisation of installed capacity but not fully utilising design capacities with a little less than 20% of design capacity not used. As all of the ro-ro terminals in the South African port system are run by TPT and with no private sector competition, indications are that whilst utilisation of existing capacity is high, operational efficiency still remains a problem to consumers and this combined with traditionally high cargo dues on vehicle imports and exports as is evident in Figure 13 with South African ports in excess of 200% higher than a sample global average in 2014. Participation of other players through the establishment of new infrastructure does however not seem likely as existing capacity and planned expansion thereof will adequately service the capacity requirements by the industry up to 2042.

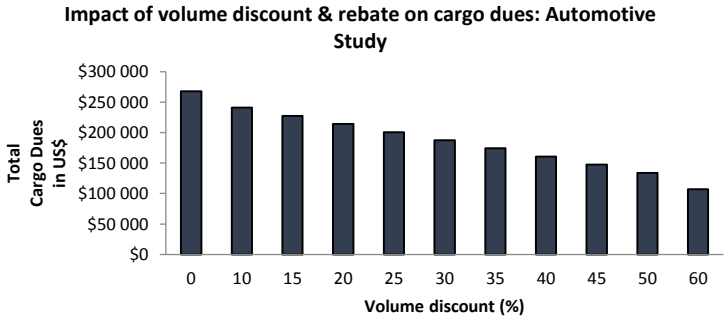
Figure 13 RoRo Cargo Dues compared to Global Sample Average



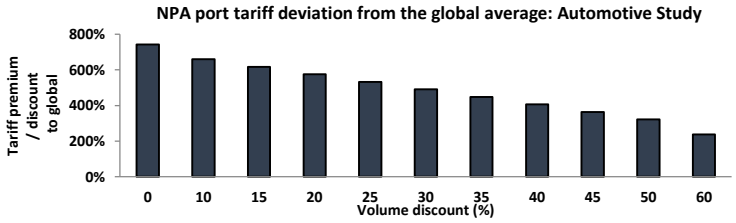
Source: GPPCS, 2015

The impact and removal of the Automotive Volume Discount Scheme

In 2010 the NPA instituted an Automotive Industry Volume Discount (AIVD) which applies to importers and exporters of vehicles. However, the Ports Regulator of South Africa issued a Tariff Strategy in the July 2015 tariff that indicated the removal of the automotive volume discount scheme that was in place since the inception of regulation and significantly advantaged larger players in the market (see box below).



The figure above isolates the effect of the AIVD on the overall cargo dues faced by vehicle importers and exporters. The AIVD has volume discounts available at different levels depending on the total number of vehicles imported or exported, ranging from a minimum discount of 0% for 0-10 000 and a maximum discount for 60% for 80 001+ vehicles. In the figure above the impact of the AIVD on small manufacturers who received a smaller discount because they imported or exported fewer vehicles; and large manufacturers who received larger discounts with an extreme of 60% because they imported/exported more vehicles is apparent. It is clear that the cargo dues paid by smaller manufacturers that do not qualify for the AIVD are significantly higher than those paid by larger manufacturers that qualify for the maximum AIVD (60%).
In addition, it is clear that even after the AIVD at the 60% level, the cargo dues faced by South African exporters ($96 378) are still above the global average cargo due tariffs ($31 724). It is clear that AIVD and rebate programs provide more benefit to larger manufacturers of vehicles.



The tariff premium to the global average paid by vehicle manufactures after receiving discounts are significant. The lower extreme where there is 0% AVID as a result of the manufacturer being too small shows a premium of 740% to the global average, while the opposite extreme where there is an AVID of 60% which is received by the largest manufacturers shows a premium of approx. 240% to the global average. A concerning conclusion is that South African cargo dues are significantly above the global average, it is smaller manufacturers who are the worst affected by this anomaly.

Industry impact of the discount structure

The structure as set out below provided a significant discount to importers and exporters based on volumes. The value of the impact differs as the tariff applicable on vehicles is calculated on a volume basis, i.e. the larger the exported or imported vehicle, the larger the cargo dues tariff applied. I.e. a small sedan will have a lower cargo dues tariff than a Double Cab Bakkie. More specifically, the tariff is calculated per ton where one meter is equal to two tons for purposes of calculating the applied tariff.
As per the published Tariff Strategy this will be removed and implemented along with the other changes to mirror the pricing by terminal operators. The categories will be defined in alignment with Transnet Port Terminal's definition as follows:

- Passenger vehicles (PV): weight < 3.5 tons and all dimensions must not exceed: length < 4.8 meters, width < 2.5 meters, height < 2.87 meters
- Commercial vehicles (CV): weight between 3.5 and 8.5 tons and all dimensions must not exceed, length between 4.8 and 12 meters, maximum width of 2.5 meters, maximum height of 2.87 meters
- Heavy commercial vehicles (HCV): weight above 8.5 tons or if any of the following dimensions is exceeded: length >12 meters, weight > 2.5 meters, height > 2.87 meters

These changes, will not only provide a better indication of use of port assets, rather than some arbitrary weight length measure, but also simplifies the billing systems across the port.
Together with the change in the way cargo dues will be priced, the removal of the discount scheme must also be implemented as part of the Tariff Strategy implementation plan.

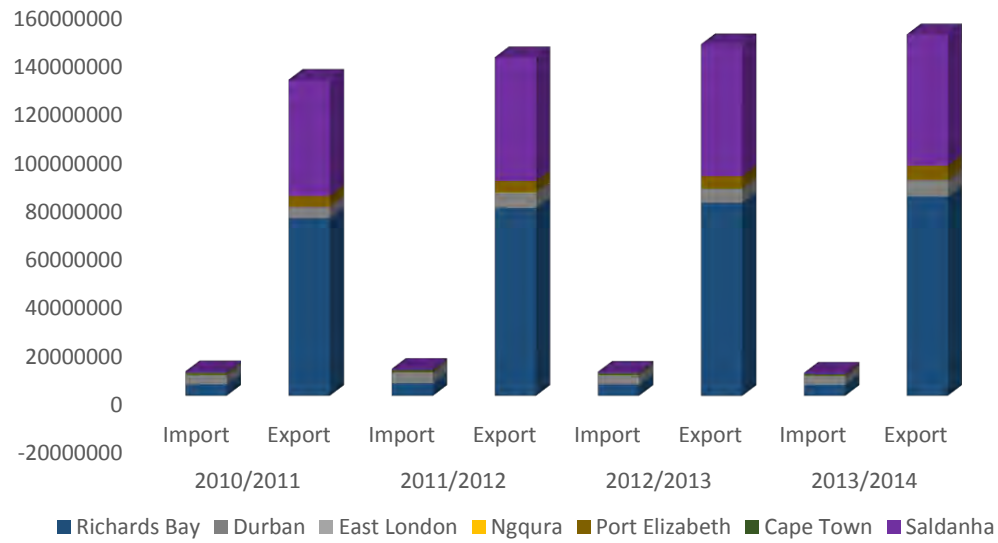
Dry Bulk Remains of Strategic Importance to the South African Economy

The South African port system mainly handles three main dry bulk commodities i.e. iron ore (Port of Saldanha), coal (Port of Richards Bay) and Manganese (Ports of Port Elizabeth and Saldanha Bay) and in total, including all others are expected to handle in excess of 170 million tons per annum.

TPT holds the most number of port operator licenses for handling dry bulk cargo (5), followed by SA Bulk Terminals. Included in the category "other" is Richards Bay Coal Terminal, Durban Coal Terminal, FPT Port Leasing, PBD Boeredienste, Profert, and Rocasync/Proterminal (some license have since expired). Included in TPT's land areas is the manganese terminal in the Port of Port Elizabeth with terminal capacity of 5,5 million tons per annum, the Richards Bay Dry Bulk Terminal handling the import of alumina, aluminium fluoride, coking coal, petcoke and sulphur as well as the export of anthrasite, steam coal, discard coal, chrome, fertiliser, chloride, rutile, zircon, sulphate, magnetite, vermiculite, hematite/iron ore and woodchips and has design and installed capacities of 10,9mtpa and 14,7mtpa respectively. In addition, in the privately operated RBCT has a design and installed capacity of 91mtpa.

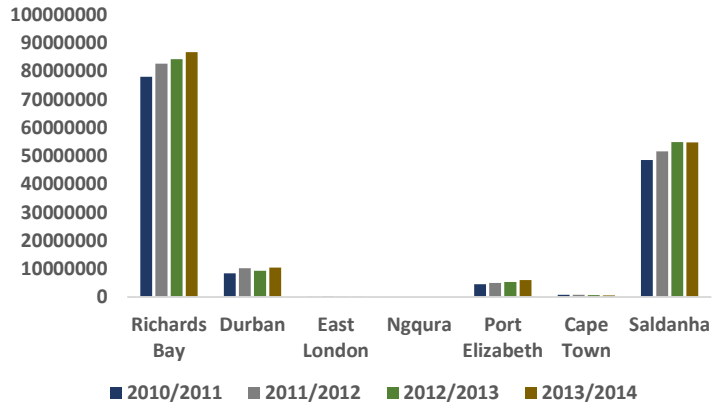
With dry bulk cargo requiring space, the size of a terminal as well as capacity gives a better

Figure 14 Total dry Bulk Volumes



picture of who the main role players are in the Dry Bulk sector. The Terminal Operators Performance System (TOPS) figures places TPT's total terminal area for dry bulk as 642 million square meters. The rest of the terminals occupy the following land area in the port with RBCT and Durban Coal Terminal as the second and third largest terminal areas.

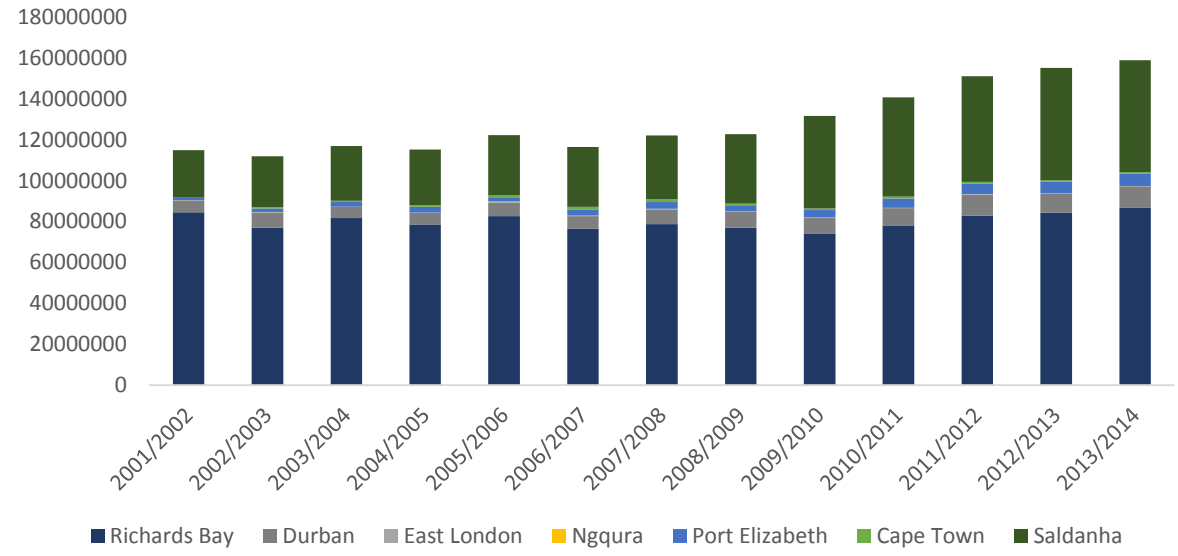
Figure 15 Dry Bulk by Port (tons)



Coal, manganese and iron ore remain the greater part of the dry-bulk commodity basket making up 85% of the tonnage over the period. The Port of Richard's Bay accounted for 55% of all dry bulk volumes the majority thereof coal (79 million tons annual average), with only the Port of Saldanha coming close with 35% of dry bulk volumes (mostly iron ore with an average annual 57 million tons). Both import and exports of dry bulk have increased over the past five years however, in line with South Africa's economic structure as a net exporter of commodities dry bulk exports still outnumber imports by fifteen times.

Dry Bulk volumes have showed slow but steady growth over the last twelve years. The Port of Saldanha Bay and Richards Bay (more recently) were responsible for most of the growth which occurred as they increased their contribution of dry bulk volumes in the overall ports system.

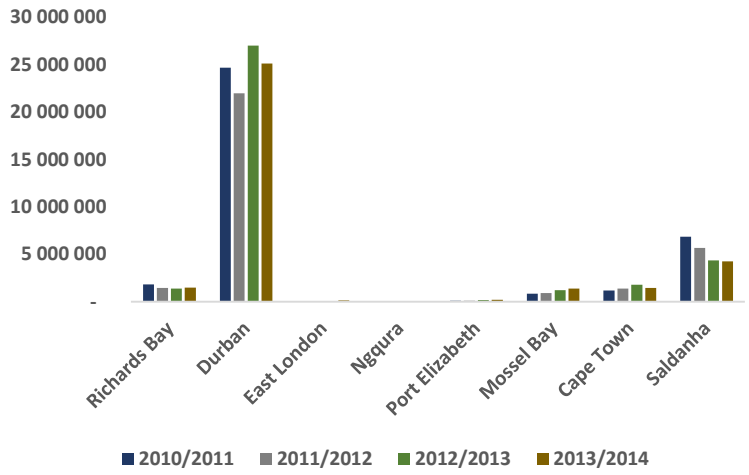
Figure 16 Historical Dry Bulk Volumes



Liquid Bulk sector fuels the South African economy

The South African liquid bulk port sector comprises of twenty-two (mostly private sector) entities who collectively hold thirty-six port operator licenses. Of these, Engen South Africa individually holds the most number of licenses (six) across the system in the Ports of Durban, Richards Bay, East London and Port Elizabeth. Engen is also part of Joint Bunkering Services which is an amalgamation of BP Southern Africa and Chevron SA. The other players hold one license each and account for 34% of licenses in this sector. This category comprises: AECI Cape Chemicals, Blendcor (PTY) Ltd; BP Southern Africa; Cape Town Bulk Storage; Chemoleo; FFS Refineries; H&R South Africa; Hillside Aluminium Limited; Joint Bunkering Services (BP Southern Africa, Chevron SA, Engen Petroleum, Shell South Africa Marketing); Protank (Indian Ocean Terminals); Shell South Africa Marketing; Strategic Fuel Fund Association; Veetech and Zenex Oil.

Figure 17 Liquid Bulk Volumes



The Port of Durban accounted for 74% of all liquid bulk volumes. Liquid bulk volumes have decreased slightly overall. Total liquid bulk exports have been falling drastically over the past five years, while imports have increased slightly. Imports of liquid bulk cargo are far higher than exports, at a ratio of 11:1 with crude making up the bulk of all imports.

The Port of Saldanha's liquid bulk terminal has the deepest draught followed by the ports of Ngqura, Cape Town and Richards Bay. Handling capacity at the Port of Ngqura is still to be installed. The Port of Mossel Bay and Durban handle liquid bulk through a loading buoy anchored offshore -Single Point Mooring buoy- which is capable of handling any size ship. The CBM/SBMs currently has a capacity of about thirty two million kilolitres per annum. The largest vessels measure more or less the same length of around 275m and based on berth length, these would not be calling in the Ports of Port Elizabeth, East London or Durban's Island View.

Figure 18 Liquid Bulk Volumes by Port

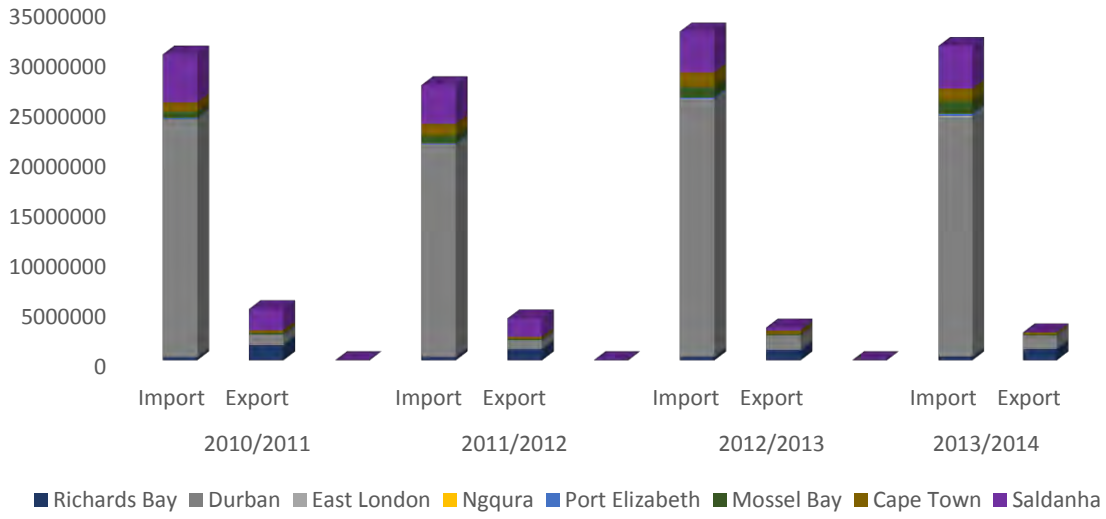


Table 6 Liquid Bulk Capacity by Terminal

Port	Terminal	Berths	Usable Berths	Terminal Capacity	Berth Length (m)	Berth Draft
Richards Bay	RB Bulk Liquid	209,208	2	2 720 000	600	14m
Durban	Island View	IV7,8,9	3	12 000 000	705	11.9m to 12.2m
Durban	Island View	IV 2,4,5	3	3 400 000	525	9.4m to 10.6m
Durban	Island View	IV 1	1	1 700 000	230	12.5m
Durban	CBM/SBM	-	-	24 000 000	-	-
Durban	Maydon Wharf	MW 3 and 4	1	900 000	305	8.7 to 9.1m
East London	Tanker Berth	TB	1	2 400 000	259	10.7m
Ngqura	Ngqura Liquid Bulk	B100		0	300	18m
Port Elizabeth	PE Liquid Bulk	15	1	1 300 000	242	9.9m
Saldanha	Liquid Bulk	103	1	25 000 000	360	23m
Mossel Bay	CBM/SPM	-	-	7 971 600	-	-
Cape Town	Cape Town Liquid Bulk	TB1 and TB 2	2	3 400 000	489	13.7m to 15.2m

Total liquid bulk capacity is based on combined capacities of the Ports of Saldanha, Cape Town, Port Elizabeth, Ngqura, East London, Durban and Richards Bay. Historical growth rates for liquid bulk are 2.77% per annum with a decline in the Port of Richards Bay and Port of Cape Town. The Ports of East London and Port Elizabeth account for a significant proportion of the growth rate at 41% and 24% respectively. The third port with a high growth rate is the Port of Saldanha achieving a cumulative average growth of 18% over the period.

