

# SUBMISSION TO NERSA:

ESKOM APPLICATION FOR ELECTRICITY TARIFF INCREASES (MYPD4)

January 2019



**MINERALS COUNCIL**  
SOUTH AFRICA



# MINING MATTERS TO SOUTH AFRICA

South Africa's economy is a primary minerals intensive economy, producing a number of key minerals including PGMs, gold, coal, iron ore, diamonds, manganese, chrome and titanium. Almost one fifth of the economy is dependent on the mining sector.

## MINING - AN INDUSTRY DEPENDENT ON ELECTRICITY

Electricity is key to sustaining mining operations and to processing minerals. The mining industry needs a reliable supply of competitively priced electricity to operate deep-level and technologically complex mines and to support the continued beneficiation of South Africa's mineral resources.

The sector is both a supplier of primary energy to generate electricity (>90%) and a large consumer of electricity, consuming more than 30% of total electricity supply if smelters and refineries are taken into account.

## THE STATE OF THE SOUTH AFRICAN ECONOMY

Since 2007, economic growth has been severely affected by a range of domestic factors such as the cost of transport and logistics, increased labour costs, policy uncertainty and the rising cost and unreliable supply of electricity. While world economic growth recovered since the global financial crisis in 2007, the South African economy lagged behind and could have been 30% larger if it kept up with the growth and performance of emerging market economies.

Electricity-intensive industries such as mining and manufacturing were severely impacted by the electricity crisis of 2007/2008 and the subsequent electricity tariff increases. Regulatory and policy uncertainty, increased costs such as high electricity tariff increases and corruption over the past decade has compounded the situation, resulting in poor growth rates across all measures of GDP.

## IN 2017, THE MINING SECTOR:



Employed

**464,670**

people directly (6.1% of private non-agricultural employment)



Contributed

**R93 billion**

to fixed investment (18.2% of private sector fixed investment)



Contributed

**R308 billion**

to export earnings (27% of total export earnings)



Earned

**US\$25 billion**

in foreign exchange (half of South Africa's entire foreign exchange reserves)



Paid

**R7.5 billion**

in royalties and **R16 billion** in taxes

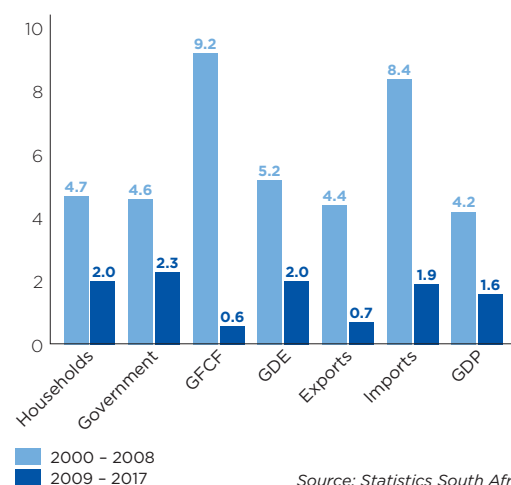


Directly contributed

**6.9%**

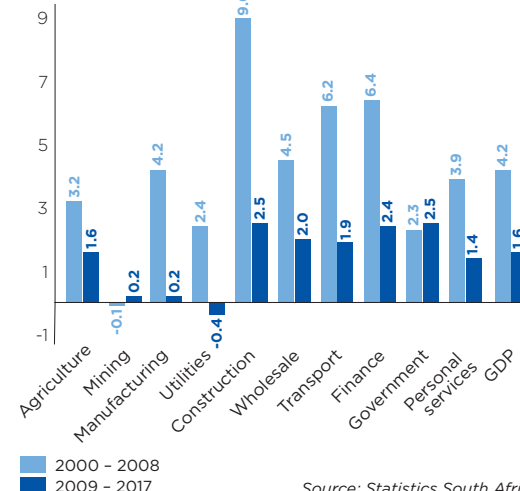
to GDP, but this more than doubles when supplier and downstream industries are taken into account

SA growth in GDP expenditure components (%)



Source: Statistics South Africa

SA growth in GDP production sectors (%)



Source: Statistics South Africa

Inadvertently, poor economic growth as a result of the factors outlined above has also had an impact on Eskom. Between 2013 and 2018, the number of Eskom's industrial customers declined by 78 to 2,703; mining customers were down 61 to 993; and the number of agricultural customers declined by 1,851 to 81,638. While it is difficult to precisely determine whether the reduction in customers is the primary result of electricity tariff increases or austere economic conditions, many industrial firms that have closed specifically identified the high and rising cost of electricity as the factor that 'pushed them over the edge'.

