planning, monitoring & evaluation

Department:
Planning, Monitoring and Evaluation
REPUBLIC OF SOUTH AFRICA

SOCIO-ECONOMIC IMPACT ASSESSMENT SYSTEM (SEIAS)

FINAL IMPACT ASSESSMENT TEMPLATE (PHASE 2)

JULY 2017

The Final Impact Assessment [Insert the Name of the Policy/Bill/Regulations/Other]

The Final Impact Assessment provides a more detailed assessment of the ultimately policy/legislative/ regulations/ other proposal. In addition, it identifies **(a)** mechanisms for monitoring, evaluation and modification as required; and **(b)** a system for managing appeals that could emerge around the implementation process.

1. The problem Statement/ Theory of Change

1.1. **Give summary of the proposal, identifying the problem to be addressed and the root (causes) of the problem that will be addressed by the new rule.**

a) Summary of the proposal (Summary Background of the proposed policy/bill/ regulations/ other).

The carbon tax forms an integral part of the broader government policy response to mitigate GHG emissions as outlined in the National Climate Change Response Policy Paper of 2011 and the National Development Plan (2012). The carbon tax is intended as one of a mix of regulatory and price (market-based) measures to address the impact of climate change and in particular to help stabilise and reduce GHG emissions.

The Carbon Tax is a proposed broad based carbon pricing mechanism that will gradually come to reflect the full externalities associated with carbon emissions, and will therefore provide a solid basis for investment decision-making. A price on carbon tax will be levied in the first phase (4 – 5years), where after the carbon budgets regime will be introduced in a way that is fully-aligned with the carbon tax, and resulting in no double penalty. The modalities of this alignment are still being worked on as the Department of Environmental Affairs (DEA) is still finalising the design of the carbon budgets regime.

The Bill aims therefore to establish the principle that the costs of GHG emissions must be internalised while giving companies time and incentives to adapt and to protect the competitiveness of companies including exports. To this end, the Bill provides for:

- A basic tax-free allowance for all sectors plus various allowances including,
- An allowance for offsets that result in a net reduction of emissions and additional allowance for those companies that perform better than the benchmark emissions intensity level;

- A carbon tax at the rate of R120 / ton CO_2 equivalent. for emissions above the tax-free allowance, leading to an effective carbon tax rate of between R6 and R48 / ton CO_2 equivalent;
- Additional tax allowances for trade exposure (to protect international competitiveness) and for participating in the initial voluntary phase of the DEA-led carbon budgeting process;
- Proposals for the recycling of revenues, such as a credit for the electricity generation levy and renewable energy premium credit.

Because of the tax-free thresholds, it is estimated that the introduction of the carbon tax will be revenue-neutral, and have a net zero impact on the cost of electricity during the first phase. For liquid fuels, the estimated carbon tax will amount to 11 c/litre for petrol and 13 c/litre for diesel assuming a 60 per cent basic tax-free threshold (only 40 per cent of emissions taxed at R120 per ton).

The level of allowances and incentives would be reviewed after the first phase (4 – 5 years), where after alignment with the carbon budgets will be done. A review of the carbon tax after the first phase will be undertaken in order to determine economic and emissions impact on the economy to gauge the effectiveness of the tax given our national GHG emissions commitments. Any adjustments to the carbon tax instrument beyond the first phase will depend on the economic circumstances; mitigation efficiency achieved and the form of alignment with the carbon budgets. An integrated review process to assess both instruments will be done, which will inform any significant changes in the tax rate and the implementation of the carbon budgets. This will depend on the emissions path depicted in the National GHG inventory at the time. This process will include consultations with relevant stakeholders.

The National Treasury has committed to appraising stakeholders with the details of how alignment of the two instruments will look like after the first phase of the carbon tax and this will be completed at least one year before the alignment is to take place. However, at no point will the alignment between the carbon tax and carbon budget after the first phase result in a double penalty scenario where sectors that qualify under these regimes are penalised or taxed twice.