Table 7 Historical liquid bulk volume growth rates

Liquid Bulk Port	2001/2002 (klpa)	2013/2014 (klpa)	CAGR
Richards Bay	1 547 576	1 491 481	-0.31%
Durban	19 830 331	25 132 543	1.99%
East London	2122	130 241	40.93%
Port Elizabeth	15 009	197 129	23.94%
Mossel Bay	490 363	1 381 951	9.02%
Cape Town	2 034 165	1 448 213	-2.79%
Saldanha	601 229	4 260 761	17.73%
Total	**24 520 795**	**34 042 319**	**2.77%**

Where the Port of East London drove the earlier growth, it is expected to register a 7.1% decline in the handling of liquid bulk by the year 2042 in terms of NPA planning projections. These growth rates are however very closely linked to the demand for energy in the domestic economy and future import patterns of fuel will be impacted through a number of factors, including the ability of local refineries to upgrade to higher standards for fuel production. Inability to comply with ever more stringent requirements might see more refined products being imported. The next five years will arguably see some restructuring in this area as energy requirements domestically undergo changes and economic growth cycles continue.

Break Bulk/Multi-Purpose Terminals

Breakbulk cargo is handled in the ports of Durban, Richards Bay, Port Elizabeth, Ngqura and Cape Town at either dedicated breakbulk terminals or berths or at multipurpose terminals. Five terminal operators run the dedicated breakbulk terminals in the system with FPT Port Leasing (Pty) Ltd holding half (four) of the terminal licenses and the other three operators accounting for the balance; Commercial Cold Storage (two); and one each for Cross Berth Cold Storage, Transnet Port Terminals and Navocare (Pty) Ltd. The two Commercial Cold Storage (Pty) Ltd in Maydon Wharf terminals have a combined terminal area of 28,552m^2. Their main operations is in the intake, cold storage and dispatching of citrus and dry goods and the cold treatment of specialised products (Fruits, Break Bulk). NovaCare (Pty) Ltd holds a single terminal operator license covering a 12 033m^2 facility. NovaCare's main operations covers storing & loading consignment of break bulk cargoes; loading and discharging of vehicles and rail wagons; tailing and sorting of break bulk; handling of fertilizers, animal feed, agricultural products and equipment. With four licenses, FPT Port Leasing (Pty) Ltd holds the most number of breakbulk terminal licenses covering a port area of 90 782m^2. The license allows for the handling of fresh produce and other commodities such as steel in the off-season period. TPT is licensed to operate 7 880m^2 breakbulk facility in Maydon Wharf for loading, off-loads and stowage of break bulk, transhipment/re-shipment, stacking or unstacking, temporary storage, collect and delivery, loading and discharging trucks and rail wagons, transfer, working break bulk on hold and all reasonably associated services. The main actual operations are: steel, overflow project cargo, and containers. In the Port of Cape Town, Cross Berth Cold Storage is licensed to operate a facility covering 5 359$m^{2,}$ where it handles the import and storage of fresh and frozen fish and fish products.

There are twenty multipurpose terminal licenses in the system with a majority (thirteen) concentrated in Maydon Wharf Durban amongst five license holders i.e. Bidfreight Port Operations (five licenses), Grindrod Terminals (five licenses), TPT (two licenses) and Ensimbini Terminals, and Manuchar SA (Pty) Ltd each with one license for the Maydon Wharf facility.

Break bulk volumes have declined over recent years as containerisation has increasingly made inroads into the traditional break bulk cargo volumes. A striking example is the impact that the container export rebate that was announced in 2012 had on break bulk volumes in Cape Town. The rebate on export containers totalling R740 on a 6m container was enough to shift a sizable share of the export fruit volumes away from traditional pellet based cargo and into reefer

containers. This trend has since established itself and the reduction of container cargo dues might see further shifts towards the containerisation of such cargo in the future.

Table 8Break Bulk Volume Growth

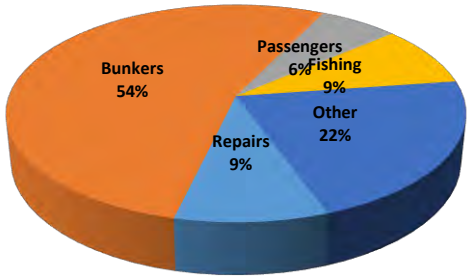
Break Bulk Volumes	2001/2002	2013/2014	CAGR
Richards Bay	4 794 917	3 381 978	-2.87%
Durban	6 911 144	3 380 546	-5.79%
East London	158 352	93 719	-4.28%
Ngqura	-	80 031	0%
Port Elizabeth	426 267	314 054	-2.51%
Mossel Bay	-	-	0%
Cape Town	2 548 597	384 536	-14.58%
Saldanha	2 424 538	873 803	-8.15%
Total	**17 263 815**	**8 508 666**	**-5.73%**

This presents an interesting problem to the port system. Not all cargo is suitable for containerisation and facilities that cater for the requirements of some bilateral trade agreements also necessitate the shipping of goods in break bulk formats. Lower volumes however mean that in terms of the principles embedded in the tariff strategy published by the Regulator, costs will increase over time as less vessels carrying break bulk cargo will call and the terminal handling charges will increase to recover the cost of the breakbulk terminal infrastructure. As a result a consolidation in the multipurpose infrastructure will most probably become evident over time with a shift towards an increase in container handling becoming the norm. Economic growth does however strongly suggest an uptick in odd-sized cargo and a return of domestic growth will support this sector of the port system.

Non-cargo services

Bunkering activity made up the majority (54%) of non-cargo working vessel calls, averaged over the review period

Figure 19 Non-Cargo port system visits



Of the bunker related vessel calls, the Port of Durban made up 47% and Cape Town 48% of all bunker related vessel calls in the South African port system. Outside of bunkering ship repair related visits and fishing both contributed 9% to the total non-cargo related vessel calls over the last five years.

Source: VTS data

Bunkering

South Africa is well positioned geographically to take advantage of east-west trade as well as shipping activity from the Far East to the African west coast and South American west coast by those lines choosing not to take the Suez Channel. Bunker services are currently offered at the ports of Richards Bay, Durban, Port Elizabeth and Cape Town, with Durban and Cape Town recording by far the majority of visits for bunkering.

The Port of Durban has a dedicated berth for bunkering which is operated by SAPREF under the Joint Bunkering Services system and are also serviced by bunkering barges. In Cape Town, there are bunkering points at some berths supplying fuel oil, gas oil and blended fuels. Bunkers are also supplied by barge. In the main, bunkers are supplied by Joint Bunkering Services, a joint venture between BP South Africa, Caltex Oil, Shell SA and Engen Petroleum.

Ship Repair

South African ports have varying levels of infrastructure and service offerings to the fishing, oil and gas, and smaller cargo vessel sectors. With the sheer volume of marine traffic around the South African coastline providing an immense potential market for various levels of ship repair (see figure 20), the NPA's plans to develop the Port of Saldanha Bay as part of operation Phakisa including the refurbishment of much neglected facilities across the port system together with the built-in tariff subsidy incorporated by the Ports Regulator in the Tariff Strategy for ship

repair, are being viewed as potential catalysts which will assist South African companies to play a more significant role in the servicing of rigs and other offshore supply fleets.

Figure 20 Significant Maritime Traffic to support Ship repair and related Industries

Source:www.cargofromchina.com

Amongst the South African ports, the Port of Cape Town has been the leading port for rig and vessel repairs due to its location, infrastructure and capacity with two dry docks; a repair quay and ship lift facilities.

The Port of Durban is equipped to handle ship repairs at the Prince Edward Graving Dock, two floating docks and a slipway. In the Eastern Cape, ship repairs are undertaken in the East London Graving Dock which has a docking length of 200 meters and a repair quay of 106 meters available adjacent to the dry-dock. In addition, available space within the Port of Ngqura is being utilized for maintenance and repair work, especially in the oil and gas sector.

In particular, over the review period, the only commercial dry-docks along South Africa's coastline capable of taking larger commercial ships (although still small by international standards and quickly becoming largely obsolete due to the cascading effect of ship sizes) are found in Durban and Cape Town.

The largest and oldest dry dock of its kind in the Southern Hemisphere, the Sturrock Dry-dock is located in the Port of Cape Town. It has an overall docking length of 360 m, a bottom length (dock floor) of 350.4 m, a width at the entrance top of 45.1 m, a width at bottom (dock floor) of a maximum 38.4 m and a depth over the entrance sill of 13.7 m. A docking length of 369.6m can be obtained by placing the caisson in the emergency stop at the entrance. The dock can be divided into two compartments of either 132.5m and 216.1m or 205.7m and 142.9m respectively.

A second dry-dock, the Robinson Graving Dock, has an overall docking length of 161.2m, a bottom length of 152m, a width at entrance of 20.7m and a depth over the entrance sill of 7.9m. A repair quay, with its 475 m length and allowable draft of 12m is equipped with two cranes, one of 15 tons and the other of 4 tons.

A synchrolift is also available. It has a lifting capacity of 1 778t, a maximum vessel length of 61m and a maximum vessel width of 15m.

In the Port of Durban, the Prince Edward Graving Dock can be separated into two separate compartments, one of 206.9m and the other 138.7m. The dock has five electric cranes ranging from 10t to 50t. The width at entrance top is 33.52m and the width at coping is 42.21m. The depth at entrance is 12.56 m and the depth on the inner sill is 13.17m.

The floating dock has an overall length of 100m and its length on keel blocks is 95m. It has an overall width of 21.6m and a width at entrance of 22m. The height on keel blocks is 1.4m and the draft on keel blocks is 6m. The floating dock has a lifting capacity of 4 500t. It has two five ton electric cranes capable of traversing the dock's full length on the port and starboard sides.

Improvement is needed in South Africa's ship repair facilities in part due to a lack of maintenance as well as very limited infrastructure spending. This, combined with the size limitations of the existing facilities presents a number of challenges going forward. The implementation of the tariff strategy that introduces a cross subsidy aimed at making these facilities financially viable together with a focus on certain niche markets like recreational yachts, tug boats, ferries, naval vessels etc. may see the positive outcomes of renewed investment spending over the next five years.

The Ports Regulator of South Africa (the Regulator) was established in 2007 through the promulgation of the National Ports Act, 12 of 2005 (the Act). The NPA collects its money i.e. Revenue, through the tariffs/prices that are charged to users of the port i.e. ships, tenants, cargo owners etc. The tariffs/prices that are charged by the NPA are approved by the Regulator on an annual basis. In its decision to approve tariffs/prices, the Regulator uses a revenue collection methodology called the 'Revenue Required' methodology to ascertain a fair level of tariffs/prices that the NPA should charge the users of the ports. The process of price / tariff regulation subsequently commenced in the 2009/2010 tariff year. Since inception, the Regulator has utilised a version of the Revenue Required Methodology that suited an infrastructure price mechanism and best supported the funding of port infrastructure development. Regulation has seen a moderation in port tariffs, whilst the NPA as a subsidiary of the larger Transnet Group has remained very profitable allowing increased cash flow into other parts of the greater Transnet group.

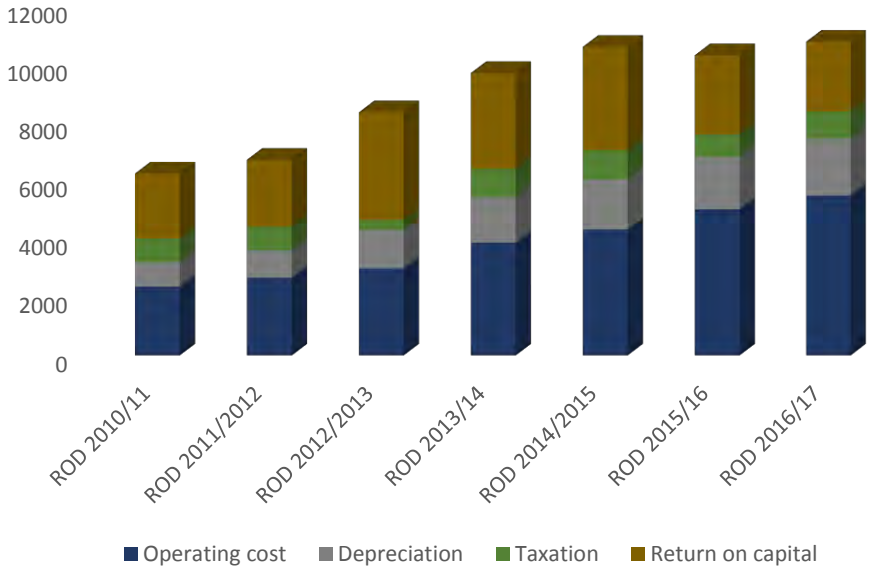


Figure 21 Revenue Requirement Building Blocks

The approval of revenue through the RR approach ensures that the NPA will always be able to recover all its costs whilst also making a profit commensurate with their risk. As such operational

expenditure allowances as well as depreciation has grown by 32% over the review period and returns on equity have generally been in excess of R2bn per annum.

Figure 23 Revenue contribution

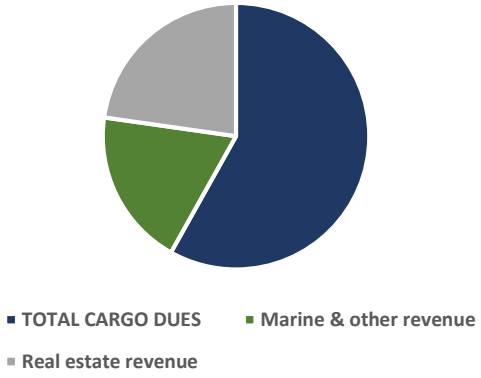
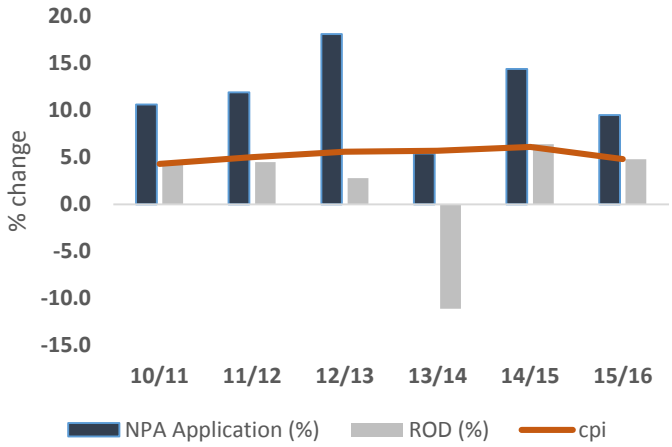


Figure 22 Tariff determinations



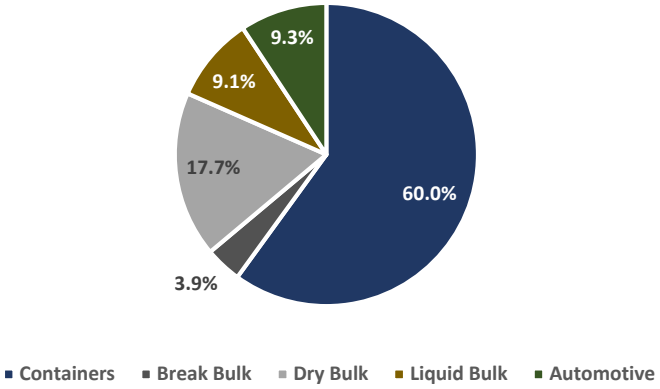
Overall the total revenue for the NPA increased from just over R5.5 billion in 2010/11 to R11.1 billion in 2015/16. The main contributor to the revenue of the ports landlord is cargo dues with approximately 60% whilst real estate and marine services contribute on average between 20 and 25% with marine services making up the rest.

Table 9 Tariff Determinations (detailed)

	Revenue Requirement				WACC		
	NPA	ROD	Difference	Revenue Allowed Annual growth rate (ROD)	NPA	ROD	Diff
Tariff year	**R Billion**	**R Billion**		**%**	**%**	**%**	**%**
9/10	5.63	5.63	0	-			0
10/11	6.87	6.02	0.85	7%	6.02	5.15	-0.87
11/12	7.64	6.52	1.12	8%	5.38	4.7	-0.68
12/13	9.65	7.79	1.86	19%	8.97	6.13	-2.84
13/14	10.98	9.84	1.14	26%	8.33	5.21	-3.12
14/15	10.95	10.67	0.28	8%	5.82	5.47	-0.35
15/16	11.2	11.1	0.1	4%	5.59	6.38	0.79

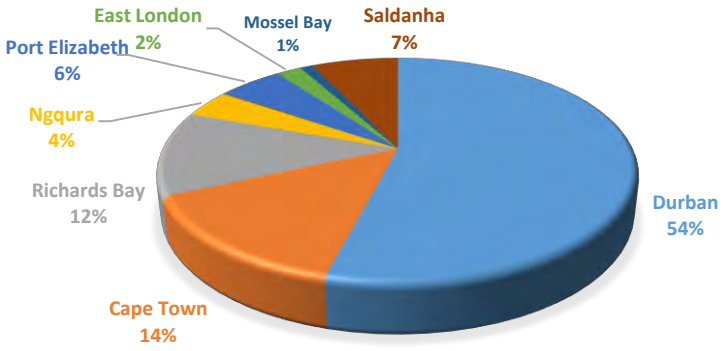
Within cargo dues, the main contributor remains containers with 60%, followed by dry bulk commodities (17%), mainly iron ore and manganese shipped mainly through the Port of Saldanha, coal through the Port of Richards Bay (and to a lesser extent through the other ports).

