

TARIFF STRATEGY FOR THE SOUTH AFRICAN PORTS SYSTEM 2015/16

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1 Introduction

In 2007, the Ports Regulator of South Africa ('the Regulator') was established through the promulgation of the National Ports Act, Act 12 of 2005 ('the Act') as 'an independent ports regulatory body¹', with a mandate to "exercise economic regulation of the ports system in line with government's objective²". The Act also sets out the functions of the National Ports Authority ('the NPA / the Authority') as the landlord of South Africa's (SA) ports and requires that "the NPA must, with the approval of the Ports Regulator, determine tariffs for services and facilities offered by the Authority and annually publish a tariff book containing those tariffs³".

Subsequently, the Directives to the Act (as approved on 13 July 2009, gazetted on 06 August 2009 and amended on 29 January 2010) require that when considering the proposed tariffs the Regulator must ensure that it allows the NPA to:

- Recover its investment in owning, managing, controlling and administering ports and its investment in port services and facilities;
- Recover its costs in maintaining, operating, managing, controlling and administering ports and its costs in providing port services and facilities; and
- Make a profit commensurate with the risk of owning, managing, controlling and administering ports and of providing port services and facilities⁴.

This mandate, coupled with the history of both SA and the NPA, required regulatory intervention as well as various tools and mechanisms to ensure the ports system of SA is fair, transparent, and competitive.

In line with the functions of NPA, as defined in Section 11 of the Act, the revenue generated from NPA's services is utilised *inter alia* to:

- Provide and arrange for road and rail access within ports;
- Regulate and control port access;
- Provide and arrange for tugs, pilot boats, and other services and facilities for the navigation and berthing of vessels in the ports; and
- Provide, control and maintain vessel traffic services.

The Authority's Tariff Book sets out the various tariffs they charge in order to maintain and develop the port system. The current approach to the setting of tariffs requires, as a starting point, a determination of the total amount of revenue required to fulfil the functions listed above, including the provision of future infrastructure, followed by a determination of how the total revenue gets apportioned to the individual tariffs for specific services and facilities. Determination of the total revenue is based on the tariff methodology which has been approved and fixed until 2023/24. This Strategy deals with how the total revenue gets apportioned to the individual tariffs.

¹ Section 29 of the National Ports Act

² Section 30(1)(a) of the National Ports Act

³ Section 72(1)(a) of the National Ports Act

⁴ Directive 23(2)



2 Background

The unique history of this country has resulted in a maritime sector that is quite unlike any other. Boasting eight commercial ports and various services and offerings, SA has the potential to be counted as a global key maritime player. The landlord port model has been adopted with the landlord (the NPA) responsible for ensuring that port functions and development is adequately provided. Although significant strides have been made in terms of development, regulation, and services, there are still many challenges to overcome, both inherited and new.

The SA tariff structure in place prior to regulation was severely imbalanced in that cargo dues occupied extremely high tariff levels (due to wharfage charges where cargo dues were calculated an ad-valorem basis depending on the value of the cargo) and maritime services enjoyed relatively low tariff levels. The combination of these varied tariff levels resulted in a tariff structure that was skewed, non-transparent, subsidised, and had no bearing on the actual costing of port infrastructure.

The non-transparent, somewhat warped, and unfair tariff book further led to a disgruntled supplier base, and a global reputation for being too expensive. The inception of regulation in 2007 and the resultant revenue requirement calculation indicated an extremely urgent need for a tariff reform. As a result thereof, in 2012, the NPA submitted to the Regulator a Pricing Strategy aimed at addressing imbalances of the past. In 2015, the Regulator, after extended public consultation, focus groups and research, published the Tariff Strategy; a phased approach of addressing imbalances of the past, eliminating cross subsidies (of which aren't in the public interest), and the implementation of a user-pay-based cost structure within the tariff book.

While the Global Pricing Comparator Study (a study completed every year which benchmarks SA ports against global counterparts) indicates where SA is as compared to other ports within the global sample, the Tariff Strategy sets out the tariff trajectory over the next ten years thus providing a clear indication of where port tariffs will end up. The aim of the Tariff Strategy is to create a tariff structure that is reasonable, fair, transparent, efficient, and effective.

This Tariff Strategy is an update of the 2015 version; while the principles remain the same, the progress and values have been updated.



3 The Framework

3.1 Legislative Framework

The Regulator is subject to the laws of the Republic of South Africa with particular attention drawn to the following:

- The Constitution of South Africa, 1996;
- The Public Finance Management Act;
- The National Ports Act, 12 of 2005;
- The Regulations to the National Ports Act, 12 of 2005 (as published on 23 November 2007);
- The Directives of the National Ports Act, 12 of 2005 (as published on 06 August 2009);
- Promotion of Access to Information Act, 2 of 2002; and
- Promotion of Administrative Justice Act, 3 of 2002.

3.2 Government's Objectives

The Tariff Strategy is aligned to government objectives with regard to economic growth and employment creation and aims to create a fair, transparent and cost-reflective port pricing structure. The intention is to reduce the cost of doing business in SA, to create employment, to boost trade, and to provide the correct investment signals. These objectives are in line with the Industrial Policy Action Plan (IPAP) 2014/15 – 2016/17 which states:

"Both government and business have recognised the role of appropriate infrastructure as a driver of economic growth in South Africa, and called for the cost of doing business to be reduced in order to enhance the competitiveness of the country's goods and services. In this regard, government has identified the crucial role that SOCs play in achieving the strategic objectives of job creation, reducing the cost of doing business, poverty alleviation and positioning SA as the investment destination of choice in Africa".

The objectives of the IPAP, along with other government objectives as highlighted in the various State of the Nation addresses over the years, coupled with the policy objectives set out below provide guidance to the Regulator in the execution of its mandate.

3.2.1 The National Development Plan

The National Development Plan (NDP) sets out the long term perspective of SA and aims to achieve the following major goals by year 2030:

- Eliminate income poverty Reduce the proportion of households with a monthly income of below R419 per person (in 2009 prices) from 39% to 0%; and
- Reduce inequality The Gini coefficient should fall from 0.69 to 0.6.

The enabling milestones which are relevant for the Tariff Strategy are:

- Increase employment from 13 million in 2010 to 24 million in 2030;
- Raise per capita income from R50 000 in 2010 to R120 000 by 2030;
- Establish a competitive base of infrastructure, human resources and regulatory frameworks;
- Gross Domestic Product (GDP) should increase by 270% in real terms, requiring average annual GDP growth of 5.4% over the period. GDP per capita should increase from approximately R50 000 per person in 2010 to R110 000 per person in 2030 (in constant prices);



- Broaden ownership of assets to historically disadvantaged groups;
- Exports (as measured in volume terms) should grow by 6% per annum with non-traditional exports growing by 10% per annum;
- The level of gross fixed capital formation should rise from 17% to 30%, with public sector fixed investment rising to 10% of GDP by 2030; and
- Durban port capacity should increase from 3 million containers per annum to 20 million containers by year 2040.

3.2.2 The Mid-Term Strategic Framework

The Mid-Term Strategic Framework (MTSF) defines the strategy for the implementation of the NDP (in the short term – up to year 2019). The following is taken from 'Outcome 6: Infrastructure':

- Where state-owned enterprises are unable to meet demand for freight services, the State should vigorously encourage private-sector involvement. The Act, which facilitates concession agreements and licensing in Sections 56 and 57 respectively, needs to be used to enable more private sector involvement, with pro-active management of tariff implications;
- Optimal utilisation of assets Port of Ngqura's modern deep-water facilities make it attractive for container transhipment traffic;
- Enhance the performance of sea-ports and inland terminals, including initiatives in the National Infrastructure Plan; and
- Public investment as a percentage of GDP is 10% by 2019.

3.2.3 National Commercial Ports Policy

The National Commercial Ports Policy (NCPP) was gazetted in 2002, the purpose of which is to 'ensure affordable, internationally competitive, efficient and safe port services based on the application of commercial rules in a transparent and competitive environment applied consistently across the transport system'⁵. The seven basic principles of the NCPP are as follows:

- National needs, aspirations and requirements shall be of primary consideration;
- Consideration of user and other stakeholder needs and views;
- Port system development, management and enhancement will primarily remain a national function;
- Regulation should be kept to a minimum, without compromising national aspirations, safety, health, security, efficiency and environmental sustainability;
- Participants in the market should be treated equally and fairly;
- The principle of user pays or cost recovery, benchmarked against international best practise
 to ensure that the costs are globally competitive will be applied as far as possible, including an
 appropriate return; and
- Strategic port planning will include the integration of social and biophysical aspects at the earliest stages to ensure sustainable port development.

⁵ Ministerial Foreword of the National Commercial Ports Policy



3.2.4 Comprehensive Maritime Trading Policy

In July 2017, the National Department of Transport (DoT) launched the Comprehensive Maritime Transport Policy (CMTP), the aim of which was to set out Government's position on all aspects related to the maritime sphere. The five main principles of the CMTP are as follows:

- Promote and introduce financial and non-financial incentives to support the growth of ship ownership, shipping investments, operations and employment by South Africans along the coast of SA and the Continent (Coastal Shipping). As well as in our international trade with key markets (International Shipping);
- Create regulatory instruments and incentive schemes to ensure the growth of our marine manufacturing industries, encouraging the use of innovative green technologies;
- Partner with the private sector in creating instruments for financing the development and growth of the maritime firms, including cooperatives, SMMEs and SA maritime corporations;
- Partner with, capacitate, and capitalise the SA International Maritime Institute (SAIMI) and other institutions to fast track the education, skill development and job programmes initiatives in order to ensure employment of South Africans, in line with both the Maritime Skills Study and the Maritime Human Resources Development Plan; and
- Improve the overall governance of the maritime sector by strengthening the agencies, expediting the adoption and domestication of outstanding international legal and regulatory instruments and providing leadership within the SA and Continental Oceans Economy domain.

