CARBON TAX DISCUSSION PAPER
FOR PUBLIC COMMENT:

# PHASE TWO OF THE CARBON TAX

national treasury
Department:
National Treasury
REPUBLIC OF SOUTH AFRICA

# TABLE OF CONTENTS

# EXECUTIVE SUMMARY

Climate change remains the largest environmental risk and challenge to the world. The Intergovernmental Panel on Climate Change (IPCC)'s Sixth Assessment Report (AR6) cautions that unless deep reductions in greenhouse gas (GHG) emissions occur in the coming decades, global surface temperatures will continue increasing, exceeding the global warming goals of 1.5°C and 2°C during the 21st century.

The 27th United Nations Climate Change Conference held in Egypt in 2022 adopted the Sharm el -Sheik Implementation Plan. It acknowledged that the impacts of climate change exacerbate the global energy and food crises, particularly in developing countries. The plan stressed that the complex and challenging global geopolitical situation and its impact on the energy, food and economic situations, as well as the additional challenges associated with the socioeconomic recovery from the coronavirus pandemic, *should not be used as a pretext for backtracking, backsliding or de-prioritizing climate action.* Green reform policies are required to build future climate resilient economies for a warming world and to revive economic activity and overcome persistent structural economic challenges.

South Africa is ranked among the top 20 highest global emitters, with emissions per capita comparable to those of developed countries because of a high dependency on fossil fuels. We have committed to reduce emissions, increase ambition and contribute to global efforts to curb emissions, limit warming to well below 2°C above pre-industrial levels and to pursue efforts to achieve the 1,5°C temperature goal.

South Africa submitted its aspirational commitment of reaching a net zero carbon economy by 2050 through the South Africa's Low Emissions Development Strategy (SA-LEDS) and its updated 2nd and 3rd Nationally Determined Contributions (NDCs) under the Paris Agreement, to a target range for 2025 of 398 – 510 and for 2030 of 350 – 420 million tonnes carbon dioxide equivalent (Mt $CO_2e$) to the United Nations Framework Convention on Climate Change at the COP26 meeting. To achieve the ambitious emissions target, a rapid and significant decline in GHG emissions will therefore be necessary from electricity generation and transport combined with appropriate reductions in industrial process emissions.

The NDCs also set out the policies and measures to support achievement of the mitigation goals, adaptation considerations and financing requirements to support the transition to a low carbon climate resilient economy. The carbon tax is a key policy measure to cost effectively lower GHG emissions, achieve the NDCs and mitigate climate change impacts as stated in the 2011 National Climate Change Response Policy and 2012 National Development Plan.

The President signed into law the Climate Change Act on 23 July 2024 which seeks to coordinate South Africa's response to climate change and sets out additional mitigation and adaptation policies and measures to support South Africa's transition to a lower carbon and climate resilient economy.

The carbon tax was introduced in June 2019 at a relatively modest headline rate of R120 / tonne carbon dioxide equivalent (t/$CO_2e$). The Carbon Tax Act gives effect to the polluter-pays-principle and ensures firms and consumers take the negative adverse costs (externalities) into account in their future production, consumption and investment decisions. The phased approach to the introduction of the carbon tax was to allow businesses time to make the necessary structural adjustments to their

production processes and practices, and flexibility to transition their activities and invest in energy efficient, renewables and other low carbon technologies.

To ensure a cost-effective transition, the design of the tax for the first phase provides significant tax-free allowances ranging from 60 to 95 percent of the total GHG emissions of firms and for the recycling of revenues through the electricity generation levy credit, renewable energy premium credit and energy efficiency savings tax incentive. To cushion energy intensive sectors such as mining and iron and steel from potential adverse impacts, the introduction of the carbon tax for the first phase does not impact on the price of electricity.

To help achieve South Africa's NDC commitments for 2025 and 2030, revisions to the carbon tax rates for the 2nd phase from 1 January 2026 to 31 December 2030 were necessary. This aimed to strengthen the carbon price signals and provide policy certainty on the future carbon tax design and price path. The 2022 Budget proposed increases in the carbon tax rate for the 2023 to 2025 tax periods by a minimum of US$ 1; increasing to US$20 in 2026 and at least US$30/$tCO_2e$ in 2030 and US$ 120 in 2050 /$tCO_2e$. The carbon tax rates were converted to the following Rand-based rates after public consultations and are set out in the 2022 Taxation Laws Amendment Act.

**Table 1: Carbon Tax Rates – 2023 to 2030**

| YEAR | CARBON TAX RATE (R/$tCO_2e$) |
|---|---|
| 2023 | 159 |
| 2024 | 190 |
| 2025 | 236 |
| 2026 | 308 |
| 2027 | 347 |
| 2028 | 385 |
| 2029 | 424 |
| 2030 | 462 |

The key guiding principles underpinning the tax rate adjustments and carbon tax design options for restructuring the tax-free allowances for the 2nd phase and beyond are:

- Polluter pays principle – the polluter should be held accountable for damages caused by greenhouse gas emissions and the costs imposed on third parties i.e. internalise the externality cost of climate change
- Economic efficiency – emission reductions should be achieved at the lowest cost possible to the economy
- Precautionary principle – taking action now to combat climate change as there would be irreversible damages due to the impacts of climate change.
- Intra and intergenerational equity – ensuring a reasonable quality of the climate to sustain current and future generations.

# Draft Proposals – Restructuring of Tax-Free Allowances

## Basic Tax-Free Allowance

The 60 percent basic tax-free threshold applies to all emissions, below which the tax will not be payable and is the only free allowance for which industry does not need to make investments to qualify for during the first phase of the carbon tax policy. As a transitional measure, this tax-free allowance provides the largest scope to strengthen the effective tax rate for phase two of the carbon tax in line with the updated NDCs and carbon neutrality commitments made in the SA-Low Emissions Development Strategy.

Studies conducted recommend carbon prices of US$25 to 50/$tCO_2e$ by 2030 for developing economies to at least achieve the 2 degrees Celsius temperature goal under the Paris Agreement and reaching global carbon price of about US$100/ $tCO_2e$. In 2023, the International Monetary Fund conducted a high-level modelling study of the carbon price required to achieve South Africa's NDC targets of 350 to 420 MT by 2030 and net zero emissions by 2050. It suggested a carbon price of about US$120/$tCO_2e$ by 2030, without considering other mitigation measures including implicit carbon pricing through regulatory measures. A study conducted by the National Business Initiative of South Africa (2021), estimated carbon prices for South Africa of US$40 in 2030, US$110 in 2040 and reaching US$ 175/$tCO_2e$ in 2050.

To facilitate a just transition to a lower carbon economy and ensure a credible effective carbon tax on the margin to encourage behaviour change, it is proposed that the basic tax-free allowance is gradually reduced over time to phase in a higher effective tax rate on greenhouse gas emissions. The proposed changes to the basic tax-free allowance are combined with a shift to incentive-based allowances.

- This would entail a reduction of the basic tax-free allowance by 10 percentage points in 2026 and 2.5 percentage points per year thereafter from 2027 until 2030. This will be combined with increases to the carbon offset allowance by 15 percentage points in 2026 and a 5 percentage points increase in the performance allowance for combustion emissions in 2026. A reduction of the basic tax-free allowance by at least 2.5 percentage points per year from 2031, where South Africa's NDC commitments under the Paris Agreement will be considered.
- The adjustments to the basic tax-free allowance and carbon offset allowance from 2026 to 2030 and beyond will help to facilitate a just transition to a lower carbon, green economy and expedite investments necessary for the economic recovery. This will help prepare South Africa to access and participate in the rapidly developing global carbon market aimed at meeting the 2deg and 1,5deg temperature goals under the Paris Agreement and facilitate the net zero transition by 2050.

**Table 2: Proposed changes to the tax-free allowances for combustion emissions**

| PROPOSAL FOR COMBUSTION EMISSIONS TAX FREE ALLOWANCE ADJUSTMENTS | | 10 PERCENTAGE POINT REDUCTION IN BASIC IN 2026 & 2.5 PERCENTAGE POINT REDUCTION PER YEAR FROM 2027 + 15 PERCENTAGE POINT INCREASE IN CARBON OFFSETS + 5 PERCENTAGE POINT INCREASE IN PERFORMANCE - TRADE EXPOSURE - CARBON BUDGET ALLOWANCE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | NDC 3 | | | | | NDC 4 | | | | |
| **Year** | **2025** | **2026** | **2027** | **2028** | **2029** | **2030** | **2031** | **2032** | **2033** | **2034** | **2035** |
| Basic | 60 | 50 | 47.5 | 45 | 42.5 | 40 | 37.5 | 35 | 32.5 | 30 | 27.5 |
| Carbon offset | 10 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| Performance | 5 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Trade exposure | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Carbon Budget | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Max Allowance** | **85** | **85** | **82.5** | **80** | **77.5** | **75** | **72.5** | **70** | **67.5** | **65** | **62.5** |

**Table 3: Proposed changes to the tax-free allowances for industrial process and fugitive emissions**

| PROPOSAL FOR FUGITIVE AND PROCESS EMISSIONS TAX FREE ALLOWANCE ADJUSTMENTS | | 10 PERCENTAGE POINTS REDUCTION IN BASIC IN 2026 & 2.5 PERCENTAGE POINTS REDUCTION PER YEAR FROM 2027 + 15 PERCENTAGE POINTS INCREASE IN CARBON OFFSETS - CARBON BUDGET ALLOWANCE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PROCESS AND FUGITIVE** | | NDC 3 | | | | | NDC 4 | | | | |
| **Year** | **2025** | **2026** | **2027** | **2028** | **2029** | **2030** | **2031** | **2032** | **2033** | **2034** | **2035** |
| Basic | 60 | 50 | 47.5 | 45 | 42.5 | 40 | 37.5 | 35 | 32.5 | 30 | 27.5 |
| Process and fugitive | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Carbon offset | 5 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Performance | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Trade exposure | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Carbon Budget | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Max Allowance** | **95** | **95** | **92.5** | **90** | **87.5** | **85** | **82.5** | **80** | **77.5** | **75** | **72.5** |

**Table 4: Effective carbon tax rates**

| REDUCTION IN BASIC TAX-FREE ALLOWANCE BY 10 PERCENTAGE POINTS IN 2026 AND BY 2,5 PERCENTAGE POINTS PER YEAR FROM 2027 | | | | | |
|---|---|---|---|---|---|
| | | COMBUSTION | | PROCESS / FUGITIVE | |
| **YEAR** | **MARGINAL TAX RATE (R/tCO₂e)** | **MAXIMUM ALLOWANCE** | **EFFECTIVE TAX RATE (R/tCO₂e)** | **MAXIMUM ALLOWANCE** | **EFFECTIVE TAX RATE (R/tCO₂e)** |
| 2026 | 308 | 85.0% | **46** | 95.0% | **15** |
| 2027 | 347 | 82.5% | **61** | 92.5% | **26** |
| 2028 | 385 | 80.0% | **77** | 90.0% | **39** |
| 2029 | 424 | 77.5% | **95** | 87.5% | **53** |
| 2030 | 462 | 75.0% | **116** | 85.0% | **69** |
| 2031 | 462 | 72.5% | **127** | 82.5% | **81** |
| 2032 | 462 | 70.0% | **139** | 80.0% | **92** |
| 2033 | 462 | 67.5% | **150** | 77.5% | **104** |
| 2034 | 462 | 65.0% | **162** | 75.0% | **116** |
| 2035 | 462 | 62.5% | **173** | 72.5% | **127** |

The effective carbon tax rates for combustion emissions range from R46 to R116/tCO₂e from 2026 to 2030 and R15 to 69/tCO₂e for fugitive and process emissions over the same period. The transition to a credible carbon price is modest and least disruptive to economic growth. Together with the marginal

tax rate increases from 2026 to 2030, this will provide a modest price signal for behaviour change and help to nudge the economy onto a lower carbon and sustainable growth path.

## Process and fugitive emissions allowance

This allowance was implemented as a transitional measure to provide relief to hard to mitigate sectors i.e. products from chemical processes that occur in fixed stoichiometric ratios (e.g. cement, iron, steel, glass, ceramic) with limited mitigation potential due to either technical or structural reasons over the short to medium term.

To allow industry a longer transitional period for the "hard-to-abate" sectors', it is proposed to retain the 10 percent process and fugitive emissions allowance until 2030.

## Performance allowance

This tax-free allowance was set as a transitional measure to reward companies that implemented mitigation measures (before the introduction of the carbon tax) and encourage firms to reduce the carbon intensity of their production processes relative to their peers.

Government approved a range of greenhouse gas emission intensity benchmarks for several sectors after extensive stakeholder consultations since 2015 and gazetted the approved benchmarks regulations for implementation in 2020. The benchmarks were jointly developed with industry stakeholders for the petroleum refining, mining, iron and steel, cement, glass, sugar and paper and pulp sectors, among others.

A review of the performance benchmarks was conducted in 2021. Most of the benchmarks were found to be methodologically sound, while 6 benchmarks required revisions to ensure the consistent use of emission factors for energy use (scope 2). Further consultations will be held with industry stakeholders during 2025 to consider technical corrections to the relevant benchmarks and any data updates to strengthen existing benchmarks to reflect latest technology developments and develop new benchmarks.

Under the Climate Change Act, companies are required to prepare and submit greenhouse gas mitigation plans to the Department of Forestry Fisheries and the Environment for approval. The plan must set out the mitigation measures that a company will implement to comply with its carbon budget for a 5-year period.

To encourage the implementation of mitigation plans by companies and a reduction in the overall carbon intensity of production processes, it is proposed that mitigation plans must also be approved by the DFFE and implemented by companies in order to qualify for the performance allowance. Where companies fully implement measures set out in the mitigation plans and perform better than the agreed benchmarks, they would qualify for the full performance allowance and if companies do not comply, the performance allowance would be forfeited.

## Carbon tax and electricity sector reforms

Several important energy sector reforms were implemented through Operation Vulindlela. A key milestone was the enactment of the Electricity Regulation Amendment Act (ERA) by the President in

August 2024. The ERA aims to promote the restructuring of the electricity supply industry, encourage competition in electricity generation and establishment of the Independent System Market Operator over the short, medium and longer term.

A partially liberalised electricity supply industry combined with the implementation of an effective carbon price will provide important incentives on the margin for behaviour change by electricity generators towards alternative lower carbon energy sources and energy efficiency improvements. This would encourage dispatching decisions of electricity generators towards lower carbon electricity generation and expedite investments in utility scale and off grid renewable energy to support energy security of supply.

Taking into account the electricity sector reforms underway, it is proposed that the performance allowance for combustion emissions is increased by 5 percentage points to 10 percentage points from 2026. To enable electricity generators to benefit from the performance allowance, a benchmark has been developed for the electricity sector. This is based on the emissions intensities of the existing coal power stations.

A greenhouse gas emission intensity benchmark of 0,94t$CO_2$e/Mwh is proposed for the electricity sector from 2026 until 2030. This is aligned with the emission factor used for scope 2 emissions by process and fugitive emitters in their approved benchmarks. A benchmark in the range of 0.6 to 0.9t$CO_2$e/Mwh is proposed from 2031.

## Carbon offset allowance

The offset allowance provides flexibility to firms to reduce their carbon tax liability by either 5 or 10 per cent of their total GHG emissions through investment in projects that reduce their emissions outside their taxable activities.

It enables industry to invest in mitigation projects at a lower cost to what would be achieved in their own operations and to incentivise mitigation in sectors or activities that are not directly covered by the tax which includes the agriculture, forestry and other land use (AFOLU) and waste.

It is still prudent to impose quantitative restrictions on the use of carbon offsets in carbon pricing by retaining the cap on the amount of offsets industry can use within the carbon tax policy to reduce their tax liability. This will ensure that the generated offsets represent real, additional, verifiable, and permanent emission reductions or removal.

Globally, the use of carbon offsets by companies to reduce their tax liabilities or meet emission targets under carbon tax and emissions trading schemes are limited to 5 and 10 per cent, similar to the caps on offsets used under the carbon tax. Some countries like China and India have implemented carbon crediting mechanisms complementary to carbon pricing to encourage participation in the voluntary carbon market.

## Increase of the carbon offset allowance by 15 percentage points

To enable continued use of offsets and development of the South African carbon market, an increase of the maximum carbon offset allowance by 15 percentage points to 20 per cent for industrial process and fugitive emission activities; and by 15 percentage points to 25 per cent for combustion emissions

is proposed from 2026. This will provide much needed flexibility to the hard to abate sectors and stimulate carbon market activities in South Africa.

## Renewable energy and energy efficiency project eligibility

Since large scale renewable electricity generation technologies such as solar PV and wind have become cost competitive with fossil fuels, it is more difficult to demonstrate additionality or presence of financial barriers to project implementation. Most international standards have established stricter eligibility criteria for offsets generated from renewable energy projects.

However, in a developing country context where renewable electricity generation is crucial for the energy transition, access to carbon markets can provide an additional source of finance and could leverage new investments in clean energy. In the 2024 Budget, government announced an increase in the threshold for eligible renewable energy projects under the carbon offset allowance from 15 megawatts to 30 megawatts installed capacity effective from 1 January 2024. The draft carbon offset regulation containing the proposed amendment was published for public comment in August 2024. This was broadly supported by stakeholders and the amended carbon offset regulations will be published in the government gazette for implementation soon.

Certain renewable energy projects approved under the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP) where power purchase agreements were signed after 9 May 2013 are eligible under the carbon offset programme. The credits from projects approved before the introduction of the carbon tax in June 2019 must be utilised by 31 December 2025.

To ensure sufficient supply of credits in the domestic market and maintain the environmental integrity of the carbon offset scheme, it is proposed that the utilisation period for offsets from projects approved and registered under the eligible standards before the introduction of the carbon tax including renewable energy projects is extended for an additional three years until 31 December 2028.

The Section 12L Energy Efficiency Savings (EES) tax incentive comes to an end in December 2025. This is due to the additional incentive provided by the higher carbon tax which comes into effect in January 2026. However, to assist industries in the short term and to encourage innovation and additional investments in energy efficiency measures, it is proposed to allow eligible energy efficiency projects including those developed under the 12L tax incentive under the carbon offset scheme. This will support the development of the domestic carbon market and crowd in private sector investment.

## Publication of the framework for evaluating local carbon offset standards

One of the main comments submitted by several stakeholders on the 2014 carbon offsets paper and the Carbon offset regulations was that the financial costs and bureaucratic processes for developing carbon offset projects under the international standards (Clean Development Mechanism, Verified Carbon Standard and Gold Standard) were too high and lengthy. It was recommended that local offset standards should also be eligible for developing carbon offset projects.

During 2020, the former Department of Mineral Resources and Energy, under the Partnership for Market Readiness Project (trust fund administered by the World Bank), undertook a study to develop a framework and criteria for evaluating and approving local carbon standards that could be eligible under the carbon offset system. The draft framework entitled: *South African Carbon Offsets*

*Programme: Draft Framework for Approval of Domestic Standards* was published for public comment in January 2022.

The Department of Electricity and Energy, National Treasury and the Department of Forestry Fisheries, and the Environment aim to finalise and publish the framework for implementation before the end of the financial year. The approved standards will be included as eligible standards for purposes of carbon offsets under the carbon tax and necessary changes will be made to the Carbon Offset Regulations.

## Trade exposure allowance

The allowance is provided to address any potential adverse impacts on industry competitiveness due to the carbon tax. Currently, the trade exposure allowance provided under the carbon tax is based on the trade intensity of sectors and / or products i.e. the ratio of the monetary value of imports and exports and production for a particular sector or company. Companies within sectors with trade intensities of 30 per cent or higher qualify for the full trade exposure allowance of 10 per cent.