The actual implementation date for the Bill will be determined in the next or 2018 Budget, taking into account the impact on the economy.

b) Problem/s and root causes that the proposal is trying to address

Identified Problem	Root causes
South Africa has one of the most energy- and carbon-intensive economies in the world, with heavy use of coal-fired electricity especially by the mines and refineries. There is increased pressure on South Africa to undertake mitigation policy efforts to lower its use of fossil fuels and decarbonise the economy by shifting to low carbon alternatives such as renewables. South Africa contributes around 1.5 per cent to global GHG emissions and is ranked in the top 20 highest emitters, with emissions per capita in the region of 9.5 tons, which is comparable to that of developed countries. The challenge therefore is to ensure that the cost of GHG emissions are internalised by companies without excessive disruption to economic growth and minimising potential adverse impacts on poor and low-income households and employment.	A core factor leading to high greenhouse gas (GHG) emissions is that the companies responsible for them do not pay for their effects, which have now been found to cause climate change. These processes could be devastating for South Africa, imposing costs through extensive droughts, anticipated especially in the West; rising water levels along the coast; and increased in-migration from other countries as droughts spread in less resilient countries. Furthermore, a failure to control GHG emissions could lead to a loss in international competitiveness, an increased vulnerability to trade, and investment measures, which would effectively entail other countries imposing a carbon price on South African exports.

1.2. **Describe the intended outcomes of the proposal**

Incorporating the costs of environmental damage into the pricing of goods and services is intended to lead to more economically efficient outcomes. Carbon pricing is expected to encourage a shift in production and consumption patterns towards low-carbon fuel choices and energy efficiency measures as well as stimulate investments in research and development of new technologies over the medium to long term.

The design of the carbon tax aims to contribute to a meaningful and permanent reduction in GHG emissions whilst, at the same time minimising any potential adverse impacts on low income households and industrial competitiveness. The provision of tax-free emission thresholds and allowances ranging from 60 per cent to 95 per cent will result in a relatively modest carbon tax rate ranging from R6 to R48/ tonCO_2 equivalent during the first phase of the carbon tax up to the end of 2020.

This bill is aligned with the objectives of the National Development Plan to ensure environmental sustainability and an equitable transition to a low-carbon economy including the implementation of a carbon price with partial exemptions for some sectors. A carbon tax modelling study was conducted on behalf of the National Treasury under the Partnership for Market Readiness initiative administered by the World Bank. This study closely modelled the design features of the tax as outlined in the 2013 Carbon Tax Policy Paper.

For a shortened summary of the various outcomes and assumptions in the modelling exercise, please refer to Annexure 1 at the end of this document. Overall, the economic modelling conducted based on the current policy design shows that the carbon tax will have a significant impact on reducing South Africa's GHG emissions and would lead to 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. The carbon tax would make an important contribution towards reaching South Africa's Nationally Determined Contribution (NDC) commitments under the recently ratified Paris Agreement for emissions to peak in 2020 to 2025, plateau for a ten year period from 2025 to 2035 and decline thereafter.

1.3. **Describe the groups that will benefit from the proposal, and the groups that will face the cost. These groups could be described by their role in the economy or in society. As a minimum, consider if there will be specific benefits or costs for the poorest households (earning R 7000 a month or less); for black people, youth or women; for small and emerging enterprise; and /or for rural development. Add more rows if required.**