# IMPACT OF HISTORIC TARIFF INCREASES ON MINING

The cost of electricity constitutes a significant component of the total input cost basket of mining, particularly for the gold and platinum sectors. Excessive increases in electricity tariffs have had a detrimental impact on the overall inflation profile of the mining sector.

The collapse of the commodity cycle during the latter part of the previous decade coincided with the start of electricity tariff increases.

## Between 2006 and 2017:

South Africa's electricity tariffs have increased by

# 488%

across all categories and industries.

The mining sector experiencing the highest increases of

# 523%

over the period.

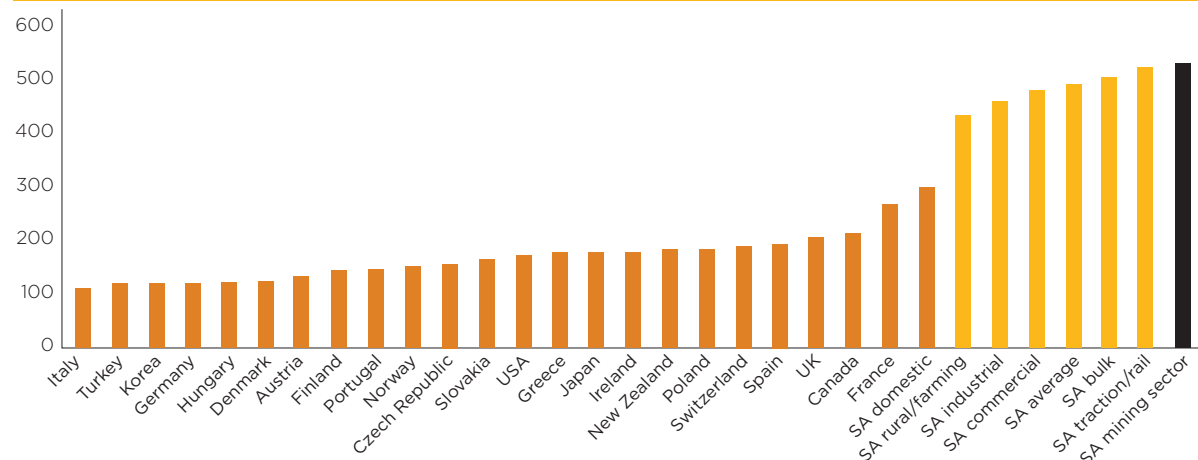
The average electricity tariff increases for the mining sector over this period was

# 15.5%

per year.



Annualised growth in electricity tariffs (%; 2006-2017)



Source: Enerdata, various country regulators, and SA Department of Energy

## The mining industry is a price-taker.

# 80%

of mining production is exported to markets where world prices prevail. The industry cannot pass cost increases on to customers.

**Since 2010, the real and nominal price of electricity paid by the mining industry increased by 12.5% and 16.2% respectively.**

Over the same period, the gold price only increased by 4.4% in dollar terms and 10.2% in rand terms, while the platinum price in dollar terms decreased by 1.8% and increased by 10.2% in rand terms.

Lower world economic growth resulted in lower demand for commodities which resulted in lower prices. At the same time costs continued to increase with the cost of electricity escalating by far the most. As a result, margins have eroded resulting in job losses and reduced fix investment across the mining sector while export earnings from mining have decreased.

**The South African mining industry has slowly, but surely become less competitive.**

# IMPACT ON EMPLOYMENT

Given that South African gold mines are mostly deep-level operations and require electricity for operating, as well as significant ventilation and cooling, the gold sector was most severely affected by tariff increases.

Since 2007, and the beginning of the electricity crisis,

**53,500**

jobs have been lost in the mining sector.

While a number of factors played a role, electricity tariff increases specifically accounted for

**18,303 (34.2%)**

of all job losses in the mining sector between 2006 and 2017.