After extensive consultations on the carbon tax, the trade exposure allowance regulations and additional analysis on sector trade intensities, it emerged that the average trade intensity across the economy is about 69 per cent.

As announced in the 2022 Budget, it is proposed that the qualifying trade intensity for the full trade exposure allowance is increased from 30 to 50 percent from 2026. The proposed changes to the trade exposure allowance and an updated list of sectors and trade exposure allowances are provided in Section 4.8 of this paper.

## Carbon budget allowance

In the 2022 Budget, the carbon budget allowance was extended for two years until 31 December 2024 due to delays with the finalisation of the Climate Change Bill. With the promulgation of the Climate Change Act in July 2024 and proposed implementation of the mandatory carbon budget system from 2026, the carbon budget allowance will fall away from 1 January 2026.

The allowance will be replaced with an equivalent increase in the carbon offset allowance. An extension of the carbon budget allowance for an additional year until 31 December 2025 is proposed for voluntary participation by companies in the carbon budget system.

Government conducted extensive stakeholder consultations on the options for the alignment of the carbon tax and mandatory carbon budgets from 2014 to 2019 and as part of the Carbon Tax Bill Parliamentary Hearings. To promote compliance with the mandatory carbon budget, government proposed a higher tax rate of R640/$tCO_2e$ on emissions exceeding the carbon budget in the 2022 Budget. It is envisaged that the mandatory carbon budget system will come into effect from 1 January 2026, once the Climate Change Act is operationalised and the carbon budget regulations and the mandatory greenhouse gas mitigation plan regulations are gazetted.

The necessary amendments to the Carbon Tax Act to provide for the higher tax rate will be published in either the 2025 or 2026 Taxation Laws Amendment Bill, after the publication of the carbon budget and mitigation plan regulations by the DFFE in the government gazette.

### Maximum tax- free allowance

It is proposed that the maximum tax-free allowances for combustion, process and fugitive emissions are aligned with the adjustments of the basic, carbon offset, trade exposure and performance allowances as set out in the tables on proposed changes to the basic tax-free allowance and **Table 5** below.

### AFOLU and Waste

The agriculture, forestry and other land use (AFOLU) and waste activities' emissions are excluded from the carbon tax net due to lack of appropriate methodologies to accurately determine GHG emissions and monitor and verify emissions.

Due to challenges with accurate methodologies to quantify greenhouse gas emissions from the AFOLU and waste sector activities, it is proposed that the blanket exclusion and provision of the 100 percent basic tax-free allowance is retained.

The National Treasury will continue to engage the DFFE on the development of robust methodologies for estimating GHG emissions from the AFOLU and waste sectors. Once robust GHG estimation methodologies are developed, the 100 percent basic tax-free allowance to the AFOLU and waste sector activities may be reconsidered.

## Revenue recycling measures

### Electricity price neutrality – electricity generation levy credit and renewable energy premium

During the first phase of the tax, the carbon tax does not impact the price of electricity as electricity generators are allowed to offset the electricity generation levy and renewable energy premium payments against their carbon tax liability (electricity price neutrality).

To help with the just transition, the following options were considered:

- **Option 1: Retain and extend the electricity price neutrality commitment for a period of five years from 2026 to 2030,** to allow for the implementation of the Just Energy Transition Plan. The electricity generation levy of 3,5c/kWh would continue to apply until 2030 and will cease in 2031. The carbon tax on electricity generators will apply from 2031.
- **Option 2: Remove the electricity generation levy and implement the carbon tax on combustion emissions from 2026 in line with the proposed changes to the basic tax free allowance.** The carbon tax will replace the electricity generation levy and be revenue neutral. Electricity generators can continue to deduct a portion of the renewable energy premium from their carbon tax liability where there would have been a difference between the carbon tax and electricity levy. This will help to reduce the impact of higher electricity prices on consumers.

**Option 2 for the removal of the electricity generation levy and implementation of the carbon tax proposals for the 2nd phase is recommended.** The rationale for option 2 is to effectively replace the electricity levy, which is around R8bn per year, with the carbon tax. In principle, this should not lead

to any potential increase in the price of electricity as the tax burden for electricity generators should remain relatively similar as the tax shifts from the electricity levy to the carbon tax and electricity generators can deduct a portion of the renewable premium. However, the incentives of electricity generators should change significantly. In the current design, the carbon tax liability is zero for Eskom as it is outweighed by the deduction of the electricity levy and the renewable energy premium. In this option, the carbon tax will start to apply and managers of electricity generators will start to factor in the level of carbon emissions in their business decisions. There will now be an incentive to lower carbon emissions to reduce their carbon tax liability.

## Tax Incentive for Green Hydrogen Production

The Green Hydrogen Commercialisation Strategy was approved by Cabinet in October 2023 for implementation. The strategy recognises the long-term demand potential for green hydrogen gas of between 15 to 20 per cent of global energy demand.

Based on current estimates, the production cost of green hydrogen is not cost competitive with other hydrocarbon-based fuels. The cost of production of grey hydrogen from fossil fuels is estimated at around US$1-2/kg compared with green hydrogen gas costs of about US$4-7/kg.

The strategy recommends the phasing in of increases to the carbon tax rate or carbon fuel levy, removal of fossil fuel subsidies and building on existing renewable energy-based regulatory tax incentives set out in the Income Tax Act to support green hydrogen production. As part of the revenue recycling measures under the carbon tax, it is proposed to extend the 100 percent depreciation allowance for solar PV to green hydrogen production.

## Support for Strategic Priorities

Although the carbon tax and other environmental taxes are not earmarked, as the carbon tax rate is increased over the short to medium term there could be revenue raising potential. Complimentary to the carbon tax, over the short, medium to longer term targeted support will be necessary for certain low carbon investments to enable a just transition, stimulate a green economy and create jobs.

Taking into account fiscal constraints, targeted support could be considered as part of revenue recycling measures for the following:

- Fund the expansion of the electricity grid and transmission infrastructure.
- Reskilling workers' programmes.
- Free basic electricity support targeted to renewable based electricity.
- Support for enhancing public transport infrastructure.
- Access to carbon finance for off-grid renewables for communities.
- Improving and strengthening municipal infrastructure to promote climate resilience including for energy, transport, solid waste collection and separation, and wastewater management.
- Enhancing the working for water, fire, waste and other environmental sector programmes of the DFFE to promote climate mitigation and adaptation efforts.
- Targeted support for disaster risk reduction and possibly through the Climate Change Response Fund to be established under the 2024 Climate Change Act.

**Table 5: Summary of main proposals for restructuring of tax-free allowances and incentives**

| NO | TAX FREE ALLOWANCE / INCENTIVE | PROPOSED CHANGES |
|---|---|---|
| 1 | **Basic tax-free allowance** | Reduction in the basic tax-free allowance by 10 percentage points in 2026, and by 2,5 percentage points per year from 2027 to 2030. This will increase the effective carbon tax rate over time. A 2,5 percentage point reduction of the basic from 2031 will be considered. |
| 2 | **Performance** | Increase the performance tax-free allowance by 5 percentage points to 10 per cent in 2026 for combustion emissions. Firms that perform better than the agreed benchmarks and develop and implement greenhouse gas mitigation plans required under the Climate Change Act would qualify for the full allowance. |
| 3 | **Carbon offsets** | Increase in the offset allowance by 15 percentage points to a maximum of 20 per cent for process or fugitive and 25 per cent for combustion emissions from 2026 to stimulate domestic carbon market activities. |
| 4 | **Carbon budget allowance** | Removal of the 5 per cent carbon budget tax-free allowance as carbon budgets become mandatory from 1 January 2026. An extension of the carbon budget allowance for an additional year until 31 December 2025 is proposed. |
| 5 | **Carbon tax and carbon budget** | A higher carbon tax rate of R640/t$CO_2$e on GHG emissions exceeding the allocated carbon budget in terms of the Climate Change Act is proposed from 1 January 2026. Proposed legislative amendments to the Carbon Tax Act will be published either in the 2025 or 2026 Taxation Laws Amendment Bill for public comment. This will be done after the Climate Change Act comes into effect and the carbon budget and greenhouse gas mitigation plan regulations are gazetted by the DFFE. |
| 6 | **Trade exposure** | Adjust the trade intensity threshold for maximum trade exposure allowance from 30 to 50 per cent from 2026 as announced in the 2022 Budget. Sectors with trade intensities greater than or equal to 50 per cent will qualify for the full 10 per cent trade exposure allowance. |
| 7 | **Process and fugitive emissions allowance** | No proposed changes to the process and fugitive emissions allowances of 10 per cent for the period 2026 to 2030. A continuation of this allowance beyond 2030 will be considered. |
| 8 | **Maximum tax-free allowance** | From 2026 to 2030, changes to the maximum tax-free allowance will be aligned with adjustments to the basic, carbon offset and performance allowances |
| 9 | **Electricity price neutrality** | The removal of the electricity generation levy and implementation of the carbon tax proposals for the 2nd phase is recommended. The carbon tax would replace the electricity levy from 2026 and electricity generators can continue to deduct a portion of the renewable energy premium from their carbon tax liability where there would have been a difference between the carbon tax and electricity levy. |

| NO | TAX FREE ALLOWANCE / INCENTIVE | PROPOSED CHANGES |
|---|---|---|
| 10 | **Section 12L tax incentive** | Proposed absorption of eligible 12L projects approved under the Energy Efficiency Savings SANS 50010 standard under the carbon offsets mechanism. This will promote investments in energy efficiency measures, reduction in scope 2 electricity emissions and job creation. |
| 11 | **Tax incentive for green hydrogen** | Extension of the 100 per cent depreciation allowance for solar PV to green hydrogen production in line with the recommendations from the Green Hydrogen Commercialisation Strategy approved by Cabinet in 2023. |

## Submission of Comments on the Carbon Tax Discussion Paper

Going forward, as the updated NDCs are aligned with Paris Agreement goals, the implemented policies and measures would help to deliver on the committed targets. Carbon pricing rates should be increased to more closely reflect the externality costs of climate change, broadening the tax base and appropriate revenue recycling measures to enhance the effectiveness and political acceptance of carbon pricing.

Stakeholders are invited to submit written comments on the draft proposals contained in this paper to CarbonTax@treasury.gov.za. After the public consultation process is concluded, the draft proposals will be revised to take into account public comments and announcements will be made in the 2025 Budget. **The closing date for comments is 13th December 2024.**

# 1 BACKGROUND – GLOBAL POLICY DEVELOPMENTS AND NATIONAL CONTEXT

1. Climate change remains the largest environmental risk and challenge to the world. The Intergovernmental Panel on Climate Change (IPCC) in its Sixth Assessment Report (AR6) confirms that it is expected that global surface temperature will continue to increase until at least the mid-century under all emissions scenarios considered, exceeding the global warming goals of 1.5°C and 2°C during the 21st century unless deep reductions in greenhouse gas (GHG) emissions occur in the coming decades. Limiting human-induced global warming to a specific level requires limiting cumulative carbon dioxide ($CO_2$) emissions, reaching at least net zero $CO_2$ emissions, along with strong reductions in other GHG emissions which would also improve air quality[1].

*2.* The 27th United Nations Climate Change Conference held in Egypt in 2022 adopted the Sharm el -Sheik Implementation Plan. It acknowledged that the impacts of climate change exacerbate the global energy and food crises, particularly in developing countries. The plan stressed that the complex and challenging global geopolitical situation and its impact on the energy, food and economic situations, as well as the additional challenges associated with the socioeconomic recovery from the coronavirus pandemic, *should not be used as a pretext for backtracking, backsliding or de-prioritizing climate action.*

3. South Africa is ranked in the top 20 among highest global emitters, with emissions per capita comparable to those of developed countries because of a high dependency on fossil fuels. In its commitment to reduce emissions, increase its ambition and to contribute to global efforts to curb emissions, South Africa has updated its Nationally Determined Contributions (NDCs) under the Paris Agreement, which reflect the highest possible level of ambition and emissions targets while taking into account national circumstances, to a target range for 2025 of 398 – 510 and for 2030 of 350 – 420 million tonnes carbon dioxide equivalent (Mt $CO_2$e).

4. The government also submitted its aspirational commitment of reaching a net zero carbon economy by 2050 through the South Africa's Low Emissions Development Strategy (SA-LEDS). The NDCs also sets out the policies and measures to support achievement of the mitigation goals, adaptation considerations and financing requirements to support the transition to a low carbon climate resilient economy. The key policies and measures outlined to achieve the NDCs include the carbon tax as a critical component of the country's mitigation policy strategy to cost effectively lower GHG emissions.

5. The President signed into law the Climate Change Act on 23 July 2024 which seeks to coordinate South Africa's response to climate change and sets out additional mitigation and adaptation policies and measures to facilitate South Africa's transition to a lower carbon and climate resilient economy. Current mitigation related policies and measures include:

[1]AR6 WGI – Headline Statements from the Summary for Policymakers, 9 August 2021. Available at: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Headline_Statements.pdf

a. **Sectoral emission targets, carbon budgets, and mitigation plans** – the carbon budget allocation framework and sector emission targets were approved. Regulations for the carbon budget and mitigation plans are being developed and will come into effect once the Climate Change Act is operationalised.
b. **Integrated Resource Plan (2019)** – sets out options for the energy mix and indicative 2030 electricity plan to ensure energy security of supply, accessible and affordable energy and to contribute towards South Africa's climate commitments.
c. **Tax incentives** for energy efficiency, renewable energy, biofuels production, biodiversity conservation, new energy vehicle production and research development and technology innovation.
d. **Carbon offset administration system (COAS**) – The COAS was operationalised in 2020 and is managed by the Department of Electricity and Energy. The department implements the carbon offset scheme under the carbon tax and evaluates and approves eligible carbon offset projects, enables the listing and retirement of carbon offsets and issuance of offset certificates to be used by taxpayers to claim the carbon offset allowance under the carbon tax.
e. **Mandatory National Greenhouse Gas Reporting Regulations** (2017) – companies report their greenhouse gas emissions for activities defined according to the Intergovernmental Panel on Climate Change 2006 and 2019 Guidelines. The emissions reported are the basis for the carbon tax and national greenhouse gas inventory reporting requirements under the UNFCCC.

6. The carbon tax is an integral part of the government's package of policy measures to mitigate climate change as outlined in the 2011 National Climate Change Response Policy and the 2012 National Development Plan. The Carbon Tax Act (Act No. 15 of 2019) came into effect on 1 June 2019 following an extensive stakeholder consultation process since 2010.

7. The Carbon Tax Act gives effect to the polluter-pays-principle for large emitters and helps to ensure that firms and consumers take the negative adverse costs (externalities) into account in their future production, consumption and investment decisions. Firms are incentivised towards adopting cleaner technologies over the next decade and beyond.

8. To ensure a cost-effective transition, the design of the tax provides for the recycling of revenues through the electricity generation levy credit and energy efficiency savings tax incentive, and significant tax-free allowances of up to 95 percent of the total GHG emissions of firms. These revenue recycling measures helped to mitigate any possible short-term negative impacts on the economy and jobs. To cushion energy intensive sectors such as mining and iron and steel and households from potential adverse impacts due to the introduction of the carbon tax, the tax does not impact on the price of electricity for the first phase.

9. The Carbon Tax Act provides for the introduction of the carbon tax in a phased manner at a relatively low rate initially to allow businesses time to make the necessary structural adjustments to their production processes and practices and to ensure a just transition to a low carbon, climate resilient economy. The first phase was initially from 1 June 2019 to 31 December 2022, and this was extended for three years until 31 December 2025 to support the economic recovery.

10. The carbon tax covers direct emissions from combustion, industrial processes and fugitive emissions. The carbon tax started at the headline rate of R120/t$CO_2$e in 2019, increasing annually by consumer price inflation plus 2 percent up to 31 December 2022. The design of the carbon tax provides transitional tax-free emission allowances ranging from 60 to 95 percent structured as follows:

    - A basic tax-free allowance of 60 percent for combustion, industrial process and fugitive emissions.
    - A basic tax-free allowance of 75 percent for road transport emissions.
    - An additional tax-free allowance of 10 percent for industrial process and fugitive emissions.
    - A variable tax-free allowance for trade-exposed sectors (up to a maximum of 10 percent).
    - An up to 5 percent maximum tax-free allowance for above average emissions intensity performance (Z-factor) within the sector.
    - A 5 percent tax-free allowance for companies participating in the DFFE voluntary carbon budget system.
    - A carbon offset allowance of either 5 or 10 percent for fugitive and industrial process, and combustion emissions activities, respectively.
    - The total tax-free allowances during the first phase are capped at 95 percent for process and fugitive emissions and 90 percent for combustion emissions, except for those sectors that are excluded from the tax and qualify for the 100 per cent tax-free allowance.

11. The carbon tax is administered as an environmental levy under the Customs and Excise (C&E) Act, 1964, as GHG emissions are environmentally harmful goods of which the externality costs should be internalised. Excise taxation is the most appropriate tool to correct this market failure through the polluter-pays principle. The tax and accounting period runs from 1 January to 31 December with the payment of the carbon tax liability, due by the penultimate working day of July of the following year following emissions verification by the Department of Forestry, Fisheries and Environment (DFFE).

12. A predictable and rising carbon price provides the correct price signals and promotes a systematic transition to a low-carbon economy by opening up new business opportunities and stimulating innovative business models over the short, medium and long term. In the 2022 Budget, the first phase of the carbon tax and revenue recycling measures were extended for three years until 31 December 2025 to support the economic recovery due to the COVID pandemic. To help achieve South Africa's NDC commitments up to 2030 and provide policy certainty to companies to guide their investment decisions, the carbon tax rate trajectory for 2023 to 2030 was set out in the 2022 Taxation Laws Amendment Act.

13. To ensure alignment with the updated NDC commitments, this paper provides an update on the carbon tax design and contains proposals for the 2nd phase of the carbon tax from 2026 to 2030, and beyond, where appropriate, including adjustments and restructuring of the tax-free allowances and appropriate revenue recycling measures to facilitate a just transition.

14. The draft paper aims to provide policy certainty on the carbon tax design to companies and sets out a predictable and robust future carbon price path. Stakeholders are invited to submit written comments on the draft discussion paper to CarbonTax@treasury.gov.za by 13th December 2024.

# 2 POLICY RATIONALE

15. The carbon tax gives effect to the polluter pays principle and ensures that the costs of damages caused by emissions of GHG emissions are captured in the prices of goods and services. It also plays a key role in enhancing innovation and smoothing the transition to a low-carbon, climate resilient economy even during economic slowdowns such as experienced during the COVID-19 pandemic.

16. Carbon pricing policies can also deliver multiple benefits, including local environmental and health benefits. These benefits include fewer premature deaths from local air pollution as carbon pricing will encourage a shift to low carbon fuels and reduction in the use of fossil-based fuels. Carbon taxes can be reinforced with measures to promote zero-emission vehicles, improvements in energy efficiency and assist low-income households and disproportionately affected workers and communities.

17. The International Monetary Fund (IMF) analysis on mitigating climate change, growth and distribution-friendly strategies recommends carbon pricing as critical to mitigation because higher carbon prices incentivise energy efficiency and reallocation of resources from high-carbon to low-carbon activities.

18. The transitional costs of carbon pricing consistent with net zero emissions by mid-century would be manageable and could be reduced as new technological innovations develop in response to carbon pricing. It is recommended that raising the cost of emissions, which is central to addressing the externality problem remains at the heart of climate change[2]. Thus, a well-designed carbon price in South Africa could help tap into the global transitional push for a strong economic recovery.