Groups that will benefit	**How will they benefit?**

Poorest households and workers	The poor are most vulnerable to the impact of climate change, unpredictable weather patterns, droughts and weather-related disasters. In addition, the reduction of GHG emissions could also generate environmental co-benefits, such as lower levels of local air pollutant emissions that will benefit society at large, especially the poorest households that live in the vicinity of heavy industry as the costs of treating pollution related illnesses will be reduced. The carbon tax policy makes proposals for recycling the revenues to poor households through increased budget allocations for and enhanced free basic electricity / alternative energy for low income households and to provide improved public passenger transport. Proposals for direct cash transfers to the households for such costs could also be investigated.
Workers	As a rule, the more energy-intensive industries are also more capital intensive, while less energy intensive and green industries tend to generate more employment opportunities. To the extent that the tax succeeds in shifting investment into innovative sectors, it should promote net job creation over the long run.
Black people, youth and women	The benefits as set out above for the poorest households will also apply for black people, youth and women in general.
Small and emerging enterprises	Most small and emerging enterprises are not particularly energy intensive, and should be marginally impacted by the low effective initial rate. The effective incentives for innovative investors will inherently provide greater opportunities for emerging and smaller enterprises. Offsets project development will also present opportunities for small and emerging enterprises to leverage opportunities.
Rural development	Rural communities will benefit from measures that minimise climate change, which will have a particularly harsh impact on agriculture through droughts. The Agriculture, Forestry and Land-use Sectors will also be exempt from the carbon tax through 2020, and may also benefit from opportunities for offset projects.
South Africa and the world	The potential socio-economic cost of climate change cannot be overstated. By extension, the benefits of mitigating it through the proposed carbon tax are also substantial. Benefits are nevertheless conditioned to other countries, particularly the United States, China and other large GHG emitters, embarking on meaningful transition to low-carbon economies. Under the historic Paris Agreement, South Africa, and the nations mentioned above committed to undertake mitigation efforts to limit

	warming to below 2^0C. South Africa ratified the Paris Agreement in November 2016 and confirmed its Intended Nationally Determined Contribution (INDC) for emissions to peak in 2020 to 2025, plateau for a ten year period from 2025 to 2035 and decline thereafter. In addition, the shift from more energy-intensive industries should open up new growth opportunities in the longer run.
Sectors benefitting	The modelling results suggest that the transport equipment, electrical machinery, and textiles and footwear sectors are all expected to see increases in the annual growth rate of exports of around 7 per cent as a result of the carbon tax plus revenue recycling, leading to their exports in 2035 being around 30–40 per cent higher than in the baseline. This may reflect a combination of the erosion of domestic sales for some of these products as well as the benefits that some sectors experience as a result of the modelled revenue recycling measures (especially textiles and footwear). ***Renewable and low carbon industries*** In 2035, the output from the nuclear generation, wind generation, hydro generation, other generation, gas generation and solar photovoltaic (PV) generation sectors is expected to be more than 200 per cent greater than without a carbon tax. This reflects the basic intuition that these low—and zero-carbon sources of power become much more cost competitive with a carbon tax. In addition, the National Treasury introduced the Energy Efficiency Savings (EES) tax incentive in November 2013. This tax incentive allows taxpayers to claim deductions of 95 cents per kilowatt-hour, or kilowatt hour equivalent, of energy efficiency savings made against a baseline measured at the start of each year of assessment. The EES tax incentive was originally planned to form part of the broader pack of recycling measures under the carbon tax. The actual implementation of the EES tax incentive in the absence of the carbon tax has already resulted in a benefit to the economy as well as energy intensive sectors at a cost to the fiscus.

Groups that will bear the cost or lose	**How will they incur the costs or lose?**
Poorest households	During the first phase of the carbon tax (until 2020), the introduction of the tax will have no impact on the price of electricity. This is achieved

Groups that will bear the cost or lose	How will they incur the costs or lose?
	through the phased approach to the introduction of the tax, the modest effective tax rate during the first phase, providing a credit for the payments of the electricity generation levy and a credit for the renewable energy premium built into the electricity tariff complemented by additional on budget allocations for free basic electricity. This will result in no direct costs to the poorest households. Poor households may suffer in the short run if jobs are lost in refining and mining and/or economic growth slows. The modelling analysis suggests that the carbon tax can be expected to have a small impact on other macroeconomic aggregates such as employment, consumption and real wages. These variables provide some proxy for the distributional impacts of the tax, which has been a key consideration in the design of the tax.
Black people, youth or women	As above.
Small and emerging enterprises	Cost of the tax (which will be low in the initial phase).
Rural Development	No cost is assumed in the first phase, as agriculture is exempt. However, envisaged development of offset projects in the AFOLU sector including restoration of sub-tropical thicket, forests and woodlands, restoration and management of grasslands and small-scale afforestation will directly lead to rural development. An indirect effect through an increase in fuel prices could have a negative impact but the proposed revenue recycling through increase in public transport grants for low income households would reduce this.
Emissions Intensive Sectors	Emissions intensive activities such as energy related emissions associated with electricity generation, petroleum refining; process emissions from iron and steel, cement, glass and ceramic, chemicals; and emissions from pulp and paper, sugar and fugitive emissions from coal mining will be liable for the carbon tax. Emission intensive activities will face higher costs and may experience to varying degrees decline in outputs and exports. The modelling analysis suggests that sectors projected to see notable