3.3 Regulatory Framework

The Regulatory Framework consists of the instruments developed and implemented by the Regulator since the inception of regulation. The various tools include previous decisions, tariff and other methodologies, incentive programmes, and the Tariff Strategy.

3.3.1 Tariff Strategy

The Tariff Strategy (published in 2015, revised in 2020) intends on defining a path for port tariffs to follow over a ten-year period, the Strategy was developed to provide a smooth trajectory for tariffs which will eventually reach a tariff structure reflecting the underlying cost of infrastructure and services provided or used. The Strategy is based on the user-pay principle and allocates port infrastructure assets accordingly. The determination as to who is charged for what portion of the total revenue in the port system is determined based on this allocation.



3.3.2 Port Tariff Incentive Programme (PTIP)

The Regulator, in consultation with the NPA, the Department of Trade and Industry (thedti), the DoT, and various other government departments, has implemented the Port Tariff Incentive Programme (PTIP). The PTIP is in support of beneficiation, industrialisation, and localisation through port tariff regulation. This development forms part of the Regulator's Tariff Strategy process and serves as a mechanism by which cross-subsidies within the port tariff structure may be implemented, quantified, as well as be fair and in the public interest⁶.

The PTIP is open to all port users, organisations, industry bodies and industry representatives and affords users an opportunity to apply for a discounted tariff as per the official port Tariff Book. Rather than a discount being afforded to a single organisation or industry player, the discount will be afforded to the entire industry in the form of an amendment to a line item within the Tariff Book.

The PTIP was officially launched in 2017 and serves as an annexure to the Tariff Strategy.

3.3.3 Tariff Methodology

The Tariff Methodology sets out the manner in which the NPA's tariff will be calculated and is published by the Regulator at various intervals, usually three year periods. The Methodology determines the total amount of revenue the NPA may raise through port tariffs and undergoes extensive public consultation prior to finalisation. Included in the Methodology is the approach used by the Regulator (revenue requirement vs. price cap), as well as the details thereof.

It is important to note the interrelationship between the Tariff Methodology and the Tariff Strategy. The Tariff Strategy will not result in any significant reduction in total port costs, any future reduction may only come from the impact of the Tariff Methodology.

3.3.4 Valuation of Assets Methodology (VoA)

In March 2017, the Regulator published the Valuation of Assets Methodology (VoA) which contained a set of guidelines for the determination of the regulatory asset base (RAB). The VoA sets out the manner in which various assets will be treated as well as the rules for asset maintenance, and inclusion thereof into the RAB. The VoA adopts the use of a historical cost approach to assets that date pre-1990, and a trended original cost approach to post-1990 assets.

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⁶ Cross-subsidies are dealt with in detail in 8.1 of the Tariff Strategy.



4 Tariff Strategy

4.1 Purpose

Historically, the process of cargo dues tariff setting depended on the "ad valorem" value of the goods handled, resulting in significant tariff differences for cargo types with similar physical characteristics. A guide was required to establish a clear set of principles and rules for the allocation of costs and the setting of tariffs for different cargo types. Similarly, for marine services, both the quantum as well as the design and calculation of tariffs were based on past practice with no clear rationale or set of rules or principles. This Strategy intends to correct these anomalies and provide clarity and transparency to the tariff setting process whilst enabling long term planning by providing a clear tariff trajectory for the different tariff categories over the next ten years.

4.2 Background

4.2.1 Tariff Overview

The manner in which individual tariff lines were previously determined has been problematic in several ways as identified by the NPA in 2015.

- Lack of a clear set of principles and rules to be applied in determining the individual tariffs for the various services and facilities, especially where deviating from a baseline tariff;
- Lack of clarity and transparency regarding all operating costs, expenses and revenues incurred or generated from a specific service, facility or land, as well as the value of the capital stock related to such services, facilities or land;
- Lack of explanation for differential tariffs for different commodities using the same handling classification;
- Lack of information detail with respect to services or facilities pricing and cost relationships, making it impossible to determine where and in which direction subsidisation takes place or if it does not; and
- Lack of information on how the tariff structure promotes access to ports and efficient and effective management and operation of ports.

Regulatory instruments and advancements have since been developed or implemented to combat the effect many of these issues in turn resulting in greater stability and certainty in the port tariff structure. As of 2019, the following advancements have been made:

- The cost reflective tariff is used for the various cargo types with the intention to move towards a single tariff per category. The PTIP was developed in 2017 with the aim of serving as an instrument for justifying any deviations to the tariff as well as for ensuring that any cross-subsidies introduced are both fair and in the public interest.
- The difference between the 'applied for' tariff and the 'actual' tariff of the NPA has decreased
 resulting from the implementation of the Tariff Methodology. Further, there is greater
 transparency regarding operating expenses, capital expenditure spend (Capital Prudency
 Assessment & CAPEX roadshows), as well as the regulatory asset base and the valuation
 thereof (the Valuation of Assets Methodology).



- The introduction of the cost-reflective tariff for the various cargo types has resulted in the simplification of cargo dues as well as the elimination of more than forty tariff lines over the period, in addition to narrowing the spread of tariff levels.
- The Tariff Strategy has made it possible to identify the various revenue streams, as well as quantify all cross-subsidies within the system. This has made it possible to move towards eliminating such subsidies or allowing them where required to satisfy certain objectives.
- The Weighted Efficiency Gains from Operation (WEGO), introduced in 2017, promotes efficiency in ports through a financial incentive.

4.2.2 Tariff Benchmarking

For three years prior to the publication of the Strategy, the Regulator conducted a Global Pricing Comparator Study (GPCS) which seeks to benchmark South African port prices against its global peers. The results are indicative of the situation described in Figure 1 and show that 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 year, several imbalances remain.

Figure 1 and Figure 2 depict results contained in the GPCS for the period 2012/13 – 2019/20. Figure 1 displays the costs faced by vessel owners as a deviation from the global sample average and Figure 2 depicts the overall costs faced by cargo owners. It is evident that a significant implied cross-subsidisation persists from cargo owners towards primary exporters and vessel owners. Although this has improved over the period, cargo owners face a 233% premium to the global sample average in 2019/20, down from a premium of 874% in 2012/13. While vessel owners face below global sample average costs, 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.

Significant progress has since been made in the regulatory environment and through the implementation of the Tariff Strategy changes to the tariff structure in SA ports are noticeable. Figure 1 and Figure 2 display the trend to tariffs over an eight year period (as contained within the GPCS 2019/20). The below inflation tariff Record of Decisions issued by the Regulator in 2018/19 and 2019/20 have resulted in relatively constant below-average vessel costs thus providing greater stability to the industry and port users.

Figure 2 not only depicts the trend of cargo dues to the global sample average, but also includes a 'target base-rate tariff' which is the cost-reflective tariff based on the user pay principle, as set out in the Tariff Strategy. The 'target tariff' used is as contained within the tariff Record of Decision for 2019/20. The Figure indicates significant tariff changes in the container and automotive industries with tariffs moving towards the global sample average as well as towards the cost reflective tariff.



Figure 1: Vessel Costs as a Deviation from the Global Sample Average (2012/13 – 2019/20)

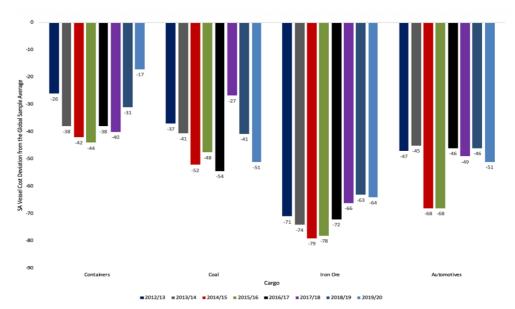
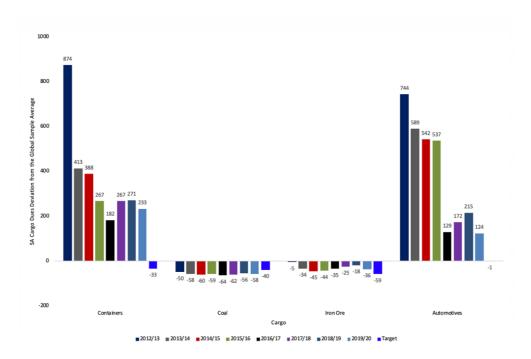


Figure 2: Cargo Owner Costs as a Deviation from the Global Sample Average (2012/13 – 2019/20)



It should be noted that the GPCS is *not* an input into the Tariff Strategy but provides a monitoring tool for the Strategy. The global sample average is not the target tariff for SA as it is not necessarily reflective of the cost of utilising the infrastructure, however it is useful to know what the relative quantum and trend is in relation to international tariffs.



4.2.3 Tariff Imbalances

As a result of the various issues surrounding the tariff structure at the inception of regulation and the historical anomalies embedded within, the tariff structure of 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 (clearly evident in Figure 1); 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.

This Strategy attempts to address these imbalances by moving away from value-based assessment towards an infrastructure-based charge, resulting in more efficient pricing structure which is in the public interest. Through the asset-and-cost allocation process and the resulting tariff structure, a quantitative assessment of the cross-subsidies is possible and existing cross-subsidies and their magnitude can be calculated. Table 1 examines potential cross-subsidies from decades of historical pricing levels and indicates the approach that the Strategy takes to attempt to address these. Although these are generalised statements; exceptions may persist. However, the Regulator remains committed to understanding and unravelling any other cross-subsidies which prevent efficient pricing in the port system and welcomes the views of port stakeholders in this regard.