19. **Table 1** below outlines the recommended carbon price levels required to achieve the Paris Agreement goals to limit warming to 2 degree Celsius and 1.5 degree Celsius.

[2]IMF, October 2020. World Economic Outlook: A Long and Difficult Ascent. Available at: file:///C:/Users/4912/Downloads/ch3%20(2).pdf

**Table 1: Global carbon prices required to achieve the 1.5$^0$C and 2$^0$C temperature goals consistent with achieving the Paris Agreement targets**

| SOURCE | METHODOLOGY AND ASSUMPTIONS | GLOBAL CARBON PRICE ESTIMATES | |
|---|---|---|---|
| | | 2020 / 2025 PRICE | 2030 PRICE |
| High-Level Commission on Carbon Pricing 2017[3] | The High-Level Commission on Carbon Pricing examined carbon prices that would be consistent with achieving the temperature objectives of the Paris Agreement. This included a review of technology road maps, national development and mitigation pathways scenarios through use of global Integrated Assessment Models (IAMs) to assess the social cost of carbon. IAMs were used to produce future scenarios of technological and socio-economic development that were consistent with different global temperature goals, including both the 1.5°C and 2°C targets. | US$40–80/tCO$_2$ by 2020 | US$50–100/tCO$_2$ by 2030 |
| The 2018 IPCC SR1.5°C study[4] | The IPCC 1.5$^o$C Report 2018 uses the cost-effective analysis modelling framework to estimate the carbon price which reflects a marginal cost of mitigation of one extra unit of emissions to achieve a particular temperature target. The carbon price varies substantially between models and scenarios within the report and increases with mitigation effort. This wide range of carbon prices depends on a number of influential variables, including methodologies, mitigation targets, projected energy demands, fuels prices, technology and policy assumptions, and socioeconomic conditions. The moderate carbon pricing assumes global implementation of a mix of regionally existing best practice policies (mostly regulatory policies in the electricity, industry, buildings, transport and agricultural sectors). | US$$_{2010}$ 5–20/tCO$_2$e in 2025 | US$$_{2010}$ 25/tCO$_2$e in 2030 |
| Tol, R.S.J., 2017[5] | A meta-analysis of estimates of the global carbon tax. It uses the 27 estimates of the global economic impact of climate change, expressed as the welfare-equivalent income loss (with income measured by Gross Domestic Product), as a function of the increase in global mean temperature relative to today (global mean temperature increase of 2.5$^0$C). The literature reviewed is largely limited to estimates of the direct costs, i.e. price times quantity, with constant prices. This is a crude approximation of the welfare impact. The probability density of the social cost of carbon for all published estimates are examined by fitting a Fisher-Tippett distribution to each published estimate (using the estimate as the mode and the sample standard deviation) based on | US$220 / tCO$_2$ for a 0% PRTP<br>$93 / tCO$_2$ for a 1% PRTP<br>$28 / tCO$_2$ for 3% in 2020. | |

[3] High-Level Commission on Carbon Prices (2017), *Report of the High-Level Commission on Carbon Prices*, World Bank, Washington, D.C. Available on: https://static1.squarespace.com/static/54ff9c5ce4b0a53decccfb4c/t/59b7f2409f8dce5316811916/1505227332748/CarbonPricing_FullReport.pdf

[4] IPCC 1.5ºC Report 2018, Fifita, et al., 2018, pp. 78-81Available at: https://www.ipcc.ch/site/assets/uploads/2018/11/sr15_chapter2.pdf

[5] The Economic Impacts of Climate Change, 2018. Review of Environmental Economics and Policy, volume 12, issue 1, Winter 2018, pp. 4–25. Available at: https://files.static-nzz.ch/2019/11/25/f44dc02c-b3cd-4abf-8a77-393f36753c34.pdf

| SOURCE | METHODOLOGY AND ASSUMPTIONS | GLOBAL CARBON PRICE ESTIMATES 2020 / 2025 PRICE | 2030 PRICE |
|---|---|---|---|
| | the pure rate of time preference (PRTP). The scenarios ran included the 0, 1 and 3% PRTP. The higher the discount rate, the lower the concern for the future and the lower the social cost of carbon. | | |
| Nordhaus, W.D., 2017[6] | Uses a revised (DICE-2016R) DICE model (Dynamic Integrated model of Climate and the Economy) which views climate change in the framework of economic growth theory. The DICE model estimates the SCC and the trajectory of the optimal carbon tax over time (also depends on government policy). It is assumed that in the presence of an optimal carbon tax, the volume of future emissions will be lower than otherwise and, on the margin, an additional tonne of carbon dioxide emitted in, say, 2050 will be less damaging than it would have been in the baseline. The model contains all elements from economics through climate change to damages in a form that attempts to represent simplified best practice in each area. The model optimizes a social welfare function, which is the discounted sum of the population-weighted utility of per capita consumption. The SCC for Standard DICE Model Parameters is measured in 2010 international US dollars and calculated along the optimized emissions path. | The SCC is US$$_{2010}$ 36.7 / ton$CO_2$ for 2020<br><br>The SCC is US$$_{2010}$ 43.5 / ton$CO_2$ for 2025 | The SCC is US$$_{2010}$ 51.2 / ton$CO_2$ for 2030<br><br>The SCC is US$$_{2010}$ 103.6 / ton$CO_2$ for 2050 |
| Kaufman et al., 2020[7] | This study estimates $CO_2$ prices needed in the near term for consistency with a net-zero $CO_2$ emissions target using top-down and bottom-up energy-economic models. Energy–economic models are built using historical data on production, consumption and market dynamics, that enable carbon prices to be combined with other policy measures to overcome multiple market barriers to emissions reductions. An emissions pathway for a jurisdiction is chosen which could either have lower upfront rate of emissions reductions with deeper emissions cuts expected in the future or frontload deeper emissions cuts to avoid technology lock-in and benefit from avoided emissions[8]. After an emissions pathway has been determined, carbon prices consistent with the chosen pathway are estimated under a given set of assumptions about future technologies, prices and behaviour[9]. Periodic updates to the energy-economic models are required to take into account changes in technologies, preferences and policies e.g. the fall in the costs of solar and wind in electricity generation. | US$$_{2018}$ 34 to US$64 / tonne of $CO_2$ in the United States in 2025 | US$$_{2018}$ 77 to US$124 / tonne of $CO_2$ in the United States in 2030 |

[6]Nordhaus, W.D., 2017: Revisiting the social cost of carbon. Proceedings of the National Academy of Sciences, 114(7), 1518-1523, Available at: https://www.pnas.org/content/114/7/1518.

[7] Kaufman, N., Barron, A. R., Krawczyk, W., Marsters, P. and H. McJeon, 2020. "A near-term to net zero alternative to the social cost of carbon for setting carbon prices", Nature Climate Change, http://dx.doi.org/10.1038/s41558-020-0880-3.

[8] Vogt-Schilb, A., Meunier, G. & Hallegatte, S. When starting with the most expensive option makes sense: optimal timing, cost and sectoral allocation of abatement investment. *J. Environ. Econ. Manage.* **88**, 210–233 (2018). Available at: https://www.sciencedirect.com/science/article/pii/S0095069617308392

[9] McFarland, J., Fawcett, A. A., Morris, A. & Reilly, J. Overview of economy-wide U.S. carbon tax strategies: results from EMF 32. *Clim. Change Econ.* **9**, 1840002 (2018). Available at: https://www.worldscientific.com/doi/abs/10.1142/S201000781840002X

| SOURCE | METHODOLOGY AND ASSUMPTIONS | GLOBAL CARBON PRICE ESTIMATES 2020 / 2025 PRICE | 2030 PRICE |
|---|---|---|---|
| | | | |
| Sustainable Markets Institute, 2021[10] | The Sustainable Markets Initiative advocated that the best way to change behaviour to save the planet was to change relative prices through the power of price signals as they can redirect capital flows. This was published before COP26 in Glasgow where they suggested that the governments should propose to introduce a world global carbon price within the UNFCCC negotiations as it would be far more effective in unlocking mitigation in various sectors depending on the price level. They suggested that at a world carbon price of $30-70 / tonne (instead of today's average level of $2), coal would become too expensive relative to gas and renewable energy while at $70-$120/ tonne, steel and cement industries would be incentivised to decarbonise their operations, and it would be economically rational for companies to use hydrogen. And at $120-150/ tonne, prohibitively expensive innovations today such as bioenergy and carbon capture and sequestration technologies would start to make economic sense. | A US $50 / tonne carbon price (i.e. tax) at an identified future date | US$30 – US$150 to unlock mitigation in various sectors. |
| IMF, 2021[11,12] | To reinforce the Paris Agreement and jump-start emissions reductions, the IMF proposes an international carbon price floor (ICPF) which could do away with the need for carbon border carbon adjustments mechanisms (CBAMs). The ICPF is designed in a way which takes into account equity considerations and emissions-equivalent alternatives to carbon pricing in line with alternative global regimes and quantifies the impacts. It focuses on a small number of key large-emitting countries, and the minimum carbon price each could implement. The illustrative example focuses on six participants i.e. Canada, China, The European Union, India, The United Kingdom, and The United States with a three-tier price floor using prices of $75, $50, and $25 for advanced, high, and low-income emerging markets, respectively conditional on achieving NDCs. The ICPF is transparent as it targets a shared price floor, which can be adjusted in response to new information, rather than country-specific parameters and considers either a pure $50 carbon price floor for all six countries or a differentiated price floor of $25, $50, and $75 depending on development levels. | US$25/50/75 varying somewhat with development and pricing levels | US$75 / ton $CO_2$ by 2030 (and rising further beyond 2030 in the US$50 – 100 range as stipulated in High Level Panel on Carbon Pricing). |

[10] Tett, G., 2021. A carbon price should be top of the wish list at the climate talks. Financial Times Opinion, 28 October 2021. Available at: https://www.ft.com/content/692e03e8-2580-4d1d-abcd-36aa87497794

[11] Parry, I., Black, S. and J. Roaf, 2021. "Proposal for an International Carbon Price Floor among Large Emitters." IMF Staff Climate Notes 2021/001, International Monetary Fund, Washington, DC. Available at: file:///C:/Users/4912/Downloads/CLNEA2021001.pdf

[12] Parry, I., Black, S. and J. Roaf, 2021. "Proposal for an International Carbon Price Floor among Large Emitters." IMF Staff Climate Notes 2021/001, International Monetary Fund, Washington, DC. Available at: file:///C:/Users/4912/Downloads/CLNEA2021001.pdf

| SOURCE | METHODOLOGY AND ASSUMPTIONS | GLOBAL CARBON PRICE ESTIMATES 2020 / 2025 PRICE | 2030 PRICE |
|---|---|---|---|
| OECD, 2021[13] | Effective carbon rates (ECRs) are determined which summarise how countries price carbon through fuel excise taxes, carbon taxes and emissions trading systems using the Carbon Pricing Score (CPS). The CPS looks at how far countries have attained the goal of pricing all energy related carbon emissions at the three benchmarks for carbon costs or more. The more progress a country has made towards the relevant benchmark value, the higher the CPS e.g. a CPS of 100% against a EUR 60 per tonne $CO_2$ benchmark (CPS60) means that a country or the group of countries prices all carbon emissions from energy use at EUR 60 or more. A CPS of 0% means that the country prices no emissions at all. An intermediate CPS between 0% and 100% means that some emissions are priced, but that not all emissions are priced at a level that equals or exceeds the benchmark. ECRs in 2018 for carbon emissions from energy use in the 44 OECD and G20 countries were analysed as per the CPS. | US$30 / tonne $CO_2$ – US$60 / tonne of $CO_2$, which is a forward looking 2030 low-end and mid-range 2020 benchmark. | US$ 120 / tonne $CO_2$ in 2030 |
| WWF – SA, 2020[14] | The study by WWF-South Africa estimates the GHG emissions of coal-based electricity's external costs using the SCC approach. In line with suggestions by the High-Level Commission on Carbon Prices 2017 report, the externality costs are converted into carbon prices. This price takes into account South Africa's developmental status, the "differentiated responsibilities and respective capabilities" of the Paris Agreement, and the country's poor economic growth, coupled with the social ills of high unemployment, poverty, and inequality[15]. | R577 – R1 254 /$tCO_2e$ in 2020 (US$35 – US$76) | R 957 – R1 947 /$tCO_2e$ in 2030 (US$58 – US$118) |

20. An appropriate carbon tax rate should, in principle, reflect the marginal external (social) damage costs of GHG emissions taking into account the proposed rates set out in **Table 1** above. A well-designed carbon price should incentivise the changes needed in investment, production, and consumption patterns, and induce the kind of technological progress that can bring down future abatement costs as part of a strategy for reducing emissions in an efficient way[16].

[13] OECD. Effective Carbon Rates 2021: Pricing Carbon Emissions through Taxes and Emissions Trading. Available on: https://www.oecd-ilibrary.org/sites/0e8e24f5-en/index.html?itemId=/content/publication/0e8e24f5-en

[14] Arp, R., and Keen, S. 2020. Pricing greenhouse gas and air pollution externalities in South Africa. WWF-SA. Available at: https://wwfafrica.awsassets.panda.org/downloads/pricing_ghg_and_air_pollution_externalities_in_south_africa_policy_brief_28april2020.pdf?31121/Pricing-greenhouse-gas-and-air-pollution-externalities-in-South-Africa

[15] Assumes average US$ - Rand exchange rate of R16,5 in 2020.

[16] High-Level Commission on Carbon Prices (2017), *Report of the High-Level Commission on Carbon Prices*, World Bank, Washington, D.C. Available at: https://static1.squarespace.com/static/54ff9c5ce4b0a53decccfb4c/t/59b7f2409f8dce5316811916/1505227332748/CarbonPricing_FullReport.pdf

**BOX 1: EXAMPLES OF GLOBAL CARBON TAXES AND THEIR IMPACTS**

Carbon pricing has been implemented internationally in order to price externalities that arise from the emission of GHGs such as climate change. Carbon taxes have contributed positively to climate change mitigation strategies and further enforce the Polluter Pays Principle in the jurisdictions where they have been introduced.

There has also been an observed decrease in emissions because of carbon tax implementation. The design of the carbon tax has to be carefully considered to ensure that it is effective in mitigation and also contributes to green economic growth. Effective green economic growth results when there is decoupling i.e. the promotion of economic growth while reducing the use of natural resources and GHG emissions. Studies show that there is evidence from various countries that carbon taxes have contributed to relative decoupling where the decrease of emissions has been recorded while GDP growth has increased.

For example, Sweden's carbon tax has been an effective instrument to decreasing the emissions since implementation in 1991, with the rate increasing over time, from €29 in 1991 to €125 in 2014 for households and services. In the period of 1990 to 1993, emissions have decreased by 23 percent from the base year of 1990, while real GDP growth has increased by 58 percent.

In France, a carbon tax was introduced in 2014 at €7 per tonne of $CO_2$, increasing progressively to €44.6 per tonne of $CO_2$ in 2018. A 2020 OECD study shows that as the carbon tax rate increased over the years, there has been a decrease in emissions in the manufacturing sector with a shift and growth of jobs within the sector during the carbon tax implementation period.

British Columbia was the first province to introduce a carbon tax in Canada in 2008 which was designed to be revenue neutral. An assessment of the impact of carbon pricing on emissions from 1995-2016 shows that the carbon tax in British Columbia has consistently led to a decrease in emissions in the province, reducing emissions by 5 to 8 percent whilst it was shown to have no adverse impacts on GDP growth.

## Carbon Tax Modelling

21. Several modelling studies have been conducted on the carbon tax dating back to the mid-2000s by academia, the World Bank, National Treasury and the most recent study by the IMF. This includes the following:

    a. **Alton et al., 2012** – National Treasury Economic Policy – Carbon tax of R100 and R200/t$CO_2$ with revenue recycling measures and impact of possible retaliatory cross border taxes

    b. **Devarajan, Go, Robinson, & Thierfelder, 2009**: World Bank – Impact of carbon tax

    c. **Pauw, 2007**: Long term mitigation scenarios economic modelling

    d. **van Heerden et al., 2006 and 2016**: University of Pretoria – Modelling of the electricity generation levy and achieving the triple dividend of emission reduction, poverty alleviation and employment with revenue recycling and base modelling of a carbon tax with revenue recycling

e. **Applied Development Research Solutions 2015 –** carbon tax modelling for the Department of Trade and Industry– econometric modelling.

22. Overall, the results from the modelling studies show that the carbon tax would be effective in achieving the country greenhouse gas emissions goal. Appropriate revenue recycling measures and transitional support measures could mitigate potential adverse impacts on economic growth and distributional impacts on households as carbon pricing policies are phased in.

23. It is important to note that the modelling studies do not take into account any possible negative impacts from climate change and unabated emissions (the cost of inaction), or some of the benefits from reducing emissions that would not be realised in the baseline. For example, co-benefits of climate action such as reduced air pollution, and traffic congestion and road safety will all be worse in the baseline scenario than when a carbon tax is introduced which is not taken into account in the different modelling studies. Therefore, the results from the different policy simulations should not be viewed as providing an assessment of the overall impact of introducing a carbon tax; and may underestimate the benefits of a carbon tax.

24. The results from the National Treasury modeling study on the carbon tax design and the IMF study are provided below.

## National Treasury – Modelling the impacts of the carbon tax[17]

25. A modelling study on the carbon tax was conducted by the National Treasury using a dynamic general equilibrium model of the South African economy. It modelled a carbon tax of R120/t$CO_2$e and increased by inflation annually; and the gradual reduction of the tax-free allowances at a rate of 10 percentage points per annum from 2021 onwards until all the industries are paying the full tax rate on their emissions. Revenues from the tax were recycled through an output-based rebate on all production across all sectors.

26. The results showed that the carbon tax would contribute towards an estimated decrease in emissions of 13 to 14.5 per cent by 2025 and 26 to 33 per cent by 2035 compared with business as usual (BAU). The impacts on economic growth are muted due to the tax free allowances and recycling of the carbon tax back into the economy i.e. reduction of average annual growth rate by only 0.05–0.15 percentage points. Concerns about the competitiveness impacts of the carbon tax are overstated, as exports could be 3.5 per cent higher in 2035 with the introduction of the carbon tax due to access to new product markets.

27. In 2035, the output from the nuclear generation, wind generation, hydro generation, other generation, gas generation and solar photovoltaic (PV) generation sectors is estimated to be more than 200 per cent greater than without a carbon tax, while sectors like coal generation, petroleum refining, other manufacturing, coke production and the electricity supply sector see a substantial decline in output relative to the baseline. The vast majority of sectors are largely unaffected by the introduction of the tax.

[17] National Treasury (2016) *"Modelling the Impact on South Africa's Economy of Introducing a Carbon Tax",* Available from: https://www.treasury.gov.za/comm_media/press/2016/2016111001%20-%20Carbon%20Tax%20Modelling%20Report%20Final%20Oct%202016.pdf

## IMF 2023 Study on Carbon Pricing and Climate Policy[18]

28. The IMF conducted a high level assessment of the impacts of a carbon tax of US$30 (~R510 / $tCO_2e$) based on the 2022 tax amendments and US$120 (~R2000 / $tCO_2e$) by 2030. The Carbon Pricing Assessment Tool (CPAT) was used to simulate the impacts of the different carbon tax rates scenario. It is based on a reduced-form model of energy consumption that incorporates growth forecasts, price and income elasticities, exogenous and endogenous rates of technical progress, and price changes. The simulation assumes that there is no tax exemptions or allowances over the modeling period and the carbon tax is the only policy instrument deployed.

