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TRANSNET NATIONAL PORTS AUTHORITY TARIFF APPLICATION FOR FINANCIAL YEAR 2014/15

SUBMISSION BY

BUSINESS UNITY SOUTH AFRICA (BUSA)

NOVEMBER 2013

SUBMISSION ON TRANSNET NATIONAL PORTS AUTHORITY (TNPA) PROPOSED INCREASE OF 14.4%, 2014-15

BACKGROUND TO BUSA

BUSA is a confederation of business organisations including chambers of commerce and industry, professional associations, corporate associations and unisectoral organisations. It represents South African business on macro-economic and high-level issues that affect it at the national and international levels. BUSA‘s function is to ensure that business plays a constructive role in the country’s economic growth, development and transformation and to create an environment in which business of all sizes and in all sectors can thrive, expand and be competitive. As the principal representative of business in the South Africa, BUSA represent the views of its members in a number of national structures and bodies, both statutory and non-statutory. BUSA also represent business interests in the National Economic Development and Labour Council (NEDLAC).

GENERAL

Earlier this year, BUSA welcomed the announcement in Parliament of a new Port Tariff structure which could include a significant cut of 40% on the tariff for exported containers in the near future. The Ports Regulator's global port pricing comparator study (Ports Regulator, 2012) revealed that containers are significantly more expensive than the global average, translating into a premium in excess of 800%. BUSA again emphasises that the primary and secondary sectors in the economy are heavily dependent on efficient and effective port facilities to expedite trade, especially as the South African economy is estimated to be about 60% reliant on international trade.

Hence cost increases have to be minimized wherever possible. BUSA’s members have faced

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significantly above inflation increases in all administered prices in the last few years and cannot continue on a path of above inflation administered price increases, which taken together increase the cost of doing business to a level which is not sustainable.

As a point of departure in assessing applications for tariff increases, BUSA shares Transnet's stated commitment to reducing the cost of doing business in taking decisions about possible tariff rises and their likely economic consequences.

BUSA believes that the magnitude of what is being requested by Transnet needs to be seriously reconsidered, particularly at a time when –

- There has been growing concern about the negative impact of administered prices on the economy, as reflected in repeated statements by the SA Reserve Bank and other authorities

- Inflation is at the upper end of the official target range of 3%-6%

- There is slippage in SA's global competitiveness as evidenced in recent Global Competitiveness Indices of the World Economic Forum, and

- Official policies are being increasingly aligned with the targets of National Development Plan,

In the light of the high increase proposed by the TNPA, BUSA commissioned research to review the proposed increase, which at 14,4% is more than double the upper inflation target of 6%.

The findings of this research are attached in Annexure 1.

The research –

- provides an overall evaluation of the TNPA's application, including a review of the Revenue Requirement tariff methodology and commented on the proposed tariff structure.

- presents a detailed economic impact assessment of the tariff increases that have been requested

- presents an alternative tariff and price path calculation.

SUMMARY AND CONCLUSIONS

The findings of the research are summarised below.

TNPA have applied for a tariff increase of 14.39% for FY 2014/15. TNPA’s required revenue and associated tariff increase have been recalculated based on the finding that the actual tariff increase, without including the TNPA rounding-off errors, results in a tariff increase of 14.29%.

TNPA use values for the components of the Revenue Requirement model that should not be allowed. More specifically, TNPA do not include a debt beta, they use a Market Risk Premium (MRP) of 7.1% and use an asset beta of 0.5. It is recommended overall that the rounding off errors be corrected and that the elements of the tariff proposal be revised as follows:

1) Include the calculation of a debt beta; and
2) Allow an MRP of 6.3% or less; and
3) Use and asset beta of less than 0.5.

The report in Annexure 1 presents a set of scenarios that demonstrate the consequences of accepting the recommendations above. For example, if an MRP of 6.3% is used and the debt beta is included, then the tariff increase would be 8.34%. If an asset beta of 0.4 is used in addition to the parameters above, then the tariff increase would be 3.80%. With CPI forecast at 5.9% for 2014, a nominal tariff increase of 3.80% would actually contribute to a reduction in real transport costs through South Africa's ports. It is therefore recommended that this be the increase that is approved by the Regulator.

A sensitivity analysis on the asset beta demonstrates that a 0.1 reduction in the asset beta causes an average 5.115% reduction in the tariff increase. Clearly, there is a need to further investigate and attempt to settle the debate on the appropriate asset beta to be used in the Revenue Required model for South Africa's ports.

Depending on the scenario and the resulting tariff adjustment that the Ports Regulator allows, it may not be advisable to allow an ETIMC of R545 million for 2014/15. It may be wise to keep the ETIMC to assist with lowering the future predicted spikes in the tariff increases.

In order to improve port pricing in South Africa, the right incentives need to be in place. There is a concern that the Required Revenue model may incentivise port prices at levels that are not in the best interests of the country. Furthermore, the revenue required model may skew incentives that may result in bloated Capex through unnecessary investments in port infrastructure as well as bloated Opex.

The report in Annexure 1 further provides evidence that several principles in the TNPA tariff structure proposal are not in line with government's strategic objectives. More specifically, the TNPA proposed application of the Beneficiation Promotion Program (BPP) to all cargoes and cargo handling types, as well as the timing of such a beneficiation initiative, is inconsistent with government's strategic objectives as stated in the National Development Plan (2012). The Ports Regulator should consider rejecting the BPP principles that are in the TNPA (2012a) proposal. Furthermore, the Ports Regulator should not approve the TNPA proposed allocation of required revenues to shipping lines, cargo owners and terminal operators. There is clearly need for further research on the optimal allocation of revenues to the port user groups.

BUSA believes that there are a number of areas in the application that require further research and would welcome an opportunity to engage further on this submission.

ANNEXURE 1

A Critique of Transnet National Ports Authority's Tariff Application for 2014/15

Report to: Business Unity South Africa (BUSA)

Compiled by:
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October 2013

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Abbreviations

BPP	Beneficiation Promotion Programme
BUSA	Business Unity South Africa
CAPEX	Capital Expenditure
CPI	Consumer Price Index
DMS	Dimson, Marsh and Staunton
ETIMC	Excessive Tariff Increase Margin Credit
GDP	Gross Domestic Product
FY	Financial Year
IPAP	Industrial Policy Action Plan
JSE	Johannesburg Stock Exchange
MRP	Market Risk Premium
NDP	National Development Plan
OECD	Organisation for Economic Co-operation and Development
OPEX	Operating Expenditure
RAB	Regulatory Asset Base
ROC	Return on Capital
ROD	Record of Decision
RR	Revenue Required
SAASOA	South African Association of Ship Operators and Agents
TNPA	Transnet National Ports Authority
WACC	Weighted Average Cost of Capital

1. Introduction

1.1. Background and Context

Transnet National Ports Authority (TNPA) has applied to the Ports Regulator for a 14.39% tariff increase for the financial year (FY) 2014/15. The Ports Regulator has invited port stakeholders to submit written comments on the TNPA application on or before the 4th November 2013. Business Unity South Africa (BUSA) has expressed its concerns regarding the above inflation tariff application. In order to strengthen BUSA's submission, a decision was taken to procure services of a consultant to prepare a BUSA position paper that will oppose the magnitude of the tariff increase.