Table 1 Potential Cross-Subsidy and the Tariff Strategy Approach

Potential Cross-Subsidies arising from Historical Pricing	Tariff Strategy Approach
Cargo owners are subsidising other user groups such as vessel owners, and lessees	A new asset allocation that results in an infrastructure cost reflective tariff proportional to the benefit each user group derives from the infrastructure or service provision. See Sections 5 and 6
Container and automotive cargo owners pay more than dry bulk cargo owners on a global comparator basis	Similarly, infrastructure is costed according to benefit derived from each cargo handling type – this is calculated by weighting total revenue required from cargo owners using the number of vessel calls by cargo type divided by total volume to get a per unit cost. See Section 7.1
It is still to be determined whether lessees are being subsidised (i.e. paying less than market value for their land) and whether some lessees are subsidising others (i.e. paying unequal or unfair tariffs)	The Regulator will start to actively monitor rental prices to ensure that two pieces of land with similar characteristics are not being charged radically different rentals. See Section 7.3
Port users of a particular port are subsidising users in other ports, through a system wide tariff book approach	System-wide pricing will remain in order to reduce the risk placed on any single port user; however, the tariff book is to be rebalanced and direct user charges in certain instances may be introduced. See Section 0
Port users subsidise fledgling port-related industries and other national policy initiatives/government objectives	Discounting certain infrastructure for identified port users in order to achieve national objectives of economic growth and inclusion will remain, assuming the cross-subsidy is fair and in the public interest. See Section 8
Use of port revenue/profits for non-port purposes	This falls outside of the scope of the Tariff Strategy
Port users of the same category or user group paying lower tariffs than similar users through differentiated tariffs or discount structures	All discount structures are to be removed from the Tariff Book. Tariff rationalisation will result in a gradual move towards consolidated tariffs that will include the removal of any discount structure currently in place. Certain built-in incentives and discounts will remain, mainly related to coastwise shipping and transhipment etc. See Section 8

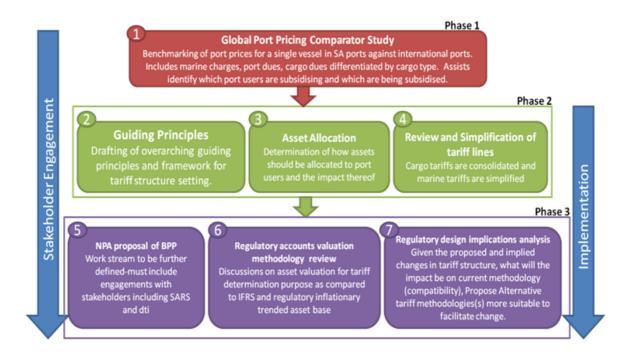


4.3 Implementation Phases

The Regulator adopted a phased approach in the development and implementation of the Tariff Strategy which is outlined as follows:

- Phase 1: Determine a benchmark for marine charges and cargo dues, differentiated by cargo type, against a sample of international ports based on a fixed methodology.
- Phase 2 (Projects 2-4): The development and publication of the principles and characteristics of the tariff book that sets out the policy foundation that any tariff change in future must adhere to including the asset allocation, tariff structure reviews, consolidation of tariff lines on tariff and port level, and a review of marine service pricing methodology.
- Phase 3 (Projects 5-7): Regulatory accounts and valuation methodology, regulatory design implications, and the development of a beneficiation strategy.
- Concurrent: Stakeholder engagement present after each phase.

Figure 3 Tariff Strategy Process



Phase One:

As of 2019, the eighth iteration of the GPCS has been completed and may be found on the Regulator's website. The Regulator will continue this benchmarking process indefinitely as the results place SA within the global context in terms of pricing as well as assists in identifying tariff movements and trends. It must be noted that the GPCS is *not* an input in the Strategy and the global sample average is *not* the end-state goal for SA port tariffs. The Tariff Strategy costs infrastructure according to an asset allocation that was completely independent of the GPCS trends. In March 2020, the 8th annual iteration of this report was published.



Phase Two:

The Guiding Principles and Asset Allocation process was completed in 2015 and the results thereof were incorporated into this Tariff Strategy. The Review and Simplification of the Tariff Book commenced at the same time however this is regarded an ongoing process. The Valuation of Assets process that was completed in 2018 and the subsequent analysis completed by the Regulator and the Authority has resulted in an updated asset allocation, which is included in this (updated) version of the Strategy. This Tariff Strategy represents Phase Two of the implementation process.

Phase Three

The third phase of implementation requires the development of a beneficiation programme as well as a methodology for the valuation of the regulatory asset base. The development and publication of the PTIP in 2017 satisfies the beneficiation requirement of this phase. In March 2018, the Regulator published the Valuation of Assets Methodology which contains rules and a method for valuing those assets included within the regulatory asset base of the Authority. Both process were published for public consultation. The third aspect of this phase refers to the Tariff Methodology, to date (2019) the Regulator has published two multi-year tariff methodologies and a third, applicable to the 2023/24 tariff period, in 2020.

Public consultation has been and will be an integral part for all processes of the Regulator to ensure increased transparency in the port tariff system.



5 Guiding Principles

In developing the guiding principles for setting the base tariff, the Regulator took into consideration the following requirements:

Cost Causation

The purpose of this factor would be to provide port users with the correct pricing signals when utilising port facilities. This ensures that port users will only demand services or utilisation of port facilities when the value placed on them is as large as the resources availing / providing them. On the other hand, the pricing signals must also reflect the correct capital structure and influence the correct behavioural changes, thus promoting both efficiency and productivity in the port system. A further complication is the introduction of system wide pricing, with the aim being to ensure financially viable CAPEX expansion according to SA's port system.

Cost Minimisation

The use of a cost recovery revenue model, where operational costs have a direct impact on average tariff levels, requires strong incentives to minimise costs. As such, the monitoring of operational expenditure and maintenance will remain a priority of the tariff assessment process.

Distribution of Benefits

Costs are recovered from the direct user since it is equitable and reasonable that costs be recovered from the beneficiary of that service. The complex nature of port activities requires some trade-offs in the way pricing is conducted. For example, using Gross Registered Tonnage (GRT) as a pricing variable sends a different signal to liners than using vessel calls would.

Practicality

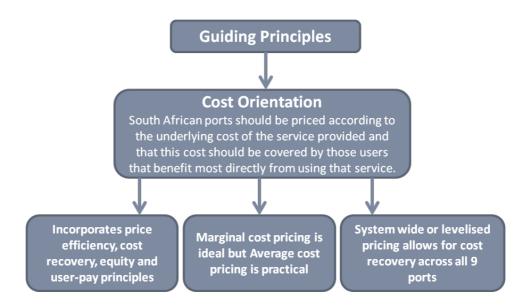
The Tariff Strategy should be practical and relatively easy to implement but this should not steer away from appropriate cost recovery.

Based on the above requirements, the guiding principles for setting the base tariff is outlined in Figure 4 and the sections that follow. These principles aim to introduce a more flexible approach to facilitating pricing in the ports sector in order to establish an appropriate level of tariffs that better reflects the underlying costs. These principles are aimed at enforcing transparency and certainty.

Further, these principles are intended to deliver a real benefit to customers through charging cost reflective tariffs. On this basis, those customer categories which are being over-charged would see a reduction in their tariffs and those customers that are being subsidized (under charged) would see their tariffs being rebased to a fair level. These principles must be taken into consideration during the gradual adjustment of the tariff book over the period up to and beyond 2026/27.



Figure 4 Summary of Guiding Principles



5.1 Cost Orientation

The principle of cost orientation is a hybrid of price efficiency, cost recovery, equity and user-pay principles. It refers to the fact that SA ports should be priced according to the underlying cost of the service provided and that this cost should be covered by those users that benefit most directly from using that service. The principle of cost orientation is important as it prevents unfair pricing and protects consumers' interests.

In the ports sector, the unbalanced pricing structure is inefficient as the 'higher than cost' pricing depresses economic activity of some port users whilst subsidizing those of others. This can further be expanded into the principle of setting tariffs in accordance with the costs incurred, whilst deriving a reasonable return from setting those rates in order to ensure the long-term development and upgrade of existing infrastructure. Port prices should at all times seek to promote efficient outcomes in port, port-ancillary, and broader transport markets where a general and quite powerful presumption supports the proposition that efficient prices are those that are related to the underlying costs of providing and continuing to provide the relevant port functions/services.

In line with the approach adopted by the National Development Plan the full cost of providing services should be recovered from users as far as possible and services provided to an identifiable group or user must be recouped from that user or group, except where cross-subsidies are in the public interest (and are transparent). The main rationale for the user pay principle is not to raise revenue, but rather to establish a more efficient allocation of resources in the port system.

5.2 Average Cost Pricing

If charges are well designed, users will be willing to pay for a service in line with the marginal cost of providing that service. However, determining the marginal cost is not a simple exercise in the port industry. As a result, where cost recovery principles are enforced, average costing is commonly used. Though the Authority may not be participating in a competitive environment, it is still expected to render competitive services and prices. From a theoretical point of view, efficiency



requires marginal cost pricing. Intra-annual price changes or customer differentiation to reflect differences in marginal costs can enhance efficiency. A marginal cost pricing mechanism may signal the value that consumers attribute to further capacity expansions as the port system approaches its capacity limit and marginal cost rises. Therefore, as a basic rule, an ideal tariff structure must see marginal costing incorporated wherever possible as a price baseline, and prices must be based on some notion of cost as opposed to an approach that includes sentiments of "what the market will bear".

It is, however, a very difficult exercise to estimate and distribute medium and long term marginal costs, especially early on in a tariff strategy review process. The Regulator is aware that marginal costing works best under an assumption of competition and if volumes are short, other sources of income are required. Furthermore, pure marginal cost pricing may not be feasible while respecting a revenue requirement model because marginal costs may be higher or lower than average costs. In addition, marginal costing will generally, in cases where fixed costs are significantly large⁷, result in price levels far below average cost pricing and as such will require outside funding for capital expansion.