29. In a scenario where the carbon tax rate is raised to $120/$tCO_2$ by 2030, the model shows that emissions could be reduced to a range of 377–453 $MtCO_2$ during 2026–2030, consistent with the NDC commitment range. The carbon tax of US$30/$tCO_2e$ will contribute towards reduced emissions however, this would not be in the range of the NDC targets. In the NDC target range, the impacts on economic growth are mild; and energy-intensive and high-carbon sectors could contract while there is expansion of green and low-carbon sectors. The main findings are summarized below:

    a. A shift in value added to less carbon-intensive sectors is observed in the power sector, highlighting the importance of the sector for the success of South Africa's climate mitigation strategy.

    b. The value added in the power sector can increase by 17–47 per cent relative to the baseline, with the overall share of renewables in 2030 increasing from 10 percent in the baseline to 30–53 per cent.

    c. Coal remains the biggest source of electricity generation in 2030, however its share is falling over the years with growing demand being increasingly supported by renewables.

    d. The value-added in the fossil extraction sector can fall between 17 to 31 per cent relative to the baseline scenario.

    e. Under the NDC350 and NDC420 pathways the annual GDP growth rate between 2022–2030 reduces by 0.04 to 0.12 percentage points relative to the baseline growth rate.

    f. Total employment in South Africa can increase by about ½ per cent relative to the baseline (or roughly 70–90 thousand more jobs) driven by increased employment in the collective, business, and other services.

30. The analysis assumes that the revenues from the current tax of $30/$tCO_2$ by 2030 is recycled and used to increase climate-smart public investments, some tax shifting, and support for vulnerable households to reduce potential adverse impacts due to the carbon tax. The results show that recycling the revenues would result in net annual GDP growth of 1.4 per cent in 2030 (compared to 1.3 per cent in the baseline) and 2.2 per cent growth in 2035 (compared to 1.7 per cent in the baseline).

[18] Qu, Haonan, Suphachol Suphachalasai, Sneha Thube, and Sébastien Walker. "South Africa Carbon Pricing and Climate Mitigation Policy." IMF Selected Issues Paper (SIP/2023/040). Washington, D.C.: International Monetary Fund.

31. The current practice of avoiding earmarking of carbon tax revenues to ensure spending efficiency and fiscal transparency in the budget process was supported. It is recommended that the use of carbon tax revenue should also consider South Africa's already-substantial social assistance spending and lack of fiscal space. As is the case with any other budget priorities, the use of fiscal resources to support the climate transition should compete with all other budget priorities and be mindful of the available resource envelope.

# 3 INTERNATIONAL EXAMPLES OF CARBON PRICING

32. Carbon taxes have been introduced in different countries as a policy instrument to internalise the externalities that are caused by GHG emissions. In 2024, there are about 75 carbon pricing initiatives emission trading schemes (36) and carbon taxes (39).

33. In addition to developed countries, emerging economies including Colombia, China, Mexico, Chile, Singapore, and Argentina are already implementing explicit carbon pricing. The introduction of China's national ETS in February 2021 has been the largest contributor to the increase in emissions that are covered by carbon pricing instruments. Brazil, India, and Türkiye have made progress towards emissions trading and carbon crediting implementation. Within Africa, six countries are exploring carbon pricing with a focus on carbon taxes:

    a. Botswana: Botswana's National Climate Change Policy (approved in 2021), outlines commitment to adopt and enforce carbon taxes.

    b. Cote d'Ivoire: Exploring carbon pricing as an option to achieve its NDC. Analysis is underway on the main carbon tax design elements.

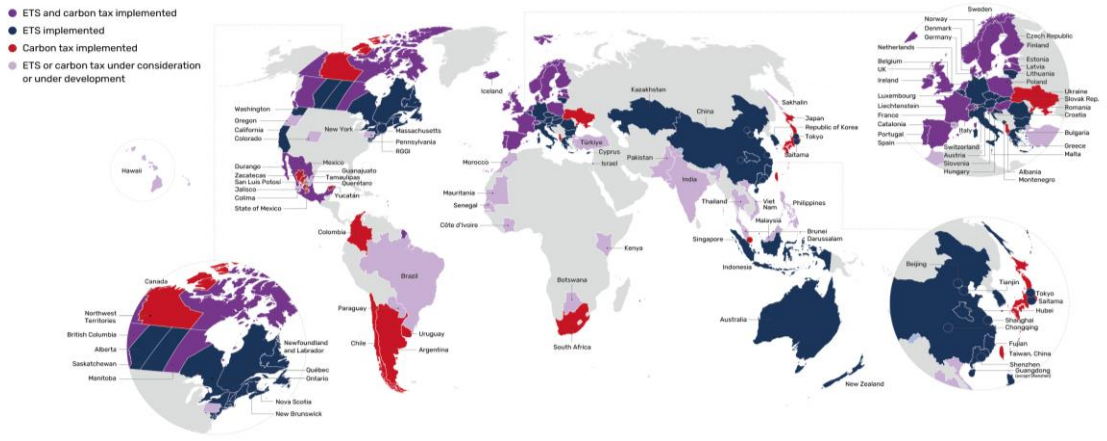
    c. Kenya: Considering carbon tax to better reflect the externalities of fossil fuel consumption and to achieve its NDC

    d. Mauritania: Aiming to introduce a gradual carbon tax aligned with the NDC to address emissions from all sectors of the economy and fuels except liquefied petroleum gas.

    e. Morocco: Developing a carbon tax in line with the recommendations of international financial institutions.

    f. Senegal: Exploring carbon tax as part of the policy options to achieve its NDC.

**Figure 1: World Bank map of carbon taxes and emissions trading systems (2024 World Bank "States and Trends of Carbon Pricing" report).**




34. The **figure 2 and 3** below shows that the marginal carbon tax rates across the different jurisdictions range from about US$2 to above US$150/ $tCO_2e$.

35. While most tax rates are below the recommended carbon price levels necessary to fully account for the externalities of climate change, the coverage of explicit carbon pricing policies has increased and remains a key pillar in country mitigation policy strategies.

36. The scope of explicit carbon pricing schemes is likely to increase rapidly in the coming years in two ways. Firstly, higher effective carbon prices will be combined with base broadening measures to help achieve NDC commitments and Paris Agreement temperature goals and revenue objectives, where appropriate. Secondly, proposals for carbon border adjustment mechanisms (CBAM) aimed at addressing concerns about carbon leakage in jurisdictions that apply higher explicit carbon prices are increasing.

37. The EU and the UK proposed CBAMs from 2026 and 2027, respectively, are tangible examples of a transition risk. The EU CBAM commenced in October 2023 and requires importers to the EU to report the embedded emissions of products such as iron and steel, cement, fertiliser, aluminium, hydrogen and electricity. Australia, Canada, and Japan are also considering domestic border carbon adjustments.

38. Although the CBAM poses transition risks to developing economies, there will also be opportunities for economic growth and development through local investments in green technologies and innovation, access to new product markets and value chains and job creation.

**Figure 2: Carbon prices (US$/tCO$_2$e) in different countries**

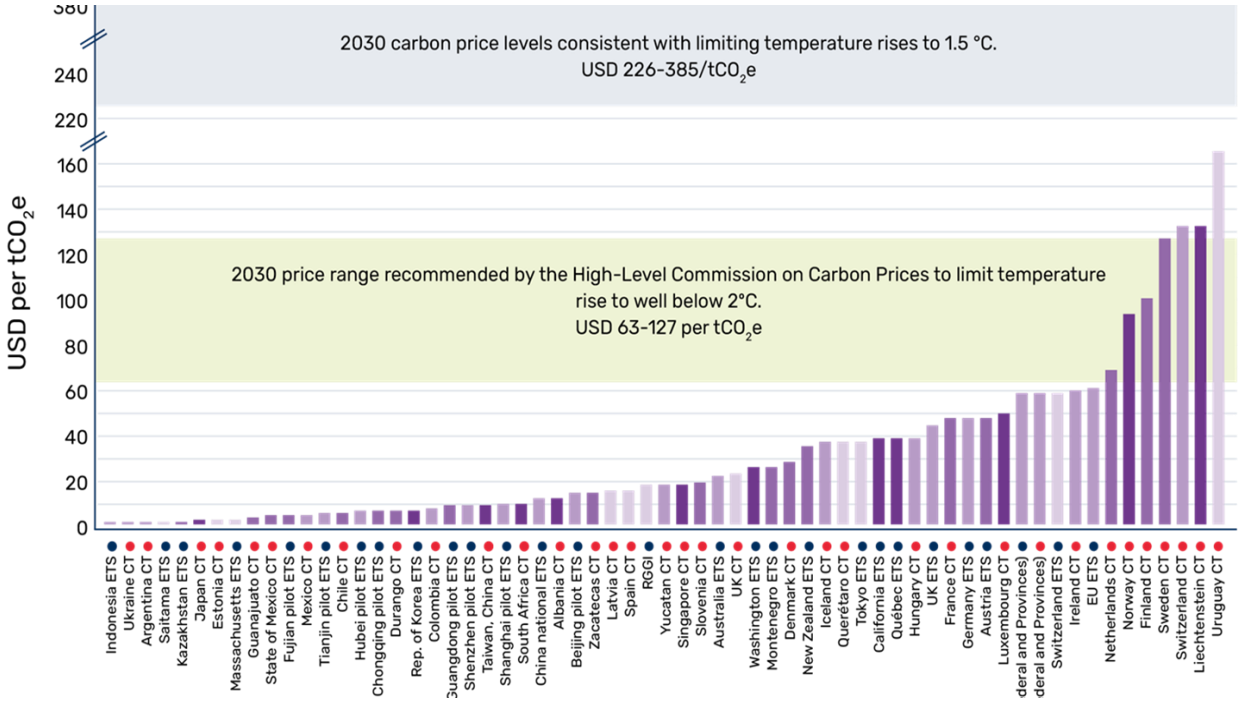
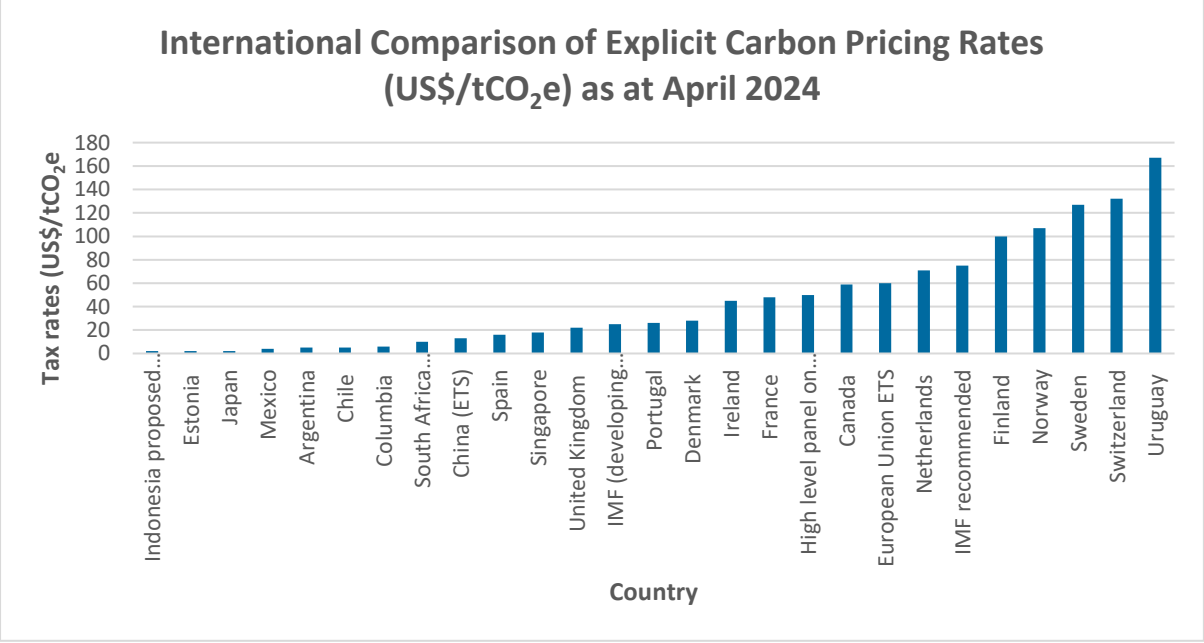



**Figure 3: Additional international examples of carbon tax rates**



# 4 PROPOSALS FOR PHASE 2 AND BEYOND – OPTIONS FOR RESTRUCTURING TAX FREE ALLOWANCES

## 4.1 Phased approach to the carbon tax

39. As announced in the 2022 Budget, the carbon tax proposals for the 2nd phase will extend from 2026 to 2030 and long-term for beyond 2030 which aligns with the NDCs periodic updates as required under the Paris Agreement.

40. The alignment of carbon tax reforms with the 5-year adjustment timeframe for the NDCs will help to provide policy certainty and predictability on the expected price path for the carbon tax while ensuring sufficient flexibility for adjustments and strengthening of the effective carbon price within an NDC period to achieve climate goals, as necessary.

41. It would be important to monitor and regularly review the emissions trajectories, technology costs, and the pace of technological change and diffusion so that carbon prices can be adjusted if actual prices fail to trigger the required behavioural changes.

## 4.2 Basic tax-free allowance

42. A 60 percent basic tax-free threshold is applicable to all emissions, below which the tax is not payable during the first phase of the carbon tax policy. It is the only free lever in the current design for which industry does not need to make investments as it is applicable to all emissions.

43. As a transitional measure, this tax-free allowance provides the largest scope to strengthen the effective tax rate for phase two of the carbon tax policy in line with the updated NDCs and carbon neutrality commitments made in the SA-Low Emissions Development Strategy. The basic tax-free allowance adjustment could be aligned with a target effective carbon tax rate or allowable maximum tax-free allowance in the short, medium and long-term based on the transitional support envisaged.

44. Studies conducted recommend carbon prices of US$25 to 50/$tCO_2e$ by 2030 for developing economies to at least achieve the 2 degree Celsius temperature goal under the Paris Agreement and a global carbon price of about US$75/ $tCO_2e$. In 2023, the IMF modelling study estimated the carbon price required to achieve South Africa's NDC targets of 350 to 420 MT by 2030 and net zero emissions by 2050. The study suggested a carbon price of about US$120/$tCO_2e$ by 2030, without other mitigation measures including implicit carbon pricing through regulatory measures.

45. To strengthen the price signal and improve the incentives under the carbon tax, it is proposed that the basic tax-free allowance is gradually reduced, and the incentive-based allowances are adjusted to provide flexibility to companies to reduce their carbon tax liability and improve the emissions intensity of their processes. This will help to facilitate a just transition to a lower carbon economy in a phased manner and ensure a credible effective carbon tax on the margin to encourage behaviour change.

a. It is proposed that there is a reduction of the basic tax-free allowance by 10 percentage points in 2026 and by 2.5 percentage points per year from 2027 until 2030. A reduction of the basic tax-free allowance by at least 2,5 percentage points per year from 2031, where South Africa's NDC commitments under the Paris Agreement could be considered.

b. The relatively moderate adjustments to the basic tax-free allowance for 2026 to 2030 will help to facilitate a just transition to a lower carbon green economy and promote investments necessary for the economic recovery.

46. **The tables 2 and 3** below outlines the specific proposals for adjustments to the basic and other tax-free allowances for combustion, fugitive and industrial process emissions.

**Table 2: Proposal for combustion emissions**

| PROPOSAL FOR COMBUSTION EMISSIONS TAX FREE ALLOWANCE ADJUSTMENTS | | 10 PERCENTAGE POINTS REDUCTION IN BASIC IN 2026 & 2.5 PERCENTAGE POINTS REDUCTION PER YEAR FROM 2027 + 15 PERCENTAGE POINTS INCREASE IN CARBON OFFSETS + 5 PERCENTAGE POINTS INCREASE IN PERFORMANCE - TRADE EXPOSURE - CARBON BUDGET ALLOWANCE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | NDC 3 | | | | | NDC 4 | | | | |
| YEAR | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 |
| Basic | 60 | 50 | 47.5 | 45 | 42.5 | 40 | 37.5 | 35 | 32.5 | 30 | 27.5 |
| Carbon offset | 10 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| Performance | 5 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Trade exposure | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Carbon Budget | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Max Allowance** | **85** | **85** | **82.5** | **80** | **77.5** | **75** | **72.5** | **70** | **67.5** | **65** | **62.5** |

**Table 3: Proposal for fugitive and process emissions**

| PROPOSAL FOR FUGITIVE AND PROCESS EMISSIONS TAX FREE ALLOWANCE ADJUSTMENTS | | 10 PERCENTAGE POINTS REDUCTION IN BASIC IN 2026 & 2.5 PERCENTAGE POINTS REDUCTION PER YEAR FROM 2027 + 15 PERCENTAGE POINTS INCREASE IN CARBON OFFSETS - CARBON BUDGET ALLOWANCE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PROCESS AND FUGITIVE | | NDC 3 | | | | | NDC 4 | | | | |
| Year | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 |
| Basic | 60 | 50 | 47.5 | 45 | 42.5 | 40 | 37.5 | 35 | 32.5 | 30 | 27.5 |
| Process and fugitive | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Carbon offset | 5 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Performance | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Trade exposure | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Carbon Budget | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Max Allowance** | **95** | **95** | **92.5** | **90** | **87.5** | **85** | **82.5** | **80** | **77.5** | **75** | **72.5** |

# Effective tax rates

47. This section sets out the effective carbon tax rate for the proposed adjustment of the basic tax-free allowance.

**Table 4: Effective tax rates for combustion, process and fugitive emissions**

| REDUCTION IN BASIC FROM 2026 BY 10 PERCENTAGE POINTS & 2,5 PERCENTAGE POINTS /YR FROM 2027 + 15 PERCENTAGE POINTS INCREASE IN CARBON OFFSET ALLOWANCE | | | | | |
|---|---|---|---|---|---|
| | | COMBUSTION | | PROCESS / FUGITIVE | |
| YEAR | MARGINAL TAX RATE (R/tCO₂e) | MAXIMUM ALLOWANCE | EFFECTIVE TAX RATE (R/tCO₂e) | MAXIMUM ALLOWANCE | EFFECTIVE TAX RATE (R/tCO₂e) |
| 2026 | 308 | 85.0% | **46** | 95.0% | **15** |
| 2027 | 347 | 82.5% | **61** | 92.5% | **26** |
| 2028 | 385 | 80.0% | **77** | 90.0% | **39** |
| 2029 | 424 | 77.5% | **95** | 87.5% | **53** |
| 2030 | 462 | 75.0% | **116** | 85.0% | **69** |
| 2031 | 462 | 72.5% | **127** | 82.5% | **81** |
| 2032 | 462 | 70.0% | **139** | 80.0% | **92** |
| 2033 | 462 | 67.5% | **150** | 77.5% | **104** |
| 2034 | 462 | 65.0% | **162** | 75.0% | **116** |
| 2035 | 462 | 62.5% | **173** | 72.5% | **127** |

48. Adjustments to the basic tax-free allowance will be coupled with changes to the incentive-based allowances to strengthen the effective carbon tax rate on the margin and promote behaviour change toward lower carbon intensity production processes and investments in technology innovation. It is proposed to increase the carbon offset allowance by 15 percentage points in 2026 for process, fugitive emissions and combustion emissions and to increase the performance allowance by 5 percentage points for combustion emissions from 2026 (See section 4.4 and 4.5 for further details).

49. Together with the rate increases from 2026 to 2030, this proposal seeks to provide a pathway towards a credible effective price signal to encourage behaviour change and will help to nudge the economy onto a lower carbon and sustainable growth path.