Job losses resulting from a 15.5% increase in electricity tariffs\* (number of jobs)

	Gold	Other mining	Total mining
2006	693	721	1,415
2007	721	814	1,535
2008	722	886	1,608
2009	694	830	1,525
2010	681	865	1,547
2011	628	961	1,590
2012	617	1,010	1,627
2013	572	1,009	1,581
2014	516	1,012	1,528
2015	499	989	1,489
2016	506	913	1,419
2017	490	951	1,441
<b>Total</b>	<b>7,341</b>	<b>10,962</b>	<b>18,303</b>

Source: Minerals Council calculations based industry/sector coefficients

\* The jobs impact was calculated based on electricity tariffs resulting from time-series estimations

# IMPACT ON FIXED INVESTMENT

High tariff increases have resulted in South Africa no longer being an attractive investment destination.

The average electricity tariff increases of 15.5% per year between 2006 and 2017 has reduced fix investment by a cumulative R103.2 billion.

Beneficiation industries such as foundries and manganese smelters, initially established in South Africa because of lower electricity tariffs compared to other countries in the rest of the world, were forced to either close their doors or relocate as a result of the above-inflation tariff increases.

Reduction in investment resulting from a 15.5% increase in electricity tariffs (Rm)

	Gold	Other mining	Total mining
2006	971	4,449	5,420
2007	1,214	5,722	6,937
2008	1,492	7,220	8,711
2009	1,542	7,675	9,217
2010	1,452	7,428	8,880
2011	1,473	7,742	9,215
2012	1,427	7,657	9,102
2013	1,404	7,799	9,203
2014	1,392	7,953	9,345
2015	1,346	7,907	9,253
2016	1,264	7,642	8,906
2017	1,080	7,931	9,011
<b>Total</b>	<b>16,056</b>	<b>87,144</b>	<b>103,201</b>

Source: Minerals Council calculations based industry/sector coefficients

## BENEFICIATION AND OPPORTUNITY COST

Over the last decade, manganese production has trebled due to export demand for use in iron and steel production amongst various other uses. Despite the abundance of manganese in South Africa, unreliable electricity supply and increasing electricity tariffs have rendered local beneficiation unviable.

The value derived from beneficiating manganese alloy can be more than four times the value of manganese ore. In 2007 before the electricity crisis, local sales made up 29% of total tonnes sold. In 2018, local sales decreased to just 2.4% of total tonnes.

The Minerals Council estimates an opportunity cost to South Africa of R92 billion, equating to \$8.2 billion lost in potential foreign exchange earnings over the last decade. As local sales continue to drop, relative to exports, the opportunity cost curve will continue to widen.

# IMPACT OF ESKOM'S MYPD4 APPLICATION

If history is anything to go by, the 15% annual electricity tariff increase currently being applied for by Eskom will cause considerable damage not only to Eskom's mining customers, but to the utility's income and future.



## IN 2017, THE MINING INDUSTRY SPENT

R9.5 billion on electricity, representing 11.9% of total intermediate input costs. If the 15% annual tariff increase is granted, the sector will likely spend R14.5 billion on electricity which represents a 75% increase in electricity tariffs from 2017 to 2021.



Gold Fields – South Deep

Given the fundamentals of the mining industry, the sustainability of a mining operation is dependent on its ability to contain the cost of production. The tariff increase applied for by Eskom will further erode the mining industry's competitive advantage and will lead to further mine closures and job losses.

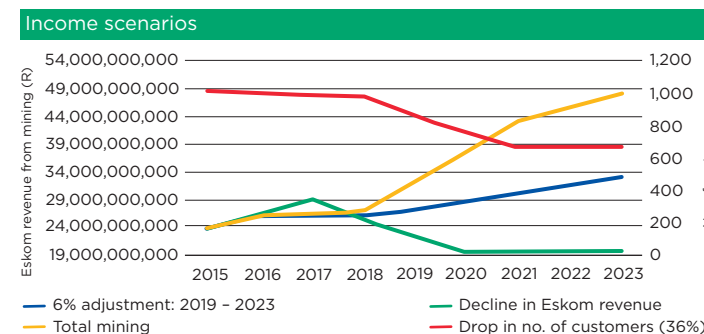
At the same time, Eskom relies on customers to use and pay for the electricity it produces. The proposed tariff increase will have such a severe impact on the mining industry that the power utility would lose so many mining customers that its income would suffer severely, accelerating its own 'death spiral'.

The tariff increase applied for by Eskom will further erode the mining industry's competitive advantage and will lead to further mine closures and job losses.

The Minerals Council has completed a study to illustrate the impact of an additional 15% tariff increase on the mining industry. The outcomes of the study also illustrate the impact on Eskom's income.