Figure 24 Cargo Dues Contribution



From a total revenue perspective the Port of Durban with 50% or R5.2 billion in 2015 is by far the largest contributor with the Port of Cape Town a distant second with 14% or R1.4 billion in 2015.

Figure 25 By Port revenue Contribution



The Port of Durban is also responsible for the bulk of costs responsible for about 38% of total operational expenditure. Cape Town and Richards Bay both account for approximately 16% each.

Whilst Durban and the larger ports account for the bulk of both revenue and the associated costs, a look at the net operating expenses as a share of revenue allows a comparison of financial efficiency or rather the ease of generating revenue by port. Whilst it will be difficult to compare a bulk commodity port like Saldanha with a multi cargo type port like Port Elizabeth the ratio is expected to remain similar however, other variables will impact this comparison including the efficiencies of economies of scale (i.e. larger ports can create revenue easier through a higher level of activities) or the type of commodity and whether a seasonality of cargo flows exist for example fruit or any other agricultural products).

It is thus interesting to note that over the review period, the Port of East London had the largest cost/revenue ratio (70%), whilst Durban, the largest port, has the lowest with 20%. An analysis of the underlying reasons for the difference may be found in the large volume of containers shipped through Durban as containers with its currently very high tariffs are very efficient in creating revenue. It is also worth noting that over the review period, the Port of Durban had the largest profit/revenue ratio (74%), meaning that for every R1 of revenue generated 74 cents of that is profit. The Port of East London has the lowest profit/revenue ratio (12%). The ports of Cape Town, Richards Bay and Saldanha Bay all had profit/revenue ratios in the region of 50%.

Figure 27 By port operating profit contribution

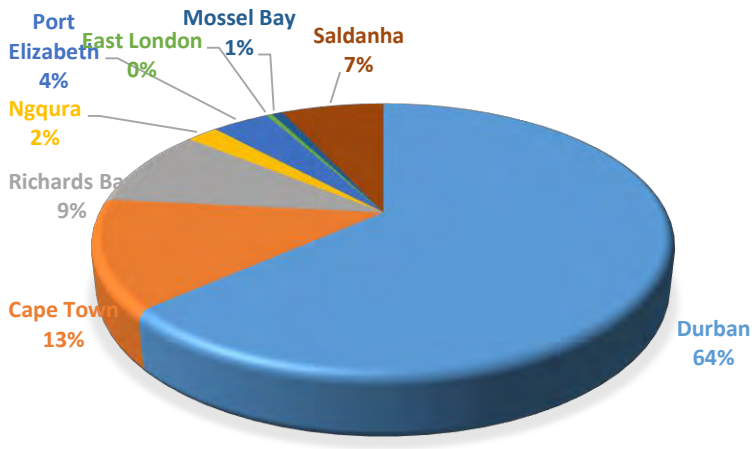
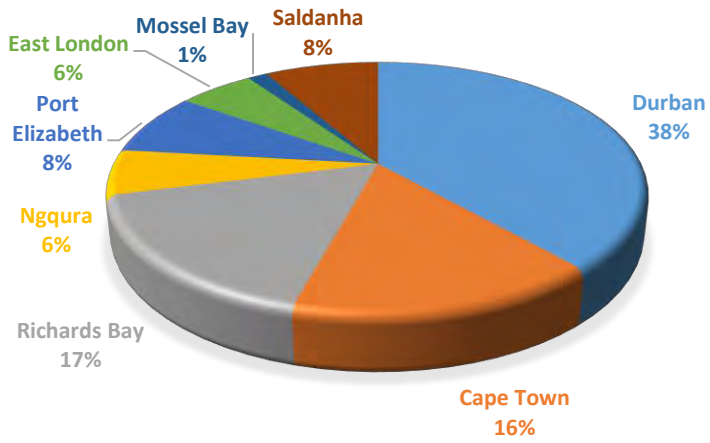


Figure 26 By Port Operating Cost Contribution

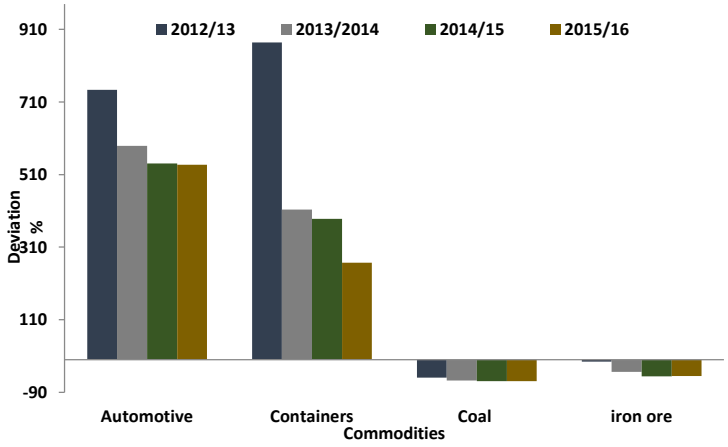


Whilst the ports in South Africa are managed on a system basis, the profit/cost differentials that exist between the ports creates an number of perverse incentives, the most obvious would be the impact on investment decision making as an investment in the Port of Durban would arguably create larger (or quicker) returns with the larger profit and lower cost ratios there. This could further entrench the status quo, creating capacity concerns over the longer term, negating the advantages of a system-wide approach to port management.

In addition, the determination of the individual tariffs in the tariff book have been based on historically differentiated tariff lines resulting in significant differences in tariffs and costs to port users. The anomalies that exist in the tariff book, explained below, also provide inefficient investment signals, with investment decisions based on common calculations/forecasts like NPV or IRR resulting potentially in investments following the high tariff areas, especially container cargo. This is further exacerbated by the geographic distribution of cargo types.

To analyse and assess the extent of pricing anomalies in the South African ports system, the Regulator has conducted a Global Port Pricing Comparator Study (GPPCS) over the period under review which sought to benchmark South African port prices against its global peers. The results were indicative of imbalances in the tariff book and showed how, over the years, the overall structure of the South African port pricing system has changed somewhat on a relative level. However, despite large decreases in container cargo dues and export automotives announced in the 2013/14 Record of Decision as well as relative changes in marine services and dry bulk commodities in the following years, the imbalances remain.

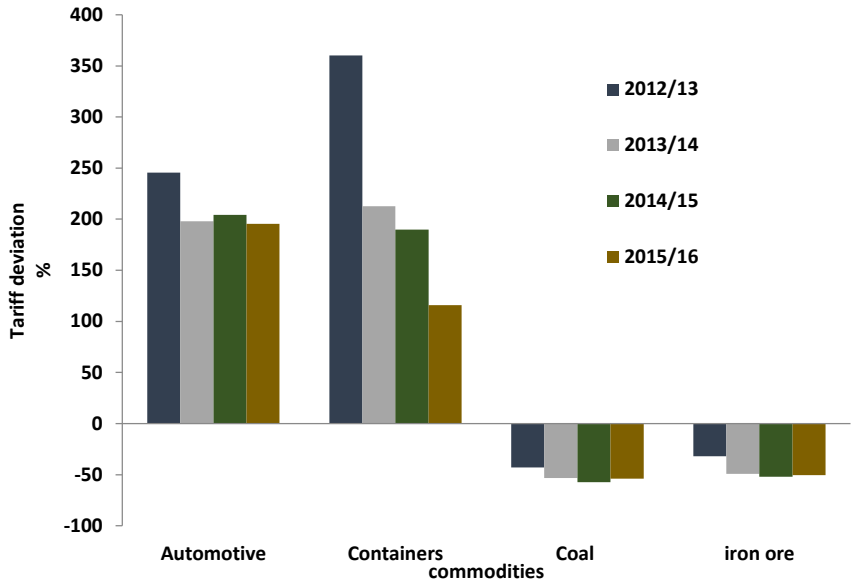
Figure 28 Cargo Dues deviation from Global sample Average



As evident in Figure 28 above, the results show that significant implied cross-subsidisation from cargo owners towards primary exporters and vessel owners persist. Although this has improved over the period the study has been conducted, cargo owners still face a 388% premium in 2014/15, although down from a premium of 874% to the global sample average in 2012/13. While vessel owners face costs below the global sample average (-26% in 2012/13, -32% in 2013/14 and -42% in 2014/15), the total NPA costs to users in container ports comes at a still high premium of 125% above the global sample average (similar results for the automotive sector applies) whilst the report shows that bulk commodities are charged much lower total port costs than the global sample averages. This further implies that beneficiated exports from

South Africa are facing much higher costs than their global peers as compared to exporters of un-beneficiated bulk commodities, whose tariffs are below the global sample used in the study.

Figure 29 South African Total Port Costs compared to a Global Sample Average



As a result of these issues, the tariff structure (as at 2015) presented several imbalances in the determination of the various tariffs, including:

- Very high tariff levels for cargo dues resulting from the migration from the old wharfage charge, which was calculated on an ad-valorem basis depending on the value of the cargo;
- Very high differentials in the levels of cargo dues for different cargo types and commodities with no clear motivation for the differences;
- Relatively low tariff levels for maritime services, which are based on an activity-based costing exercise conducted during the tariff reform of 2002 and that has since not been updated, resulting in the subsidisation of most services; and
- Relatively low and unevenly distributed levels of revenue from the real estate business based on the asset value and benefits derived from being in the port system.

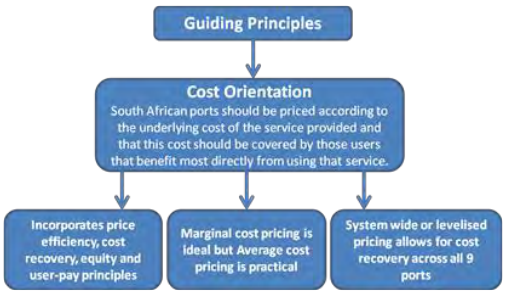
These pricing anomalies are addressed through the Regulator's Tariff Strategy (published 31 July 2015) that attempts to address these imbalances over the next 10 years, by moving away from value-based assessment towards an infrastructure-based charge, resulting in more efficient pricing which is in the public interest. (See Box)

A Tariff Strategy for the South African Port System

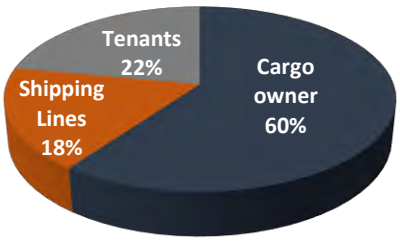
The current tariff structure presents several imbalances in the determination of the various tariffs, including:

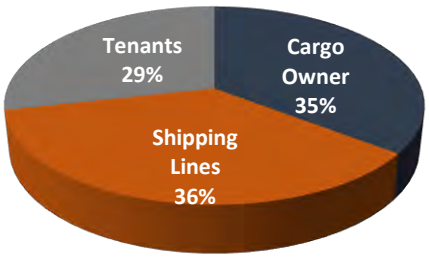
- **Very high tariff levels for cargo dues resulting from the migration from the old wharfage charge, which was calculated on an ad-valorem basis depending on the value of the cargo;**
- **Very high differentials in the levels of cargo dues for different cargo types and commodities;**
- **Relatively low tariff levels for maritime services; and**
- **Relatively low and unevenly distributed levels of revenue from the real estate business.**

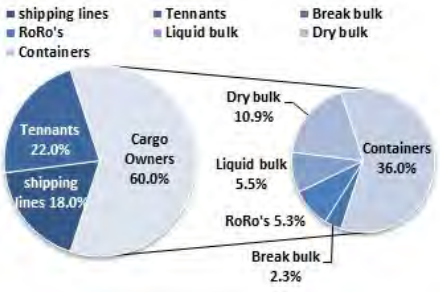
The Tariff Strategy sets out the principles and characteristics of the revised tariff book including the asset allocation, tariff structure reviews, a consolidation of tariff lines on tariff and port level as well, as review of marine service pricing methodology and will be implemented over a ten year period.

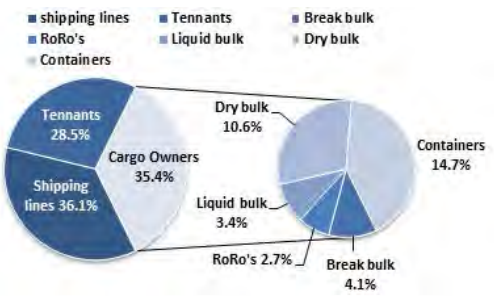


The Strategy sets out a process where tariffs will in future better reflect the use and benefit of assets by different users. As such a rebalancing of the tariff book is required with shifts of costs between users over time to better reflect these principles.









The rebalancing of the tariff book will see:

- **Increasing share of revenue contributed by shipping lines and lease holders**
- **Reduced cargo dues with containers benefitting most**

The Tariff Strategy will be implemented over a period of ten years with annual updates and will incrementally implement transparent tariffs based on sound regulatory economic principles

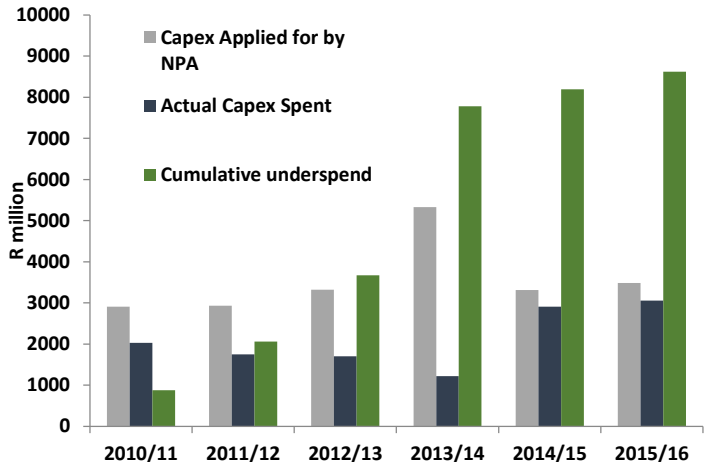
Concluding remarks

On an overall basis, the port system in South Africa as managed by the NPA, and regulated by the Regulator, has been sustainable and experienced growth as well as movement towards the introduction of efficiency pricing with the development of performance measuring during the later parts of the period under review.

However, a number of challenges were experienced during the last five years. The introduction of regulation brought about a previously absent level of transparency in the tariff process. The relationship between the Regulator, port users, and the NPA has improved markedly over the period. Whilst the Regulator has not intervened in any operational matters other than the approval of revenue, and through tribunal decisions and mediation, a number of issues have been resolved.

Two main areas of concern remain however. The first is the persistent underspending of approved CAPEX. A cumulative underspending of R8.6 billion occurred over the period 2010/11-2015/16.

Figure 30 Capex Underspent



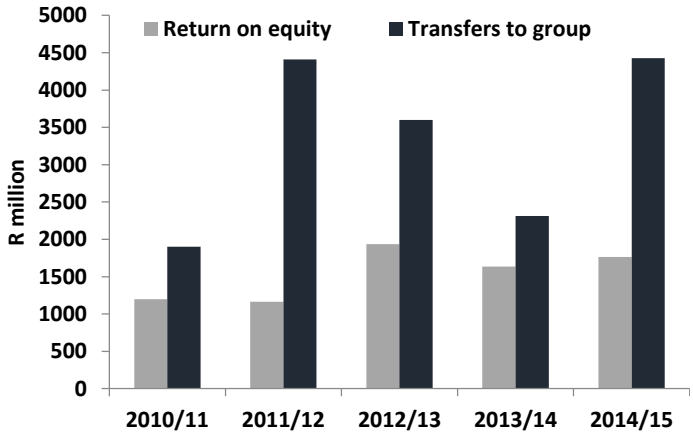
Over the five year review period, 27% of the total CAPEX in the South African port system was allocated to the Port of Durban in the period (2010/11-2014/15), whilst the largest allocation went to the Port of the Ngqura which accounted for 52% of the total value of CAPEX spent in the port system over the past five years. The majority of the port's CAPEX investment went towards the installation of facilities and new construction whilst in Durban (Ngqura and Durban received almost 80% of all capex spending over the period) the nature of the CAPEX investment

was largely spent on the rehabilitation/renovation, upgrading/extension and new construction of port infrastructure. The port of Saldanha received approximately 7% of all CAPEX spend over the review period, but very limited infrastructure was added to the ports of Richards Bay, East London, Port Elizabeth, Mossel Bay and Cape Town.

The lack of CAPEX spending and the consistent underspending of allowed capital expenditure (see next chapter) may result in significant capacity problems in the future. That combined with the geographic location of spare capacity (the Eastern Cape has port space to spare) emphasises the importance of utilising the existing port assets more efficiently. Differentials between design and installed capacity, low terminal efficiency resulting in low capacity utilisation are "low hanging fruit" that will, if addressed, result in a more efficient use of the current infrastructure. The introduction of the Terminal Operators Performance System and the Marine Operators Performance System should result in more clearly identifying problem areas where remedial action can be taken. The next review must see a significant improvement in port efficiency to ensure the sustainability of the port system.

Future years may see capacity constraints in future years or excessive tariff increases as a backlog of projects require catch-up and is an area of concern that the Regulator has identified for close monitoring. The underspending on approved CAPEX does raise a concern with regards to the ability of the NPA to implement the capital expenditure earmarked for the port system. The better performance by the NPA in the last two years of the review (representing only about 10% of total underspend) does seem to indicate improving implementation.