1.2. Objectives

The aim of this report is primarily to scrutinize the existing benefits and shortcomings of current processes used for setting tariff amendments, to investigate the existing recommendations for improving processes used for determining tariff amendments, and to highlight how the tariff increases, especially at the proposed increase of 14.39%, are not in the best interests of the economy. The report will focus on a constructive critique of the Revenue Requirement (RR) model applied by TNPA as well as comment on the proposed tariff structure.

This report is structured as follows: Section 2 discusses South Africa's economic context and port pricing. Section 3 presents the TNPA application for financial year 2014/15. Section 4 critiques the TNPA tariff methodology and includes scenarios that recalculate the application. Section 5 discusses tariff structure. Section 6 concludes.

2. South Africa's Economic Context and Port Pricing

South Africa's economy is struggling, with relatively low GDP growth rates and extremely high unemployment levels. Unemployment for the second quarter of 2013 was measured at 25.6% (StatsSA, 2013a). This means that more than 4.7 million people are officially unemployed in South Africa. If one adds the 2.3 million discouraged work seekers, then this means that more than 7 million people are currently unemployed in South Africa (StatsSA, 2013a).

Economic growth, as measured by real GDP, is predicted to average 2.1% for 2013 and forecast to grow to 3.5% by 2016 (National Treasury, 2013). The National Development Plan (NDP, 2012: 39) explains that South Africa's GDP should grow in excess of 5% per year in order to promote sustainable job creation and to reduce unemployment. Several measures are proposed to bring about such economic growth, these measures include: "Increasing

exports, focusing on those areas where South Africa already has endowments and comparative advantage, such as mining, construction, mid-skill manufacturing, agriculture and agro-processing, higher education, tourism and business services. …" (NDP, 2012: 39).

The South African Reserve Bank has a mandate to use inflation targeting to attempt to keep inflation (as measured by the consumer price index (CPI)) between 3% and 6%. In 2013, inflation peaked above the 6% upper limit, but the average for the year is expected to be within the band of 3% to 6%. The forecast CPI inflation rate for 2014 is 5.9% (National Treasury, 2013). Inconsistent with such a national monetary policy priority, TNPA have applied for tariff increases of 10.62% in 2010, 11.91% in 2011 and 18.06% in 2012. Consistent with the country's monetary policy objectives of keeping inflation below 6%, the Ports Regulator has allowed tariff increases of 4.42% in 2010, 4.49% in 2011 and 2.76% in 2012. For 2013, TNPA applied for a tariff increase of 14.2%, but TNPA capped the increase at 5.4% due to the "non-finalisation" of the tariff methodology and the assumption that a multi-year tariff application of CPI + 3% would be submitted for 2014/15 (Ports Regulator, 2013a).

The Ports Regulator global port pricing comparator study (Ports Regulator, 2012) showed that containers are significantly more expensive than the global average. For example, an 874% premium to the global average and a 721% premium when the 2012/13 rebate is considered. Within such a context, it is understandable that the Ports Regulator (2013d: 1) tariff determination for the tariff year 2013/14 declined TNPA's proposed 5.4% tariff increase and decided on the following tariff adjustments:

a. Cargo dues tariffs
    i. Container full export cargo dues to be reduced by 43.2%;
    ii. Container full import cargo dues to be reduced by 14.3%;
    iii. Motor vehicles exported on own wheels (Ro-Ro) cargo dues to be reduced by 21.1%; and
b. the remainder of the tariffs in the tariff book are to be retained at the same level they were over the 2012/2013 tariff year.

Clearly, the TNPA application for a 14,39% tariff increase is significantly above the 5.9% CPI inflation forecast for 2014 as well as the 6% upper limit of the inflation targeting band. Such an above inflation increase will contribute to increasing the costs of transportation through South Africa's ports.

3. TNPA Application for Financial Year 2014/15

"In terms of Section 72 (1) (a) of the National Ports Act, 2005 (Act No. 12 of 2005), Transnet National Ports Authority, a division of Transnet SOC Limited is required, with the approval of the Ports Regulator, to determine tariffs for services and facilities offered by the Authority and to annually publish a tariff book containing those tariffs" (TNPA, 2013c: 6).

The regulatory framework does not set a tariff methodology nor does it constrain the Ports Regulator from adopting one different from TNPA. TNPA have submitted a tariff methodology position paper as well as a tariff strategy/structure paper to the Ports Regulator in 2013. These two documents are still under review. In order to reduce the difference between the tariff increase that TNPA request and the Ports Regulator grant, the Ports Regulator issued an interim Regulatory Manual applicable for the 2014/15 tariff year.

The approach (applicable to the 2014/15 tariff year) decided upon is based on the Revenue Required methodology. The formula for the Revenue Required methodology is as follows:

Revenue Requirement
= Regulatory Asset Base (RAB) X Weighted Average Cost
of Capital (WACC) + Operating Costs+ Depreciation
+ Taxation Expense – (+) Claw back +(-) Excessive Tariff
Increase Margin Credit (ETIMC)

The key principles included in the Regulatory Manual are as follows (TNPA, 2013c: 7):

a) "***Regulatory Asset Base (RAB)***: The RAB represents the value of assets that the National Ports Authority (NPA) is allowed to earn a return on.
b) ***Vanilla Weighted Average Cost of Capital (WACC)***: A real Weighted Average Cost of Capital will be applied, given that the RAB is indexed for inflation.
c) ***Operating Costs***: The NPA is required to provide detailed and complete motivation for each of the expenses applied for.
d) ***Depreciation***: The depreciation of the assets in the RAB will be calculated as a straight line 40 year on the opening balance of the RAB.
e) ***Taxation Expense***: The Regulator will use the pass-through tax approach where the vanilla WACC will be applied to the average RAB for the period under consideration, less the interest cost of debt and the corporate tax rate to determine the tax liability to be treated as an expense in the RR calculation.
f) ***Claw Back***: The Regulator will spread the total impact of over/under recovery of revenue over a period of two tariff determinations.

g) ***Excessive Tariff Increase Margin Credit (ETIMC)***: The Regulator considers it prudent to avoid future tariff spikes by retaining and increasing the NPA's Excessive Tariff Increase Margin Credit (ETIMC)."