As such, utilising marginal cost pricing may not be feasible over the short to medium term and might be difficult to reconcile with a revenue requirement methodology. For this reason, average cost pricing will be used. Due to the difficulty in allocation of common costs, the pricing (and the full allocation to different users) thereof must, in principle, be at least equal to the average total cost of the service determined through the current use of the required revenue approach. In terms of the allocations to specific users and tariff lines, it means direct costs plus an appropriate proportion of common and overhead costs. However, in determining the correct asset allocation and attributing costs to different user categories and cargo types, the unit throughput per user (cargo type, tenant, or vessel) will then result in an average cost approximation. This is similar to the current calculation, but will change with a different asset (cost) allocation, effectively resulting in a more accurate costing of the service based on asset allocations. Operational costs will be allocated as per user group (effectively by cost centre in the case of marine services) and asset allocation (weighted to user groups by asset value when not directly attributable).

The disadvantage of using average cost pricing is that it does not take into account efficiency, which is particularly important in the pricing of port infrastructure. The most common ways of combining efficiency and revenue requirements are through the use of two-part tariffs, adjusting the fixed charge to meet the revenue requirement, or through second-best pricing like Ramsey Pricing. ⁸ However, through the inclusion of the Terminal Operator Performance Standards (TOPS) and MOPS Marine Operator Performance Standards (MOPS) process in the Tariff Methodology in the for of WEGO, the concerns surrounding efficiencies and their incentives will be addressed.

⁷ See Roy, 2002, Schuler 2009 and others

⁸ It is not evident whether the best scheme is a two-part tariff or some other pricing mechanism. The role of block rate pricing, increasingly more frequent in actual pricing practices, is yet to be fully investigated.



5.3 System-Wide Pricing

Whilst pricing should ideally be determined on a facility level, average costing will be applied across the ports system in order to reduce the burden placed on any single port user and to ensure equality in benefit, as well as to spread the funding risk. This will apply to the different user groups and result in system-wide pricing within the different cargo handling types. This type of system-wide pricing is common in the pricing environment where homogenous services are required (e.g. the provision of electricity and fixed-line telecommunications) and has been adopted here. The impact of this principle will result in, for example, equal cargo dues for a ton of dry bulk irrespective of the port being used. Similarly, each unique marine service will be priced equally, although differentiation due to variables such as time or distance might apply in the calculation of the final fee.

System wide pricing in the context of a developing country is also useful in that it allows the sharing of the costs of development of a new port or terminal/facility between all users rather than only the users of that particular port or terminal/facility i.e. a single tariff book approach to system wide pricing. However, the existence of significantly different levels of service in a system might require differentiation between "project internalised user charges" and system wide user charges. As such, the Regulator reserves the right to apply direct user charges where it deems necessary, especially in instances where significantly different levels of service or cost base exist.

6 Asset Allocation

The purpose of allocating different asset groups to the various user categories in the port system is to provide a set of investment signals based on the flow of revenue to both the Authority and to service providers. It is important that these signals reflect the underlying asset structure in order to facilitate the correct flow of investment allocation, which will be in the public interest. The allocation or attribution of the cost of port assets takes into consideration which user classes depend more on a particular asset type and the extent to which they would be affected if the infrastructure did not exist. Therefore, in considering where the burden of this asset class allocation should be, the Regulator reviewed the activities of the different users and the benefit they derive therefrom. The lack of a methodology to allocate benefit or use in a more precise manner necessarily results in an approximation or general allocation. Any proposal or development of a more precise methodology will be taken into consideration going forward as cost reflectivity is the ultimate objective of the Tariff Strategy.

The facilities and services provided by the port may be broadly divided into the following categories:

Seaward Side:

Light house service infrastructure, port control and safety, entrance channel, breakwaters, turning basins, aids to navigation, vessel traffic services, maintenance dredging;

Landward Side:

Quay walls, roads, rail lines, buildings, fencing, port security, lighting, bulk services; and

• Sea-land Interface:

The point where land and sea meet, quay and berth facilities are provided for both ships and cargo.



Port users are categorised as follows:

- Shipping Lines;
- Cargo Owners;
- Terminal Operators (and all cargo working lessees); and
- All other lessees in the port system.

The general underlying logic is that the seaward side benefits mostly shipping lines and cargo owners, the interface benefits mostly shipping lines and tenants, and the landward side benefits mostly tenants.

Table 2 identifies the key port assets and allocates these assets to user groups in order to determine a more equitable share of infrastructure and cost sharing between the broad groups.

Table 2: Asset Allocation

Asset Group	Lessees	Terminal Operator	Cargo Owner	Shipping Lines
Breakwaters	33% shared	on a NBV basis	33%	33%
Channels, fairways, & basins			50%	50%
Quay walls, berths, & jetties		50%		50%
Ship-working vessels and navigational aids				100%
Vessel repair infrastructure	40%	15%	15%	30%
All movable NPA assets, buildings, & structures (not part of lease agreements	50% shared on a NBV basis		25%	25%
Terminal land & staging areas		100%		
Non-terminal land including recreational & yachting	100%			
All common access infrastructure	66% shared on a NBV basis		33%	
Overheads	50% shared on a NBV basis		25%	25%

^{*}NBV: Net Base Value

Breakwaters

Breakwaters are defined as structures that are built into the sea to protect the port by removing the effect of waves and bad weather. By definition, they are designed to protect the port system as a whole and make the establishment of a port facility feasible. It is however more difficult to determine relative use of the asset between port users than it is for channels (shipping line) or land (lessee). Therefore, the Regulator has determined that all cargo working users, i.e. liners, cargo owners, and cargo working lessees should carry the costs of building and maintaining the breakwaters in equal shares. It is important to note that the shared component for tenants is based on the NBV of the land.

For the purpose of recovering the cost of the breakwaters through marine services, GRT will be used. The use of vessel size as a pricing variable provides a more accurate approximation of asset use and the risk associated therewith.



Channels, Fairways, Basins

All navigable channels in the ports are used by liners to facilitate the transfer of cargo from the open seas to terminals. An equal distribution of the cost and maintenance of the assets must be shared by cargo owners and shipping lines as this represents an equitable attribution of costs in terms of benefit and use. For the purpose of recovering the cost of the channels, fairways, and basins through marine services, GRT will be used as vessel size is a more efficient approximation of asset use than, say, an average cost based on vessel calls. Cargo will be levied on an average unit basis through cargo dues.

Quay Walls, Berths & Jetties

Quay walls, berths, and jetties are the connecting points between the land and watersides of the port. They make possible the transfer of cargo and facilitates the functions of both the terminal operator and the shipping lines. These assets are attributed on equal terms to shipping lines and terminal operators. The cost recovery that forms part of the shipping line costs will be levied through marine services and recovered on a GRT basis; the use of infrastructure is more efficiently priced based on the size of the vessel. Larger vessels make more use of available draft, weight of equipment on quays, and possible damage to infrastructure. Cost to terminal operators will be on an NBV basis.

All Ship Working Vessels & Aids to Navigation

All ship working vessels and aids to navigation (including light houses) are allocated to shipping lines who directly benefit from these services to safely navigate the port system. These tariffs are to be recovered through port dues, vessel traffic services (VTS) charges, and existing light dues; they will be recovered on a GRT basis.

Vessel Repair Infrastructure

According to benefit, the direct charge or cost of current infrastructure should be recovered on a from the users of the facility, i.e. tenants or users of the facilities in the instance where no lease to a third party tenant is in place. However, the a cross-subsidy is allowed resulting in a spread of the cost between all users across the port system in line with Government initiatives, especially Operation Phakisa as the Regulator agrees that currently the provision of infrastructure of this nature is rarely financially viable; it further represents a critical service required in a world class port system and, as such, should be carried across the port system by all users. Specifically the lease (if leased to an operator) associated with the infrastructure or the tariffs levied by the Authority (where the NPA operates a facility) need to recover only 40% of the required revenue. The remaining 60% of the costs associated with the assets will be shared through port tariffs by all other port user categories as per Table 2. Lessees of existing infrastructure, combined with shipping lines, should contribute the bulk of the infrastructure, with other port users, namely non-cargo working lessees, terminal operators, and cargo owners contribute to a lesser extent. This will be reviewed in future funding models that may impact the financial viability of these projects and may see projects funded by the private sector, funded in total by the lessees.



All movable NPA Assets, Buildings and Structures (not part of lease agreements) & Unused Land

All movable assets and unused land costs are shared equally between user groups. The Regulator, as part of the Tariff Methodology and the tariff determination process, will determine the extent of inclusion of unused land in the regulatory asset base.

All Cargo Working Land and Related Assets (terminals) & their Staging Areas

All cargo working land (commercial leases) and related assets must be (at a minimum) recovered from the lease holders of these facilities.

All Non-Cargo Working Land & related Assets (non-terminals) including Recreational & Yachting

Similarly, all non-cargo working land and related assets must be recovered from the lease holders of these facilities.

All Common Access Infrastructure

As with wet common infrastructure, where the allocation is to the users of the infrastructure and cargo owners as the beneficiary thereof, similarly, dry common access infrastructure (including Port Engineering) is allocated to the users of these assets (lessees) as well as the beneficiaries thereof, namely cargo owners.

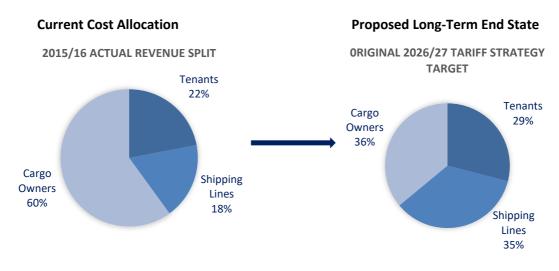
Overheads – Including OPEX & other costs in line with the Regulatory Framework

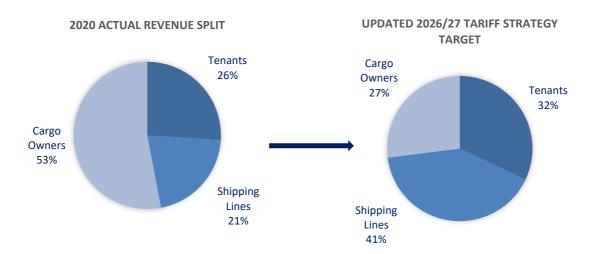
All overhead costs are shared equally between user groups.