Figure 31 Return on Equity and estimated transfers to group

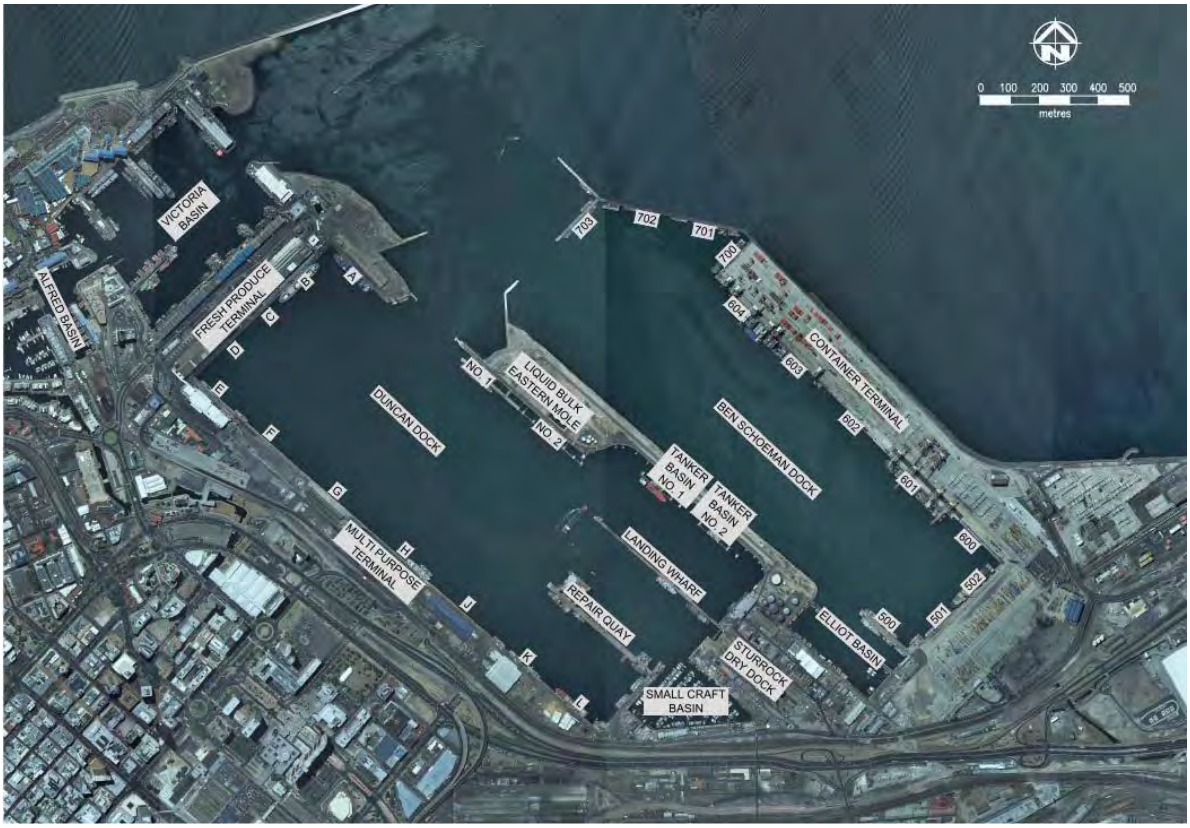


Individual ports have performed well over the period under review from a financial perspective. In particular, the NPA cash flows amounted to profit transfers to the Transnet group totalling more than R15 billion since 2010/11. It must be noted that the NPA does require some centralised services from the holding company, for example treasury services and capital project management, and an allowance for group costs are included in the required revenue allowed by the Regulator every year since regulation started. This, combined with the guaranteed profits as a result of being a

regulated entity, has allowed significant cash flow to the Transnet Group from the ports system. Specifically over the period under review, each port was operated profitably by the NPA with none of the ports (in what is a complimentary port system) recording a loss over the period. Whilst not all the ports are equally profitable, costs have not exceeded revenue as can be seen from the 5 year average profit contributions provided in the Port-by-port snapshots that follow.

In conclusion, the expectation of increased competition regionally, a weak domestic and global economic outlook and increased costs of operations and capital will remain the main challenges facing the South African Port system over the next five years. This will on the one hand require careful consideration by both the Regulator in setting tariff levels that will both ensure the sustainability of the NPA but also support industry and port users in general in retaining stable tariff levels with the right incentives to support more productive ports in future and on the other hand require even higher levels of prudent financial management and increased efficiency over the next five years from the port landlord. The NPA has, despite the impact of regulation on their preferred levels of revenue and lower tariffs, continued to manage the port system profitably and if the expected gains in efficiencies can be reached over the next five years will see the South African port System go from strength to strength, in the national interest.

Port by Port Snapshot



Source: National ports Authority

Port of Cape Town

The Port of Cape Town, established in 1652 as a way station for ships of the Dutch East India Company, has evolved to consist of the Ben Schoeman Dock and Duncan Dock respectively housing container and the multipurpose, fruit terminal, dry dock, repair quay and tanker basin. [South African Port Capacity and Utilisation 2014-15]

"The port is situated on one of the world's busiest trade routes and will always retain strategic and economic importance for that reason alone. In addition, Cape Town is also a busy container port, second in South Africa only to Durban, and handles the largest amount of fresh fruit. " [ports.co.za]

The Port of Cape Town plays a small role in the handling of dry bulk volumes in the South African port system however, dry bulk volumes handled at the port have steadily decreased over the past 5 years with volumes dominated by imports. The Port of Cape Town's share in total dry bulk volumes in the port system has

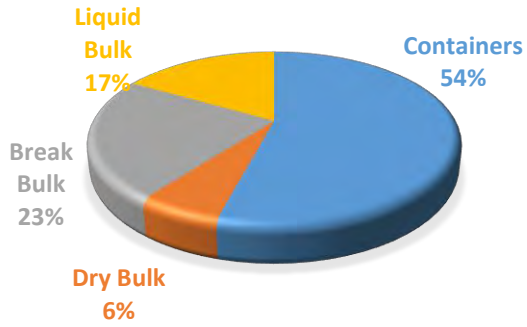
remained constant over the period, albeit at very low levels compared to the rest of the port system, especially the dedicated bulk ports of Saldanha and Richards Bay.

Installed Capacity

Table 10 Cape Town Installed Capacity

Cargo Type	Terminal	Berths	Berth Draft
Containers	Container	601, 602, 603,604	12,8m – 15,5m
Dry Bulk	Dry bulk	G, H	12,2m – 12,8m
Break bulk	Multi-purpose	B, C, D, E, F, J	9,1m – 12,2m
Liquid bulk	Liquid bulk	TB1 & TB2	13,7m – 15,2m

Figure 32Cape Town Terminal Area



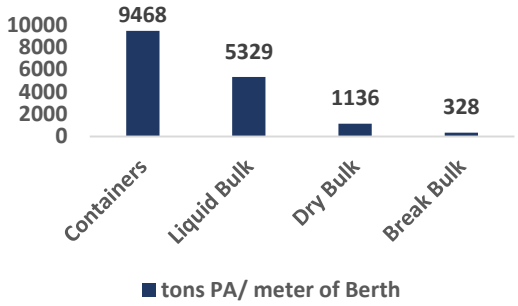
The Port of Cape Town consists of fourteen berths. Containers are moved through four deep sea dedicated container berths of 1151 meters with installed capacity of 1 million TEUs and comprising of a berth draft of 12.8 to 15.5 meters deep.

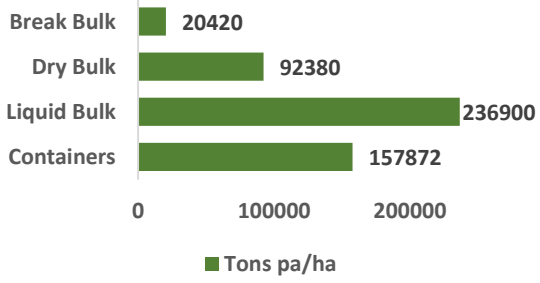
The liquid bulk terminal plays a major role in the energy security of the Western Cape region and the terminal has an installed capacity of 3.4 million kilolitres and two dedicated berths with a draft of 13.7 -15.2 metres. It features two berths with a total berth length of 489 meters and a terminal area of 16ha which accounts for 17% of the total port area.

A dry bulk facility is housed at Duncan Dock with an installed terminal capacity of 1.4 mtpa and two dedicated berths with a draft of up to 12.8 metres deep.

The port's break-bulk terminal handles various commodities such as fruit, paper, steel, maize, wheat, rice, timber, coal, scrap, other general cargo and passenger cruise ships.

Figure 33 Cape Town Capacity



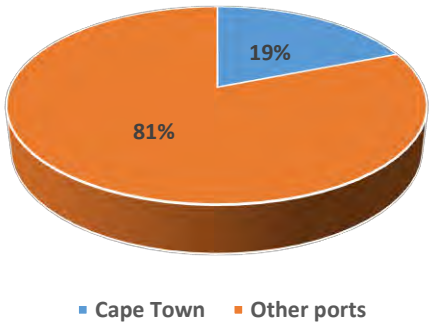


The terminal consists of six berths with a total length of 1368m and a capacity of 4.2 million tons. It has a terminal area of 22ha which accounts for 23% of the total port area.

The dry bulk terminal has two berths with a total berth length of 569 meters. The terminal has a terminal area of 6ha which accounts for approximately 6% of the total port area.

Container Cargo

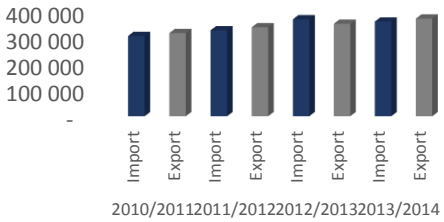
Figure 34 Cape Town 5 year Ave Container Volumes



The Port of Cape Town imports and exports experienced an average annual growth rate of 4% over the review period. Following the global economic downturn during 2008/9 the Port of Cape Town experienced a significant growth in container volumes from 2010/11 up to 2012/13, with a slowdown in volumes experienced in the following financial year. Transhipment volumes have grown substantially at an average annual growth rate of 29%.

The Port of Cape Town has a 19% share of container volumes in the South African market. The Port of Cape Town's share in total container volumes in the port system has increased by 3% over the period.

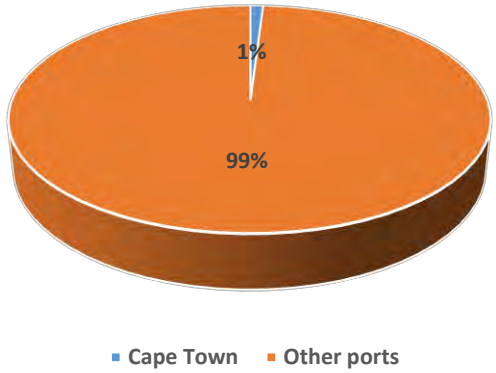
Figure 35 Cape Town Container Volumes



From an operator efficiency perspective, the data and analysis by the Ports Regulator provides a mixed sense of the operations in the port. Berth meter per crane is similar to the global average calculated in the Regulators performance benchmarking report of 2014/15 at 144 meters per crane, however, TEU per running meter of berth is significantly below the average at 525 compared to the global sample average of 916. This results in a very low throughput per hectare and berth meter with 9952 per hectare compared to an average of 22344.

Dry Bulk and Multipurpose Cargo

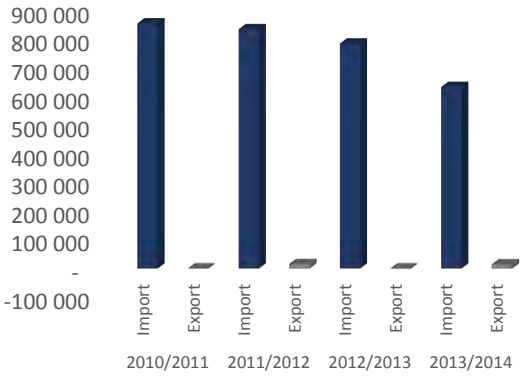
Figure 36 Cape Town Dry Bulk Volumes share



The Port of Cape Town has experienced a gradual decrease in dry bulk and break bulk volumes over the review period, with volumes decreasing at an average annual growth rate of 7%.

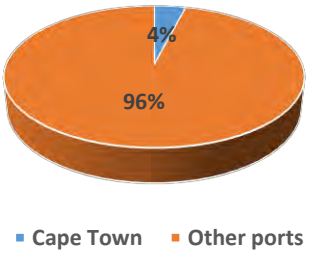
The Port of Cape Town plays a small role in the handling of dry bulk volumes in the South African port system with a more dominant role in the export of especially multipurpose cargo from the agricultural sector. Dry bulk volumes dominated by imports handled at the port have steadily decreased over the past five years however Cape Town's share in total dry bulk volumes in the port system has remained constant over the period. The containerisation of many traditionally break bulk commodities is especially prevalent in Cape Town and will require careful planning to ensure optimal utilisation of infrastructure whilst still providing key services to especially the Western Cape agricultural sector.

Figure 37 Cape Town Dry Bulk Volumes



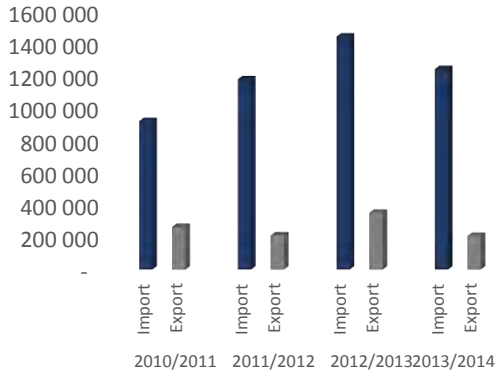
Liquid Bulk Cargo

Figure 38 Cape Town Liquid Bulk share



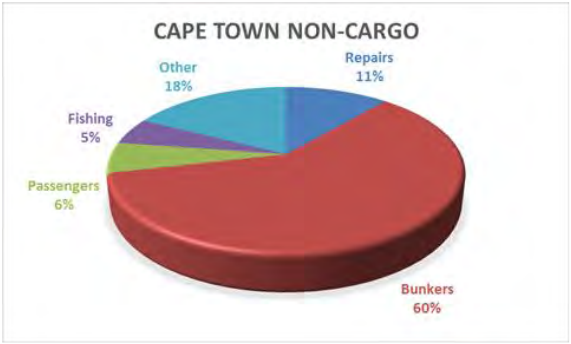
The Port of Cape Town experienced a steady increase in liquid bulk imports, at an average annual growth rate of 8%. Liquid bulk exports fell at an average annual growth rate of 6% and a 4% share of total liquid bulk volumes in the South African port system. Liquid bulk volumes are, like the rest of the port system dominated by imports.

Figure 39 Cape Town liquid Bulk Volumes



Amongst the non-cargo related vessel calls, bunkers calls were the most frequent.

Figure 41 Cape Town non-cargo vessel ratio



Non-Cargo Services

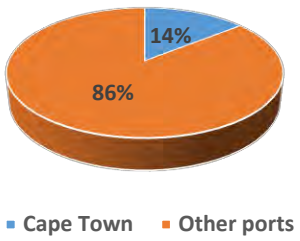
Figure 40 Cape Town Vessel call Reasons

Over the five year period under review, the Port of Cape Town has had on average 2500 vessel calls with a spike experienced in 2011/12 (4000 calls).

Of the cargo related vessel calls, the majority were container and break-bulk cargo carrying vessels, correlated with the main business of the port.

Port Financial overview

Figure 42 Cape Town Revenue contribution



Over the review period, the Port of Cape Town contributed approximately 13-14% to the National Port Authority's overall revenue totalling an average R1.3 billion over the period. With little structural change in the port system over the period, there has not been significant growth or decline in the Port of Cape Town's revenue contribution with revenues remaining largely stable and predictable.

In particular, profits averaged around 13% per annum over the review period.

Figure 43 Cape Town Profit Contribution

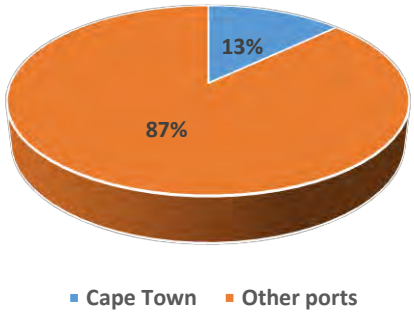
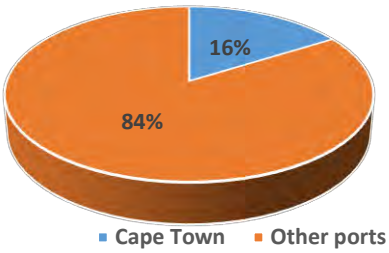


Figure 44 Cape Town Expenses Contribution

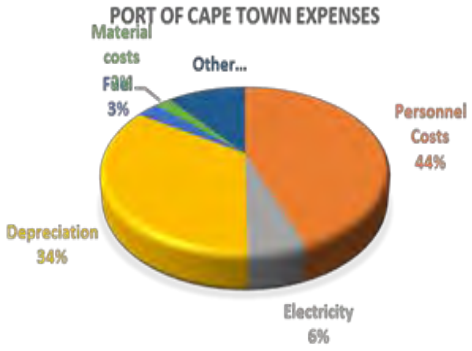


Over the review period, the Port of Cape Town was responsible for 16% of the National Port Authority's operating costs.

Depreciation and Personnel Costs accounted for the majority of the port's expenses.

By the end of the review period, the Port employed 675 permanent employees, from 588 at the beginning resulting in an annual average growth rate of employment of about 3%. This is however expected to increase as more focus on the refurbishing and operating of ship repair facilities, together with the establishment of a cruise terminal is expected to see more pronounced employment gains. Employment costs already make up almost half of NPA costs in the port and the expectation is that beyond the planned capex related costs over the next review period personnel costs will remain the largest contributor to port costs.

Figure 45 Cape Town OPEX contribution



With regards to capital investment, over the last five years R176 million of the total Capex in the port system was allocated to the Port of Cape Town, which accounts for just 1% of the total value of Capex. The allocated Capex was largely spent on the expansion of the container terminal, the shift in focus to ship repair and the establishment of a cruise terminal, amongst others, will see a different picture over the next five years.