50. The basic tax-free allowance for mobile emissions from road transport of 75 per cent will remain unchanged until 2030. A reduction of the basic tax-free allowance by at least 2,5 percentage points per year from 2031, where South Africa's NDC commitments under the Paris Agreement could be considered.

## 4.3 Hard to Abate Sectors – process and fugitive emissions allowance

51. The process and fugitive emissions tax-free allowance was implemented as a transitional measure to provide relief to the hard to mitigate sectors i.e. products from chemical processes that occur in fixed stoichiometric ratios (e.g. cement, iron, steel, glass, ceramic) with limited mitigation potential due to either technical or structural reasons over the short to medium term.

52. The hard-to-abate sectors are also likely to face the EU and UK CBAMs from 2026 onwards. Since other jurisdictions including the EU will start to phase out free allowances to such sectors

from 2026, it is proposed to allow industry a longer transitional period and to retain this tax-free allowance of 10 percent until 2030. A continuation of this allowance from 2031 to 2035 may be considered however, this will depend on the availability of new technologies to mitigate greenhouse gas emissions in hard to abate sectors.

## 4.4 Performance tax-free allowance

53. The performance tax-free allowance seeks to reward taxpayers that perform better than an approved industry GHG emissions intensity benchmark and to encourage firms to reduce the carbon intensity of their production processes relative to their peers. Firms can qualify for a 5 per cent tax-free emissions allowance for investments that reduce the emissions intensity of their activities that is, the amount of GHG emissions relative to the quantity of products produced.

54. To help facilitate the development of greenhouse gas emission intensity benchmarks, the National Treasury commissioned a study through the World Bank and a report entitled *"Emissions Intensity Benchmarks for the South African Carbon Tax"* was published in 2014. This report set out the methodological approaches that could be used to develop benchmarks for key sectors, outlined the key principles and criteria to guide the establishment of benchmarks, and specified possible benchmarks for key industrial processes and sectors taking into account the availability of data and international best practice.

55. In 2015, following the stakeholder consultation process on the report, the National Treasury requested stakeholders and potential taxpayers to develop benchmarks to be applied to the formula for purposes of the performance allowance. During the period 2016 to 2018, several industrial stakeholders embarked on the process to develop benchmarks which were submitted to the National Treasury for consideration and approval.

56. To date, benchmark proposals have been developed by the liquid fuels, gas and coal to liquid fuels, mining, cement, iron and steel, paper and pulp, ferroalloys, titanium, chemicals (nitric acid), sugar and clay brick sectors. **Table 5** below lists the published greenhouse gas emissions intensity benchmarks for the different sectors.

**Table 5: Gazetted greenhouse gas emission intensity benchmarks**

| SECTOR/SUB-SECTOR | SA INDUSTRY BENCHMARK VALUE | |
|---|---|---|
| Iron and Steel | 3.83 tonne $CO_2e$ / tonne crude steel | |
| Ferroalloys | Ferrochrome - 5.57 tonne $CO_2e$ / tonne ferrochrome | |
| | Silicomanganese - 6.26 tonne $CO_2e$/tonne silicomanganese | |
| Mining Sector - Platinum | Depth of platinum mine in metres | Intensity range in tonne $CO_2e$ / tonne ore mined |
| | Shallow: 0 -300 m | 0.004 |
| | Medium: 300 -1200 m | 0.062 |
| | Deep: 1200 -2000 m | 0.12 |
| | Concentrators | 0.0495 tonne $CO_2e$ / tonne ore milled |
| | Smelters and refineries | 0.395 tonne $CO_2e$ / ounce of metal |

| SECTOR/SUB-SECTOR | SA INDUSTRY BENCHMARK VALUE | |
|---|---|---|
| Mining Sector Gold | Depth of gold mine in metres | Intensity range in tonne $CO_2e$ / tonne rock mined |
| | Shallow: 0 -1000 m | 0.01 |
| | Medium: 1000 -2500 m | 0.25 |
| | Deep: 2500 -4000 m | 0.43 |
| Mining Sector - Coal | Opencast Coal Mining | 0.014 tonne $CO_2e$/ tonne run of mine coal |
| | Underground Coal Mining | 0.022 tonne $CO_2e$/ tonne run of mine coal |
| Cement | 1 tonne $CO_2e$ / tonne clinker | |
| Pulp and paper | Integrated white & brown pulp, brown Kraft paper and newspaper | 2.542 tonne $CO_2e$ per tonne pulp and paper |
| | Integrated brown Neutral Sulphite semichemical (NSSC) and brown recycled containerboard | 1.045 tonne $CO_2e$ per tonne pulp and paper |
| | Non -integrated white print paper | 1.44 tonne $CO_2e$ per tonne paper |
| | Non - integrated dissolving wood pulp | 1.14 tonne $CO_2e$ per tonne pulp and paper |
| | Non -integrated brown recycled containerboard | 0.984 tonne $CO_2e$ per tonne paper |
| | Integrated white print paper and tissue | 3.19 tonne $CO_2e$ per tonne pulp and aper |
| | Integrated white pulp and white & brown Kraft paper | 0.59 tonne $CO_2e$ per tonne pulp and paper |
| | Integrated brown NSSC and brown recycled containerboard and lignosulphonate | 2.46 tonne $CO_2e$ per tonne pulp and paper |
| | Non -integrated brown recycled container board and white print paper | 1.80 tonne $CO_2e$ per tonne pulp and paper |
| | Non -integrated white recycled container board | 1.614 tonne $CO_2e$ per tonne paper |
| | Sawn timber | 0.26 tonne $CO_2e$ per tonne wood |
| Petroleum refining | 53,6 kg$CO_2e$ / SA - CWT | |
| Petroleum (CTL/ GTL) | 0.0669 Mt $CO_2e$ / PJ energy input | |
| Clay brick manufacturing | 0.28 tonne $CO_2e$ / tonne saleable bricks | |
| Chemicals - Nitric Acid | 0.68 tonne $CO_2e$ / tonne 100% nitric acid | |
| Ilmenite industry - Titanium slag | 3.9 tonne $CO_2e$ / tonne titanium slag | |
| Quicklime | 1.322 tonne $CO_2e$ / tonne quicklime | |
| Sugar | Raw sugar - 0.217 tonne $CO_2e$ / tonne raw sugar | |
| | White - 0.601 tonne $CO_2e$ / tonne white sugar | |
| | Raw and white sugar - 0.217 to 0.601 tonne $CO_2e$ / tonne white sugar and raw sugar | |
| Aluminium | 16.13 tonne $CO_2e$ / tonne aluminium | |
| Ceramic tile | 0.3 tonne $CO_2e$ / tonne ceramic tile | |

57. To ensure dynamic incentives for carbon intensity improvements, benchmark stringency is crucial, and benchmarks should be adjusted and reduced over time. This should take into account the availability of new technologies, structural changes required for companies within

priority sectors to comply with the benchmarks, and regional differences. For example, **Table 6** below provides a list of benchmarks applicable under the EU ETS for the period 2021 to 2025, and a comparison with the benchmarks applied for the previous phase of the ETS.

**Table 6: EU ETS Benchmarks for phase 3 and phase 4**

| | BENCHMARK VALUE FOR 2021-2025 | BENCHMARK VALUE FOR PHASE 3, 2013 – 2020 (AS A REFERENCE) | |
|---|---|---|---|
| | VALUE | | UNIT |
| Refinery products | 0,0228 | 0,0295 | t $CO_2$e/CWT |
| BM2 Coke | 0,217 | 0,286 | t $CO_2$e/t |
| BM3 Sintered ore | 0,157 | 0,171 | t $CO_2$e/t |
| BM4 Hot metal | 1,288 | 1,328 | t $CO_2$e/t |
| EAF carbon steel | 0,215 | 0,283 | t $CO_2$e/t |
| high alloy steel | 0,268 | 0,352 | t $CO_2$e/t |
| Iron casting | 0,282 | 0,325 | t $CO_2$e/t |
| Pre-bake anode | 0,312 | 0,324 | t $CO_2$e/t |
| Aluminium | 1,464 | 1,514 | t $CO_2$e/t |
| Grey cement clinker | 0,693 | 0,766 | t $CO_2$e/t |
| White cement clinker | 0,957 | 0,987 | t $CO_2$e/t |
| Lime | 0,725 | 0,954 | t $CO_2$e/t |
| Dolime | 0,815 | 1,072 | t $CO_2$e/t |
| Sintered dolime | 1,406 | 1,449 | t $CO_2$e/t |
| Float glass | 0,399 | 0,453 | t $CO_2$e/t |
| Bottles and jars of colourless glass | 0,29 | 0,382 | t $CO_2$e/t |
| Bottles and jars of coloured glass | 0,237 | 0,306 | t $CO_2$e/t |
| Continuous filament glass fibre products - | 0,309 | 0,406 | t $CO_2$e/t |
| Facing bricks | 0,106 | 0,139 | t $CO_2$e/t |
| Pavers | 0,146 | 0,192 | t $CO_2$e/t |
| Roof tiles | 0,12 | 0,144 | t $CO_2$e/t |

Source: European Commission (2021) *Updated of Benchmark Values for the year 2021-2025 of Phase 4 of the ETS*, Available from: https://ec.europa.eu/clima/system/files/2021-10/policy_ets_allowances_bm_curve_factsheets_en.pdf

58. As more trading partners implement CBAMs, emissions intensity provides the easiest proxy for determining emissions embedded in a product. Therefore, lower emission intensities in the economy could help to reduce the import taxes South African industry would face when exporting goods into such jurisdictions.

59. In light of the above, it is proposed to increase the performance tax-free allowance by 5 percentage points in 2026 for combustion emissions, that is the maximum allowance will be increased from 5 to 10 percent (**See Section 5** on carbon pricing and electricity sector policy reforms**).**

**BOX 2: REVIEW STUDY OF THE SOUTH AFRICAN SECTOR BENCHMARKS**

The study reviewed the current emission intensity benchmark values, methodologies used by industries to develop the benchmarks, and recommended criteria for future annual adjustments of the benchmark values. Stakeholder consultations on the review were undertaken in December 2020 and the process was finalised in July 2021.

The benchmarks were reviewed according to criteria for robustness; transparency; consistency; completeness; accuracy; and uncertainty associated with the benchmarks values for each sector or sub-sector. In total, 17 sectors' benchmark values were evaluated including the Aluminium, Cement, Ceramic tiles, Chemicals - nitric acid, Clay brick making, Coal mining – surface & underground, Ferrochrome, Gold mining, Ilmenite – titanium slag, Iron and steel, Petroleum - CTL/GTL, Petroleum – refining, Platinum mining, Pulp and paper, Quicklime, Silicomanganese, and Sugar.

An overall evaluation is provided for each benchmark with most benchmarks falling between adequate and not adequate. Issues identified with each benchmark value were described with recommendations for improvement – noting that there needs to be a balance between technical and political drivers, and the feasibility of implementing certain benchmarks at the sector or subsector level. Several cross- sector issues were also identified including the following:

- *Inclusion of scope 2 emissions* – there was inconsistency across and within sectors as different grid electricity factors (GEFs) were used instead of the recommended 0.94tonne $CO_2e$ / MWh as proposed in the 2014 National Treasury GHG Emission Intensity Benchmarks Technical Report. In some cases, the GEF was omitted by many sectors.
- *Product definition* – not all benchmarks were product benchmarks as recommended in the 2014 Technical Report, there were deviations to input, refining and mining benchmarks. This was mostly due the lack of production and emissions data.
- *Stringency* – benchmarks were mostly determined as an average weighted by production, averaged by installation, linear regression, percentage reduction from average, international (regional) reference.
- *Cross boundary energy* – there was no consistent treatment of energy production for use outside of the benchmarked process and sometimes this was difficult to ascertain.
- *Data consistency* – there was variation in reference values used e.g. GEF, Net Calorific Values (NCVs) of fuels, Global Warming Potential (GWP) based on both the 3$^{rd}$ and 4$^{th}$ assessment reports.
- *Different methodology tiers* were used as the basis for Scope 1 emissions factors.
- *Uncertainty analysis* was rarely done so the accuracy of the benchmark values is unknown.

Eleven sector benchmarks were regarded as acceptable and five were classified as potentially acceptable with some consideration and only one benchmark was considered not acceptable. Stakeholder consultations on the benchmark assessments and additional data requirements to improve the benchmark values and methodologies for each sector will be conducted during 2025/26 to inform technical corrections and adjustments to the benchmark values.

## 4.5 Carbon Offsets tax-free allowance

60. A carbon offset is an (external) investment through which a firm can access additional GHG mitigation options that are cheaper than what can be achieved by investment in its own operations. Carbon offsets are typically project-based, i.e. involve specific projects or activities that reduce, avoid, or sequester emissions, and are developed and evaluated under specific methodologies and standards, which enable the issuance of carbon credits.

61. Carbon offset projects are developed and evaluated under specific methodologies and standards which enable issuance of carbon credits. Because offset projects can involve different GHGs, they are quantified and described with a standard form of measure; metric tons of $CO_2$-equivalents (tonne $CO_2e$)[19].

62. Carbon offsets are guided by a variety of principles, which will typically need to be fulfilled for a project to be awarded a tradable credit under a specific standard. The principles of 'real, additional, verifiable and permanent' are pivotal to ensuring the credibility of carbon offset projects.

63. Carbon offset markets currently exist both under compliance and voluntary carbon offset schemes. Voluntary offset markets function outside of the compliance markets and enable companies and individuals to purchase carbon offsets on a voluntary basis.

64. In addition, there has been an emergence of standards for development of projects in particular geographic regions generally being driven by either national or local governments and are tailored to their unique domestic situations and climate change mitigation objectives. Most notable are schemes developed in Brazil, China, Australia, Costa Rica, Thailand, the UK, Switzerland, Japan, South Korea, and California.

65. Regional standards are frequently established to close the loop between domestic supply and demand, and thus to encourage local carbon financing and the channelling of funds to locally developed projects. Additionally, they often incorporate sustainable development objectives and criteria, which are tailored to the host country's context, as well as supporting other domestic priorities, strategies and targets.

66. **Box 3** provides an overview of both compliance and voluntary the credit market activity in 2023.

[19] Ramseur J. L. Voluntary Carbon Offsets: Overview and Assessment. U.S. Congressional Research Service, 2007. Available at: http://fpc.state.gov/documents/organization/96418.pdf

**BOX 3: CARBON OFFSETTING IN THE VOLUNTARY AND COMPLIANCE MARKETS**

The Ecosystem Marketplace reported the transaction value of the Voluntary Carbon Market (VCM) of US$723 million, a decline of 61 percent from US$1,9bill in 2022 and well below the peak market value of US$2.1bil in 2021. Voluntary demand, however, continues to dominate with moderate growth in compliance demand.

In terms of regional supply of credits, China and India remain the largest host countries in terms of issuances, with roughly 15 per cent share each. After the peak in project registrations at around 1600 in 2020, 2023 new registrations were just over 1200 with the Verified Carbon Standard and the Gold Standard accounting for about 43 percent of new registrations.

In 2023, there was a decline in credit issuance and retirements were significantly below credit issuances and fell for the second consecutive year. The two largest project categories—renewable energy and emission avoidance projects in forestry and land use—both faced a near 50 per cent decline in issuances compared to 2022. Independent crediting mechanism issuances fell by 9 per cent from the previous year.

For renewable energy projects, the number of projects able to deliver credits is declining. New renewable energy projects face challenges to demonstrate financial additionality requirements, and many large-scale renewable projects are reaching the end of their crediting periods. In the case of avoided deforestation projects, reduced issuances are attributed to weakened market confidence due to continuing concerns of over crediting following criticisms of the integrity of project-level activities during 2023. One project category that saw growth was household devices, including clean cookstoves, biodigester systems, and efficient lighting, which increased by 23 per cent.

In 2023, the World Bank State and Trends of Carbon Pricing report stated that prices declined across most project categories, except for carbon removal projects. On average, buyers paid $6,53 per ton $CO_2e$ for carbon credits in 2023, a slight decrease from US$7,37 in 2022 in the VCM. Prices were more resilient in over-the-counter (OTC) transactions, which allow buyers to pursue specific purchasing strategies. Carbon credit prices have declined across most project categories

- Exchange-traded prices for renewable energy projects fell by over 50 per cent between 2022 and 2023 but were largely stable in OTC transactions.
- Prices for household device projects dropped from their 2022 high, across both exchange-traded contracts and OTC transactions.
- Nature-based credits—covering both emission avoidance and emission removal projects within the agriculture, forestry and other land use categories—traded in exchange traded contracts saw the most significant decline, with average prices collapsing by nearly 80 per cent between 2022 and 2023 to below US$2.

The integrity of carbon credits remains a critical area of concern for the market. Credits with specific attributes—such as cobenefits, corresponding adjustments, or recent vintages—traded at a premium, demonstrating the value these characteristics provide buyers. The subdued market and reduced confidence emphasize the importance of initiatives to rebuild integrity and credibility. The long lead times to generate abatement and issue credits, combined with uncertain and changing demand signals, mean unlocking new sources of supply takes time. In addition, there is a need to ensure that governments and businesses are ready to participate, while also exploring options for innovative approaches and opportunities to reduce transaction costs. However, these priority areas must be balanced against maintaining environmental integrity.

***Sources:*** *Forest Trends' Ecosystem Marketplace, 2024 and The World Bank, 2021 and 2024.*

67. Major concerns with the voluntary markets are with the verification of the authenticity and quality of offsets sold in the market. This is partly being addressed through harmonised criteria and principles which can be used to assess the quality of voluntary offsets by initiatives like the Task Force on Scaling Voluntary Carbon Market which recommended the development of core principles to ensure the environmental integrity of carbon markets.

68. The Integrity Council for the Voluntary Carbon Market (ICVCM) was established in 2021 as a non-profit independent governance body to set and maintain a global standard for integrity in the voluntary carbon market. The ICVCM developed the Core Carbon Principles (CCP) (set out in **Box 4** below) as a global benchmark for credit quality and will use the CCP to assess carbon crediting programmes and methodologies and issuing the qualifying programmes and methodologies with the CCP label which will help to bring integrity to the market.

69. Carbon crediting programmes like the Gold Standard, Climate Action Reserve and VERRA (Verified Carbon Standard) have been approved by the ICVCM and issued with a CCP label.

70. There is increasing consensus that offsetting should be supplementary to companies' own emissions reduction as part of their corporate net-zero strategies[20] and carbon market mechanisms should be complementary to policies that aim to achieve real absolute, emissions reductions. This is crucial across both voluntary and compliance carbon markets. Consistency of systems across different markets over time will help promote effective action and a level playing field. Limiting the scope of the offsets to only project types that still need carbon finance to be viable; and imposing quantitative restrictions on the use of carbon offsets in all regulatory compliance instruments (carbon taxes and ETS) are recommended[21].

[20] The World Bank, 2021. States and Trends of Carbon Pricing 2021. Available at: https://openknowledge.worldbank.org/handle/10986/35620
[21] The World Bank, 2021. States and Trends of Carbon Pricing 2021. Available at: https://openknowledge.worldbank.org/handle/10986/35620

**BOX 4: THE CORE CARBON PRINCIPLES OF THE ICVCM**

The Core Carbon Principles (CCP) are ten (10) science-based principles on governance, emissions impact and sustainable development for identifying high-quality carbon credits that create real, verifiable carbon impact. It aims to provide a global benchmark for high integrity in the VCM and to improve its quality and accelerate progress towards the 1.5 degree Celsius target.