TNPA claim that the tariff application for FY 2014/15 was prepared using the Revenue Required methodology, "in line with the prescribed interim Regulatory Manual" (TNPA, 2013c: 7). TNPA's application of the Revenue Required methodology is presented in table 1.

Table 1. TNPA's Calculation of their Tariff Application for 2014/15

	FY 2014/15
	Rm'
Asset Beta (β_a)	0.5
Debt Beta (β_d)	0
Equity Beta (β_e) (using Hamada)	0.86
Risk-free Rate (Nominal) (NR_f)	8.32%
Real Risk free rate (RR_f)	2.29%
Gearing (g)	50%
Debt/ Equity ratio (D/E)	1
Inflation	5.90%
Market Risk Premium (MRP)	7.1
Corporate tax (t)	0.28
Cost of Equity (real) K_e	8.4%
Weighted Average Cost of Debt (nominal) NK_d	9.34%
Weighted Average Cost of Debt (real, pre-tax) RK_d	3.25%
Weighted Average Cost of Capital (WACC)	5.83
RAB	64 694
Real Post WACC	5.83%
Return on Capital (ROC)	3 772
Plus: Depreciation	1 671
Plus: Operating Expense	4 329
Plus: Taxation Expense	1 057
Plus: Claw Back	118
Revenue Requirement (RR)	10 947
Less: Real Estate	-2 113
Marine Revenue	8 834
Latest Estimated Revenue (LER) for FY 2013/14	7 462
Estimated Volume Growth (EVG) for FY 2014/15	3.50%
(LER) for FY 2013/14 x (EVG) for FY 2014/15	7 723
FY 2014/15 Revenue Requirement (RR)	8 834
Tariff Increase	**14.39%**
Less ETIMC	454
Marine Revenue for FY 2014/15: Less ETIMC	8 380
Tariff Increase: Less ETIMC	**8.5%**

Source: Author compiled from TNPA (2013c: 7-9, 33).

The following extracts from TNPA's (2013c: 7-9) executive summary help to explain the calculated tariff increases presented in table 1.

> *"Application of the Revenue Requirement formula results in a revenue requirement of R10 947m comprising of Real Estate business revenue of R2 113m and Marine Business revenue of R8 834m. In order to determine Marine Business revenue to be derived from tariff adjustments, the required revenue of R8 834m is compared with the expected revenue of R7 462m for FY 2013/14 increased for the expected growth in volumes of 3.5% for FY 2014/15… This translates into an average tariff adjustment of 14.39% for FY 2014/15.*
>
> *…the Authority is of the view that it can deliver on the planned execution of the Transnet MDS with Marine Business revenue cash revenue of R8 380m. Based on the interim Regulatory Manual, the Authority therefore applies to the Regulator to release R454m of the ETIMC provision previously created... Which translates to an average overall tariff adjustment of 8.5%.*
>
> *In accordance with the interim Regulatory Manual the Authority hereby applies to the Regulator for revenue of R10 493m comprising of marine business revenue of R8 380m and real estate business revenue of R2 113m for FY 2014/15. This translates to an average overall tariff adjustment of 8.5%.*
>
> *Translation of this marine revenue of R8 380m into individual tariffs (tariff book) will be informed by the Regulator guideline which will be issued post the tariff determination process."*

4. A Critique of the TNPA Tariff Methodology and Recalculation of the Application for 2014/15

There are several contested components of the Revenue Required Model proposed by TNPA. This section critiques several of components of the TNPA proposed Required Revenue model and recalculates the weighted average cost of capital, required revenue and tariff increases under twelve different scenarios.

4.1. A Contested Regulatory Asset Base, Volume Growth and CAPEX Assumptions

The regulatory asset base (RAB) is contested. For example, TNPA originally included in the value of the RAB the R2 billion spent on purchasing the Durban International Airport site. The Ports Regulator determined that the R2 billion should not be included in the RAB. In addition, the valuation of the assets is questioned as well as the composition of the asset base. For example, it is questioned "why the shunting yards at Bayhead are part of TNPA and not Transnet Freight Rail asset base" (Ports Regulator 2013c). The actual value used for the RAB makes a significant difference to the calculated value of the return on capital (ROC).

The Ports Regulator should continue to examine and request that the actual value and composition of the RAB be audited.

The TNPA application for 2014/15 assumes that given an estimated volume increase of 3.5% the necessary tariff increase will be 14.39%. A shortcoming and characteristic of the Revenue Required model becomes evident when one calculates that a volume growth of 1% results in a necessary tariff increase of 17.21%. So the irony is that when the economy is performing poorly with lower volume growth, then the model allows TNPA to apply for a higher, rather than a lower, tariff increase. Furthermore, SAASOA in their 2013/14 submission, compiled by Jones and Christison (2012: 7) regarding the Tariff Application, states that "A distressed sea transport industry therefore always faces higher potential port price increases than an industry that is prospering on the back of strong transport growth. A damping down of these pro-cyclical tendencies will be welcomed." Likewise, BUSA have commented in their 2011 and 2012 submissions to the Ports Regulator, that "It would appear that TNPA has once again not taken cognisance of the (continuing) depressed nature of the local and global economy when applying for such an immense increase" (BUSA, 2011: 19 and 2012: 12).

Another contributing factor to the 14.39% tariff increase is the proposed 49.5% increase in Capex Spending for FY 2014/15 from R2 219 million to R3 317 million. This is forecast to increase by a further 136.5% to R7 846 million for 2015/16 and a further 28.5% increase to R10 082 million for 2016/17 (TNPA, 2013c: 56). Such large forecasts in Capex will, under the current Required Revenue method, result in continued above inflation increases in tariffs until 2018/19, as confirmed by the TNPA Application (TNPA, 2013c). Indeed, TNPA project future tariff adjustments of between 7% and 12.89% per annum. Accordingly, they have proposed a multi-year tariff application approach that would result in a "smoothed tariff increase of 9.70% from FY 2015/16 to FY 2018/19" (TNPA, 2013c: 8).