The future:

The Port of Cape Town's seven year development initiatives can be listed as:

- Establishment of a dedicated cruise liner facility;
- Expansion of the Cape Town Container Terminal;
- Fire Fighting Equipment at Tanker Basin;
- Burgan Cape Terminal, Liquid bulk;
- Refurbishment of ship repair facilities;
- Replacement of Marine Fleet.

The expansion of the container terminal project is anticipated to increase the current terminal capacity by 400 000 TEUs and further enhance logistical and storage services for the area's fruit harvest. The first phase of the project entails the configuration of landside activities to increase stacking capacity, the provision of new equipment, and the deepening of existing berths. The increasing of container berth depth will allow Cape Town's container terminals to accommodate bigger vessels making it the second deepest port after the Port of Ngqura. The second phase of the project will provide additional landside capacity, increasing the installed capacity from 1 million to 1,4m TEUs.

All seven quays at the port have been equipped with the latest developments in crane and mechanical lifting technology and the port is capable of handling all kinds of material handling challenges. The port's current upgrades also includes the replacement of mechanical equipment, refurbishment of ship repair facilities and the replacement of cranes for ship repair facilities. Of the total of twelve cranes, eight will be written off to enhance performance, efficiency and speed at the port.

Port of Durban

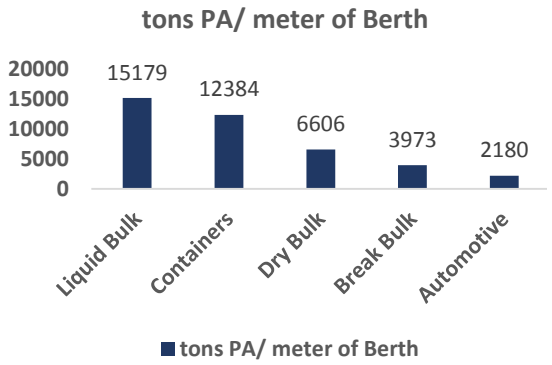
Source: Transnet National ports Authority

The Port of Durban developed from a natural inlet that formed a bay protected by a large sand dune (or bluff) to the south which provided shelter from winter storms. Durban quickly evolved into Africa's largest and busiest container port, and handles the most seagoing traffic in of all the ports in the South African Port system all types of cargo. The continual rise in container demand has raised concerns about the port's capacity and how soon its optimum capacity utilisation would be reached.

The Port of Durban consists of forty three berths with containers (operated by TPT) moved through ten (of 15) dedicated container berths of 2 578 meters long and a terminal area of 185ha. The liquid bulk terminal features nine berths with a berth length of 1 048 meters taking up 157ha of port land. The dry bulk terminal comprises nine berths with a total berth length of 1 615 meters taking up 59ha of port land and the break bulk terminal features 14

berths with a total quay length of 3 051 meters and takes up 81ha of port land. The liquid bulk and breakbulk or multi-purpose terminals are run by various private operators.

The automotive terminal run by TPT, comprises three berths with a total length of 1 048 meters and takes up 39ha of port land.



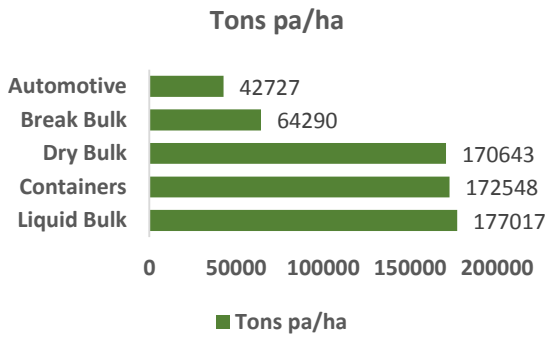
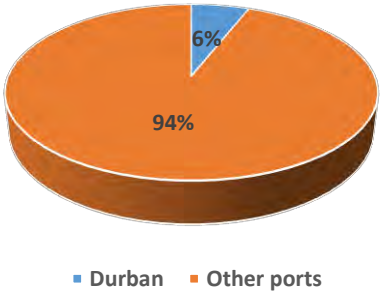


Figure 46 Port Infrastructure based Throughput

Dry Bulk Cargo

Figure 47 Durban Average dry Bulk Volumes 5 years



The port's dry bulk volumes produced a mixed set of results for imports and exports, where dry bulk imports experienced a slight annual average rate decrease of 1% over the review period, while export volumes (mostly coal) increased by 9% over the period.

For the Port of Durban, dry bulk cargo is secondary, lagging significantly behind the more dominant dedicated dry bulk ports of Richard's Bay and Saldanha Bay and contributes about 6% of total dry bulk volumes to the port system. Although the volume exports of dry bulk are higher than imports, this ratio is far lower than in the other ports where dry bulk imports are far lower than exports. The Port of Durban's share in total dry bulk volumes in the port system has remained constant over the period.

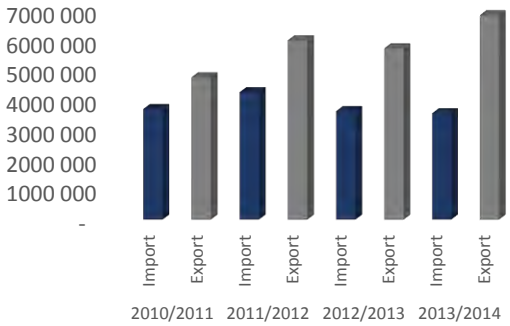
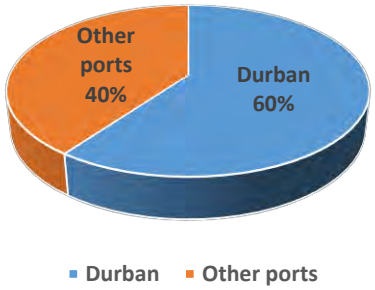


Figure 48 Port of Durban Dry Bulk Volumes

Container Cargo

Figure 49 Durban Average Container Volumes 5 Years



The Port of Durban experienced slight growth in container volumes in the review period. Import and export containers showed an average annual growth rate of 2% and 3% respectively. Transhipment container volumes have fallen at an average annual rate of 9% over the period, with the largest fall experienced between 2011/12-2012/13.

The Port of Durban continued its dominance of container cargo despite the 6% fall in Durban's share in total container volumes over the period.

With 22 cranes covering 2.5km of berth length, and a terminal area of 186 ha, container throughput of about 14 million over the period Durban only experienced an average annual growth rate of about 2%. Operationally, evidence points to certain inefficiencies, including a below average TEU per hectare as benchmarked globally in the PRSA Port Benchmarking Report. Whilst Durban is below the global average it does compare favourably with port of similar sizes in the sample. Significantly, Durban is close to the average TEU throughput per running meter of berth (1034 compared to the average of 1071). TEU/crane/per working year is also close to the global sample average of 128 918.

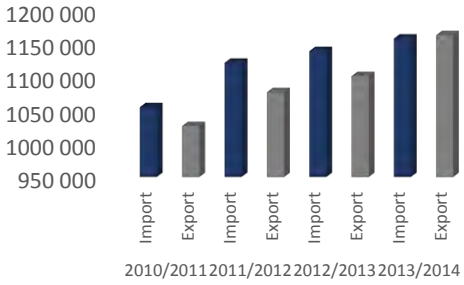
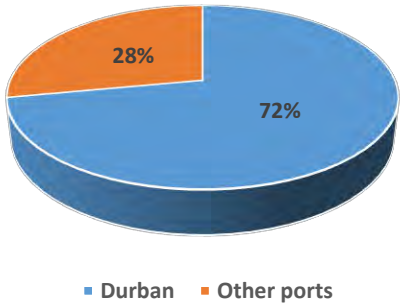


Figure 50 Port of Durban Container Volumes

Liquid Bulk Cargo

Figure 51 Durban Average Liquid Bulk Volumes 5 years



The growth in liquid bulk imports at the Port of Durban has remained flat over the review period, with only liquid bulk exports increasing at an average annual growth rate of 6% over the period.

The Port of Durban cemented its position as the chief outlet for liquid bulk cargo mainly as a result of oil refining capacity in the region. Liquid bulk imports (mainly crude) dominated exports. The Port of Durban's share in total liquid bulk volumes in the port system has increased by 4% over the review period to make up approximately 72% of the total throughput in the system.

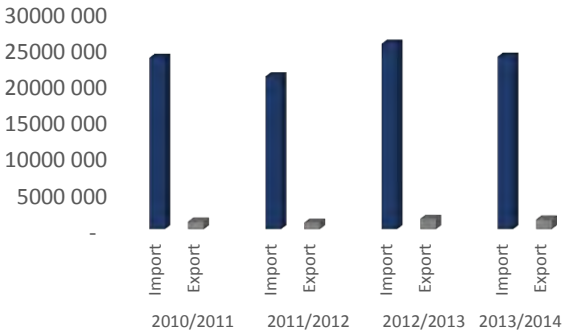


Figure 52 Port of Durban Liquid Bulk Volumes

Non-Cargo Services

Figure 53 Non-Cargo Call reasons

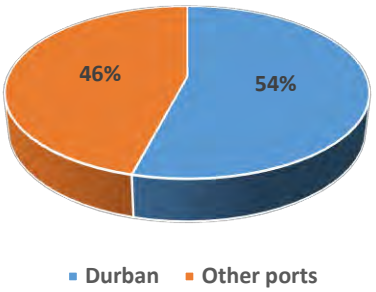
Mainly due to increased ship sizes, the past five years show that the number of vessel calls have been decreasing since the 2010/11 period, where there were about 4500 calls, to recent figures of about 4000 calls. The majority of vessel calls at the Port of Durban were container and break-bulk cargo carrying vessels, as well as vessels arriving for bunkers. Liquid bulk vessel calls have been increasing over the past five years while container and break-bulk vessel calls have been decreasing.

Amongst the non-cargo related vessel calls, bunkers calls were the most frequent.

Figure 54 Durban Non-Cargo Call distribution

Financial overview

Figure 55 Durban revenue Contribution 5 years



The Port of Durban, being the largest and specifically the largest handler of container traffic (containers being the largest revenue generator) contributed 54% to National Ports Authority's overall revenue over the review period or approximately R4.9 billion on average annually and remained largely stable over the period.

Profit contribution averaged about 64% per annum over the review period.

Figure 56 Durban Average Profit Contribution

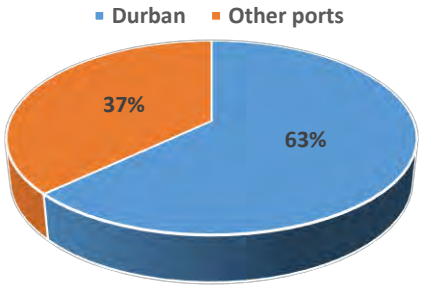
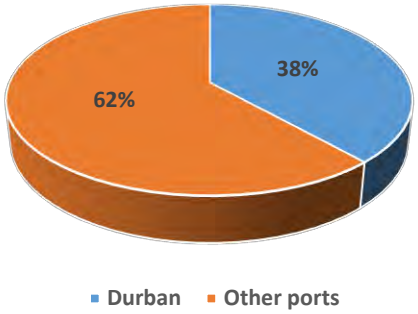


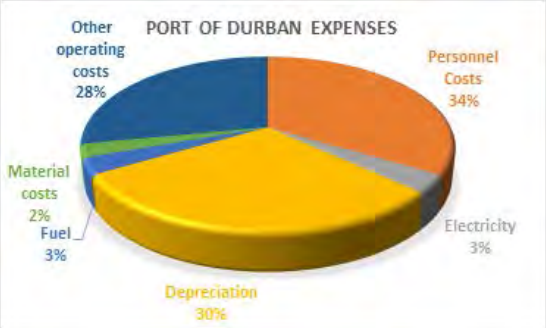
Figure 57 Durban Average Expenses Contribution



Whilst generating more than half of total revenue in the port system and 63% of NPA profits, Durban was responsible for only 38% of the NPA's operating costs with depreciation and Personnel costs accounting for the majority of the port's expenses.

In the port, the NPA employs 1175 permanent employees, from 1112 at the beginning of the review period with very little movement over the period. The establishment of control centres and the

implementation of the TOPS program may see increased employment in the port.



With regards to capital investment over the last five years, 27% of the total Capex in the port system was allocated to the Port of Durban. The allocated Capex was largely spent on the rehabilitation/renovation, upgrading/extension and new construction of port infrastructure.

The future:

The seven year development initiative is envisaged to provide the following developments in the Port of Durban:

- Relocation of the cruise terminal from N berth to AB berth;
- Reconstruction of Maydon Wharf berths;
- Increase commercial and logistics footprint into Ambrose park area;
- Lengthening and deepening of North quay berths at Pier2; and
- Reconstruction of Island View berths.

Port of East London

Source: National ports Authority

The Port of East London is South Africa's only river port situated at the mouth of the Buffalo River. As a common user port, it boasts the largest grain elevator in South Africa, a car terminal on the west bank which includes a four story parking facility connect by dedicated road to Mercedes Benz factory. The port also has a multipurpose terminal on the East Bank which handles containers, a dry dock, a repair quay, pilot and fishing jetty, the Latimer's Landing Water frontage as well as bunkering with fuel oil and marine gas oil.

Installed Capacity

Table 11 Port of East London Installed capacity

Cargo Type	Terminal	Berths	Berth Draft
Containers	Quay 6	K, L	10,7m
Cars	West quay	P, R	9m
Dry bulk	East London bulk	S, T	10,7m
Break bulk	Quay 3 and 4	G, I	11m
Liquid bulk	Tanker berth	TB	10,7m

Figure 58 East London terminal capacity

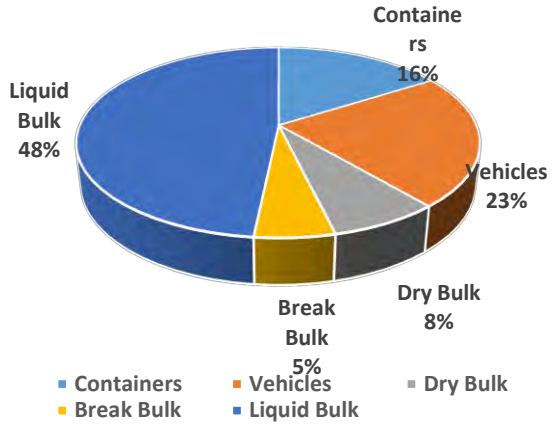
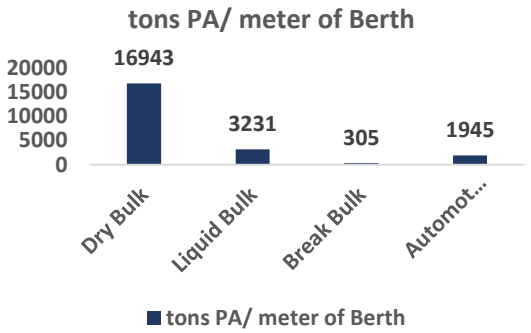
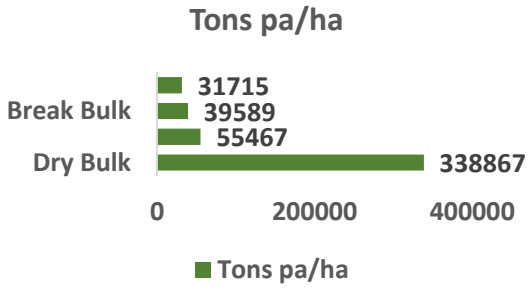


Figure 59 East London Capacity





The Port of East London consists of nine berths with the container terminal occupying two berths with a terminal area of 7.194 ha and an installed capacity of 93 000 metric tons.

The automotive terminal is operated by TPT, and has an installed capacity to handle 130 000 units using a total berth length of 559m. Currently there is limited investment planned for automotive cargo.

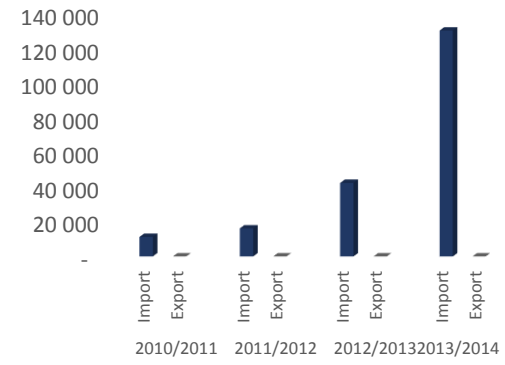
The breakbulk terminal has an installed capacity of 166 666 tons.

There are four privately operated liquid bulk terminals in East London namely, BPSA, Chevron, Engen and Total. The liquid bulk terminal in the Port has an installed capacity of 3 million kilolitres and plays a key role in regional energy security.

The dry bulk terminal has two dedicated berths, with a total berth length of 388 meters. The terminal has a capacity of 984 000 tons and 3.369 ha.

Liquid Bulk Cargo (KL)

Figure 60 Liquid Bulk Volumes East London



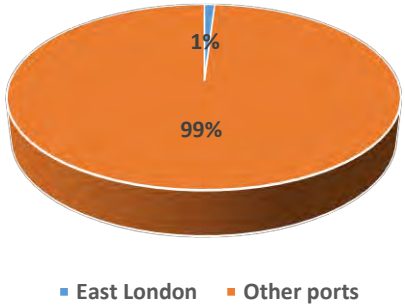
The Port of East London has shown noticeable growth in liquid bulk imports,

with an annual average growth rate of 85% over the review period.

The Port of East London's overall share in liquid bulk volumes remains small, but it has interestingly been on the ascent over the past five years, mainly fuelled by increased imports. The Port of East London's share in liquid bulk volumes in the ports system has remained constant over the review period.

Container Cargo

Figure 61 East London average Container Volumes Contribution



The Port of East London is not a significant player in the container sector with less than one percent of volumes. The port has experienced a dip in container volumes in each of the past five years and its share in total container volumes in the port system has remained constant.

Container volumes at the Port of East London decreased over the review period, with imports decreasing at an average annual rate of 8% and exports at a rate of 6%.