1. Effective governance: The carbon crediting programme must have effective governance to ensure transparency, accountability, continuous improvement and the overall quality of credits.
2. Tracking: The programme must have a registry to be able to identify, record, and track mitigation activities and carbon credits issues to ensure credits can be identified.
3. Transparency: The programme must provide comprehensive and transparent information on all activities and make this information publicly available in an electronic format acceptable to all audiences
4. Robust independent third-party validation and verification; There must be programme level requirements for robust independent third-party validation and verification of mitigation activities.
5. Additionality: The GHG emissions reductions or removals must be additional i.e. They would not have occurred in the absence of the incentive created by carbon credit revenues
6. Permanence: the GHG emission reductions and removals must be permanent or where there is a risk of reversal there shall be measures in place to address those risk of reversals and compensate reversals.
7. Robust quantification of emission reductions and removals: The GHG emissions reductions and removals must be robustly quantified based on conservative approaches, completeness and scientific methods.
8. No double counting: The GHG Emissions reductions and removals must not be double counted ie. They shall be counted once towards achieving mitigation targets and goals. Double counting covers double issuance, double claiming and double use.
9. Sustainable development benefits and safeguards: The programme must have clear guidance, tools and compliance procedures to ensure that mitigation activities conform with or go beyond established industry best practices on social and environmental safeguards while delivering positive sustainable development impacts
10. Contribution toward net zero transition: The mitigation activities shall avoid locking in levels of GHG emissions, technologies or carbon intensive practices that are incompatible with the net zero emissions goals by mid-century.

**Source:** Integrity Council - The Core Carbon Principles. Available from: www.icvcm.org

## Overview of carbon offset allowance and 2026 proposals

71. The carbon offset tax-free allowance under the carbon tax provides flexibility to firms to reduce their carbon tax liability by either 5 or 10 percent of their total GHG emissions through investment in projects that reduce their emissions outside their taxable activities. It enables industry to invest in mitigation projects at a lower cost to what would be achieved in their own operations i.e. seek out delivery least cost mitigation and to incentivise mitigation in sectors or

activities that are not directly covered by the tax which includes the agriculture, forestry and other land use (AFOLU) and waste.

72. Carbon offsets from approved projects under the international standards including the Clean Development Mechanism (CDM), the Verified Carbon Standard (VCS) and the Gold Standard (GS) and any approved local standard are eligible for use under the carbon tax. The Carbon Offsets Administration System (COAS) became operational in July 2020. To date, 89 companies are registered on the system, and about 39 projects have been approved to supply credits. The compliance market under the carbon tax consists of around 17 841 680 $tCO_2e$ listed offsets and about 17 515 310$tCO_2e$ offsets have been retired for purposes of the carbon tax from June 2019 until October 2024.

73. **Table 7** below provides a breakdown of the number of the projects approved in key carbon offset project categories. This shows that renewable energy and waste to energy projects account for about 70 per cent of the total number of approved projects under the COAS.

**Table 7: Carbon offset projects approved in key project activity categories**

| PROJECTS APPROVED IN KEY PROJECT CATEGORIES | |
|---|---|
| **Project categories** | **No of Projects** |
| Chemical industries | 9 |
| Energy demand | 3 |
| Energy industries | 10 |
| Manufacturing industries | 2 |
| Metal production | 1 |
| Waste handling and disposal | 14 |
| **Total** | **39** |

Source: Department of Electricity and Energy

## Proposal to increase the carbon offset allowance

74. Several countries have implemented carbon pricing through emissions trading, carbon taxation and crediting mechanisms. **Table 8** below provides an overview of the carbon pricing measures implemented and restrictions applied on the use of credits.

**Table 8: International examples of carbon pricing and offsets crediting mechanisms**

| NO | COUNTRY | NAME OF SCHEME/ POLICY | DESCRIPTION OF CARBON MARKET AND / OR OFFSET SCHEME |
|---|---|---|---|
| 1 | China | China Certified Emission Reduction Programme (CCER) | The CCER was launched in January 2024. Companies can trade carbon reduction credits in the voluntary market.<br>The CCER covers the afforestation, solar thermal, offshore wind and mangrove vegetation sectors. The Ministry of Ecology and Environment manages the programme.<br><br>The programme complements the Emissions Trading Scheme which came into effect in July 2021. China implements a carbon price |

| NO | COUNTRY | NAME OF SCHEME/ POLICY | DESCRIPTION OF CARBON MARKET AND / OR OFFSET SCHEME |
|---|---|---|---|
| | | | through a national emissions trading scheme covering the power sector. The carbon price average in 2024 was around US$13/tCO$_2$e. Under the ETS, companies can use carbon offsets which is capped at 5 per cent of their annual emissions. |
| 2 | India | Carbon Credit Trading Scheme (CCTS) | The CCTS was launched in 2023 for compliance and voluntary sectors for implementation by 2026. The compliance market is based on government targets for specific sectors based on carbon intensity while the voluntary market does not have a limit on emissions. This programme is managed by the Ministry of Power and the carbon credit certificates will be issued by the Bureau of Energy Efficiency.<br><br>India implements a specific excise tax on coal at the rate of Rupees 400 per tonne of coal (currently around US$4,7/tcoal). The tax was introduced in 2010 and is equivalent to a carbon tax of ~US$2.4/tCO$_2$. |
| 3 | Chile | Carbon Tax and Offsets | Chile implements a carbon tax at US$5/tCO$_2$e and proposed increases to the carbon tax to US$ 35/tCO$_2$e by 2030 and US$80/tCO$_2$e by 2040. Carbon offsets up to a maximum of 5 per cent can be used by companies to meet their carbon tax obligations. |
| 4 | USA – California | Cap and trade system | California implemented an emissions trading scheme in 2013. The auction reserve price for 2024 is around US$24/tCO$_2$e and the carbon price as at 1 April 2024 was US$38/tCO$_2$e. The use of carbon offsets is limited to 4 per cent. Carbon credits from projects developed under the American Carbon Registry, Climate Action Reserve and the VERRA are permitted. The scheme is administered by the California Air Resources Board. |
| 5 | Singapore | Carbon tax and offsets | The carbon tax came into effect in January 2019 and the tax rate is about US$19/tCO$_2$e. In 2026 and 2027, the tax rate will increase to around US$34/tCO$_2$e. Companies can use high quality international carbon credits (ICCs) to offset up to 5 percent of their taxable emissions. Eligible ICCs must comply with the rules under Article 6 of the Paris Agreement and meet principles to demonstrate high environmental integrity. |
| 6 | South Korea | ETS and Offsets | South Korea implements an ETS scheme and allows offsets of up to a maximum of 5 per cent. |

75. Carbon offsets or crediting mechanisms can be implemented on their own and as part of carbon pricing policies in the compliance or voluntary market. To promote the development of a domestic carbon market, commitments to credible carbon price pathways and stringent emissions targets are required.

76. To stimulate carbon market activities under the carbon tax, an increase of the carbon offset allowance by 15 percentage points from 5 to 20 per cent for fugitive and process emissions and from 10 to 25 per cent for combustions emissions is proposed. Although this is not aligned with the restrictions on the use carbon offsets globally, it could provide an important economic and financial incentive on the margin and the necessary policy certainty to help expedite low carbon investments and encourage technology innovation in the short to medium term.

77. An alternative approach is to phase in a gradual increase in the carbon offset allowance by 5 percentage points per year until it reaches 25 per cent. This would be combined with an equivalent reduction in the basic tax free allowance. Similar to the option above, this would strengthen the economic incentives under the carbon tax further and promote additional low carbon investments. There is likely to be a shortage of credit supply in the short term and companies would be afforded a longer time period to prepare and have projects ready in order to access the higher offset allowance.

78. As companies acquire the necessary knowledge and expertise in project development and investor confidence increases, the market could develop rapidly over the medium to long term. As the market develops and there is learning by doing, and the institutional infrastructure for offsets generation and exchange is strengthened, a carbon pricing instrument would play a crucial role in carbon market development and crowding in private sector investment.

## Renewable energy project eligibility

79. In a developing country context where renewable electricity generation is crucial for the energy transition, access to carbon markets can provide an additional source of finance for new investments in clean energy. Under the carbon tax, renewable energy projects approved under the Renewable Energy Independent Power Producers Procurement Programme (REIPPPP) where power purchase agreements were signed after 9 May 2013 are eligible under the carbon offset scheme.

80. To ensure sufficient supply of credits and liquidity in the market, it is proposed that the utilisation period for carbon offsets generated from projects approved under eligible standards before the introduction of the carbon tax including renewable energy is extended for an additional three years until 31 December 2028.

81. To encourage development and inclusion of micro, small-scale and community projects in the eligible offsets pool, small-scale renewable energy projects developed as part of a programme of activities could be considered for inclusion under the carbon offsets. Several standards including the new Article 6(4) mechanism under the Paris Agreement caters for the development of a programme of activities consisting of a group of small-scale initiatives.

## Energy Efficiency Tax Incentive

82. The post-2015 National Energy Efficiency Strategy (post-2015 NEES) adopted a vision to promote energy efficiency as the 'first fuel' in driving balanced, socially inclusive, and environmentally sustainable economic growth, and boosting job creation.

83. The 12L tax incentive was promulgated on 9 December 2013 in the Government Gazette No 37136 and formed part of the revenue recycling measures under the carbon tax. It was introduced with a sunset clause of year of assessment ending before 1 January 2020. The incentive was extended to 2025.

84. The incentive allows businesses to claim deductions against their taxable income for energy-efficiency saving measures measured in kWh equivalent. The rate at which the deduction is calculated was increased from 45c/ kWh to 95 c/kWh in 2015.

85. The incentive is based on the verified and measured energy efficiency savings over a 12-month period, compared to a 12-month baseline measurement. All energy carriers, apart from renewable energy producers, are eligible to claim the 12L incentive and the incentive was extended to include cogeneration in Budget 2015.

86. To date, the main beneficiaries of the Section 12L incentive have been the mining and coal and gas to liquid fuels sectors. Since the introduction of the 12L incentive in 2013, tax-compliant businesses have directly contributed to overall energy efficiency savings of 29.9 TWh and reduction in greenhouse gas emissions of 28.6 $MtCO_2eq$ by the end of September 2024.

87. The review of the post-2015 NEES will set new targets for 2025 to 2035 aligned with the new energy and climate change policy developments in South Africa. To encourage energy efficiency investments, it is proposed that the 12L incentive is allowed to lapse at the end of December 2025 and the carbon offset mechanism is expanded to include energy efficiency projects such as eligible 12L projects approved under the SANS 50010 Energy Efficiency Savings standard. This will assist firms to meet their energy efficiency targets, reduce scope 2 electricity emissions and contribute to job creation.

## Sequestration

88. Under the carbon tax, a deduction is provided for biological sequestration in forestry plantations and harvested wood products, and carbon capture and storage. Usually, sequestration refers to the removal of carbon dioxide from the atmosphere by land-based activities and resembles a sink. Permanent storage resulting from the capture of carbon dioxide prevents it from being released into the atmosphere and is therefore a subtraction from the source of emissions and not a removal. A technical clarification is required to remove geological storage and capture of carbon dioxide emissions from the definition of sequestration.

89. In the case of sequestration, there are concerns about the permanence of carbon dioxide removals and high uncertainty associated with the removal estimates, like carbon offset projects. The main objective of the carbon tax is to promote real emission reductions by companies within their own activities, and this deduction could unintentionally promote offsetting of emissions without investments to reduce emissions.

90. Following consultations with the DFFE, it is proposed to place a cap of 70 per cent on the amount of sequestered emission removals that would be eligible for the tax deduction. This will preserve the environmental integrity of the carbon tax and provide an emissions buffer where there are high uncertainties around removal estimates. Going forward, there might be a need to replace the sequestration deduction with the carbon offset allowance, especially once the methodologies under Article 6(4) and other offset standards are finalised and developed, respectively.

## Domestic Standard Framework

91. One of the main comments submitted by several stakeholders on the 2014 carbon offsets paper and the Carbon offset regulations, was that financial costs and bureaucratic processes for developing carbon offset projects under the international standards (CDM, VCS and GS) were too high and lengthy and a major obstacle to the development of local carbon offset projects. It was recommended that local offset standards should be eligible for developing carbon offset projects.

92. During 2020, the Department of Mineral Resources and Energy under the Partnership for Market readiness Project (trust fund administered by the World Bank) undertook a study to develop a framework and criteria for evaluating and approving local carbon standards that could be eligible under the carbon offset system. The draft framework entitled: *South African Carbon Offsets Programme:* Draft *Framework for Approval of Domestic Standards* was published for public comment in January 2022.

93. The Department of Electricity and Energy, National Treasury and the Department of Forestry Fisheries, and the Environment aim to finalise and publish the framework for implementation before the end of the financial year. The approved standards will be included as eligible standards for purposes of carbon offsets under the carbon tax and necessary changes will be made to the Carbon Offset Regulations.

## Carbon Market Integrity

94. There are two distinct aspects relating to the integrity for carbon markets as a financial asset class.

    a. *The primary market aspects.* The Primary market is characterized by issuance of credits led by private initiatives and arrangements. Adequate information about the inherent characteristics of projects underlying carbon credits is essential to help investors make informed decisions about investments related to those carbon credits in this market. Furthermore, governance and accountability measures within carbon crediting programs, such as assessments of the likelihood that credits will achieve their stated carbon removal or avoidance goals, should be considered by relevant regulators or authorities. Drawing on the experience from the International Organization of Securities Commissions (IOSCO's)[22]

[22] IOSCO is the international body that brings together the world's securities regulators and is recognized as the global standard setter for financial markets regulation

Principles for Price Reporting Agencies (PRAs) provides a valuable framework. These measures align with IOSCO's objectives of investor protection and market integrity by promoting transparency and accountability throughout the carbon credit value chain.

b. *The secondary market aspects.* A significant portion of carbon credits is traded over-the-counter (OTC), often via intermediaries, resulting in limited public pricing information. While some differentiation among projects may be necessary to meet the diverse goals of carbon credit buyers, the introduction of more standardized carbon credits on centralized trading platforms could enhance accessibility for a wider range of market participants and improve liquidity in voluntary carbon markets. In compliance markets, there is a greater degree of standardisation through a narrow set of applicable standards.

95. In addition to increasing liquidity, broader market access generally leads to enhanced price transparency and market efficiency. With a larger pool of participants, there is greater insight into transactions and pricing, which helps to reduce information asymmetry and provides clarity on trading interest. This transparency aids in price discovery by fostering competition among market participants. Efficient markets allow participants to consider recent transaction prices when determining their own quotes or deciding whether to accept offers. Furthermore, appropriate market transparency can attract new participants, boost competition, and mitigate market concentration. Ideally, carbon trading platforms should implement criteria and procedures for market participants that are fair, reasonable, transparent, and non-discriminatory.

96. In South Africa, the domestic market is only OTC, with a large number of transactions taking place in the "primary market" between the owner of the project generating carbon credits and the entity using them to offset their carbon tax. It is also a very concentrated market with two buyers taking around 90 percent of the market. Whilst the scale of the market provides regulators an opportunity to define how the market should function, these regulatory considerations still need urgent attention.

97. The IOSCO consultation document on voluntary carbon markets outlines 21 good practices aimed at enhancing market integrity and functionality. These good practices are intended to build trust and efficiency in voluntary carbon markets, supporting global efforts to reduce greenhouse gas emissions effectively. These are included in **Box 5**.

98. The National Treasury will publish a diagnostic on the domestic carbon market and consider actions necessary to improve the financial integrity of the market with specific implementation options and possible approaches relating to key aspects of the IOSCO good practices. This will consider the international VCM and compliance market developments.

**BOX 5: PRACTICES TO ENHANCE MARKET INTEGRITY AND FUNCTIONALITY**

The IOSCO consultation document on voluntary carbon markets outlines good practices aimed at enhancing market integrity and functionality, including the following:

- Regulatory Oversight: Establish clear regulatory frameworks to oversee market activities and ensure compliance with established standards.
- Standardization of Carbon Credits: Develop and adopt standardized methodologies for verifying carbon credits to ensure they represent genuine emission reductions.
- Transparent Disclosure Practices: Promote transparency by requiring clear disclosures regarding project details, credit quality, and market pricing.
- Robust Verification: Strengthen verification processes to uphold the credibility and reliability of carbon credits.
- Avoidance of Double Counting: Implement systems to prevent carbon credits from being claimed more than once across different markets or jurisdictions.
- Clear Definitions and Terminology: Use standardized and clear terminology to avoid confusion and enhance understanding among market participants.
- Public Registries: Maintain accessible and comprehensive registries that track carbon credit issuance, transfer, and retirement.
- Market Liquidity and Access: Enhance market liquidity and improve access for a wide range of participants to facilitate effective trading.
- Reliable Pricing Mechanisms: Ensure that pricing mechanisms accurately reflect the value of carbon credits and provide signals to market participants.
- Governance Frameworks: Develop strong governance structures to oversee market operations and manage conflicts of interest.
- Risk Management: Encourage practices that help participants identify, assess, and mitigate risks associated with their market activities.
- Integrity of Market Participants: Promote high standards of integrity among participants, including ethical behavior and compliance with market rules.

## Article 6 Carbon Market Cooperation under the Paris Agreement

99. Article 6 of the Paris Agreement establishes a framework for international cooperation through market and non-market mechanisms to help countries achieve their Nationally Determined Contributions (NDCs) commitments.

    a. Article 6.2 allows two or more countries to cooperate to trade Article 6 units directly.

    b. Article 6.4 replaces the Clean Development Mechanism and caters for international trading of credits generated from eligible projects. The Supervisory Board has been established to approve methodologies, and maintain a registry of projects for an international credit trading mechanism.

    c. Article 6.8 which refers to non-market mechanisms.

100. The main difference between credit trading under Article 6.2 and Article 6.4 is that the former governs direct trading of credits between governments, and the latter involves trading through

a centralised mechanism similar to the Clean Development Mechanism system. The rules and modalities for Article 6 have been developed including the reporting rules and governing bodies however the mechanism has not been fully operationalised.

101. The outstanding issues on Article 6.4 relate to finalisation of the methodologies to be used under the new mechanism and the role of nature-based credits which is currently limited to Afforestation Reforestation and Revegetation (ARR) projects under the CDM. Project types such as Improved Forest Management, Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD+)[23] and agriculture soils sequestration were not allowed under the CDM.

102. To access the Article 6 mechanisms, countries have developed or initiated processes to develop domestic guidelines and policy frameworks to enable participation and cooperation with other jurisdictions. The DFFE is finalising a framework to guide the implementation of Article 6 cooperation mechanisms and considering how it would impact on South Africa's NDC commitments under the Paris Agreement.

103. Decisions taken under the Paris Agreement in November 2022 set out the process for transitioning activities from the CDM to the Article 6(4) mechanism. About 45 South African based CDM projects were eligible for the transition to the new mechanism. As of 31 December 2023, there were no applications for the transition of any South African CDM projects to the Article 6(4) mechanism.

104. In the 2024 Budget, government announced possible inclusion of the Article 6(4) mechanism as a replacement of the CDM and eligible standard for the carbon offset mechanism under the carbon tax. Once the Article 6(4) mechanism standards and methodologies are approved and the mechanism registry is operationalised, it is proposed to include the mechanism as an eligible standard under the carbon offset scheme.

## 4.6 Carbon budget tax-free allowance

105. The carbon budget tax-free allowance of five percent was implemented for the voluntary carbon budget phase from 2016 to 2024 to promote participation in the system and provision of data to government. This allowance falls away with implementation of the mandatory system as provided for in Section 27 of the Climate Change Act (No 22 of 2024).