There are concerns about the calculation of the current volume growth forecasts. Consider that, "trade volumes decline more sharply than output [GDP] during downturns and trade accelerates faster than GDP when the economy picks up. In 2009 trade volumes dropped by nearly 11% whereas GDP fell by only 1%. But in 2010, trade flows rose by 12.5%, far faster than the 4.9% increase in global output. The OECD forecasts that the world's GDP will expand by 4.2% [in 2011], and trade volumes will grow by 8.1%."(The Economist, 2011). So, if South Africa's GDP is forecast to grow at 3.1% for 2014, surely volume growth should be significantly higher than the TNPA forecast volume growth of 3.5%. If volume growth is higher than 3.5%, then the tariff increase should accordingly be lower than the 14.39%.

Presumably, TNPA have forecast Capex based on volume growth assumptions. So, lower volume growth should mean that the Capex projects may be delayed. In addition, an

increase in port efficiency and productivity should allow the Capex to be further delayed, therefore contributing to a reduction in the forecast tariff increases.

Several relevant questions and comments were raised at the public hearings on the TNPA tariff application for 2014/15 that occurred between 30 September and 4 October 2013. These concerns on the RAB, Capex, Opex, volume forecasts and so forth are already documented and available on the Ports Regulator website (see Ports Regulator, 2013c).

This report aims to add value to the current discourse. The following six scenarios explain and recalculate the TNPA application. Each scenario in table 2 explains the change in particular variables that results in reduced tariff increases.

4.2. Scenario 1. Recalculation of TNPA Application: Rounding-off Errors

The first scenario reflects the recalculation of the revenue requirement for TNPA. There have been recurring rounding-off errors in TNPA's calculations. Due to these errors TNPA calculates a WACC of 5.83% (TNPA, 2013c). The author, however, has recalculated this figure and the result is a WACC of 5.82% (a 0.01% difference). Consequently the recalculated ROC is R3 765.04 million. This is R6.96 million less than the ROC proposed by TNPA. This changes the total revenue requirement to R8 827.04 million. Such a revenue requirement would reduce the tariff increase from 14.39% to 14.29%.

4.3. Scenario 2. Changes to the Market Risk Premium

The second scenario shows a change to the Market Risk Premium (MRP) calculation. "The Market Risk Premium is in essence forward-looking and, as such, it cannot be observed but must be predicted" (Ports Regulator, 2013b: 13). The Ports Regulator continues to state that calculating MRP is problematic and that "For the 2014/15 FY tariff assessment, the Regulator will use the Dimson, Marsh and Staunton (DMS) estimate of the arithmetic mean MRP as measured against bonds for South Africa to determine an MRP for the NPA cost of equity calculation" (Ports Regulator, 2013b: 13).

TNPA propose an MRP of 7.1%. Although they state that they have used the DMS data (as instructed by the Ports Regulator in the interim manual), it is not clear how they actually used the DMS data to calculate an MRP of 7.1%.

DMS shows that for the period 1900 to 2012, "the annualized equity risk premium relative to bills has been 6.3%" and that the rate for EP Bonds is 5.4%. (Credit Suisse, 2013: 52). Jones, Christison and Strydom (2011) argue that the MRP should be in the region of 6%. Jones and Christison (2012: 13) explain that TNPA have "adopted the R186 bond yield as the basis of their risk free rate, and therefore the average long-term MRP is 5.3%, while the average over the past 10 years is just 3.9%".

Table 2. Recalculating the TNPA Tariff Application for 2014/15: Six Scenarios

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
	Recalculation of Tariff Application	Change: MRP to 6.3	If βd is considered	If MRP = 6.3 and βd is considered	If βa = 0.4, MRP = 6.3 and βd is considered	If βa = 0.35, MRP = 6.3 and βd is considered
	Rm	Rm	Rm	Rm	Rm	Rm
Asset Beta (β_a)	0.5	0.5	0.5	0.5	0.4	0.35
Debt Beta (β_d)	0	0	0.14	0.16	0.16	0.16
Equity Beta (β_e) (using Hamada)	0.86	0.86	0.76	0.74	0.57	0.49
Risk-free Rate (Nominal) (NR_f)	8.32%	8.32%	8.32%	8.32%	8.32%	8.32%
Real Risk free rate (RR_f)	2.29%	2.29%	2.29%	2.29%	2.29%	2.29%
Gearing (g)	0.5	0.5	0.5	0.5	0.5	0.5
Debt/ Equity ratio (D/E)	1	1	1	1	1	1
Inflation	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%
Market Risk Premium (MRP)	7.1%	6.3%	7.1%	6.3%	6.3%	6.3%
Corporate tax (t)	0.28	0.28	0.28	0.28	0.28	0.28
Cost of Equity (real)	8.39%	7.70%	7.66%	6.97%	5.89%	5.34%
Weighted Average Cost of Debt (nominal) NK_d	9.34%	9.34%	9.34%	9.34%	9.34%	9.34%
Weighted Average Cost of Debt (real, pre-tax) RK_d	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%
WACC	5.82%	5.48%	5.45%	5.11%	4.57%	4.30%
RAB	64 694	64 694	64 694	64 694	64 694	64 694
Real Post WACC	5.82%	5.48%	5.45%	5.11%	4.57%	4.30%
Return on Capital (ROC)	3 765.04	3 542.49	3 527.48	3 304.93	2 954.42	2 779.16
Plus: Depreciation	1671	1671	1671	1671	1671	1671
Plus: Operating Expense	4329	4329	4329	4329	4329	4329
Plus: Taxation Expense	1057	1057	1057	1057	1057	1057
Plus: Claw Back	118	118	118	118	118	118
Revenue Requirement (RR)	10 940.04	10 717.49	10 702.48	10 479.93	10 129.42	9 954.16
Less: Real Estate	2113	2113	2113	2113	2113	2113
Marine Revenue	8 827.04	8 604.49	8 589.48	8 366.93	8 016.42	7 841.16
LER for FY 2013/14	7462	7462	7462	7462	7462	7462
EVG for FY 2014/15	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
(LER) for FY 2013/14 x (EVG) for FY 2014/15	7 723.17	7 723.17	7 723.17	7 723.17	7 723.17	7 723.17
FY 2014/15 Revenue Requirement (RR)	8 827.04	8 604.49	8 589.48	8 366.93	8 016.42	7 841.16
Tariff Increase	**14.29%**	**11.41%**	**11.22%**	**8.34%**	**3.80%**	**1.53%**
Less ETIMC	454	454	454	454	454	454
Marine Revenue: Less ETIMC	8373.04	8150.49	8135.48	7912.93	7562.42	7387.16
Tariff Increase: Less ETIMC	**8.41%**	**5.53%**	**5.34%**	**2.46%**	**-2.08%**	**-4.35%**

Source: Author compiled and calculated.