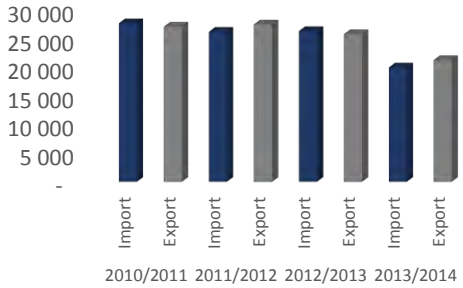
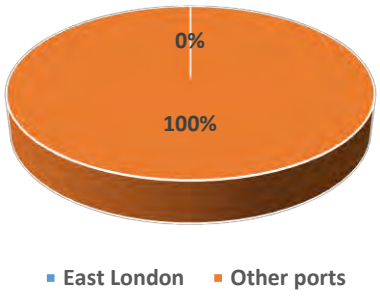


Figure 62 Port of East London Container Volumes

Dry Bulk Cargo

Figure 63 East London Average Dry Bulk Volumes 5 years



The Port of East London experienced a fall in dry bulk imports at an average annual rate of 9%, while dry bulk exports were relatively outside of the spike experienced between 2010/11-2011/12.

The Port of East London is not a major player amongst the South Africa ports in the handling of dry bulk volumes. Its share of dry bulk volumes has dwindled over the

last five years, with one notable spike in export volumes in 2011/12. The port's share in total dry bulk volumes in the port system has remained constant (between 0% and 1%) over the period.

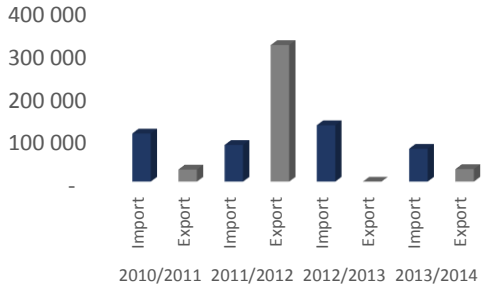
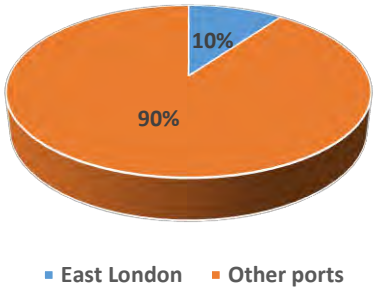


Figure 64 Port of East London Dry Bulk Volumes

Automotive Cargo

Figure 65 East London Average Automotive volumes 5 Years



The Port of East London has seen a shift in volumes over the period with automotive imports overtaking exports. Automotive volume imports at the port grew at an average annual growth rate of 11% over the review period, while exports decreased by 11% over the period.

The Port of East London is ranked third, handling 10% of automotive volumes in the South African ports system, behind the Port of Durban and Port Elizabeth. The Port of East London's share in total automotive volumes in the port system has fallen by 2% over the period.

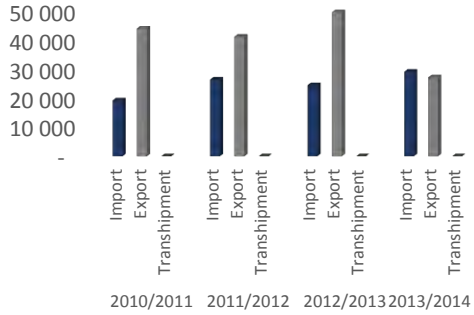


Figure 66 Port of East London Automotive Volumes

Non-Cargo Services

Figure 67 East London Non cargo Visits Distribution

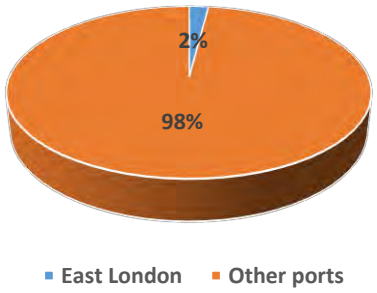
Very little no-cargo related activities are facilitated in the port of East London where over the five year period the Port of East London has had on average 300 vessel calls

Of the cargo related vessel calls, the majority were container, liquid bulk and automotive related.

Amongst the non-cargo related vessel calls, passenger vessel calls were the most frequent.

Financial overview

Figure 68 East London Average Revenue Contribution 5 Years



The Port of East London contributed 2% to the NPA's overall revenue over the review or approximately R187 on an annual basis.

On average the port of East London recorded annual profit contribution of 0.5% making it the smallest contributor, though still profitable of all the ports in the system.

Figure 69 East London Average Profit Contribution 5 Years

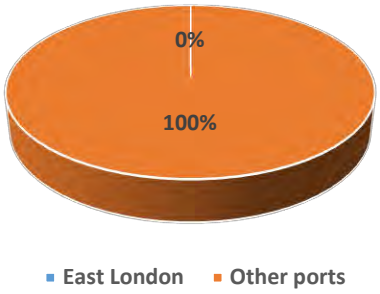


Figure 70 East London Average Expenses Contribution 5 Years

Over the review period, the Port of East London was responsible for 6% of the NPA's operating costs of which depreciation and personnel costs accounted for the majority of the port's expenses

In the Port of East London, the NPA employs 150 permanent employees, from 156 at the beginning of the review period.

With regard to capital investment, only 1% of the total Capex in the port system was allocated to the Port of East London, with the allocated Capex largely spent on the expansion of the container terminal.

In the past five years, two major projects were planned for Port of East London.

These projects, still under construction are, the West Bank Foreshore Protection (Feasibility and Execution) and a sheet pile wharf rehabilitation project.

Figure 71 Port of East London Expenses Distribution

The future:

The port is sited at the mouth of the Buffalo River, and as a consequence is restricted in both width and depth, with limited opportunities for future expansion. Containers and break bulk cargoes are handled on the east bank, and bulk cargoes and vehicles handled on the west bank of the river. While East London will continue to provide general cargo handling services to its hinterland, the constraints to expansion, the limited hinterland, and the development of the new port at Ngqura suggest that East London will see limited growth in the thirty-year planning horizon

The port's seven year infrastructure plan consists of a limited number of projects in line with the view that limited growth is expected over the next thirty years. The seven year Port Development Framework Plan envisaged the following two development projects which directly or indirectly should provide for required capacity for every cargo type, namely: the land preparation for coal exports and the deepening and widening of the entrance channel. However it should be noted that the deepening and widening of the entrance channel is to ensure the safety of navigation at the port.

In past years, the container volumes in the port have remained fairly flat and as a result the port will continue to handle container throughput through their multi-purpose terminals until volumes justify dedicated facilities. The port handles various dry bulk commodities including coal, as highlighted above there are plans to develop a coal export terminal in the port.

Development plans for the port are limited to reconfiguration of existing infrastructure. Unless regional growth generates new cargo volumes, the Port of East London will continue to play an important but limited role in the port system. The challenges that face the Port of East London are the requirement to adapt existing port waterside capacity to meet new and larger vessel types, a challenge that commonly affects the older ports. East London is an example of a port that is not easily able to adapt due to the very restrictive river basin site of

the port. East London also has limited opportunity to expand to new areas suited to the development of new waterside capacity.

Port of Richards Bay

Source: National Ports Authority

The Port of Richards Bay was developed between 1972 and 1976 in response to the demand for additional rail-linked port infrastructure to service export potential from the (now) KwaZulu-Natal and Mpumalanga coalfields. A deep water facility was needed because of the development internationally of very large bulk carriers. Richards Bay was chosen because of the large lagoon; the ease of dredging; direct links with the national rail network, an adjacent town, Empangeni, to stimulate initial development; and an ample supply of fresh water.

The port is now South Africa's premier dry bulk port, handling an increasing variety of bulk and neo-bulk commodities in addition to break-bulk. The coal terminal, single bulk liquids berth and bulk liquid storage and phosphoric acid loading facility are operated by private companies

Installed Capacity

Figure 72 Richards bay Installed capacity

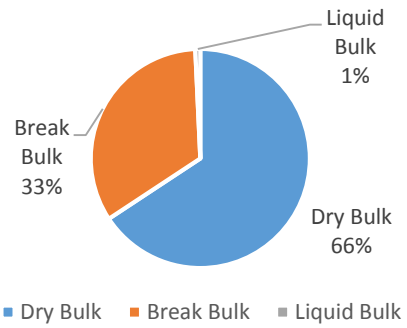


Table 12 Richards bay Installed capacity

Terminal	Berths	Berth Draft
Richards Bay coal	301, 302, 303, 304, 305, 306	19m
DBT - woodchips	804	19m
DBT – import	607, 701, 702	14,5m – 19m
DBT – export	703, 704, 801	19m
Richards Bay break bulk	606, 607, 608, 706, 707, 708	14,5m
Richards Bay bulk liquid	209 and 208	14m

The Port of Richards Bay consists of 21 berths.

The current installed capacity reflects the economy of the region with an installed terminal capacity of 112 million dry bulks, 8.2 million break bulks and 3 million liquid bulks. The port currently has no installed capacity dedicated solely for containers, but handles a small number of containers at the multipurpose terminal.

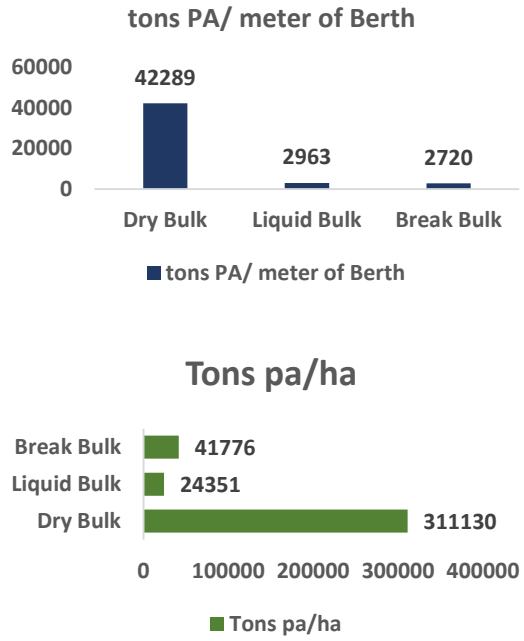
Liquid bulk cargo serves the energy needs of the industries of the region. The liquid bulk terminal has an installed capacity of 3 million kl and plays a key role in the energy security of the region.

The break bulk and multipurpose terminals handle various cargoes, and have an installed capacity of 8.2 million tons.

Dry bulk cargoes are moved through 13 dedicated dry bulk berths with a total berth length of 3 984 meters and a terminal area of 411.5 hectares.

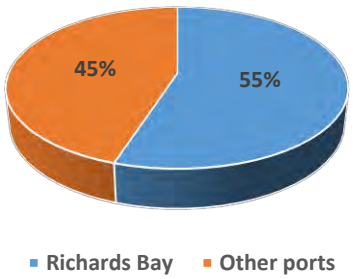
The liquid bulk terminal features two berths with a total berth length of 550 meters making up 4.6 hectares of the port land.

Figure 73Richards Bay Capacity throughput



Dry Bulk Cargo

Figure 74 Richards Bay Average Dry Bulk volumes 5 Years



The Port of Richard's Bay showed only a slight growth in volumes over the review period, with dry bulk imports showing no growth and only dry bulk exports showing an average annual growth rate of 3%.

The Port of Richard's Bay is mainly dedicated to the handling of dry bulk cargo. The Port of Richards Bay's share in total dry bulk volumes in the port system has remained constant over the period at about 55%.

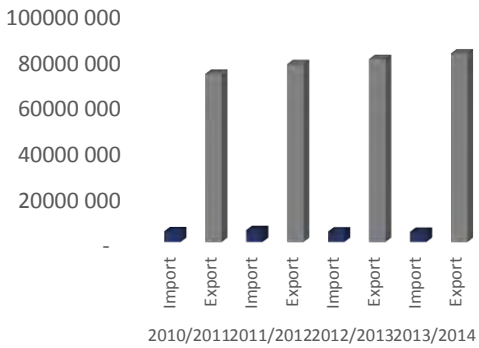
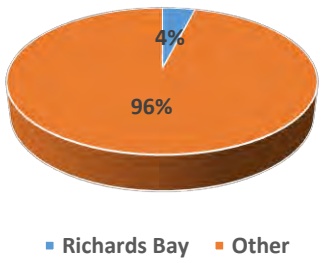


Figure 75 Port of Richards Bay Dry Bulk Volumes

Liquid Bulk Cargo

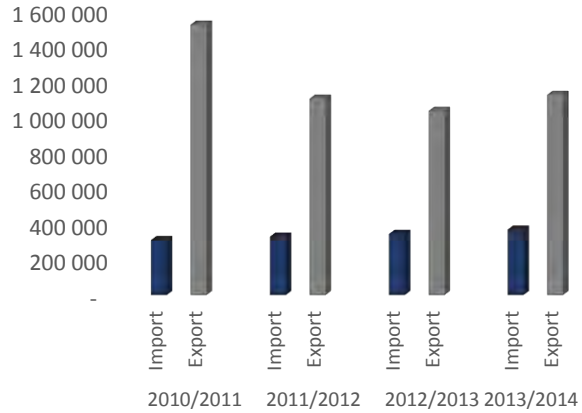
Figure 76 Richards Bay Average Liquid Bulk volumes 5 Years



The Port of Richard's Bay experienced a mix set of results in the growth of liquid bulk volumes. Liquid bulk imports grew at an average annual growth rate of 4% over the period, whereas exports fell at an average annual rate of 7%.

Liquid bulk cargo is a secondary cargo for the Port of Richard's Bay, with volumes handled at the port having decreased over the past 5 years, mainly as a result of lower exports of liquid bulk cargo. The Port of Richard's Bay share in total liquid bulk volumes in the port system has remained constant over the period.

Figure 77 Richards Bay Liquid Bulk Volumes



Non-Cargo Services

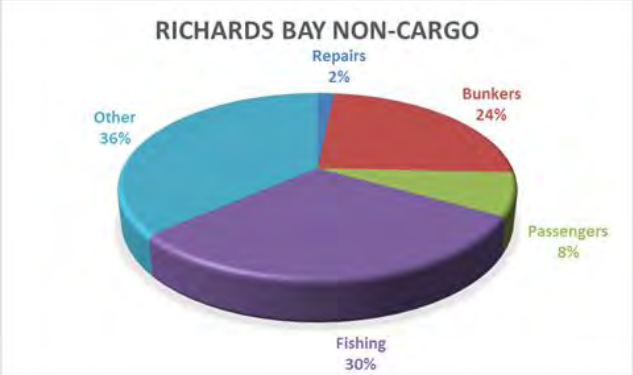
Figure 78 Richards Bay Call reasons

Over the five year period the Port of Richards Bay has had on average 1800 vessel calls.

Of the cargo related vessel calls, the majority were dry bulk and break-bulk cargo carrying vessels.

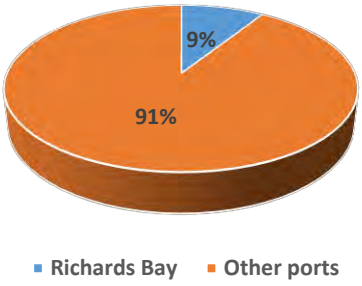
Amongst the non-cargo related vessel calls, fishing vessel calls were the most frequent.

Figure 79 Richards Bay Non-Cargo Call Distribution



Financial overview

Figure 80 Richards Bay Average Profit Contribution 5 Years



The Port of Richards Bay contributed 12% to the NPA's overall revenue or on average about R1.1 billion per annum and contributed approximately 9% in profit over the review period.

There has not been significant growth or decline in the Port of Richards Bay's revenue contribution over the review

period, with revenues and profits remaining largely stable.

Figure 81 Richards Bay Average Revenue Contribution 5 Years

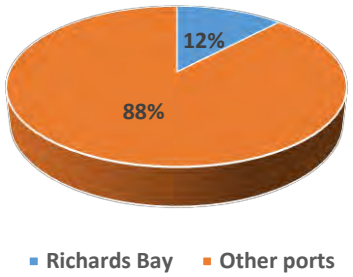
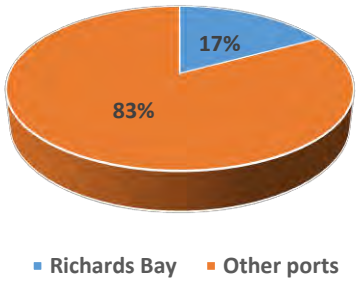


Figure 82 Richards Bay Average Expenses Contribution 5 Years



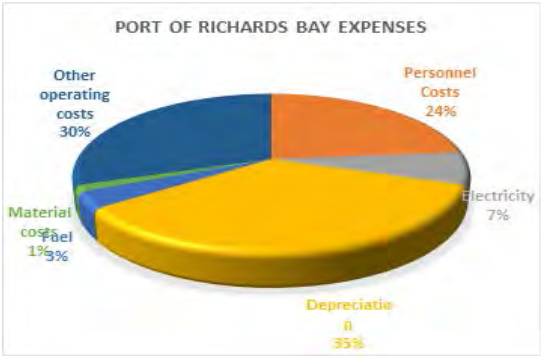
Over the review period, the Port of Richards Bay was responsible for 17% of the NPA's operating costs, and similar to other ports in the system, depreciation and personnel costs accounted for the majority of the port's expenses due in part to large capital assets.

The NPA employs 382 permanent employees, up from 258 at the beginning of the review period In the Richards Bay port.

With regards to five year capital investment, 7% of the total Capex in the port system was allocated to the Port of Richards Bay.

In the past five years nine major projects were planned for Port of Richards Bay. Eight of them have been successfully completed and one project was discontinued which is the Construction of Common User Berth 307.

Figure 83 Port of Richards Bay Expenses Distribution



The future:

Whilst there hasn't been any growth for the Port of Richards Bay in the previous years, the medium and long term development framework envisages some major growth. The port is also looking at exploring the viability of various handling facilities such as container, LNG, oil and gas. The Long Term Plan summarises the following seven year port development initiatives which directly or indirectly should provide for required capacity for the port:

Upgrade all bulk services Infrastructure (roads, water, sewer and electricity);

Develop South Dunes precinct for liquid bulk;

Implement Richards Bay Expansion project;

Explore the viability of oil and gas facilities;

Explore the viability of LNG facilities;

Explore the availability of container terminal; and

Investigate the installation of ship repair facilities.