Groups that will bear the cost or lose	How will they incur the costs or lose?
	declines in exports include the coke oven and iron and steel sectors, although in the latter case the sector's exports continue to grow over the period to 2035, just at a lower rate than if there were no carbon tax. The annual growth rate in exports from the coke production sector falls from 3.6 per cent to –0.3 per cent, leading to a change in exports in 2035 of more than 50 per cent relative to the baseline in the case of coke. The annual growth rate in exports for iron and steel falls from 3.3 per cent to 1.4 per cent, leading to a change in exports in 2035 of more than 30 per cent relative to the baseline in the case of iron and steel. This is likely to be a result of the carbon tax making it more challenging for these sectors to compete internationally. It should be stressed, however, that this modelling assumes that no other jurisdictions change their climate policies between today and 2035. The analysis may exaggerate the competitiveness impacts experienced by these sectors. Coal generation is likely to become much less cost-competitive and, as a result, its output is expected to be 46 per cent lower in 2035 than it would be without the tax. Other sectors that see substantial declines in output (greater than 15 per cent), relative to the baseline, include petroleum refining, other manufacturing, coke production, electricity supply, iron and steel production and the transport services sector. The small decrease in output for these sectors is a result of higher costs which are at least partly passed through to prices and which, in equilibrium, lead to less production of carbon intensive goods and services and reduced demand. These price increases, especially for instance in the electricity sector, are likely to stimulate improvements in energy efficiency which would allow consumers and firms to undertake the same activities as before, while using less electricity. It should also be stressed that all of these declines reflect a *relative* decline in output compared with the situation in which there is no carbon tax. In the first phase, the cost will nevertheless be mitigated by high tax-free emission allowances of up to 95 per cent of their total emissions and they may be able to take advantage of incentives for improved energy

Groups that will bear the cost or lose	How will they incur the costs or lose?
	efficiency.
Workers and communities in the mining value chain	Employees in emissions-intensive industries will likely see slower growth, which could lead to a reduction in workers' purchasing power (through lower or no salary increases) and job losses. Efforts to reskill workers will be needed to support their shift and employment in new, clean energy industries.

1.4. **Describe the behaviour that must be changed, main mechanisms to achieve the necessary changes. These mechanisms may include modifications in decision making process systems; changes in procedures; educational work; sanctions; and or incentives. Also identify groups inside or outside government whose behaviour will have to change to implement the proposal. Add more rows if required.**

The carbon tax aims to encourage companies to gradually change their fuel inputs, production techniques and processes by encouraging investments in energy efficient, low carbon technologies to lower their emissions. The bill gives effect to the polluter pays principle. The manner in which the firm adjusts its use of fuel inputs, its production processes and incorporates alternative low-carbon technologies will determine the level of carbon tax it will be liable for.

To avoid potential negative impacts on growth and employment also requires that private and public investors significantly diversify investment from the historic trajectory, which has been dominated by large-scale mining and industrial activities. The phased approach to the introduction of the carbon tax and the high tax-free thresholds will help to cushion sectors and provide entities with the flexibility to choose how and when to reduce emissions based on their own assessments of costs and benefits. The carbon tax will also protect South Africa's exports from border carbon adjustments (carbon related import tariffs / charges) that could be imposed on exports to other countries that are already pricing carbon. Initial analysis suggests that sectors such as mining and iron and steel are likely to qualify for the full trade exposure allowance of10 percent.