The Ports Regulator (2013a) Record of Decision for 2012/13, as well as for 2013/14, approved the use of an MRP of 6.3% as proposed in TNPA's Tariff Application to the Ports Regulator for 2013/14. The original value of 6.3% is based on the historic returns of the JSE over the last 75 years. Accordingly, it appears that the TNPA proposed MRP of 7.1 is excessive and that the Ports Regulator should consider applying an MRP of 6.3% or less.

The second scenario reflects a calculation using an MRP 6.3%, rather than 7.1%. This decreases the cost of equity from 8.39% to 7.70%. The WACC decreases to 5.48%, the ROC changes to R3 542.49 million and the RR changes to R8 604.49 million. This calculation results in a tariff increase of 11.41%.

4.4. Scenario 3. Inclusion of the Debt Beta

The third scenario considers the Debt Beta. The Regulatory Manual (Ports Regulator, 2013b) uses the Hamada equation. Jones and Christison (2012: 17) stated that: "the Port Authority has used an incorrect method to determine the equity (levered) betas. The Port Authority has applied a form of the Hamada method… that is suitable only for entities that have risk-free debt, while at the same time assuming that its debt is risky." If the cost of debt, risk-free rate and MRP are known, the debt beta can be computed.

The third scenario shows a calculation including the debt beta. This decreases the equity beta from 0.86 to 0.76 and the cost of equity decreases to 7.66%. The WACC decreases to 5.45%, the ROC changes to R3 527.48 million and the RR changes to R 8 589.48 million. This calculation results in a tariff increase of 11.22%.

4.5. Scenario 4. Using MRP of 6.3% and including the Debt Beta

The fourth scenario reflects a calculation including an MRP of 6.3% and the debt beta. When the MRP is 6.3%, the debt beta increases to 0.16, and the equity beta decreases to 0.74. The cost of equity decreases to 6.97%, the WACC decreases to 5.11%, the ROC changes to R3 304.93 million and the RR changes to R8 366.93 million. This calculation results in a tariff increase of 8.34%.

4.6. Scenario 5. Using Asset Beta of 0.4, MRP of 6.3% and including the Debt Beta

A Beta measures systematic risk based on how returns co-move with the overall market. The Ports Regulator (2013b: 13) states that: "because the NPA is not a traded company, the choice of comparators used to calculate a Beta must be as similar as possible to reflect the actual risks faced by NPA under the RR methodology. This is to prevent it substantially overestimating (or underestimating) the appropriate return for the risk faced". In essence, TNPA (2012b: 21) would prefer to use an asset beta that is derived by de-levering the equity beta of the JSE top 40 companies that is obtained from Bloomberg. The Ports Regulator,

however, states that “the inclusion of a claw-back mechanism, the introduction of the ETIMC and the inherent public nature of the NPA and the existence of an interventionist regulatory regime requires the Regulator to use a Beta substantially lower than proposal’s such as the JSE top 40. For the 2014/15 tariff year, the Regulator will use the 0.50 asset beta decided upon in the previous ROD’s” (Ports Regulator, 2013b: 13). The asset beta of 0.5 in the previous ROD’s was taken from the Queensland Competition Authority which is an estimate for the global ports industry (Ports Regulator, 2010). However, as the Ports Regulator has correctly identified, South Africa’s ports are less risky than the JSE top 40. Furthermore, South Africa’s ports are less risky than the average for ports globally because of the reasons mentioned by the Ports Regulator as well as the complimentary system of ports and associated tariff structure that allows for cooperation between ports (rather than competition) and diversification and spreading of costs, revenues and risks across the ports system. Such distinct characteristics of South Africa’s ports system significantly reduce the risks and hence it can be argued that the asset beta for South Africa’s ports should be lower than the global average of 0.5.

The fifth scenario reflects a calculation including an asset beta of 0.4, an MRP of 6.3% and the debt beta. In this calculation the equity beta decreases to 0.57. The cost of equity decreases to 5.89%, the WACC decreases to 4.57%, the ROC changes to R2 954.42 million and the RR changes to R8 016.42 million. This calculation results in a tariff increase of 3.8%.

4.7. Scenario 6. Using Asset Beta of 0.35, MRP of 6.3% and including the Debt Beta

The sixth scenario reflects a calculation including an asset beta of 0.35, an MRP of 6.3% and the debt beta. In this calculation the equity beta decreases to 0.49. The cost of equity decreases to 5.38%, the WACC decreases to 4.3%, the ROC changes to R2 779.16 million and the RR changes to R7 841.16 million. This calculation results in a tariff increase of 1.53%.

4.8. Sensitivity Analysis on the Asset Beta: Scenario A to Scenario F

Using the assumptions that TNPA have applied in their tariff application and only changing the asset beta, a clear relationship is demonstrated between changes in the asset beta and the associated impact on the tariff increase. Table 3 shows a sensitivity analysis on the impact of the changes in asset beta on the tariff increase. For example, if an asset beta of 0.3 is used, then a tariff increase of 4.06% would be calculated. If an asset beta of 0 is used (meaning that movement of the asset is uncorrelated with the movement of the benchmark), then a tariff *decrease* of 11.28% would result. Overall, table 3 demonstrates that a 0.1 reduction in the asset beta causes an average 5.115% reduction in the tariff increase. Clearly, there is a need to further investigate and attempt to settle the debate on the appropriate asset beta to be used in the Revenue Required calculation for South Africa’s ports.