Port of Saldanha Bay

Source: National Ports Authority

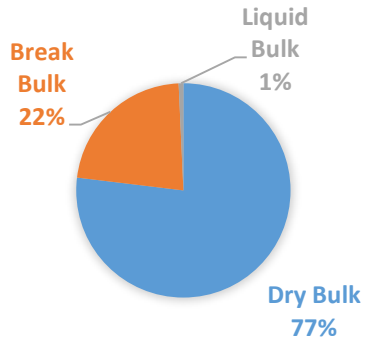
It is argued that only the lack of fresh water prevented this otherwise excellent natural harbour from becoming the major port along the south coast of Africa. The mainly facilitates the export of iron ore from the Northern Cape. This required the construction of a railway more than 800km to the mines at Sishen in the Northern Cape and the construction of a deep water berths and terminal in Saldanha Bay to accommodate the Capesize ore carriers. The first deliveries of iron ore were exported on the vessel Fern Sea during September 1976.

Installed Capacity

Figure 84 Saldanha Bay Terminal Area

Table 13Saldanha Bay Installed capacity

Cargo Type	Terminal	Berths	Berth Draft
Dry bulk	Iron ore	101, 102	23m
Break bulk	Multi-purpose	201, 202, 203, 204	13m -15m
Liquid bulk	Liquid bulk	103	23m

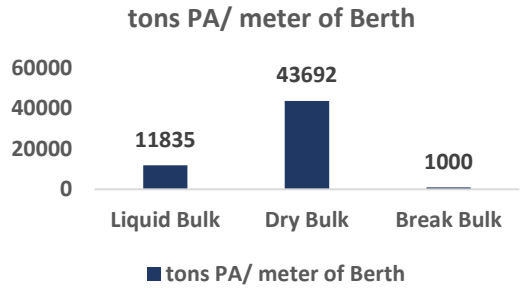


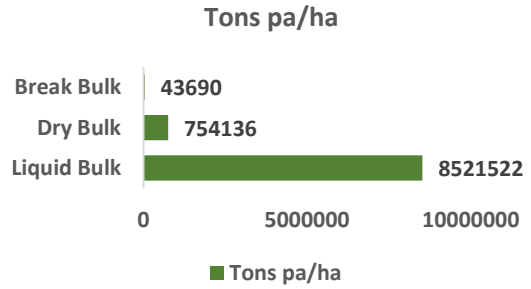
The Port of Saldanha Bay consists of eight berths and current installed capacity reflects the dedicated bulk purpose of the port with an installed terminal capacity of 60 MT dry bulk, 3.3 MT break bulk as well as 25 kl liquid bulk capacity serving the energy needs of the region.

The Port facilitates the movement of break-bulk cargo through its installed capacity of 3.3 million tons per year over one berth with a length of 365 meters.

The liquid bulk terminal features a berth with a length of 365 meters which makes up 1ha of port area.

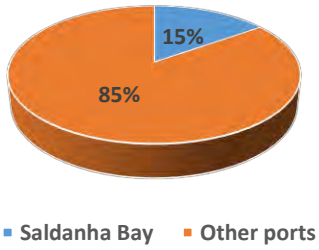
Figure 85 Saldanha Bay Infrastructure based Throughput





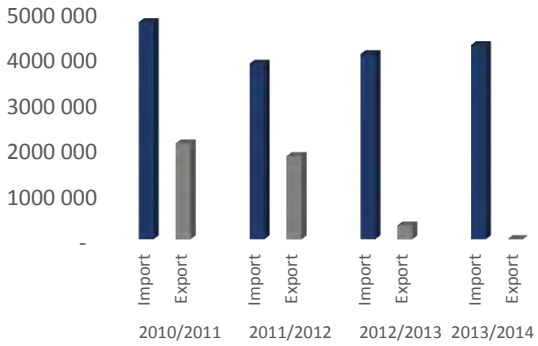
Liquid Bulk Cargo

Figure 86 Saldanha Bay Average Liquid Bulk volumes 5 Years



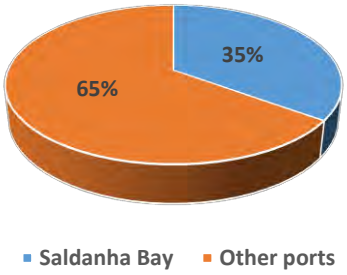
The Port of Saldanha experienced little change in liquid bulk imports over the review period, with volumes stable at an average annual growth rate of 1%.

Exports are negligible, and overall the liquid bulk volumes moving through Saldanha represent around 15% of total South African liquid bulk port volumes that are shipped in bulk.



Dry Bulk Cargo

Figure 87 Saldanha Bay Average Dry Bulk volumes 5 Years



The Port of Saldanha Bay showed minor growth in dry bulk volumes (its primary focus) over the review period, with imports (even if very small volumes) growing at an average annual growth rate of 2%; while exports grew at a rate of 3%.

The Port of Saldanha Bay accounted for a 35% share of dry bulk volumes (mostly iron ore from the Northern Cape) in the ports system. The Port of Saldanha Bay's share in overall dry bulk volumes in the port system has remained fairly constant over the period.

A slowdown in especially the Chinese economy could see volumes of mainly bulk exports through Saldanha come under pressure.

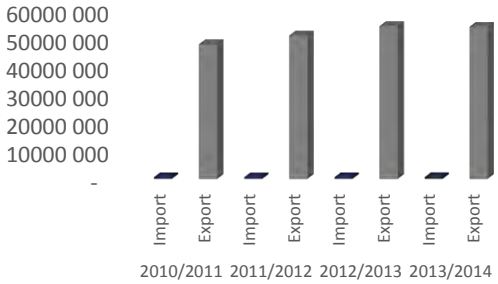


Figure 88 Port of Saldanha Dry Bulk Volumes

Non-Cargo Services

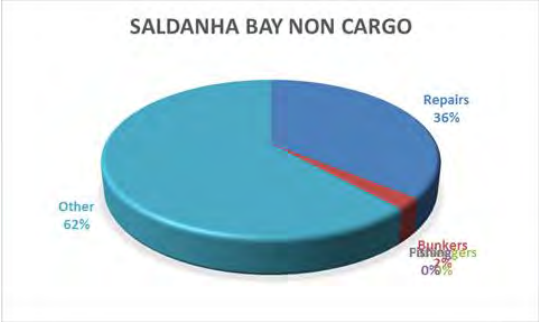
Figure 89 Call reasons Port of Saldanha

Over the five year period the Port of Saldanha Bay has had on average 515 vessel calls,

Cargo related calls make up about 95% of all vessel calls at the port. The most frequent call reason by far at the Port of Saldanha Bay is consistently dry bulk, followed by break-bulk calls.

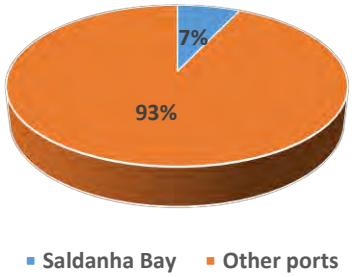
Amongst the non-cargo related vessel calls, bunkers calls and limited ship repair visits were the most frequent.

Figure 90 Saldanha bay Non-Cargo Call Visits Distribution



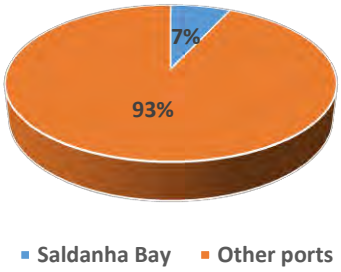
Financial overview

Figure 91 Saldanha Bay Average Revenue Contribution 5 Years



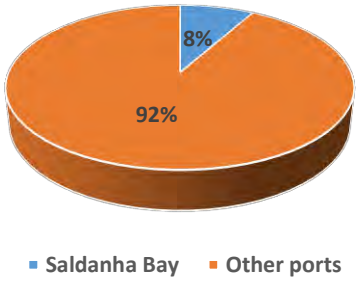
The Port of Saldanha Bay contributed 7% to the NPA's overall revenue or approximately R650 million per annum as well as profits over the review period and profits contributing on average about 7% over the review period

Figure 92 Saldanha Bay Average Profit Contribution 5 Years



Over the review period, the Port of Saldanha was responsible for 8% of the NPA's operating costs.

Figure 93 Saldanha Bay Average Expenses Contribution 5 Years

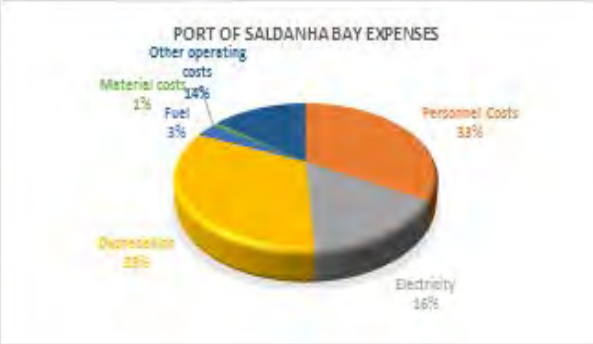


As in other ports, Depreciation and Personnel Costs accounted for the majority of the port's expenses

In the Port of Saldanha Bay, the NPA employs 225 permanent employees, marginally up from 216 at the beginning of the review period.

With regards to capital investment over five years, 7% of the total Capex in the port system was allocated to the Port of Saldanha Bay

Figure 94 Port of Saldanha Bay Expenses Distribution



The future:

Although there has not been much change in port infrastructure with installed capacity not changing significantly over the past five years, the port's seven year development framework envisages some growth in the port with the Long Term Plan outlining a number of initiatives which directly or indirectly should provide for required capacity for all cargo types:

Development of an Oil & Gas Service Hub;

Extension of the General Maintenance Quay;

Construction of 500m Jetty at the Mossgas quay;

Provision of Dedicated Facility for Oil Rigs (Berth 205);

Joint Planning with Saldanha Bay IDZ;

Construction of an LPG Terminal;

Increasing Liquid Bulk Handling Capacity;

Development of an LNG Terminal;

Marine Craft Replacement Programme;

Iron Ore Expansion (Phase 2).

Though the port is doing well in terms of dry bulk exports, the hazardous nature of iron ore dust and corrosion effects of iron ore has raised concerns from other industries in Saldanha Bay. This could slow growth in iron ore production as a result. However the port is trying to resolve the issue and has put forward a mitigation plan to address the issue. Future expansion plans envisage major investment and development in the liquid bulk facility and LPG and LNG terminal as well as in oil rigs. It is anticipated that liquid bulk volumes for both crude oil and refined products will grow substantially and current capacity is not adequate to handle these forecast volumes. Major expansion in this sector is expected to change the layout of the port.

The break bulk facility is envisaged to be adequate to handle current and future volumes thus no investment is planned.

Port of Ngqura

Source: Transnet National Ports Authority

The Port of Ngqura is South Africa's 8th and latest commercial port development. It is a deep-water port capable of handling post-Panamax dry and liquid bulkers as well as 6,500 TEU cellular container vessels. The port's main breakwater is the longest in South Africa. At a construction cost of R10b, the port of Ngqura was to have had an aluminium smelter as its anchor tenant. With the electricity generation crisis in 2008, the aluminium smelter became unlikely against the pressures for Eskom to provide security of supply on a national basis. This brought about a change in focus for the Port of Ngqura from a deep-water bulk port to container handling with operations on the container terminal commencing in 2009. The Coega Industrial Development Zone (IDZ) as well as the Nelson Mandela Bay Strategy all aim to optimize the existence of the two ports in this undeveloped region. [South African Port Capacity and Utilisation Report 2014-15]

Installed Capacity

Table 14 Ngqura installed Capacity

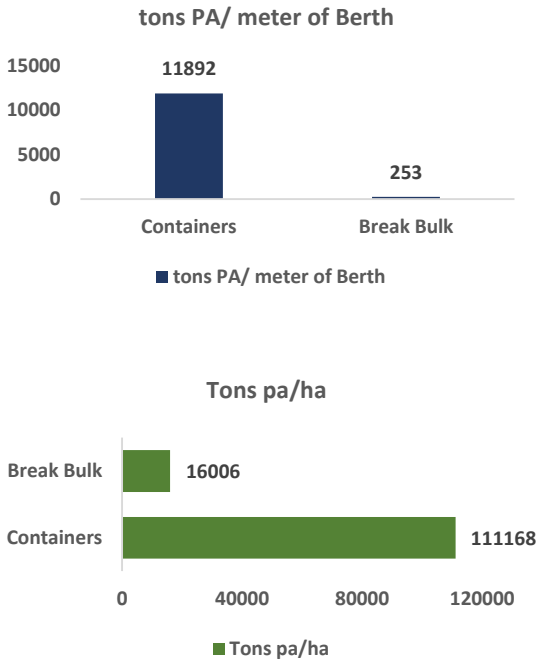
Cargo Type	Terminal	Berths	Berth Draft
Containers	Ngqura Container	D100, D101	16,5m
Dry bulk	Ngqura Container	C100	16,5m
Break bulk	Ngqura multi-purpose	C101	16,5m
Liquid bulk	Ngqura liquid bulk	B100	18m

The Port of Ngqura consists of five berths with an operational four berth container terminal, as well as three jetty berths.

The container terminal area which accounts for the largest area within port limits has also been widened from 62.33 to 90.40 hectares resulting in just above 500 TEU's per ha throughput, and the 720 meters of berth and 10 cranes result in an average 575 TEU's per meter of berth.

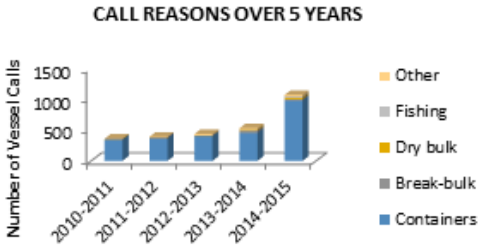
The liquid bulk terminal features two berths with a total berth length of 489 meters and a terminal area of 16ha which accounts for 17% of the total port area.

Figure 95 Port of Ngqura throughput



Non-Cargo Services

Figure 96 Ngqura Non-Cargo Calls

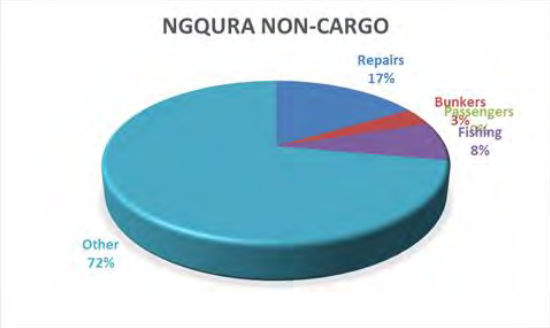


Over the five year period, the Port of Ngqura has had, on average 561 vessel calls.

The Port of Ngqura has seen a year-on-year increase in the number of vessel calls at the port. From having figures below 400 calls in 2010/11 to around 1100 calls in 2014/15, the port has the highest growth rate in vessel calls amongst all ports in South Africa over the five year period

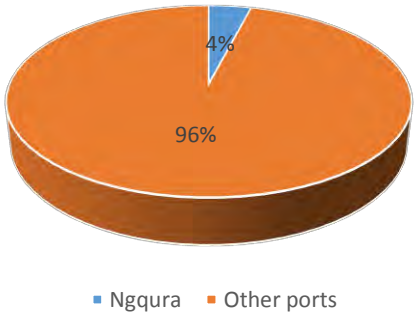
albeit off a low base. The most frequent call reason by far at the Port of Ngqura is consistently container carrying vessels.

Figure 97 Ngqura Non-Cargo Calls Distribution



Financial overview

Figure 98 Ngqura Average Revenue Contribution 5 years



The Port of Ngqura contributed 4% (about R370 million annually) to the NPA's overall revenue over the review period and contributed about 2% of total profits.

Strong growth in transhipment volumes did not translate in large revenue growth as cargo dues on transhipment containers are very low, at R77.9 per 20' container (2014/15)

Transhipment mainly benefits the NPA marine component of revenue as well as group revenue through the terminal handling charges levied by TPT.

Figure 99 Ngqura Average profit Contribution 5 years

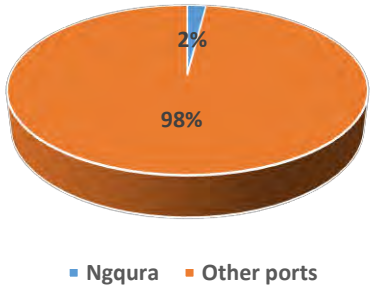
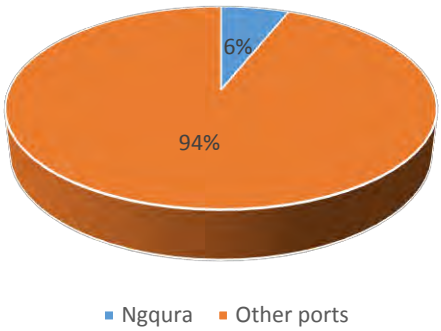


Figure 100 Ngqura Average Expenses Contribution 5 years



Over the review period, the Port of Ngqura was responsible for 6% of the NPA's operating costs, 4% of revenue and 2% of profit.

Depreciation accounted for over half of the port's expenses.

In the Port, the NPA employs 175 permanent employees, from 68 at the beginning of the review period.

With regard to five year capital investment, 52% of the total Capex in the port system was allocated to the Port of Ngqura; the majority of the port's capex investment went towards the installation of facilities and new construction.

Current and planned projects over the past five years included the Construction of Marine & Landside Infrastructure as well as the operationalisation of the Port. A Manganese terminal is also underway.