Groups inside Government	Behaviour that must be changed (Current Behaviour)	Main mechanism to achieve the necessary changes
Groups inside government whose behaviour will have to change	**Behaviour that must be changed**	
Government economics departments	Will have to support constructive adaptation by producers through the incentives provided in the Bill and other complementary measures.	Should phase out the explicit and indirect support for carbon-intensive industries as well as fossil fuel subsidies, and redirect them to low-carbon initiatives.
Department of Environmental Affairs and Department of Energy	Will have to establish reliable systems to monitor and verify emissions and energy use data reporting	Updating reporting and verification measures.
South African Revenue Services	Will have to ensure efficient tax administration (and enforcement), including provision of incentives in a timely and consistent fashion, and monitor outcomes	Updating administrative and auditing capacity.
National Treasury	Will have to ensure allocation of resources to minimise the impact on incomes for poor and working people	Budget allocations and fiscal expenditure.
Department of Energy and Eskom	DoE should facilitate establishment of an Independent System and Market Operator to ensure safe, secure and efficient operation of the country's integrated power system; trading of electricity at wholesale level; and to provide for matters connected therewith. This intervention establishes the platform for South Africa to increase	Eskom could be mandated to implement a more diversified energy mix through the integrated resource plan (IRP) giving consumer's access to less carbon intensive electricity.

	power generation by independent power producers, and to ensure that there are alternative energy sources for consumers that choose to move away from use of carbon-intensive energy sources.	
Policy interactions	All national policy that engages with the possible impact of the Carbon Tax raises the point that relief at the low-income household level from any trickle-through effect of the tax on electricity and fuel prices will be important. Impact on poor households has been addressed above whilst the electricity price neutrality commitment is to mitigate the tax impact on electricity and fuel prices including the tax incentive (150% rebate) on qualifying R&D expenditure already provided for as per section 11D if the Income Tax Incentive.	The carbon tax policy will interact positively with Renewable Energy & Energy Efficiency Programmes, which aim to incentivise uptake of low carbon energy generation and enhancement of energy efficiency measures. Some of the energy efficiency policy instruments which will interact positively with the carbon tax include the post - 2015 National Energy Efficiency Strategy being finalised by the Department of Energy and The Energy Efficiency Target Monitoring System, Energy Efficiency Savings Tax Incentive, Revised National Building Regulations, Biofuels Industrial Strategy and Green Transport Strategy (under development).

Groups outside Government	**Behaviour that must be changed (Current Behaviour)**	**Main mechanism to achieve the necessary changes**

Producers	Will have an incentive to reduce emissions, primarily by seeking greater energy efficiency, switching to low carbon fuels, investments in low carbon technologies and through offset projects; will have to measure, verify and report their GHG emissions (and energy use).	The carbon tac will aim to incentivise behaviour change due to the cost implications of the tax.
Investors	Should diversify investment into other kinds of production that are less emissions intensive.	The carbon tac will aim to incentivise behaviour change due to the cost implications of the tax.
Consumers	Consumers will have to make conscious decisions about electricity consumption and the purchase of other carbon intensive goods.	A price on carbon will internalise the externalities associated with carbon intensive goods.

1.5. **Report on consultations on the proposal with the affected government agencies, business and other groupings. What do they see as the main benefits, costs and risks? Do they support or oppose the proposal? What amendments do they propose? And have these amendments been incorporated in your proposal?**

There are three publications that have informed the Carbon Tax Bill namely, Carbon Tax Discussion Paper of 2010, the Carbon Tax Policy Paper of 2013, which builds on the Carbon Tax Discussion Paper of 2010, and the Carbon Offsets Paper of 2014.

The **Carbon Tax Discussion Paper** was published in December 2010. A total of 80 written comments were received. A public workshop and series of bilateral meetings were held during 2011 and 2012. The comments received during these engagements resulted in the Carbon Tax Policy Paper and draft tax design features published in May 2013.

- The **carbon tax policy paper, "*Reducing Greenhouse Gas Emissions and Facilitating the Transition to a Green Economy*"** was published for public comments in May 2013. One hundred and fifteen written submissions were received from a broad range of

stakeholders. Two public stakeholder workshops and several bilateral engagements were held. The proposed carbon tax design features were refined to take into account various comments.

- The publication of the ***Carbon Offsets Paper*** providing a framework for the implementation of the carbon offset scheme in April 2014. Seventy-seven written submissions were received. Commentators supported the proposal to use carbon offsets alongside the carbon tax as a cost-effective measure to incentivise GHG emissions reduction in sectors not covered by the tax.
- Publication of the **draft Carbon Tax Bill** in November 2015. Ninety-one written comments were received followed by sector based stakeholder consultations.
- Publication of the **draft Carbon Offsets Regulation** in June 2016. Sixty-five written comments were received followed by sector based stakeholder consultations.