Table 3: Sensitivity Analysis on the Asset Beta: Scenario A to Scenario F

	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario F
	Recalculation of Application	Only change: β_a to 0.4	Only change: β_a to 0.3	Only change: β_a to 0.2	Only change: β_a to 0.1	Only change: β_a to 0
	Rm	Rm	Rm	Rm	Rm	Rm
Asset Beta (β_a)	**0.5**	**0.4**	**0.3**	**0.2**	**0.1**	**0**
Debt Beta (β_d)	0	0	0	0	0	0
Equity Beta (β_e) (using Hamada)	0.86	0.69	0.52	0.34	0.17	0.00
Risk-free Rate (Nominal) (NR_f)	8.32%	8.32%	8.32%	8.32%	8.32%	8.32%
Real Risk free rate (RR_f)	2.29%	2.29%	2.29%	2.29%	2.29%	2.29%
Gearing (g)	0.5	0.5	0.5	0.5	0.5	0.5
Debt/ Equity ratio (D/E)	1	1	1	1	1	1
Inflation	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%
Market Risk Premium (MRP)	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%
Corporate tax (t)	0.28	0.28	0.28	0.28	0.28	0.28
Cost of Equity (real)	8.39%	7.17%	5.95%	4.73%	3.51%	2.29%
Weighted Average Cost of Debt (nominal) NK_d	9.34%	9.34%	9.34%	9.34%	9.34%	9.34%
Weighted Average Cost of Debt (real, pre-tax) RK_d	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%
WACC	5.82%	5.21%	4.60%	3.99%	3.38%	2.77%
RAB	64694	64694	64694	64694	64694	64694
Real Post WACC	5.82%	5.48%	5.45%	5.11%	4.57%	4.30%
Return on Capital (ROC)	3765.04	3542.49	3527.48	3304.93	2954.42	2779.16
Plus: Depreciation	1671	1671	1671	1671	1671	1671
Plus: Operating Expense	4329	4329	4329	4329	4329	4329
Plus: Taxation Expense	1057	1057	1057	1057	1057	1057
Plus: Claw Back	118	118	118	118	118	118
Revenue Requirement (RR)	10940.04	10717.49	10702.48	10479.93	10129.42	9954.16
Less: Real Estate	2113	2113	2113	2113	2113	2113
Marine Revenue	8827.04	8604.49	8589.48	8366.93	8016.42	7841.16
LER for FY 2013/14	7462	7462	7462	7462	7462	7462
EVG for FY 2014/15	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
(LER) for FY 2013/14 x (EVG) for FY 2014/15	7723.17	7723.17	7723.17	7723.17	7723.17	7723.17
FY 2014/15 Revenue Requirement (RR)	8827.04	8432.01	8036.99	7641.97	7246.95	6851.93
Tariff Increase	**14.29%**	**9.18%**	**4.06%**	**-1.05%**	**-6.17%**	**-11.28%**
Less ETIMC	454	454	454	454	454	454
Marine Revenue: Less ETIMC	8373.04	7978.01	7582.99	7187.97	6792.95	6397.93
Tariff Increase: Less ETIMC	**8.41%**	**3.30%**	**-1.82%**	**-6.93%**	**-12.04%**	**-17.16%**

Source: Author compiled and calculated.

4.9. Excessive Tariff Increase Margin Credit (ETIMC)

Depending on the scenario and the resulting tariff adjustment that the Ports Regulator allows, it may not be advisable to allow an ETIMC of R454 million for 2014/15. In addition, consider that for FY 2014/15, the planned Capex by TNPA is R3 317 million. This is forecast to increase by a further 136.5% to R7 846 million for 2015/16, and a further 28.5% increase to R10 082 million for 2016/17 (TNPA, 2013c: 56). In 2018/19 the Capex is planned to reach R12 795 million. Such large forecasts in Capex will, under the current Revenue Required method, result in continued above inflation increases in tariffs until 2018/19, as confirmed by the TNPA Application (TNPA, 2013c). Indeed, TNPA project future tariff adjustments of between 7% and 12.89% per annum. Perhaps it may be wise to keep the ETIMC to assist with lowering the future predicted spikes in the tariff increases.

5. Tariff Structure

Transnet National Ports Authority summarise their overall objective as "ensuring the competitiveness of the South African ports systems and support economic growth as mandated by its role as a state owned company." (TNPA, 2012a: 56). Section 30(1a) of the National Ports Act, 2005 (Act No. 12 of 2005) specifies that one of the main functions of the Ports Regulator is to "(a) exercise economic regulation of the ports system in line with government's strategic objectives".

The purpose of this section of the report is to examine and provide comments on the TNPA proposal for a new tariff structure (TNPA, 2012a). In essence, TNPA's proposal for a new tariff structure TNPA (2012a: 56) is "seeking an 'in principle' approval by the Regulator of the new tariff structure…". Section 5.1 discusses the proposed Beneficiation Promotion Programme (BPP) and section 5.2 discusses the allocation of required revenues to shipping lines, cargo owners and terminal operators.

5.1. Beneficiation: South Africa's Government Policy Perspectives versus the TNPA Tariff Proposal

TNPA define beneficiation or value added processing as involving "the transformation of the raw material using local factors (labour and capital) to a more finished product that has a higher value than the sale of the raw material" (TNPA, 2012a: 41). Government's current strategic objectives are clearly stated in South Africa's National Development Plan (NDP, 2012). On the topic of beneficiation, the NDP (2012: 42) states:

> *There are important trade-offs to be considered in mineral beneficiation. South Africa is losing global market share in products such as ferrochrome. However, first-stage processing or smelting is highly energy and capital intensive, potentially drawing*

energy and capital away from other sectors. South Africa should be selective about the areas in which it intends to support first-stage beneficiation. Priority areas should include those where suitable capacity already exists, or where beneficiation is likely to lead to downstream manufacturing. Beneficiating all of the country's minerals is neither feasible nor is it essential for developing a larger manufacturing sector.

In stark contrast to such national policy stated in the NDP, TNPA's broad application of the BPP "to all cargoes and cargo handling types" (TNPA, 2013a: 16) is in direct contradiction to best practice and South Africa's government policy that specifically promotes "beneficiation that targets identified opportunities" (NDP, 2012: 157).

In contrast with the BPP claims made in the TNPA tariff structure proposal, and within the context of the mineral and metals cluster, the NDP (2012: 146) states: "As long as electricity is scarce, there will be a trade-off between beneficiation and other more labour absorbing activities. In general, beneficiation is not a cure-all because it is also usually capital intensive, contributing little to overall job creation."

IPAP (2013: 7; 20) shows that the DTI has only started its research on the various industrialisation projects and is still discussing the best ways to implement such initiatives. So it would appear that the proposed Transnet BPP strategy is premature and, arguably, ill-conceived.

From a financial perspective, TNPA's (2012a: 43) BPP tariff structure proposes:

… to offset the revenue loss (by stage of beneficiation rate reductions) by increasing the cargo dues rate for other commodity/products in the same cargo handling type. In a nutshell, in order to offer a reduction to beneficiated products, non-beneficiated products will need to be charged a general rate that is higher than the base rate for the relevant cargo handling type as determined in paragraph 7.4.1.3.

This means that cargoes with little or no realistic opportunity to beneficiate may be "penalised" and pay a higher price.