The future:

The seven year port development initiatives of the port still envisages major growth in the port; the two major projects which would change the current layout of the port are the relocation of tank farm operation and manganese operation from the Port of Port Elizabeth. Other projects are mainly for safety reasons and risk mitigation since the port is experiencing some long wave effects, swells and strong winds because of weather conditions in the Eastern Cape. The seven year port development initiatives indicate eleven projects which are earmarked for the port, these projects are as listed below:

Installation of Automated Mooring System to mitigate Surge at the container berth;

Provision of NPA Admin Building, Marine Fleet Jetty and Marine House;

Relocation of Tank Farm Operations from the Port of Port Elizabeth;

Construction of the Cadastral boundary, lights and cameras around the port for security purposes;

Plant required by infrastructure for maintenance and to execute minor projects;

Provision of offices, workshops, and facilities to the Infrastructure Department personnel;

New General Cargo Berth to accommodate new business from IDZ and Hinterland;

Relocation of Manganese Operations from Port of PE;

Installation of Scada System for the Port Services; and

Provision of additional capacity for marine craft.

Port of Port Elizabeth

Although services started in 1836 and the first jetty was constructed in 1837, the Port of Port Elizabeth was established as a proper harbour in 1933 with the construction of the Charl Malan Quay (now used as the container and car terminals) which for the first time offered protection from open seas.

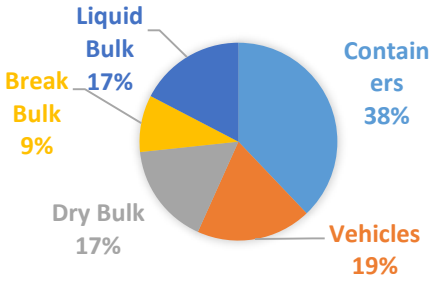
Agriculture and farming – deciduous and citrus fruits and wool crop – played an important role in the development of the Port of Port Elizabeth, prior to the growth of containers and motor industry in prominence in this port. The fishing industry and passenger ships (accommodated at the fruit terminal berths when calling at the Port) are important players in the Port. Other products handled in this port include Manganese ore (which by 2017/18 will be relocated to the Port of Ngqurha) and petroleum from other South African ports.

Installed Capacity

Table 15Installed capacity Port Elizabeth

Cargo Type	Terminal	Berths	Berth Draft
Containers	P.E container	102, 103	12,2m
Cars	P.E motor vehicle	100, 101	12,2m
Dry bulk	P.E manganese	I3	12,2m
Break bulk	P.E multi-purpose	8,9,10,11,12	7M – 11m
Liquid bulk	P.E liquid bulk	15	9,9m

Figure 101 Port Elizabeth Terminal Area



The Port of Port Elizabeth consists of nine usable berths and has two container berths with a length of 630 meters and a draft of 12,2m and a terminal area of 36ha resulting in an average throughput of just above 9000 TEU's per ha over the period and just over 500TEU's per running meter of berth.

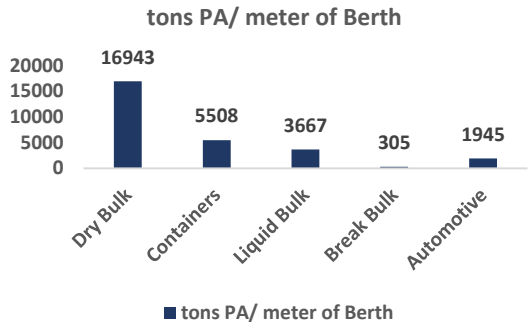
The port has only one car terminal berth on the Charl Malan quay with a length of 358 meters and a draft of 12,2m.

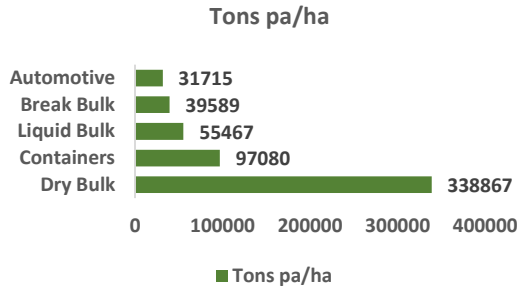
There are four break bulk berths with a total berth length of 705 meters and a draft of about 11 meters.

The port has one dry bulk berth on the Dom Pedro jetty with a berth length of 360 meters and a draft of 12,2m.

There is one liquid bulk berth on the breakwater with a berth length of 242 meters and a draft of 9,9m.

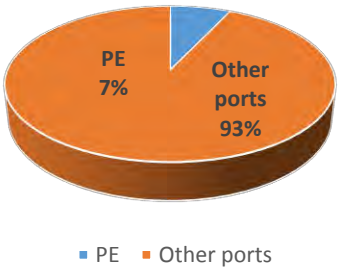
Figure 102 Port Elizabeth throughput





Container Cargo

Figure 103 Average Container volumes 5 Years



The Port of Port Elizabeth experienced a decline in container imports and exports over the review period, with imports declining at an average annual rate of 5%, and exports falling at a rate of 12%. There was a slight increase in transhipment containers which grew at an average

annual growth rate of 2% over the review period.

The Port of Port Elizabeth has a share of 7% of overall container volumes in the South African container sector. The port has handled fewer volumes over the past five years as the shallow draft and the proximity of the nearby deep-water port of Ngqura together with the cascading ship size increases see vessels going elsewhere. Imports and exports have decreased, with only transhipment volumes showing a slight increase.

The Port's share in total container volumes in the port system has fallen by 2% over the period.

Automotive Cargo

The Port experienced mixed results in automotive volume growth over the review period. There was a substantial shift which saw automotive imports overtake exports.

Over the period, automotive volumes imports grew at an average annual growth rate of 3%, while exports declined at an average annual rate of 11%. This saw the port's share in total automotive volumes in the port system fall by 6% over the period.

The Port of Port Elizabeth is a vital outlet for automotive cargo in the Eastern Cape. The port has a 19% share of overall automotive volumes in the South African market. The ratio of automotive imports to exports is much closer in Port Elizabeth than in the Port of Durban and East London.

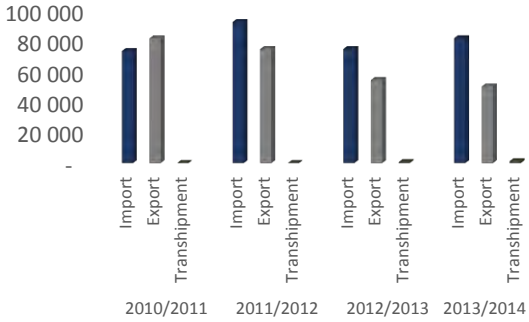
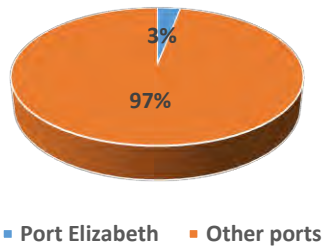


Figure 104 Port Elizabeth Dry Bulk Volumes

Dry Bulk Cargo

Figure 105 Port Elizabeth Average Dry Bulk volumes 5 Years

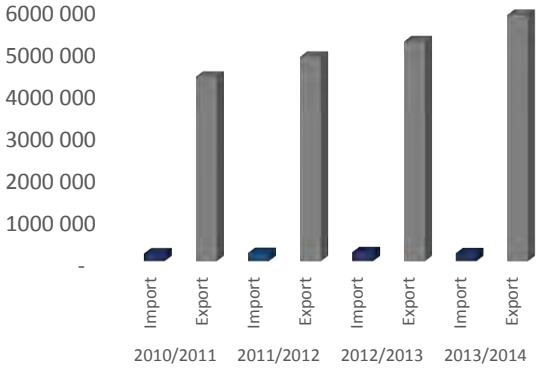


The Port of Port Elizabeth is ranked fourth in the handling of dry bulk volumes

amongst the South African ports with the manganese terminal currently operated in Port Elizabeth. The port has seen a steady increase in dry bulk volumes handled.

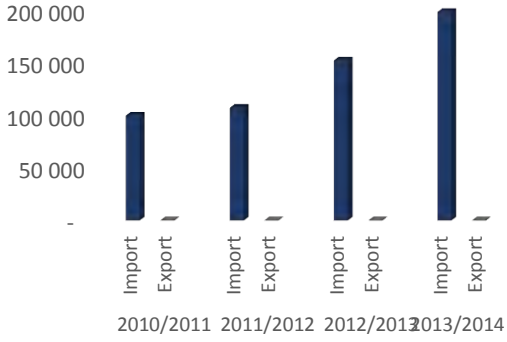
The Port of Port Elizabeth's share in total dry bulk volumes in the port system has remained constant over the period, but will see very little volumes in future as the manganese terminal is to be moved to the Port of Ngqura.

Figure 106 Dry Bulk Volumes Port Elizabeth



Liquid Bulk Cargo

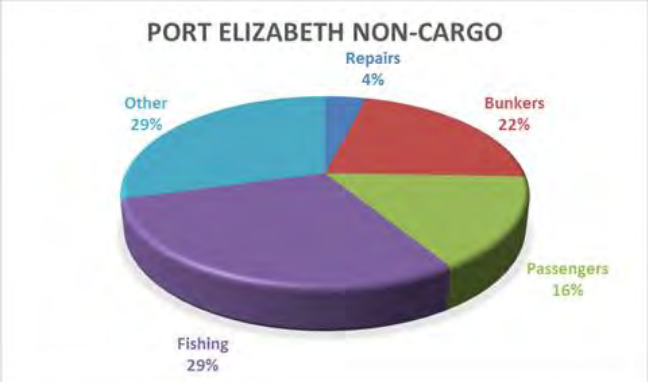
Figure 107 Liquid Bulk Volumes Port Elizabeth



Port Elizabeth saw a significant increase in liquid bulk imports over the review period, which grew at an average annual growth rate of 19%. This increase was not enough to alter the ports share of liquid bulk volumes in the ports system with the Port of Port Elizabeth remaining a small player in the handling of liquid bulk volumes, with only a 0.5% share in liquid bulk volumes amongst the South African ports. As a distributing hub for the Eastern Capes fuel and energy requirements Port Elizabeth has seen significant increase in liquid bulk import volumes whilst there were no liquid bulk exports at the port.

Non-Cargo Services

Figure 108 Port Elizabeth Non-Cargo Calls Distribution

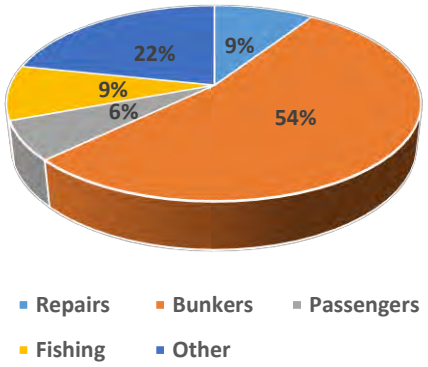


Over the five year period, the Port of Port Elizabeth has had on average 900 vessel calls per annum.

Of the cargo related vessel calls, the majority were container and automotive cargo carrying vessels.

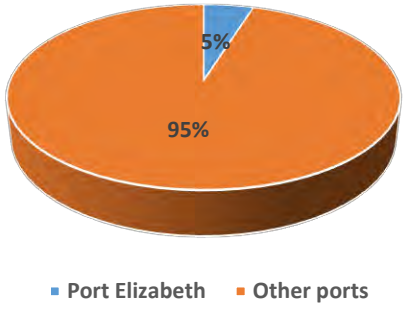
Amongst the non-cargo related vessel calls, fishing vessel calls were the most frequent with an even spread between different vessel calls.

Figure 109 Port Elizabeth 5 Year Average Non-Cargo Working Calls



Financial overview

Figure 110 Port Elizabeth Revenue Contribution 5 Years



The Port of Port Elizabeth contributed 5% or approximately R497 million to the NPA's overall revenue on an annual basis over the review period and contributed annual average profits of 4%.

There has been a slight decline of -8% in the Port of Port Elizabeth's profits over the review period.

Figure 111 Port Elizabeth Profit Contribution 5 Years

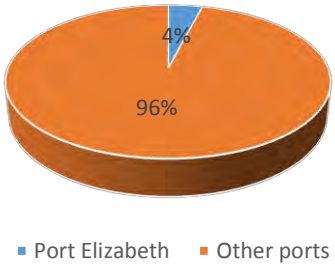
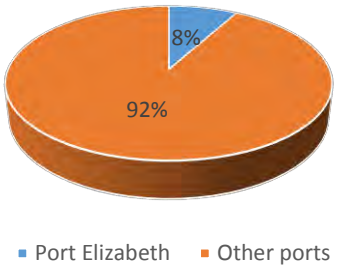


Figure 112 Port Elizabeth Expenses Contribution 5 Years



Over the review period, the Port of Port Elizabeth was responsible for 8% of the NPA's operating costs, of which depreciation and personnel costs accounted for the majority of the port's expenses.

In the Port of Port Elizabeth, the NPA employs 327 permanent employees, from 273 at the beginning of the review period.

With regards to capital investment over five years, only 1% of the total Capex in the port system was allocated to the Port of Port Elizabeth.

The future:

The Port of Port Elizabeth is planning to relocate the manganese terminal to the Port of Ngqura. The plan will be to expand the automotive terminal capacity by relocating the automotive to the area vacated by manganese operation and liquid bulk. The seven year PDFP envisaged to provide the following developments in the port:

Decommissioning and rehabilitation of Manganese Terminal;

Decommissioning and rehabilitation of Liquid Bulk Terminal;

Refurbishment and upgrade of Multi-Purpose Terminal for Break Bulk Operations, Cruise liners and Ship Repair lay-by;

Deepening of Container Terminal;

Expansion of automotive terminal capacity by relocating the automotive to the area vacated by Liquid Bulk and Manganese Operations;

provision of additional capacity for marine craft repair and expansion of berthing facilities for fishing industries; and

Expansion of Leisure and Recreational Precinct.

Port of Mossel Bay

The Port of Mossel Bay is the smallest commercial harbour in the South African system. It caters for the developing oil industry which began with Mossgas in the late 1980's as well as small but significant fishing industry in the region.

Capacity

The Port of Mossel Bay consists of 5 quay berths and two offshore mooring facilities and has a liquid bulk facility with an installed capacity of 8 mtpa.

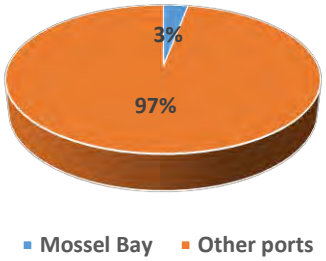
Breakbulk cargo is moved through three breakbulk berths with a berth length of 280 meters and a terminal area of 0.9 hectares.

Table 16Mossel bay Installed capacity

Cargo Type	Terminal	Berths	Berth Draft
Break bulk	Quay 4	5	7,0m
Liquid bulk	CBM/SPM	-	-

Liquid Bulk Cargo

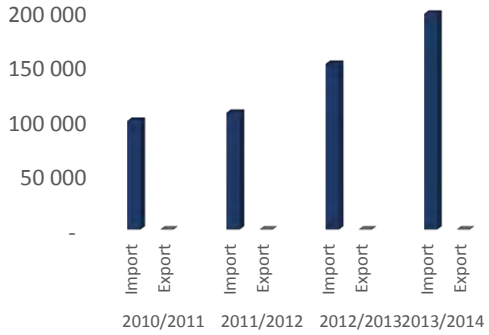
Figure 113 Mossel Bay Average Liquid Bulk volumes 5 Years



The Port of Mossel Bay experienced strong growth in liquid bulk imports over the review period, with an average annual growth rate of 18%. Liquid bulk exports on the hand have decreased at an average annual rate of 11% over the period.

Liquid bulk is the main cargo handled at the Port of Mossel Bay and the facility handles 4% of total liquid bulk cargo in the South African ports system. The port has seen a steady increase in liquid bulk volumes over the past five years and has seen its share in total liquid bulk volumes in the port system increased by 2% over the review period

Figure 114 Liquid Bulk Volumes Mossel Bay



Financial overview

The Port of Mossel Bay contributed only 0.5% to the NPA's overall revenue or about R93 million per annum over the review period. Despite the low levels of revenue, on average profits contributed about 1% on an annual basis.

Figure 115 Mossel Bay Average Profit Contribution 5 Years

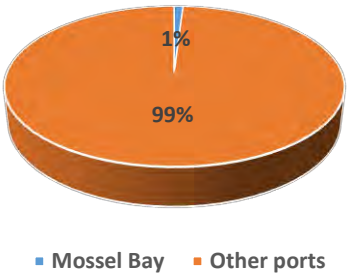
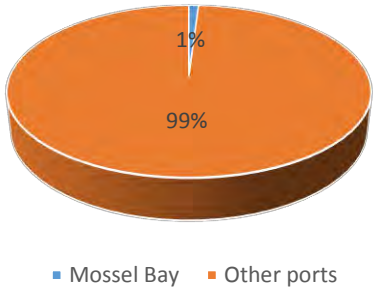


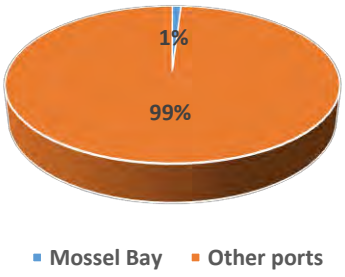
Figure 116 Mossel Bay Average Expenses Contribution 5 Years



Over the review period, the Port of Mossel Bay was responsible for only 1% of the NPA's operating costs. With depreciation and Personnel Costs accounting for the majority of the port's expenses.

In the Port, the NPA employs 39 permanent employees, up from 24 at the beginning of the review period.

Figure 117 Mossel Bay Average Revenue Contribution 5 Years



The Future

In terms of the seven year port development initiative these are the proposed projects for the port:

Extensions to the existing Port Administration building to provide space for port staff currently located in different areas of the port;

Replacement of asbestos roof sheets in the port, starting with the long shed on quay 4 and proceeding through all other structure;

Replacement of the old lean to canopy on quay 4 with a new steel structure;

Resurfacing of the existing road serving the recreational area and surfacing of the parking area;

Provision of an alternative radar site for the vessel tracking system of the port;

Upgrading and reconstruction of the existing services networks for the port; and

Replacement of the ageing launch.