The pie charts below reflect a summation of the proposed asset allocation to user groups.

Figure 5 Current Cost Allocation vs. Proposed Long Term Cost Allocation





The updated allocation taken into account the revaluation of the Regulatory Asset Base (RAB) which results in the provisional redistribution of costs between user groups as follows:

- Cargo owners to experience a decrease in cost share from 53% (60% in 2015/16) to 27%;
- Shipping lines to experience an increase in cost share from 21% (18% in 2015/16) to 41%; and
- Terminal operators' and other tenants' leases to increase from 26% (22% in 2015/16) to 32%;

On a broad level, the gradual shift from the current allocation to a more equitable shift in cost allocation will be spread over the long term.



The implementation of a revised cost reflective pricing structure will continue to be executed over a minimum period of ten years for a number of reasons, namely:

- 1. The reallocation of costs is, in essence, a "zero-sum game". Decreasing the contribution from one user group necessitates increasing revenue from another. Contractual agreements and binding leases previously in place, prevents the Regulator from changing tariffs too quickly;
- 2. Large shifts in tariffs may lead to unintended consequences and as such, a more gradual approach is favoured; and
- 3. The cost structure of the port system, by its very nature, changes and evolves over time. This may be as a result of a change in consumer behaviour (domestically or internationally); the addition of cargo specific capacity resulting in a change in the cargo mix or even shifts in other cost elements. This will in any case require an annual review of the pricing structure and, in effect, change the "end state". The end goal remains to have a pricing structure as close to full infrastructure cost reflectivity as possible, that can then be maintained.

The update of "target tariffs" or "base rates" will be published annually in the tariff Record of Decision. Successive tariff determinations by the Regulator will be differentiated annually between user groups and between cargo handling types at reasonable levels in order to reach the proposed, more rational end-state in the long term.

Due cognisance will be taken by the Regulator regarding annual circumstances in order to ensure that large tariff spikes to any particular user group is avoided. As such the increases/decreases implied above will not be strictly applied in each year as a stipulation.



7 Tariff Rationalisation

This section reviews and illustrates the possible effects of the proposed asset allocation on the tariff lines for cargo and marine services. The intention is to reduce the number of tariff lines, simplifying port tariffs, and provides an improved rationale for the definition of tariffs.

7.1 Cargo Dues Review

Cargo owners are required to contribute partially to breakwaters, channels, fairways and basins, vessel repair infrastructure, NPA assets not earning lease revenue, and common access infrastructure. The calculated portion of the revenue requirement is therefore 35% and will be adjusted on an annual basis. The Regulator has adopted a process of tariff line simplification based on cargo handling type; dry bulk, break bulk, containers, liquid bulk and RoRo's where more than forty tariff lines have been removed from the tariff book. The share of the various handling types' contribution to the required revenue is based on vessel calls. The use of vessel calls is considered to be the most rational approach to distribute the required revenue given the significant portion of the revenue required allocation attributed to wet infrastructure. The vessel call split has been ascertained using SAP data and will be updated annually.

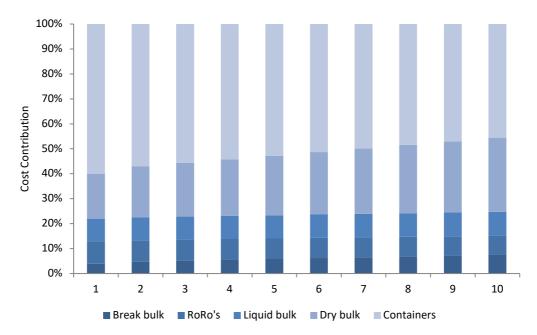
The Regulator is cognisant of the fact that vessel size, growth, and visit numbers does not change evenly between cargo types. The impact thereof and the calculation of the cost reflective tariff level will be monitored and updated as the need arises.

Cargo dues will be adjusted, together with the other revenue streams over the proposed ten year period or longer. Whilst the current distribution of vessel calls is used to calculate the distribution between cargo types, it is important to realise that any change in the mix will result in a change in the calculated cost allocation and the resulted distribution. This will be reviewed annually and the updated "target" cargo mix will continue to be published as part of the tariff determinations and incorporated in the Tariff Methodology going forward.

The indicative changes to each cargo handling type based on the current distribution of vessel calls are:

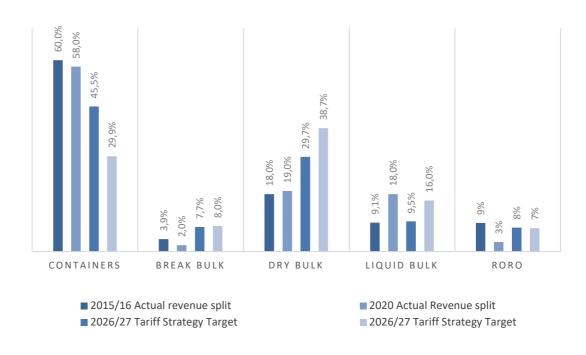


Figure 6 Provisional Changes to Cargo Dues



The proposed cargo dues structure will reflect an overall decreasing cost recovery from cargo with real decreases for containers and Ro-Ro's. Some tariffs in the other categories see an increasing cost share; these will however be limited as the overall decrease in cargo dues contribution is significant.

Figure 7 Updated Annual Changes Required for Cargo Dues





The implementation of this will have different impacts on different commodities. The underlying assumptions guiding the base level cargo dues tariffs include:

- i. The Strategy retains a "per unit" charge and a base rate be calculated per cargo handling unit (container, ton, meter, etc.). All tariffs will, over time, converge towards the base rate that will be adjusted every year; around forty tariffs have been removed from the tariff book already as they converged with the base or "other" rate;
- ii. Tariffs are calculated by cargo type and not by a specific tariff. Initially, specific tariffs will still remain part of the tariff book, but as convergence occurs these tariffs will disappear and the base level will apply in the form of an 'Other' category;
- iii. Export tariffs for container and RoRo's are to be maintained at a 70% discount to import tariffs so as to align as far as possible with government's current strategic objectives as regards beneficiation and export competitiveness; however, it is clear that Transnet Port Terminal (TPT) handling charges may negate the impact thereof. State designed incentives through the NPA pricing structure should not be neutralised or eroded by price increases by another government entity. Whilst this retains the status quo, more work is required in consultation with the DoT, thedti and other stakeholders with regards to SA's industrial policy objectives of which the development and implementation of the PTIP is part of;
 - All volume discount structures, which are subsidised by other port users who are not benefiting from the discount, are to be phased out and will be dealt with if required in terms of section 8.1 of the strategy. As such, the Automotive Industry Volume Discount was removed in the Record of Decision for 2016/17. We will also consider the impact on each OEM affected by the phasing out of the volume discount programme;
 - National policy aligned tariff incentives are currently retained to be further developed to better align with national industrial and transport policy objectives;
 - Empty container cargo dues will remain as such until otherwise determined;
 - Transhipment cargo dues are to remain at the current levels; and
 - Coastwise cargo dues are to be retained.

Ultimately, the total impact of the revised asset allocation, combined with the assumptions detailed above, will see significant changes in the total contribution of different cargo handling types to total NPA revenue. These are illustrated below:



Figure 8: Cargo Dues Contribution to Total Revenue (Current And Future Target)

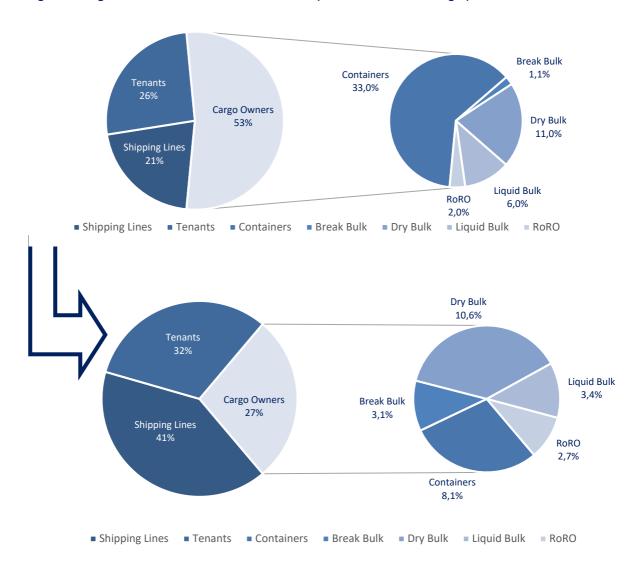


Table 3 displays the base tariffs as determined in 2015/16 as well as the progression over the period until 2020/21

Table 3 Base Tariff Progression

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Dry Bulk (t)	6,53	7,49	5,54	5,73	6,01	6,39
Break Bulk (t)	31,03	36,22	21,88	28,08	31,50	36,07
Liquid Bulk (kl)	15,21	16,59	12,27	15,83	18,95	23,54
RoRo (m)*	51,30	50,34	30,23	58,40	75,39	65,93
Containers (TEU)	651,53	322,66	210,03	184,97	175,57	204,60

^{*}the tariff design for RoRos changed in 2015/16 to a per metre charge on a more appropriate proxy of capacity utilisation (space) of the port infrastructure.



Further, the establishment of a base tariff for the different cargo types will result in some tariffs requiring change at much slower rates than others. As the tariff effect will differ for the different tariffs, the specific magnitude depends on the current tariff level differential with the base level as calculated. Changes in the asset structure, volume growth and resultant revenues will affect different impacts on different tariff lines. These will be adjusted on an annual basis as convergence with the updated base rates are progressively reflected in the Tariff Book. As such the Regulator approved tariff book will, on an annual basis, contain an updated list of the base rates. This will allow all cargo owners to monitor the convergence of their applicable tariffs with these base rates.