The TNPA (2012a) tariff structure proposal (including the BPP) is still under review by the Ports Regulator. Therefore, even though TNPA have applied for an overall tariff increase of 14.39%, it is not clear what the actual individual tariffs for the various cargoes will be as the tariff book will only be issued post the tariff determination process. So, if the TNPA (2012a) tariff structure proposal (including the BPP) were to be accepted by the Ports Regulator, then several bulk and break-bulk cargoes will pay significantly higher tariffs. For example, TNPA have proposed a tariff structure that may contribute towards a 94% increase for Citrus Fruit, 140% for Granite, 122% for Chrome Ore, 71% increase for Rice and so forth (see figure

1). Indeed the current TNPA proposed tariff increase appears to undermine the NDP 2030 objectives of focusing on South Africa's comparative advantages and plans to make it more costly to export mining and agricultural cargoes.

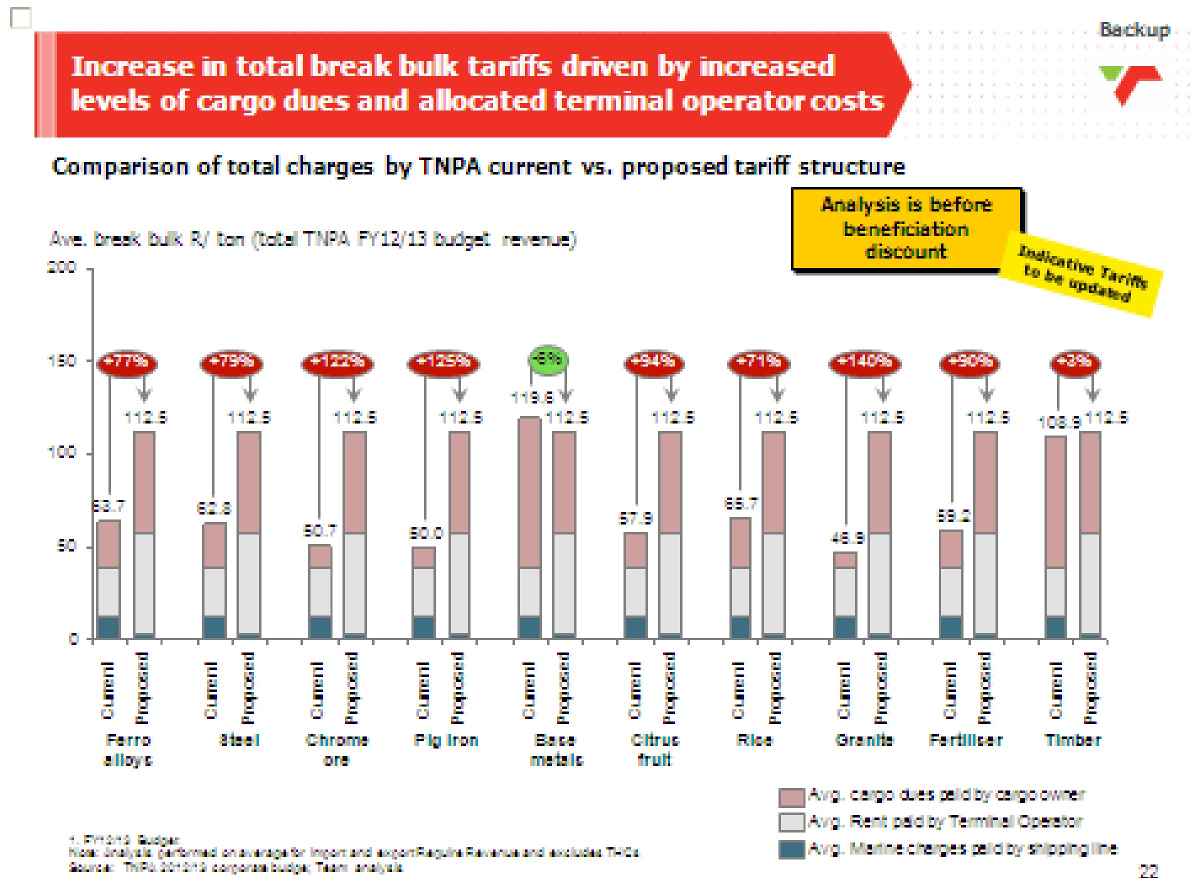

Figure 1. Increase in total break-bulk tariffs

Source: TNPA 2013b: 22.

Considering the tariff principles proposed by TNPA of simplifying and making a more cost-based structure. Rather than simplifying the tariff structure, the proposed BPP may make the tariff structure more complex and open to beneficiation classification and tariff discount disputes. The proposed tariff discounts move the actual tariffs charged further away from the actual costs of providing the port service and infrastructure – further diluting the links between TNPA costs, productivity and prices charged.

5.2. Asset Allocations to Shipping lines, Cargo Owners and Terminal Operators

The Ports Regulator (2012: 4) study shows that vessels face much lower overall cost in South Africa than the global averages. These costs are: 26% below the global norm in the case of containers, 37% for coal (Richards Bay), 47% for automotive (Durban); and 57% for iron ore vessels (Saldana). TNPA (2012a: 20) calculates that based on the provisions allocation of assets to specific port users, shipping lines would be allocated 58% of total assets. Hence "if the cost recovery and user pays principle were applied based on this asset allocation, shipping lines would have to pay more than 50% of Required Revenue, versus 18% currently, which would seriously jeopardise the competitiveness of the South African ports system." (TNPA, 2012a: 20). After various explanations, TNPA ultimately proposed the following contributions to Required Revenue: terminal operators 33%, cargo owners 46% and shipping lines 21% (see Figure 2 and TNPA, 2012a: 23).