## The study was based on three possible scenarios:

- 01** A 15% tariff increase from 2019 to 2021 and thereafter an inflation aligned increase of 6% until 2023. This is what Eskom's application entails and is suggested by its teams for the post 2021 period (the yellow coloured line).
- 02** An inflation related increase of 6% from 2019 to 2023 (blue coloured line); and
- 03** A scenario that considers a decline in the number of mining customers (red coloured line on the right-hand axis) resulting from Eskom's application.
  - The green line shows the reduction in revenue collected by Eskom as a result of the reduction in the number of mining customers. This scenario assumes a decline of 36% in mining customers in the three years to 2021. The historical experience between 2013/14 and 2017/18 is that the number of mining customers declined from 1,054 to 993.



Source: Minerals Council calculations

Eskom assumes that a 15% tariff increase will result in the collection of R48.1 billion in revenue from the same number of mining customers (993) it currently has (yellow coloured line).

However, Eskom will only collect R19.5 billion in revenue (green coloured line) if the number of mining customers decline by 36% by 2021 (red coloured line).

If an inflation aligned increase of around 6% is allowed for up until 2023, Eskom could collect R32.7 billion in revenue from the mining sector. This scenario assumes that the number of mining customers remains relatively the same.

# IMPACT OF MYPD4 APPLICATION ON THE GOLD AND PGMs SECTORS



AngloGold Ashanti – Mponeng

## SOCIO-ECONOMIC IMPLICATIONS

In total, as many as

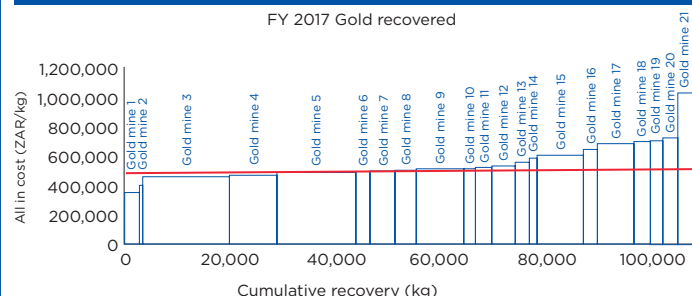
# 150,000

jobs would be at risk if existing sector-specific challenges and the impact of MYPD4 on all commodities is taken into account. Given the mining sector's dependency ratio of 10 people supported by each mining job, the potential socio-economic implications for the country are dire.

## IMPACT OF MYPD4 APPLICATION ON THE GOLD SECTOR

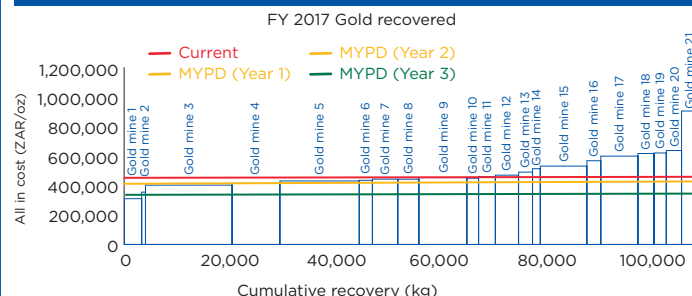
In 2018, 71% of gold mining operations, representing 60% of gold production, were either marginal or loss making. These operations employed approximately 58,000 employees.

Gold industry cost curves (Gold price = R529,256/kg)



Source: Minerals Council and Company Annual Financial Statements

## MYPD (Years 1 to 3) - Gold sector impact



Source: Minerals Council, Company Annual Financial Statements

The Minerals Council estimates that factoring in a **15%** per year inflation rate for electricity tariffs will have a detrimental impact on the overall cost profile of an industry already in distress.

Factoring in the adjusted inflation profile to gold industry cost curves in relation to the prevailing gold price would render almost all gold operations (**95%**), representing **96%** of gold production, loss-making or marginal in a short period of three years, threatening a total of 98,509 jobs.

## IMPACT OF MYPD4 APPLICATION ON THE PGM SECTOR

Currently, more than **52%** of PGM production is already unsustainable on an all-in-cost basis at prevailing prices.

Taking inflationary pressures currently being experienced by the sector into account, **25,751** jobs are already under threat. Should MYPD4 be implemented, an additional **11,909** jobs will be at risk in the PGM sector.



Anglo American Platinum – Polokwane smelter





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