7.2 Marine Services Review

Vessel owners are required to contribute partially to breakwaters, channels, fairways, basins, quay walls, berths, jetties, all ship working vessels, aids to navigation, vessel repair infrastructure, and NPA assets not earning lease revenue and overheads. The calculated share of the revenue requirement is therefore 41% and will be adjusted on an annual basis. The Regulator has decided to adopt the tariff simplifications proposed by the Authority in their proposal.

Maritime services as a whole are currently not recovering operating costs, depreciation/capital and other allocated costs. This impacts the ability of maritime services to be self-sufficient for purposes of capital additions (such as new tugs) without cross-subsidisation from other services and port users. In addition, cross-subsidisation currently exists between individual maritime services as a result of some services over-recovering costs, whilst others are under-recovering costs

The proposed maritime services tariff structure works on the basis that the Required Revenue should be calculated individually for each service, applying the cost recovery and user pay principles. Each maritime service has a different cost base that is dependent on the operating and depreciation/ capital costs specific to providing that service. In addition, the assets are specifically allocated to each service (for example, tug vessels will be allocated to tug services and tariffs) to calculate the required returns for each service. Different tariffs will then be calculated for each service to meet Required Revenue on a system wide approach and ensure cost recovery at the disaggregated level.

In calculating Required Revenue, as detailed above, and setting tariffs to meet Required Revenue for each individual maritime service, shipping lines will pay the correct amounts for the specific services that they use, thereby satisfying the user pay principle. Furthermore, the basis for the charges can be clearly explained.

The proposed new tariff structure suggests the discontinuation of berth dues – mainly due to three reasons: First, the initial purpose of berth dues when they were introduced was to impose a financial penalty to ensure vessels continuously work cargo while berthed. However, the tariff levels seem too low to support this objective effectively. Second, typically berth dues are charged for the provision of quay wall. Since in the proposed tariff structure quay walls are allocated to tenants, there is no longer a basis to charge berth dues to shipping lines altogether. Lastly, berth dues are a minor revenue contributor. Taking all this into account and in the spirit of simplifying the tariff book, this charge is no longer foreseen.



Table 4 highlights the marine service component of each asset type and the methodology used to calculate the applicable tariff. The Strategy differentiates between the use of either GRT as an approximation for vessel size as a measure of volume, and efficient use of infrastructure where a direct cost allocation is not feasible.

The revised required revenue allocation results in a significant increase in marine services' contribution over the period. This correction not only reflects a better cost allocation, but also addresses the concern regarding the global average tariffs vessel owners face. The Regulator is mindful of the impact that delays stemming from port inefficiency can have on vessel owners with regard to cost and has embarked on a process by which these inefficiencies should be addressed using TOPS and MOPS and will reflect in the WEGO outcome.

Pilotage VTS **Light Dues** 1% 1% **Tenants** Ship Repair Networks Tugs 1% **Shipping Lines** 6% Facilities 18% 0% Cargo Owners Berthing 60% 1% Floating Cranes Port Dues 0% 5% ■ Cargo Owners ■ Tenants Port Dues Tugs Pilotage VTS Light Dues Ship Repair ■ Floating Crane ■ Networks Facilities Berthing Tugs Pilotage 11% 2% VTS 1% **Light Dues** Tenants 1% Ship Repair 2% **Shipping Lines** 41% Networks 5% Cargo Owners Floating Cranes 27% **Facilities Port Dues** 2% Berthing 15% 2% ■ Cargo Owners ■ Tenants Pilotage VTS Port Dues Tugs Light Dues ■ Ship Repair Floating Crane Networks Facilities Berthing

Figure 9: Cost Allocation: Marine Service

The inclusion of NPA overheads and associated assets and costs results in significant increases in network (electricity and water) related costs, as well as facilities (water supplied to ships, fire



services, galley waste, small craft and port licences, permits and registrations) costs. The increases and decreases reflects a more accurate cost allocation in the pricing of marine services.

Table 4 Tariff Rationale: Marine Services

Tariff	Tariff Base / Design Methodology	Charge Frequency	Rationale
Port Dues	GRT per port/ per hour periods/linear fee per GRT	Per visit	Incentive for quicker turnaround times
Berthing and Running of lines	Consolidated tariff/Linear fee per GRT	Per visit	Simplification
Tugs	Flat fee per Tug, irrespective of Tug size/number of tugs determined by Harbour master	Per visit as determined by Harbour master	Incentive for latest technology vessels by moving away from fixed vessel size/tug ratio
Pilotage	Flat fee per service differentiated by port	Compulsory at every port/per visit	Simplification
VTS	GRT per port/linear fee differentiated by port	Every port where available	As per current tariff book
Light Dues	GRT per port/linear fee differentiated by port	First port of call	As per current tariff book

The proposed tariff structure consolidates berth dues into the current ports dues tariff. Berth dues are currently charged on an exception basis, when vessels are not engaged in cargo handling activity, and are an insignificant revenue source for the NPA. The consolidation of the tariffs will therefore simplify the tariff structure to the benefit of users. Port dues are charged on a linear GRT basis per port per six hour periods. GRT, as the measure of the total enclosed volume of the ship, is considered to be the best approximation of draught, length and width, i.e. the size of the vessel and is therefore the best reflection of use of assets such as channels and berths.

The running of vessel lines is a fairly infrequent activity during the berthing process, therefore the proposed berthing tariff design is to consolidate berthing and the running of vessel lines as a single tariff for simplification of the tariff book. The consolidated tariff will apply the same tariff design as the current berthing tariff.

Future tug charges will be driven by the actual number of tugs used and the Harbour Master's discretion with regards to the number of tugs needed to provide the service. The proposed tariff design for tugs will address key issues raised by customers:

- The current tariff design does not account for resources actually used, while in the future the tug
 charge will be driven by the exact number of tugs used per service which is more fair and easy to
 explain;
- The surcharges in the current tariff design are perceived as unfair, hence the future tariff structure will specifically charge for any additional tug used instead of a flat 50% surcharge on total tug levy; and



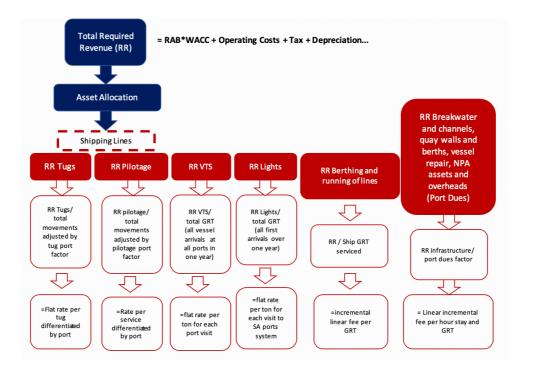
 Fixed GRT rate is unfair for vessels that have better manoeuvrability (e.g. car carrier vessels), hence the number of tugs used will not be based on GRT but will be at the Harbour Master's discretion based on operational and safety considerations.

The charge calculation for the proposed tariff design for pilotage will be a linear tariff that is dependent on a vessel's gross registered tonnage (GRT), rather than the current tariff that incorporates a base rate in addition to a linear rate per a vessel's GRT. This will simplify the tariff to the benefit of port users.

Applying the principle of cost recovery, in the case of tugs and pilotage, will be implemented on a system level thus the recovery of costs for tugs and pilotage will be on a system level and not necessarily for each individual port. To achieve this, all required revenues for tugs (or pilotage) from all ports will be pooled for all ports on a system level to determine a system-wide average rate per hour for one hour of tug-operation (or pilotage). This average hourly rate will be differentiated between ports in its application due to the difference in time it takes to perform the service. In other words, the applied costing factor per tug per operating hour will be the same across ports; however, since tugs will be charged per service and the time needed to provide the service differs across ports, the actual tariff will vary by port.

The current tariff design for VTS is fair and in line with international norms and will therefore remain the same as it adequately reflects the relative risk posed to the port system. The figure below captures the methodology used for each marine services tariff line.

Figure: Marine Charges Methodology





7.3 Review of Rentals

Tenants are separated into cargo working tenants (including terminal operators) and non-cargo working tenants. Cargo working tenants are responsible for contributing partially towards the required revenue from breakwaters, quay walls, berths, jetties, vessel repair infrastructure, movable NPA assets and buildings (not leased), terminal land, staging areas, all common access infrastructure and overheads. Non-cargo working tenants are responsible for contributing partially towards the required revenue from the same assets excluding those dedicated to working cargo quay walls, berths, jetties, terminal land and staging areas. This asset allocation results in the increase of required revenue for rentals from 22% to 32%.

A situational analysis of NPA's rental agreements is being conducted at this stage and the outcome of the process will be included in the next update of the Tariff Strategy. Therefore, the revenue to be recovered from cargo working and non-cargo working tenants cannot be distinguished at this stage. An assessment of the indicative average annual growth in rental taking into account asset values, when leases are due for renewal, and therefore when prices can be adjusted, as well as other contractual agreements which could be enough to achieve the increase in required revenue over the proposed period. Perhaps, most importantly, tenants should be charged equitably for the land they occupy. The Regulator will seek more transparency in this area from the NPA with the view to ensuring all tenants are paying equitably for the benefit they receive, as are cargo owners and vessel owners.

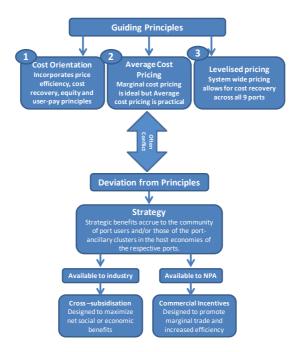
Further in response to the NPA's proposal in this regard that proposes a value based rental strategy, the Regulator will further engage with the NPA as a value based strategy does not encourage marginal cargo, contradicting the principles contained in this Strategy.