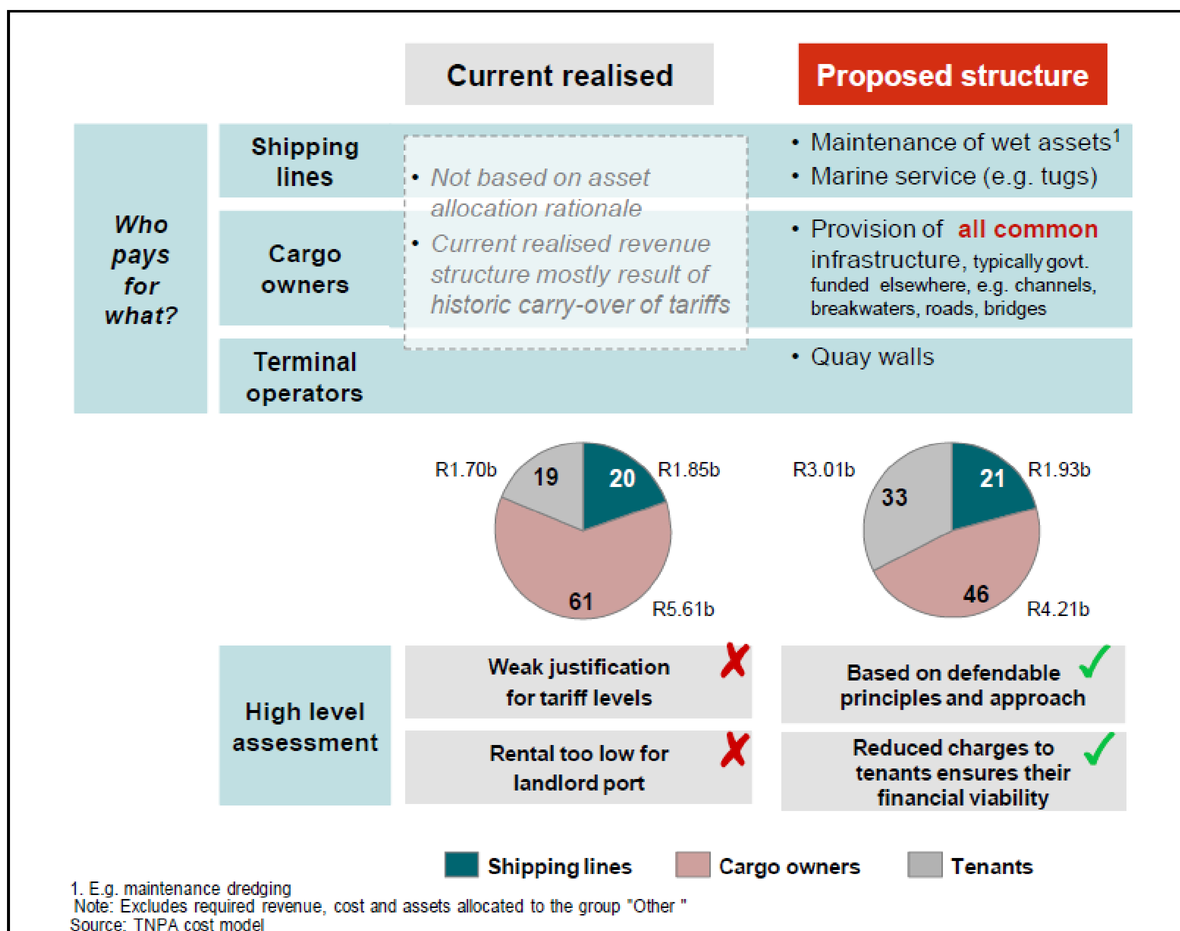

Figure 2. TNPA Proposed structure of required revenue.

Source: TNPA, 2012a: 23.

TNPA (2012a: 22) explain that “not all wet infrastructure should be allocated to shipping lines as this will make the tariffs charged to shipping lines prohibitively expensive compared to other ports internationally.” Further information is revealed in TNPA (2013a: 4), an extreme hypothetical example of redistributing the entire required revenue allocated to cargo owners of 46% to shipping lines results in an estimated 3.5 times higher marine charge than current levels. Such a calculation is not clear. Is the difference of 3.5 based on the 46% plus 21% or merely the additional 46% allocation? TNPA (2013a: 4) then proceed to briefly explain the potential negative consequences for South Africa of reduced port call by shipping lines or “avoiding South Africa altogether”. Rather than using the “extreme examples” it may be useful to use (calculate) more moderated and audited realistic examples that may result in a greater Required Revenue allocation to shipping lines: moving the marine pricing closer to the global norm, whilst having no negative consequences on the South African economy. Indeed, higher marine charges may incentivise shipping lines to use larger ships. Larger ships, through economies of scale, should contribute towards lowering the transportation costs of South Africa’s international trade. Further consideration needs to be given to the proposed asset allocation to port user groups.

6. Conclusions

This report focused on a constructive critique of the Revenue Requirement tariff methodology applied by TNPA as well as commented on the proposed tariff structure.

TNPA have applied for a tariff increase of 14.39% for FY 2014/15. This report recalculated TNPA’s required revenue and associated tariff increase and found that the actual tariff increase, without including the TNPA rounding-off errors, results in a tariff increase of 14.29%.

TNPA use values for the components of the Revenue Requirement model that should not be allowed. More specifically, TNPA do not include a debt beta, they use an MRP of 7.1% and use an asset beta of 0.5. This report recommends that the Ports Regulator should:

1) Include the calculation of a debt beta; and
2) Allow an MRP of 6.3% or less; and
3) Use and asset beta of less than 0.5.

Scenarios one to Scenario six (in table 2) demonstrates the consequences of accepting the recommendations above. For example, Scenario four demonstrates that if an MRP of 6.3% is used and the debt beta is included, then the tariff increase would be 8.34%. Scenario five demonstrates that if an MRP of 6.3% is used, the debt beta is included and an asset beta of 0.4 is applied, then the tariff increase would be 3.80%. With CPI forecast at 5.9% for 2014, a

nominal tariff increase of 3.80% would actually contribute to a reduction in real transport costs through South Africa's ports.

Table 3 demonstrated though Scenario A to Scenario F a sensitivity analysis on the asset beta. The Scenarios demonstrate that a 0.1 reduction in the asset beta causes an average 5.115% reduction in the tariff increase. Clearly, there is a need to further investigate and attempt to settle the debate on the appropriate asset beta to be used in the Revenue Required model for South Africa's ports.

Depending on the scenario and the resulting tariff adjustment that the Ports Regulator allows, it may not be advisable to allow an ETIMC of R545 million for 2014/15. It may be wise to keep the ETIMC to assist with lowering the future predicted spikes in the tariff increases.

In order to improve port pricing in South Africa, the right incentives need to be in place. There is a concern that the Required Revenue model may incentivise port prices at levels that are not in the best interests of the country. Furthermore, the revenue required model may skew incentives that may result in bloated Capex through unnecessary investments in port infrastructure as well as bloated Opex.

This report provides evidence that several principles in the TNPA tariff structure proposal are not in line with government's strategic objectives. More specifically, the TNPA proposed application of the BPP to all cargoes and cargo handling types, as well as the timing of such a beneficiation initiative, is inconsistent with government's strategic objectives as stated in the National Development Plan (2012). The Ports Regulator should consider rejecting the BPP principles that are in the TNPA (2012a) proposal. Furthermore, the Ports Regulator should not approve the TNPA proposed allocation of required revenues to shipping lines, cargo owners and terminal operators. It appears that it may be better to allocate a greater proportion of the required revenues to shipping lines. There is clearly need for further research on the optimal allocation of revenues to the port user groups.

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