106. To address concerns about double penalties for companies under the carbon tax and the mandatory carbon budgets, the 2022 Budget proposed a higher carbon tax rate of R640 per tonne of carbon dioxide equivalent on all greenhouse gas emissions exceeding the carbon budget. It is envisaged that the mandatory carbon budget system will come into effect from 1 January 2026, once the Climate Change Act is operationalised and the carbon budget and greenhouse gas mitigation plan regulations are gazetted by the Department of Forestry Fisheries and the Environment (DFFE).

[23] Forests can be a source of greenhouse gases when destroyed or damaged. REDD+ refers to additional forest related activities that protect the climate including sustainable management of forests and conservation and enhancement of forest carbon stocks

107. The carbon budget allowance of 5 per cent would fall away once the mandatory carbon budgeting system comes into effect and will be replaced with an equivalent increase of the carbon offset allowance by 5 per cent. The proposed amendments to the Carbon Tax Act to give effect to the carbon budget related changes will be included in the Taxation Laws Amendment Bill after gazetting of the carbon budget and mitigation plan regulations by the DFFE.

## 4.7 Trade exposure tax-free allowance

108. The Carbon Tax Act makes provision for the allocation of a tax-free allowance to entities that are exposed to international trade competitiveness. The allowance is provided to address the potential adverse impacts on industry competitiveness and reduce the risk of carbon leakage. Competitiveness is related to the ability of firms to maintain or increase their international market share. Carbon Leakage refers to the shift in production from jurisdictions with explicit carbon prices and a displacement of emissions to countries with low or no carbon pricing.

### Trade Exposure Allowance Methodology

109. Trade Intensity is used as a proxy for trade exposure. The trade intensity of a particular sector / subsector is based on the sum of the value of imports and exports divided by production of that sector or subsector. This is calculated for the sector or subsector according to the following formula:

***Trade Intensity = (Exports+ Imports)/ Production***

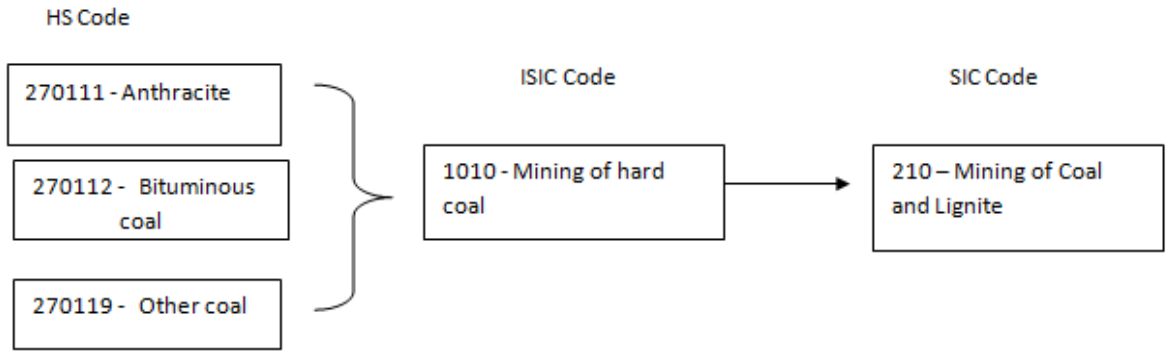
110. The maximum tax-free allowance is 10 percent for sectors with trade intensity of 30 percent and above. There is graduated relief for sectors according to low, medium and high trade intensity. Sectors with trade intensity below 10 per cent do not qualify for the allowance. **Table 9** shows the trade exposure allowance for different trade intensity categories.

**Table 9: Trade exposure allowance for each trade intensity category**

| TRADE EXPOSURE CATEGORISATION | TRADE INTENSITY (TI) | ALLOWANCE |
|---|---|---|
| **Low** | TI < 10 % | 0 % |
| **Medium** | TI ≥ 10 % to < 30 % | Between 3 and 9.8 %<br>(Trade intensity *(0.3)) |
| **High** | TI ≥ 30 % | Maximum of 10 % |

111. The trade exposure allowance is determined through the use of trade and production data. The trade data uses the Harmonised System (HS) code classification and the production data uses Standard Industrial Classification (SIC) codes. The United Nations (UN) concordances are used to align trade data to the SIC classification as illustrated in Figure 4. This is to ensure that there is compatibility between the data sets for the calculation of the trade intensity and the determination of the trade exposure allowance. The Gross Value Added (GVA) is used for sectors where the production data is not published.

**Figure 4: Concordance conversion of trade data**




## Trade Exposure Allowance Proposals from 2026

112. Comments received from stakeholders during the consultation process on the carbon tax and trade exposure allowance suggested that the trade exposure allowance thresholds are very generous. The threshold trade intensity of 30 per cent, which results in a full trade exposure allowance of 10 percent does not reflect the average trade intensity across the economy of 50 per cent.

113. Analysis by the National Treasury shows that the national average trade intensity for goods traded was well above 50 per cent for the period 2021 to 2023 (when using GVA at basic prices of all industries (GDP) as proxy for total national output).

**Table 10: Trade intensity in South Africa**

| | EXPORTS OF GOODS & SERVICES (KBP6013J) | IMPORTS OF GOODS & SERVICES (KBP6014J) | GROSS VALUE ADDED AT BASIC PRICES OF ALL INDUSTRIES (GDP) (KBP6645J) | TRADE INTENSITY: (M + X) / (GDP) |
|---|---|---|---|---|
| | (R Millions) | (R Millions) | (R Millions) | |
| Average (2021-2023) | 2 152 137 | 1 972 975 | 5 966 020 3 | **69 %** |

Source: South African Reserve Bank, 2024

114. As announced in Budget 2022, it is proposed that the maximum trade intensity threshold be increased from 30 to 50 per cent from 1 January 2026. For the short to medium term from 2026 and beyond, the trade exposure allowance is to remain at a maximum of 10 percent. Aspects of the allowance such as the threshold, methodology and coverage will be amended as shown in **Table 11**.

**Table 11: Proposed Design of Allowance from 2026**

| PERIOD | ALLOWANCE ALLOCATION | THRESHOLD | METHODOLOGY | COVERAGE |
|---|---|---|---|---|
| 2026-beyond | 10% | 50% | Updated data for methodology used | -Mining and Quarrying<br>-Manufacturing |

115. The trade intensity thresholds and the corresponding trade exposure allowances for 2026 and beyond are outlined in **Table 12** below.

**Table 12: Trade Intensity Thresholds from 2026**

| TRADE EXPOSURE CATEGORISATION | TRADE INTENSITY (TI) | ALLOWANCE |
|---|---|---|
| **Low** | TI < 20 % | 0 % |
| **Medium** | TI ≥ 20 % to < 50 % | Between 4 and 9.8 %<br>(Trade intensity *(0.2)) |
| **High** | TI ≥ 50 % | Maximum of 10 % |

a. An intensity threshold of 50 per cent will ensure that sectors with a trade intensity of 50 per cent and more will automatically qualify for the full maximum 10 per cent allowance (high trade intensity).

b. For the medium trade intensity category, trade intensity will be multiplied by 0.2 in order to determine the associated trade exposure allowance for sectors in this band. Those with a trade intensity equal to or greater than 20 but less than 50 per cent will receive a progressive allowance of between 4 and 9.8 per cent (medium trade intensity). A sector with trade intensity of 30 per cent will qualify for an allowance of around 6 per cent, trade intensity of 40 per cent would result in an allowance of 8 per cent and trade intensity of 49 per cent will result in a trade exposure allowance of 9.8 per cent.

c. Sectors with a trade intensity of less than 20 per cent will not qualify for the allowance. The trade exposure is categorised as low for sectors below the trade intensity of 20 per cent. The low trade intensity threshold has been adjusted from 10 per cent to 20 per cent to reflect the higher trade intensity levels in the country as outlined in table 6 and through the adjusted threshold to receive the full allowance.

d. The trade exposure allowance is capped at a maximum of 10 per cent for sectors with a trade intensity greater than 50 per cent.

116. The methodology to calculate trade intensity has been used to update the trade exposure allowance for sectors. Trade and production data from 2021-2023 was used to determine the trade exposure allowance, as shown in **Table 13** below. The SIC codes highlighted in grey are where the GVA data has been used to calculate the trade exposure allowance.

**Table 13: Proposed Trade Exposure Allowances**

| SECTOR | SIC CODE | TRADE EXPOSURE ALLOWANCE |
|---|---|---|
| Mining of coal and lignite | 210 | 10% |
| Extraction of crude petroleum and natural gas | 221 | 10% |
| Mining of gold and uranium | 230 | 10% |
| Mining of Iron Ore | 241 | 8% |
| Mining of non-ferrous metals (incl gold) | 242 | 4% |
| Stone quarrying, clay and sand | 251 | 10% |
| Mining and quarrying other non-metallic minerals | 253 | 10% |
| Meat , fish, fruit etc. | 301 | 7% |
| Dairy products | 302 | 0% |
| Grain mill products | 303 | 4% |
| Other food products | 304 | 5% |
| Beverages | 305 | 0% |
| Tobacco Products | 306 | 10% |
| Textiles | 311 | 10% |
| Other textile products | 312 | 10% |
| Knitted, crocheted articles | 313 | 10% |
| Wearing apparel | 314 | 10% |
| Leather and leather products | 316 | 10% |
| Footwear | 317 | 10% |
| Sawmilling and planing of wood | 321 | 9% |
| Products of wood | 322 | 8% |
| Paper and paper products | 323 | 10% |
| Publishing | 324 | 4% |
| Printing , recorded media | 325 | 0% |
| Coke, petroleum products and nuclear fuel | 331-333 | 10% |
| Basic chemicals | 334 | 10% |
| Other chemical products | 335 | 10% |
| Manufacture of man-made fibres | 336 | 0% |
| Rubber products | 337 | 10% |
| Plastic products | 338 | 7% |
| Glass and glass products | 341 | 6% |
| Non-metallic mineral products | 342 | 5% |
| Basic iron and steel products | 351 | 10% |
| Non-ferrous metal products | 352 | 10% |
| Casting of metals | 353 | 10% |
| Structural metal products | 354 | 5% |
| Other fabricated metal products | 355 | 8% |
| General purpose machinery | 356 | 10% |
| Special purpose machinery | 357 | 10% |
| Household appliances | 358 | 10% |
| Manufacturing of computing machinery | 359 | 10% |
| Electric motors, generators, transformers | 361 | 10% |

| SECTOR | SIC CODE | TRADE EXPOSURE ALLOWANCE |
|---|---|---|
| Electricity distribution and control apparatus | 362 | 10% |
| Insulated wire and cables | 363 | 10% |
| Accumulators, primary cells and primary batteries | 364 | 10% |
| Electric lamps and lighting equipment | 365 | 10% |
| Other electrical equipment | 366 | 10% |
| Electrical machinery | 369 | 10% |
| Manufacture of electronic valves | 371 | 10% |
| Radio, television and communication apparatus | 372 | 10% |
| Manufacture of television and radio receivers, | 373 | 10% |
| Professional equipment | 374 | 10% |
| Manufacture of optical instruments | 375 | 10% |
| Manufacture of watches and clocks | 376 | 10% |
| Radio, television and communication apparatus and professional equipment | 379 | 10% |
| Motor vehicles | 381 | 10% |
| Bodies for motor vehicles, trailers and semi-trailers | 382 | 9% |
| Parts and accessories | 383 | 6% |
| Other transport equipment | 384 | 0% |
| Manufacture of railway and tramway | 385 | 0% |
| Manufacture of aircraft and space craft | 386 | 10% |
| Manufacture of transport equipment n.e.c. | 387 | 10% |
| Motor vehicles, parts and accessories and other transport equipment | 389 | 10% |
| Furniture | 391 | 10% |
| Production, collection and distribution of electricity | 411 | 0% |
| Manufacture of gas; distribution of gaseous fuels through mains | 412 | 0% |
| Steam and hot water supply | 413 | 0% |
| Manufacture of sugar, including golden syrup and castor sugar | 3042 | 10% |

117. The allocation of the allowance will be amended for application on a select few sectors. The allowance is currently calculated for the Mining and Quarrying, Manufacturing as well as the Electricity, Gas and Water Supply SIC major divisions. It is proposed that the allowance apply only to the Mining and Quarrying and the Manufacturing divisions. The Electricity, Gas and Water Supply division are deemed not to be trade exposed because they fall outside of the 20 per cent threshold for trade intensity and do not qualify for the allowance. This allowance of 5 percent has been allocated to the increase in the performance allowance for combustion emissions from electricity and heat generation.

118. The international developments on carbon pricing show that there is increased coverage of emissions that are under carbon pricing. Over time there may be less need for the trade exposure allowance, particularly with more countries and jurisdictions implementing carbon pricing measures.

## 4.8 Maximum tax-free allowance level

119. The proposed adjustment framework for the maximum tax- free allowances from 2026 to 2030 and beyond is that the maximum tax-free allowances would be changed in line with adjustments of the basic and performance allowances.

# 5 CARBON PRICING AND ELECTRICITY SECTOR STRUCTURAL REFORMS

120. The 2022 Sharm el-Sheik Implementation Plan emphasised the urgent need for immediate, deep, rapid and sustained reductions in global greenhouse gas emissions across all applicable sectors while it stressed the importance of enhancing a clean energy mix, including low-emission and renewable energy, at all levels as part of diversifying energy mixes and systems aligned with national circumstances and recognizing the need for support towards just transitions. It recognised that the global energy crisis signifies the urgency to rapidly transform energy systems to be more secure, reliable, and resilient, and to accelerate clean and just transitions to renewable energy during this critical decade of action.

121. The plan further emphasised the urgent need for accelerated financial support for developing countries from developed countries and other sources for enhancing mitigation action. This is vitally important to address inequities in access to finance, including its costs, terms and conditions, and economic vulnerability to climate change for developing countries, and that scaled-up public grants for mitigation and adaptation for vulnerable regions, in particular sub-Saharan Africa, would be cost-effective and have high social returns in terms of access to basic energy.

122. About US$4 trillion per year needs to be invested in renewable energy up until 2030 to be able to reach net zero emissions by 2050 to enable a global transformation to a low-carbon economy. The Plan highlighted that delivering such funding will require a transformation of the financial system and its structures and processes, engaging governments, central banks, commercial banks, institutional investors and other financial actors.

123. The International Energy Agency and the International Renewable Energy Agency indicate that the world requires three times more renewable energy capacity by 2030, or at least 11,000 GW, and must double the global average annual rate of energy efficiency improvements from around 2 per cent to over 4 per cent every year until 2030 to limit warming to 1.5°C. Transformation of the energy systems globally will help to create new jobs, improve livelihoods, and empower people, communities, and societies[24].

124. Post 2030, it is expected that an increasingly diversified portfolio of technologies will be market-ready and available at scale to decarbonize the energy sector, with a critical role for renewables, energy efficiency, and low emissions technology. The COP28 Global Energy Efficiency and

[24] COP28 UAE (2023) "*Global Renewables and Energy Efficiency Pledge"*, Available from www.cop28.com

Renewable Energy Pledge recognised the role for enabling policies and measures to facilitate a just transition including:

a. Accelerate permitting of renewable projects and related infrastructure.

b. Develop and expand grid connections and improve energy system integration.

c. Provide clarity on market design and incentive schemes and strengthen market conditions and investment frameworks to facilitate investments in renewables and energy efficiency.

d. Promote energy efficiency, electrification and energy demand management in all relevant sectors.

e. Raise public awareness and encourage behavioral change.

f. Enhance and scale new technological solutions, including through support in research, development and innovation.

g. Empower consumers and support the development of a skilled workforce, support current energy workers at risk of displacement by the energy transition, promote productive reconversion of stranded assets, and ensure communities affected by this transition benefit from the opportunities offered by the energy transition[25].

125. Climate transitions could unlock significant growth opportunities in the transformation of energy and industrial sectors, sustainable transport and agriculture systems, building resilient, nature-positive economies and in just transitions to net-zero economies. The strategic decarbonisation of electricity and use of low carbon electricity to power as much of the economy as possible is critical as electrification is a key abatement option (ie. lighting and appliances, heating, manufacturing, and transport) to reduce emissions in other sectors.

126. In the case of electric vehicles, to realise their potential to mitigate emissions, critical progress is required to decarbonise electricity generation and to integrate electric vehicles in power systems, build charging infrastructure and to advance sustainable battery manufacturing and their recycling.

127. The pace of South Africa's energy sector decarbonisation efforts will, however, have to be carefully managed and factor in the risks and opportunities of different decarbonisation pathways. Diversifying power sources and gradually phasing-down the use of fossil fuels is critical for achieving South Africa's climate goals, achieving energy security of supply, and ensuring access to affordable energy over the medium to longer term. This has to take into account global transitions in renewable energy and ensure that South Africa is not left behind as delaying decarbonisation efforts could put the country on an uncompetitive and unsustainable growth path.

128. The updated NDCs and the proposed emissions reduction goals aiming to achieve net zero emissions by 2050 provides a strong signal of government's intentions to lower emissions in key sectors such as electricity, which presents the least cost mitigation option. This provides opportunities for job creation and industrialisation, as the transition of the electricity sector and

[25] Ibid.

the shift to alternate clean energy is combined with appropriate investments in upgrading the grid infrastructure and adequate support measures for vulnerable workers, and communities.

129. South Africa received a pledge of US$ 8.5 bn for the Just Energy Transition (JET). The JET plan was approved by Cabinet and launched at COP28, and the initial plan was to decommission Camden, Hendrina, and Grootvlei by 2027. Given the energy supply constraint, the Eskom has proposed a delay in the decommissioning of the 3 plants to March 2030.

130. It is argued that the factors impacting the pace of decarbonisation of these facilities are grid vulnerability, Eskom debt relief conditions and electricity sector reforms supporting public private partnerships. National Treasury is commissioning a study to assess the costs and benefits of the delayed decommissioning of the three power stations and the ageing coal fleet.

## Overview of electricity sector reforms and carbon tax

131. South Africa currently has about 18 major operating coal fired power stations, 15 of which are owned by Eskom. The coal fleet is ageing and more than 80 per cent of the coal generating power capacity was built between 1960 and 2000, with many plants currently reaching the end of their designed lifetime. Almost all coal-based generation uses subcritical technology, which is the least efficient and most carbon intensive form of coal fired power generation.

132. The first two supercritical power stations – Medupi and Kusile – helps to improve the fleet's overall performance. The first units came online in 2015, and once fully operational, they will be among the largest coal power stations in the world. The 2019 IRP planned for an additional 1.5 GW in new coal capacity to be online by 2030 however, this has been revised in the draft 2023 IRP.

133. Under Operation Vulindlela, legislative and regulatory changes were implemented to encourage private sector investment in electricity generation capacity and promote competition. This included amendments to schedule 2 of the Electricity Regulation Act to increase the licensing threshold for electricity generation projects to 100MW in 2021 and removal of the threshold in December 2022. The Electricity Regulation Amendment Act (ERA) signed into law by the President on 16th August 2024 and provides for:

    a. Additional electricity, new generation capacity and electricity infrastructure
    b. Establishment, duties, powers and functions of the Transmission System Operator SOC Ltd and transitional measures
    c. An open market platform that allows for competitive electricity trading
    d. Assignment of the duties, powers and functions of the Transmission System Operator SOC Ltd to the National Transmission Company South Africa SOC Ltd

134. There is general acknowledgement that the energy landscape is shifting rapidly, and it is crucial to manage the transition of the energy sector in line with the ERA and address concerns about energy security and load shedding. *South Africa is already moving towards a decentralised electricity system, with more than 5GW of installed rooftop solar PV and hundreds of large-scale utility wind and solar projects moving into construction. The enactment of the ERA Amendment Bill will help to ensure that cheaper and cleaner generation capacity can effectively be brought*

*online optimally, and to the benefit of all electricity consumers (*Energy Council of South Africa, 2024).