8 Cost Deviation

It is necessary to consider the cases where tariffs might deviate from those identified above for reasons of strategy. Overarching considerations of strategy, which may at times conflict with cost orientation concerns, are equally as important as cost orientation considerations. The Directives, in terms of section 30(3) of the National Ports Act requires 'The avoidance of cross subsidisation save where cross subsidisation is in the public interest'9. A port or port system's pricing policies should be in line with its overall strategic goals, which would include the strategic benefits that would accrue to the community of port users and/or those of the port-ancillary clusters in the host economies of the respective ports. Ports are not just a conduit for trade between sea and land; they are a vital part of a country's logistics supply chain and are, therefore, catalytic pieces of infrastructure with regard to employment creation and investment attraction¹⁰.

Figure 10: Reasons for Deviation



Under-recovery of cost is sometimes necessary for strategic considerations but has consequences for the port system especially when operating within a zero-sum context. This means that if an investment or facility under-recovers, it requires subsidisation by a different, more financially successful investment or facility, thus deviating from the main pricing principle of a cost reflective tariff. Another way of deviating from cost oriented tariffs is through discounting, which may not lead to under-recovery or cross-subsidisation, but is none-the-less a deviation from the tariff line. Discounts and cross-subsidies are described in more detail below. Rules are given for when discounts and cross-subsidies may apply.

¹⁰ Section 11(1)(f) and Section 12 (i) of the Act.

⁹ Directive 23(1)(f).



8.1 Cross-Subsidisation

Pricing should preferably avoid cross-subsidisation between commodities or types of cargo and ports; ultimately the tariff structure should reflect the cost structure of the port system. However, the regulatory Tariff Methodology utilises the Required Revenue methodology that utilises a system wide pricing model. Therefore, equalisation of tariffs and a certain level of cross-subsidisation does exist and will continue to form part of the tariff structure. The use of specific cross- subsidies may also pose a net benefit on the port system in particular, and the economy as a whole and must therefore be considered by the Regulator.

A cross-subsidy is a regulatory scheme designed to maximize net social or economic benefits. Though its practical applicability and effectiveness have demonstrated a potential for being a useful policy as well as regulatory instrument, its theoretical underpinning has remained somewhat controversial. Various kinds of definitions and concepts have been put forward as attempts to make it theoretically consistent and practically effective.

Okano (1985) has described cross-subsidy on the basis of an *un-remunerative service*. He considered cross-subsidy as the case where an un-remunerative service is dually compensated by the profit of other services. An un-remunerative service is defined as "a service, or part of a service, the resulting revenues from which are known (or definitely expected) to be insufficient to cover those costs which, but for its provision, would not have been incurred, either directly or indirectly, in the short or long run" (Ponsonby 1963). **To put it simply, un-remunerative (or under remunerated)** services are not (fully) paid for but are useful services for some users.

There have been many transportation infrastructure facilities built and/or operated under cross-subsidy schemes. A cross-subsidy is often depicted as a source of economic inefficiency on one hand, and a corrective-measure to deliver a useful service (which would otherwise have not been provided through market mechanism due to the lack of financial resources of the government and/or market failure) on the other hand. In effect, the cross-subsidy mechanism transfers a part of cost burden between projects (or assets), different elements of the same project (or assets) or between users. As a result, it has a direct impact on a project's profit level or/and user's welfare. As the implementation criteria of cross-subsidy schemes involve a considerable degree of subjective judgement, it invites an endless debate on fairness and efficiency of the scheme. It is therefore important to develop criteria for the South African ports system that attempts to remove the subjectivity from implementing a cross- subsidy.

8.1.1 Cross-Subsidisation Criteria

Section 30 of the Act sets out the functions of the Regulator which include to 'exercise economic regulation of the ports system in line with government's strategic objectives'. Cross-subsidies will first and foremost be considered when implementing a strategic objective or national policy.

Any other proposal or approval of a cross-subsidy or allowance of existing cross-subsidisation must satisfy one or several of the following criteria. The onus will be on the Authority or user group applying for the subsidy to prove that the subsidy will fall under one or more of the criteria.



Table 5 Cross-Subsidisation Criteria

Criteria	Description		
The cross-subsidy will meet economic growth and developmental objectives	This applies to the funding of new infrastructure and the discounting of current infrastructure/services to achieve economic growth. Economic benefit needs to be weighed against expected future financial benefit. Applicable to infrastructure capacity expansion that is not "bankable" but does provide economic benefit.		
The cross-subsidy aligns national policy objectives with port pricing	The need for cross-subsidisation may arise from aligning to national policy objectives.		
The cross-subsidy is necessary for equality in benefit	System wide pricing is an example whereby tariff levelising provides equality of benefit. Cargo dues, for example, are similar in all ports, providing an equal benefit of port assets to all users of port infrastructure, irrespective of their geographic location; This supports a complimentary ports system.		
The cross-subsidy will minimise finance and volume risk	The risks associated with the dependency on a specific user of cargo type with associated volumes advocates for a levelising of prices on at least a system wide level to minimise risk to the landlord and project.		
The cross-subsidy will promote efficient use of port facilities	The promotion of efficient use of port facilities may in some cases be influenced through strategic pricing signals such as a subsidy of marine services or even cargo dues in some ports to support the use of excess capacity. This will also assist with marginal costing as the marginal cost of one unit in a port at full capacity is higher than at a port with excess capacity.		
The cross-subsidy will reduce congestion	Reducing congestion is a crucial part of running a successful port system and reducing logistics costs for port users. A reduction in port congestion could be considered worthy of subsidisation.		
The cross-subsidy will promote the inclusion of previously disadvantaged persons	Promoting equitable access to infrastructure may require subsidisation. Marginalized groups may under recover on the cost of infrastructure or services initially but ultimately should be viable.		
The cross-subsidy is aimed at reducing carbon emissions	Several global ports have started to introduce incentives or 'rewards' for vessels that are low sulphur and efficient. SA ports are more of a 'receiver' of vessel classes than a 'definer' of them but nonetheless sound environmental practices in all aspects of the port could warrant subsidisation.		
The cost to the economy if the cross-subsidy is not granted will be drastic	 Special consideration will be given where the economic risk associated with not providing the subsidy is high. This could also be called the opportunity cost. For example if the subsidy is not allowed then: necessary capacity investment in the port will not take place resulting in an inability to meet demand; a niche industry will fail resulting in trade and job loss; a commodity will be priced out of the international market; and port users will no longer use a SA port. 		



The Port Tariff Incentive Programme was launched in 2017 as an annexure to the Tariff Strategy. The programme was developed in consultation with the NPA, thedti, and the DoT and serves as a tool for ensuring that any cross-subsidy implemented within the system is 'fair and in the public interest'. The approval of an application and the implementation of a cross-subsidy though the PTIP will result in an amendment to a tariff line within the tariff book and NOT to a single user. Further, there will be numerous conditions attached the cross-subsidy including a sunset review.

8.2 NPA Commercial Incentives (discounts)

Incentives in its simplest form can be seen as a special case of discounts that serves some commercial purpose. These discounts are therefore available to the NPA in order to gain some commercial goal, without requiring any cross-subsidy from other users i.e. the discount is self-funded from retained earnings and is tariff burden neutral. In the broadest sense, port tariffs must be trade facilitating rather than trade neutral or trade destroying. This applies to the utilisation of tariff incentives to increase cargo volumes and the number of vessel calls.

With regard to cargo volumes, this would be consistent with a situation where the tariff structure encourages marginal cargoes and attracts additional lucrative business, such as transhipment business or other transit business. In practical terms, it would therefore be an advantage if the tariff could induce vessels to work more cargo per port call. Some introduction of volume-related dimensions to certain tariff items may therefore be appealing, albeit only if applied transparently and to incentivise port users and potential port users. An example of this could be that if a certain volume of traded cargo is reached in a single vessel call or a year then the marginal cost per movement above that volume would be on a sliding scale downwards. Importantly, this is distinct from cross-subsidies because this discount does not have to be recovered either because the base number of units moved would already cover costs or because the discount would result in increased cargo which would recover the costs of the discount.

With regard to vessel calls, tariffs must attract additional vessel callers, but not at the expense of extra cargoes (through congestion etc). Most ports (in the widest sense of port communities) generate greater employment and revenue from cargo-related as opposed to vessel-related activities especially through the covering of maintenance and operation of maritime infrastructures, land transport and logistics activities, including rail and road as well as cargo services (e.g. freight forwarding and customs broking) etc. The value chain and therefore the economic multiplier effect is generally longest for imports and exports (freight vessel calls), followed by non-freight vessel calls and is shortest for transhipments. As a result, incentives should encourage increased transhipped cargo but not at the expense of increased non-freight vessel calls, which in turn should not be at the expense of freight related vessel calls. Ideally, transhipped and marginal cargo should be encouraged only when vessels are offloading or loading larger volumes of traded cargo so that the marginal cost of the transhipped cargo is minimised.



Within this same context, **tariffs should try to attract the most efficient and the least-cost vessels** to our ports, since the efficiencies that they embody will be incorporated in lower transport costs and will benefit the wider community. The most efficient vessels:

- Are modern vessels: Move and turn quickly in the port, utilise state of the art electronic communications and state of the art safety and monitoring technology;
- Have technology that allows for the efficient offloading of cargo and efficient transfer to connecting transport services; and
- Are larger and carry larger volumes (with a TEU ceiling unique to each port).

A commercial incentive will result in some level of cross-subsidisation if a volume increase does not compensate for the loss in revenue from a lower price. This cannot be allowed to happen. The argument can be made that if a deviation from the set tariff results in an increase in volumes and revenue, the set tariff (before the discount) is sub-optimal. As such, the current tariff methodology will consider any discount aimed at an increase in volumes and the related risk to be carried by the NPA and not be subsidised across the system.

The Regulator will carefully consider all submissions related to discounts (received through the Port Tariff Incentive Programme) to determine whether said discount, aimed at an increase in volumes and the related risk, should be carried by the NPA and not subsidised across the system. The revenue risk will immediately be carried by the NPA, however, the Regulator may consider allowing some short term under or over recoveries as the situation requires but the net revenue effect should always be zero. Whilst this may not be an exact science, care must be taken to enable the NPA to use the tariff system in order to efficiently respond to market changes through price incentives, whilst ensuring the sustainability of the port system. However, discounts /incentives should be a small exception to a mainstream cost reflective pricing approach, rather than the rule.

An example of the risk of discounting being carried by the NPA and not cross-subsidised is:

Any discount that embodies a pro-efficiency dimension, like the current 15% discount on port
dues that is attracted by callers with a port turnaround time of 12 hours or less. In this example
the benefit of the discount is felt internally within the port system (increased calls) and is
therefore recovered automatically. If it isn't recovered then it possibly should not be
administered as it is not achieving its aim.

Examples of cross-subsidies:

- Passenger vessels and bona fide coasters where currently a 25% discount on port dues applies

 here the objective is to boost the tourism industry and encourage cargo owners to choose coastwise transport over road transport these are clear economic benefit arguments where the benefit falls outside of the port system and therefore needs to be recovered within the system through a cross-subsidy;
- Provided their port turnaround time is 48 hours or less, bunker callers currently attract a 50% discount on port dues^{11.} Bunker/transit callers constitute substantial business for the ports,

 $^{^{\}rm 11}$ Plus the additional 15% discount if they are in and out in less than 12 hours.



most particularly the ports of Durban and Cape Town that possess refinery capacity, and for their port-ancillary business clusters. This again presents an economic benefit argument for a cross-subsidy.

• A discount on marine charges to all South African flagged vessels actively supports South African shipping, as well as the development of South African crews and other maritime skills.

9 Conclusion

The tariff structure, outlined in this document, represents a clear but cautious departure from previous practices and is based on the consistent application of sound design principles. Further, it is based on a more balanced distribution of charges to the different port user groups, as well as being more strongly aligned with international norms and standards and South African national policy objectives. The overall trajectory of the Tariff Strategy is a more decisive adjustment towards a truly cost reflective pricing system that will, in the medium to long term, greatly benefit all users, as well as the broader South African economy. The approach adopted in developing this Strategy was to determine a cost-reflective asset allocation and rationalise tariff lines in accordance with the asset allocation.

The Regulator and NPA took into consideration principles of cost-causation, cost-minimisation, distribution of benefits, and practicality when developing this Strategy. Average cost pricing and system-wide pricing was seen as most practical and assets were allocated according to which port users benefit most from the use of port infrastructure. The general underlying logic was that the seaward side benefits mostly shipping lines and cargo owners, while the connecting point benefits mostly shipping lines and tenants, and the landward side benefits mostly tenants. The resulting changes in required revenue were therefore as follows:

- Cargo owners decrease in cost share from 60% to 27%;
- Shipping lines increase in cost share from 18% to 41%; and
- Terminal Operator's and other tenant's leases increase from 22% to 32%.

These changes will be implemented over a period of ten years or more. Prices will be differentiated annually between user groups and between cargo handling types at reasonable levels in order to reach the proposed, more rational end-state in the long term.

The Tariff Book currently charges cargo dues per commodity; this Strategy proposes that after ten years these will be reduced to cargo handling type cargo dues only. The share of the different cargo handling types' contribution to the required revenue is based on vessel calls as the use of vessel calls is considered to be the most rational approach to distribute the required revenue given the significant portion of the revenue required allocation attributed to wet infrastructure. This results in:

- Containers cost contribution to reduce from 60% to 8.1% in real terms over the period;
- RoRo cargo cost contribution to reduce from 9% to 2.7% in real terms over the period;
- Break Bulk cost contribution to decrease from 3.9% to 3.1% in real terms over the period;
- Liquid Bulk cost contribution to decrease from 9.1% to 3.4% in real terms over the period; and
- Dry Bulk cost contribution to decrease from 18% to 10.6% in real terms over the period.



The proposed marine services tariff structure works on the basis that the Required Revenue should be calculated individually for each service, applying the cost recovery and user pays principles. Each maritime service has a different cost base that is dependent on the operating and depreciation/capital costs specific to providing that service. In addition, the assets are specifically allocated to each service (for example, tug vessels will be allocated to tug services and tariffs) to calculate the required returns for each service. Different tariffs will then be calculated for each service to meet Required Revenue and ensure cost recovery at the disaggregated level.

Deviation from the base tariff:

Cross-subsidisation between user groups will be avoided as far as possible but will be allowed when it is in the public interest in accordance with the Directives to the Act¹². The following criteria will be taken into consideration, amongst others, when considering a cross-subsidisation:

- Meet economic growth and developmental objectives;
- Align to national policy objectives with port pricing;
- Be necessary for equality in benefit;
- Minimise finance and volume risk;
- Promote efficient use of port facilities;
- Reduce congestion;
- Promote the inclusion of previously disadvantaged persons;
- Aimed at reducing carbon emissions; and
- If not granted, imply a drastic cost to the economy.

Industry may apply for a cross-subsidy through the PTIP.

10 Implementation and Way Forward

The ten year (or more) implementation period with annual reviews of the variables in the tariff structure model will ensure that unintended consequences are speedily and effectively addressed and that the pricing regime stays responsive to the needs of both the landlord of the SA port system as well as its users.

The implementation of the Tariff Strategy cannot be cast in stone as the space available to the Regulator to implement any tariff changes depends on the application of the tariff methodology in any particular tariff year within which the Strategy takes effect. A number of considerations are part of the process and are outlined below:

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¹² Directive 23 (1)(f).



Figure 11: Annual Tariff Strategy Implementation



The simulation of marine charges is imperative to the achievement of accuracy and to reduce the probability of unintended consequences. The NPA will implement the simulated and consulted reviewed design of marine charges upon finalisation.

Changes to cargo dues base rates are published on an annual basis in the tariff Record of Decision which enables cargo owners to monitor the convergence of their applicable tariffs with the end goal. The 'other' category in the tariff book contains the general tariff for that period, on a per cargo basis, and it is intended that in the desired end state all tariff lines will be removed save for the general, cargo specific rate.

The Regulator is mindful of the following 'unknowns' in the Strategy and dependent processes and will work to clarify them over the implementation period:

Rentals: Overall lease revenue annual increases sufficient for implementation of the Strategy; however, more work *within* lease revenue is required to deal with the lack of transparency and information with regard to rental tariffs. The Regulator is increasing its focus in this area through its compliance monitoring programme which includes an analysis of rental agreements.

Vessel Calls and Sizes: The impact of vessel sizes on the calculation of cargo dues will be monitored and reviewed as required over the period. The number of vessel calls as determined through the SAP System will need to become more accurate and will be monitored closely for changes annually. Furthermore, the linear charges per GRT for marine services will be monitored to ensure that it does not discourage large vessels, leaving infrastructure under-utilised.



Pass-on of increases: Reduction in cargo dues might not be felt by cargo owners as vessel owners could pass on charges. Transnet Port Terminals (TPT) and other terminal operators are not regulated; therefore, they could increase their tariffs or negate the effect of the import export differential. However, more stringent monitoring of terminal handling charges and freight rates will be conducted by the Regulator and the impact on the users assessed. It should be noted that reducing the tariff burden on cargo owners is not the objective of this Tariff Strategy – this is dealt with within the tariff methodology.

Tribunal: There are tribunal decisions pending that could influence tariff lines in the tariff book – these take precedence over the Tariff Strategy and will be incorporated when they are published.

PCCs: The Strategy sets out which users pay for what portion of infrastructure they use as well as the price of that infrastructure and what it reflects. This link has never been as transparent before and requires active participation of users in NPA's capital planning, through the Port Consultative Committees, in order to ensure that they have a say in the infrastructure they ultimately will be paying for. The Regulator depends on these engagements in the CAPEX approval programme which is part of the tariff assessment.

TOPS/MOPS: The Regulator relies on PCCs to assess the credibility of the TOPS and MOPS processes. the TOPS and MOPS processes have now been in practice for four years and the results thereof feed into the WEGO processes implemented by the Regulator.

The Regulator will, throughout this process, engage with port users and the NPA alike to ensure the most equitable, fair and efficient outcome for all.

11 Consultation

Public Consultation Phase One

In 2012/13 the Authority submitted, to the Regulator a proposal containing a new tariff structure, this proposal was subsequently presented to the public in a series of roadshows hosted by the Regulator in March 2013. A window for comments was opened and the responses received were taken into consideration by the Regulator when drafting a response to the Authority's proposal.

The Regulator hosted focus groups with international port pricing specialists in June 2013 and consulted extensively on the various options available. A draft Tariff Strategy was published on 31 March 2015 and stakeholders were invited to submit comments and questions; a commenting window of two months was afforded to the public. Nine written submissions were received in response to the draft.

Concurrently, the Regulator consulted with various industry associations including the Fruit Growers Association and South African Freight Forwarders, as well as focus groups with government officials as well as with port experts. In June 2015, the Regulator hosted a second series of roadshows and afforded the public a one month commenting period. All questions and the responses thereto have been documented and maybe found on the Regulator's website.



The Tariff Strategy, as published in June 2015, takes into account all written submissions from government departments and port users, documented comments from roadshows, submissions from port experts and panel discussions held. While this Strategy is final, the implementation thereof will be consulted together with the proposed tariff application on an annual basis.

Public Consultation Phase Two

In 2019, the Regulator undertook a revision of the Tariff Strategy as published in June 2015. This revision was not a revision of the basic principles contained within the Strategy, neither does it change the intended outcome. It is rather an update of progress made in terms of implementation of the Strategy, and relevant legislation and applicable policies.

Publication date for final, updated Tariff Strategy: 31 March 2020

12 Approval

The updated Tariff Strategy for the ports system of South Africa is approved for implementation. This has been approved by the Ports Regulator of South Africa and signed by the Chairperson.

Mr Thabadiawa Mufamadi

Chairperson: Ports Regulator of South Africa

Date: 05/03/2020