135. The ERA provides important policy direction on the long-term energy transition that is critical to meeting South Africa's NDC and net zero mitigation commitments, and obligations set out in the Climate Change Act once it is fully implemented.

136. Combined with the broader electricity sector reforms underway to increase competition, diversify the energy mix through the REIPPPP and other initiatives, the carbon tax can be a powerful tool to encourage more efficient power dispatch and drive emissions reductions in the electricity sector in the 2nd phase of the tax from 2026.

137. The carbon tax improves the relative cost-effectiveness of more efficient (or less carbon-intensive) plants, thereby encouraging the use of these facilities. It creates an incentive for utilities to improve their efficiency (and hence emissions intensity), for example by retrofitting plants or replacing older, inefficient units with new ones. In the short term, the carbon tax can optimise the generation and dispatch of the existing power generation fleet. For the long term, however, it is not sufficient to only incentivise optimisation of less carbon-intensive dispatch; the carbon tax should provide an incentive to shift to low carbon technology.

138. Increasing the effective carbon tax rate by gradually phasing down the basic tax-free allowance and adjusting incentive-based allowances such as the performance allowance will go a long way towards strengthening economic incentives in the power sector to prioritise dispatch of the most efficient power plants, as more supply capacity becomes available.

## 5.1 Electricity price neutrality

139. During the first phase of the carbon tax, the introduction of the tax is revenue neutral and has no impact on the price of electricity. This concern is addressed by complementary measures to ensure revenue neutrality (zero impact) for the first phase of the carbon tax and addresses stakeholder concerns about double taxation. This is achieved by providing a credit for the payments of the electricity generation levy and a credit for the renewable energy premium built into the electricity tariff (Renewable Energy Independent Power Producers Programme).

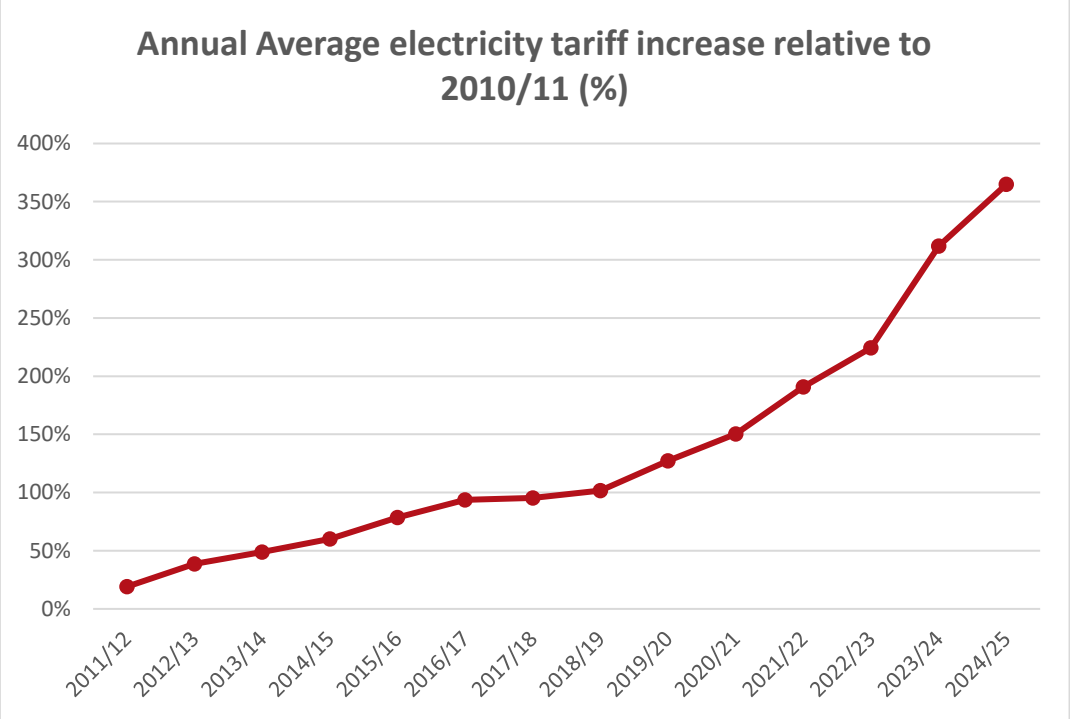
140. Government implemented the electricity generation levy in 2009. The levy applies to electricity generated from non-renewables including coal, petroleum-based fuels, natural gas and nuclear at the rate of 3.5 c/kWh. The objectives of the levy were to promote demand side management efforts and address electricity supply shortages, and to serve as a first step towards developing a carbon tax to achieve long term climate change objectives. Electricity generated from renewables and qualifying cogeneration are excluded from the levy.

141. The carbon tax was designed to not raise electricity prices in the first phase (2019-25) to facilitate a just transition and to provide high emitters including electricity generators with sufficient time to transition their activities, before higher carbon taxes are implemented.

## Impact of carbon tax proposals on electricity prices

142. Electricity prices have increased significantly over the past decade and by more than 350 percent price in 2024 compared to 2010/11, in nominal terms, as shown in **figure 4** below. The electricity generation levy accounts for under 2 per cent of the total electricity cost.

**Figure 4: Electricity tariff percentage increase for 2011/12 to 2024/25**




143. For the proposed 10 percentage points reduction of the basic tax-free allowance in 2026, offset allowance of 25 per cent and 2,5 percentage points reduction in the basic from 2027 to 2030, the estimated effective carbon tax rate on electricity ranges from 4,7 to 11,7c/kWh for the period 2026 to 2030 and account for on average 4,1 per cent of the 2024/25 approved average electricity tariff of around R1,96c/kWh.

144. To facilitate the just transition and limit potential adverse impacts of the carbon tax proposals for phase 2 from 2026 on low income and poor households, the following design options were considered for adjustments to the electricity price neutrality commitment:

a. **Option 1: Retain and extend the electricity price neutrality commitment for a period of five years from 2026 to 2030,** to allow for the implementation of the Just Energy Transition Plan. The electricity generation levy of 3,5c/kWh would continue to apply until 2030 and will cease in 2031. The carbon tax on electricity generators will apply from 2031.

b. **Option 2: Remove the electricity generation levy and implement the carbon tax on combustion emissions from 2026 in line with the proposed changes to the basic tax free allowance.** The carbon tax will replace the electricity generation levy and be revenue neutral. Electricity generators can continue to deduct a portion of the renewable energy premium from their carbon tax liability where there would have been a difference

between the carbon tax and electricity levy. This will help to reduce the impact of higher electricity prices on consumers.

145. Option 2 for the removal of the electricity generation levy and implementation of the carbon tax proposals for the 2nd phase is recommended. The rationale for option 2 is to effectively replace the electricity levy, which is around R8bn per year, with the carbon tax. In principle, this should not lead to any potential increase in the price of electricity as the tax burden for electricity generators should remain relatively similar as the tax shifts from the electricity levy to the carbon tax and electricity generators can deduct a portion of the renewable premium. However, the incentives of electricity generators should change significantly. In the current design, the carbon tax liability is zero for Eskom as it is outweighed by the deduction of the electricity levy and the renewable energy premium. In this option, the carbon tax will start to apply and managers of electricity generators will start to factor in the level of carbon emissions in their business decisions. There will now be an incentive to lower carbon emissions to reduce their carbon tax liability.

## 5.2 Performance Allowance Increase and Electricity Benchmark

146. Some of the key design considerations to promote carbon efficient dispatch decisions includes increasing the performance allowance to apply to a larger portion of the emissions and developing an appropriate emission intensity benchmark for electricity generation.

147. There are some structural challenges that must be overcome to enhance the effectiveness of carbon pricing in influencing dispatch and investment decisions:

    a. **First**, the power sector has a tight reserve margin, which has frequently fallen below 0 per cent over the past decade and should be increased.

    b. A **second** challenge is Eskom's weak financial position, which hampers investment in new supply capacity, or in the retrofitting of existing capacity.

    c. The **third** consideration is the rising electricity prices. Carbon pricing increases the cost of certain generators and would increase the wholesale and retail prices.

148. The costs and benefits of using a performance-based tax allowance regime in the second phase of the carbon tax will need to be carefully considered. Since the electricity industry restructuring and ERA implementation is in the early stages, the performance-based allowance will only affect the power sector towards the end of the decade. The short-term administrative costs of establishing the system may outweigh its benefits however, in the longer-term, the performance-based allowance could potentially play an important role if the system is based on a credible technology-neutral benchmark and the price signal is sufficiently strong.

149. Taking into account the electricity sector reforms underway, it is proposed to increase the performance allowance for combustion emissions by 5 percentage points to 10 percentage points from 2026. To enable electricity generators to benefit from the performance allowance, a benchmark has been developed for the electricity sector based on the emission intensities of the existing coal power stations.

150. The performance could be benchmarked against the average performance of coal power plants in the previous year however, a performance-based allowance that applies only to coal plants distorts competition among power generation technologies and risks slowing down the transition to a low-carbon power system. To promote the latter, the allowance would need to be based on a technology-neutral benchmark.

## Electricity benchmark proposals

151. This section explores three different benchmark options as well as their potential effects on the power market.

*Option 1: A fixed technology-specific benchmark*

152. The first option is a benchmark based on the historical performance of a specific power plant type. This could, for example, be the average emissions intensity of South Africa's supercritical coal plants (0.90 $tCO_2$/MWh in 2020) or of its subcritical power plants (1.10 $tCO_2$/MWh in 2020).

    a. Plants that perform better than the benchmark would receive the 5 per cent performance allowance, while plants performing worse would receive none.

    b. In other words, plants that are less efficient than the benchmark will be penalised with a higher carbon price. This would promote dispatch of marginally more efficient units and encourage investment in retrofitting less-efficient plants.

*Option 2: A dynamic technology-specific benchmark*

153. The second option is a benchmark based on the average performance of the entire coal fleet in a given year. For example, the weighted average emission intensity of all coal plants based on data from the previous year.

    a. The theoretical short-term effect of this option is similar to Option 1, but the benchmark becomes stricter over time as new, more efficient plants come online and older, less efficient ones retire.

    b. Assuming that capacity additions and retirements will happen as envisioned in the Integrated Resource Plan, the benchmark would decrease marginally from 1.06 to 1.04 $tCO_2$/MWh between 2020 and 2030.

*Option 3: A technology-neutral benchmark.*

154. The third option is a benchmark based on average performance of the entire power system. Under this option, the benchmark would be based on the weighted average emission intensity of all power sources (not only coal), based on data from the previous year.

    a. Like option 2, this benchmark will become more stringent over time, as coal-fired power generation becomes more efficient and, more importantly, as lower-carbon sources (e.g. natural gas, renewables) are added. Based on the capacity expansion projected in the IRP, the system-wide weighted average emission intensity would decrease from 0.90 to 0.65

$tCO_2$/MWh between 2020 and 2030. The third benchmark will be the most stringent option for coal power plants and would provide the strongest incentive for a system-wide transition to low-carbon power sources.

b. Option 1 and 2 would both offer additional carbon tax rebates for supercritical coal plants. Under the two less stringent benchmarks (i.e. Option 1 with a benchmark based on the average performance of subcritical coal plants and Option 2), some of the more efficient subcritical plants could also receive tax rebates.

### Proposed benchmark

155. For the period 2026 to 2030, an average emission intensity benchmark for the best performing power stations of 0.94$tCO_2e$/Mwh is proposed, as shown in **Table 14** below. From 2031, a technology neutral benchmark in the range of 0.6 to 0.9$tCO_2e$/Mwh is proposed.

**Table 14: Electricity Benchmark Proposal**

| CATEGORY | PROPOSED EMISSION INTENSITY BENCHMARK (tCO2e/MWh) |
|---|---|
| Older power stations | 1.14 |
| Mid-life stations | 0.90 |
| New stations | 0.80 |
| **Proposed Benchmark: Average of best performing stations in each category** | **0.94** |

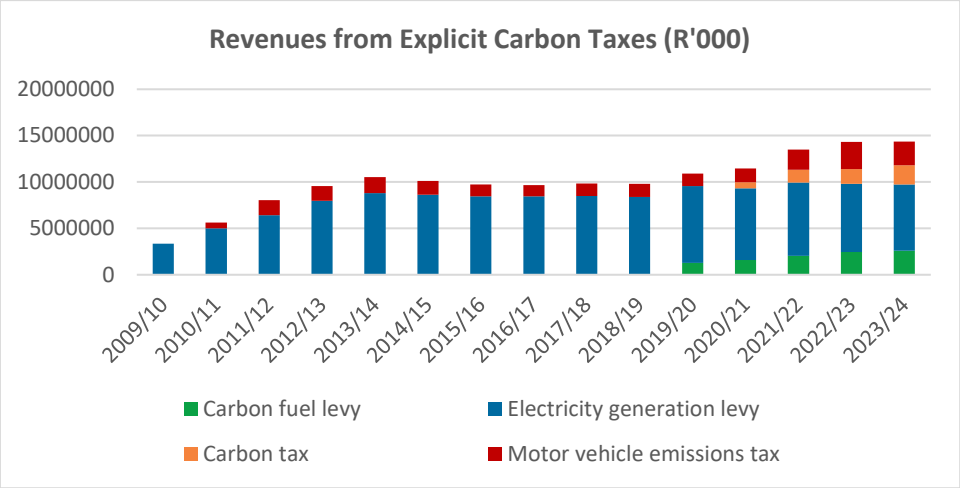
# 6 REVENUE RECYCLING MEASURES

## 6.1 Revenues from Explicit Carbon Taxes

156. As part of the broader environmental fiscal reform process initiated in the early 2000s, government introduced a range of environmentally related and carbon-based taxes. The electricity generation levy was introduced in 2009/10 followed by the motor vehicle emissions purchase tax and the carbon tax in 2019.

157. The total revenues generated from carbon-based taxes in 2023/24 was around R14,3 billion as shown in **figure 5** below, at an annual average of about R10billion. Revenues from the carbon tax were recycled through the electricity price neutrality commitment, support for the energy efficiency tax incentive and the tax-free allowances as part of a phased approach to the introduction of the tax.

**Figure 5: Revenue collection from carbon-based taxes**




## 6.2 Tax incentive for green hydrogen

158. In September 2021, Cabinet approved the Hydrogen Society Roadmap for South Africa developed by the Department of Science and Innovation. Building on the roadmap, a Green Hydrogen Commercialisation Strategy[26] was developed by the Department of Trade Industry and Competition and approved by Cabinet in October 2023 for implementation.

159. Green hydrogen is hydrogen generated from the separation of water into hydrogen and oxygen (electrolysis) using renewable electricity. The hydrogen gas produced is a clean energy source as it has lower greenhouse gas emissions and can be utilised as a fuel for chemical, steel, glass and cement production, aviation and shipping and grid energy storage.

160. The strategy recognises that over the long-term the demand potential for green transportable fuel could grow to between 15 to 20 per cent of global energy demand however the end-state remains uncertain. It states that the pace and scale of such green hydrogen market development and adoption will depend on the production cost driven down over time by equipment and operational learning curves similar to renewable energy technologies and increasing carbon pricing and fossil fuels costs as the world implements more stringent decarbonization policies.

161. The Green Hydrogen Commercialisation Strategy estimates that the production of green hydrogen consists of the cost of electricity (60-70 per cent at current renewable energy prices), and cost of electrolyser and balance of plant equipment (30 to 40 per cent). Based on current cost estimates, the production cost of green hydrogen is not cost competitive with other hydrocarbon-based fuels. For example, the cost of production of grey hydrogen from fossil fuels

[26] This section draws largely on the Cabinet approved *Green Hydrogen Commercialisation Strategy for South Africa of 2023,* Available from the Department of Trade Industry and Competition Website: www.dtic/gov.za .

is estimated at around US$1-2/kg compared with green hydrogen gas costs of about US$4-7/kg[27].

162. The strategy recommends the phasing in of increases to the carbon tax rate or carbon fuel levy, the removal of fossil fuel subsidies and reallocation of subsidies to green hydrogen development. To support the green hydrogen value chain, it suggests building on existing renewable energy-based tax incentives set out in the Income Tax Act[28].

163. Alternative green fuels are crucial to transition the economy, and investments to establish green hydrogen as a viable alternative fuel should be encouraged. As part of the revenue recycling measures under the carbon tax, it is proposed to extend the 100 percent depreciation allowance for solar PV to green hydrogen production.

## 6.3 Support for strategic priorities

164. Although the carbon tax and other environmental taxes are not earmarked, as the carbon tax rate is increased over the medium to long term there could be revenue raising potential. Complementary to the carbon tax, over the short, medium and longer term targeted measures will be necessary to support the low carbon transition, stimulate a green economy and create jobs.

165. Taking into account fiscal constraints, appropriate mechanisms may be considered as part of revenue recycling measures. Some broad priorities could include:

- Support for the expansion of the electricity grid and transmission infrastructure
- Reskilling workers' programmes
- Free basic electricity support targeted to renewable based electricity
- Enhancing public transport infrastructure
- Support for off-grid renewables for communities
- Improving and strengthening municipal infrastructure to promote climate resilience (energy, transport, solid waste collection and separation, wastewater management etc.)
- Enhancing the working for water, fire, waste and other environmental sector programmes of the DFFE to promote climate mitigation and adaptation efforts.
- Capacitate the state to effectively implement the carbon pricing policy including building skills in emissions and carbon market reporting, monitoring and verification within the SARS, DFFE, National Treasury and the Department of Electricity and Energy to improve the administration of the tax.

[27] IRENA (2021) *Making the Breakthrough: Green Hydrogen Policies and Technology Costs.* International Renewable Energy Agency, Abdu Dhabi. Available from: www.irena.org/publications
[28] DTIC (2022) Presentation on Proposed Green Hydrogen Commercialisation Strategy. Summary of the Green Hydrogen Commercialisation Panel report, 30 November 2022. Available from www.dtic.gov.za.

# 7 OTHER CARBON TAX CONCESSIONS

## 7.1 Agriculture, forestry and other land use (AFOLU) and Waste

166. The agricultural, forestry and other land use (AFOLU) activities' emissions qualify for a 100 percent basic tax-free allowance, effectively excluding the sector from the carbon tax during the first phase. This was due to the inaccuracies and the absence of appropriate methodologies for GHG emissions determination and subsequent administrative difficulties in measuring and verifying emissions hence application of the carbon tax to AFOLU activities. Only fuel related combustion emissions from the sector's activities were included in the carbon tax net.

167. Most waste sector emissions have not been included in the tax net for the first phase of the carbon tax due to the absence of emission factors for fuels used, lack of and inaccurate methodologies for GHG emissions determination and subsequent administrative difficulties in measuring and verifying emissions. Combustion emissions from the sector including waste incineration which were considered to have robust emission determination methodologies were however included in the carbon tax net.

168. Due to challenges with accurate methodologies to quantify greenhouse gas emissions from the AFOLU and waste sector activities, it is proposed that the blanket exclusion and provision of the 100 percent basic tax-free allowance is retained.

169. The National Treasury will continue to engage the DFFE on the development of robust methodologies for estimating GHG emissions from the AFOLU and waste sectors. As robust GHG estimation methodologies are developed, the 100 percent basic tax-free allowance to the AFOLU and waste sector activities could be reconsidered.

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