Following consultations, the draft Carbon Tax bill was revised. The main issues that were raised by the different stakeholder groups and policy responses and amendments to the bill are outlined in the Table below.

Table on consultations:

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
	POLICY			
Industry associations Companies State owned entities	**Carbon Tax modelling and socioeconomic impacts**	Conditional Support	There were questions raised on the carbon tax modelling undertaken to date and the need for more detailed analysis on the impacts of the carbon tax on electricity prices, emissions intensive trade-exposed sectors and revenue recycling measures. The Davis Tax Committee view on the need for further modelling to be undertaken to determine the potential impacts and recycling options as well as implications for employment was also noted.	Several carbon tax modelling studies have been undertaken to date, by the National Treasury, local academics and international institutions such as the World Bank. The broad findings from these Computable General Equilibrium models show that a carbon tax will make a significant contribution to the reduction of greenhouse gas (GHG) emissions and that the economic impact of the carbon tax will depend on how the revenues are used, that is the revenue recycling measures. The National Treasury published the Carbon Tax modelling report entitled *"Modelling the impacts on South Africa's Economy of Introducing a Carbon tax"* in November 2016. The modelling results suggests that the carbon tax will have a significant impact on reducing South Africa's GHG emissions and would lead to 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. A detailed summary of the results from the study is provided in Section 2 above.

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
Industry associations	**Carbon budget allowance**	Support	During the first phase of the carbon tax, companies participating in the carbon budgeting process will qualify for an additional tax-free allowance of 5 per cent. Some sectors such as aviation and mining suggested that sectors should be allowed to voluntarily participate in the carbon budget system and benefit from the carbon budget allowance.	Accepted. Following consultations with the DEA, it was clarified that companies that voluntarily participate in the carbon budget system can apply to the DEA to be allocated a carbon budget. The bill has been amended to allow for all companies that have been issued with a letter from the DEA approving a carbon budget will qualify for the allowance.
Industry Associations Companies NGOs Academia	**Policy alignment with carbon budgets post 2020**	Support	There are concerns regarding the nature of carbon budgets and how the carbon budgets will be applied, especially in phase 2 of the carbon tax. It is argued that an overlapping policy will result in additional costs and administrative burden on industry especially if the phasing-in period of both the carbon tax and carbon budget are not aligned. The current alignment is viewed as insufficient. There is also a view that the proposed alignment is more a harmonisation of the two instruments rather than a proper integration of their intent and design to achieve the overarching mitigation goal of government.	The Department of Environmental Affairs (DEA) and the National Treasury will ensure that the carbon tax is aligned and integrated with the proposed carbon budget system, post 2020. A study assessing the principles and approach to the alignment of the two instruments and the interface options for possible integration of the instruments has been completed under the World Bank Partnership for Market Readiness project. The National Treasury and the DEA have commenced discussions on the most appropriate interface option and a methodological approach is expected to be finalised by the end of 2017. It should also be noted that the use of a mix of

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
				measures (as articulated in the Climate Change Response White Paper of 2011) does not necessarily imply a duplication of efforts or double taxation. The combination of a package of measures will help to produce the optimal results without additional administrative burdens. The tax-free percentage thresholds will remain fixed during the first phase, up to 2020. The percentage tax-free thresholds could be reduced thereafter or may be replaced with absolute emission thresholds. The possible replacement of the tax-free thresholds with absolute emission thresholds will be aligned with the proposed carbon budgets.
Industry associations Companies State-owned entities	**Emissions Trading Scheme**	N/A	It is suggested that the alternative pricing instrument that is, a cap and trade scheme be explored. It is argued that this will guarantee the environmental outcome in contrast with the carbon tax which provides certainty on the price but not on the level of emission reductions. It was also recommended that the proposal to consider an emissions trading scheme over the next 10 to 15 years and discussions on	The government proposes a gradual phasing in of the carbon tax, with significant relief measures during the first phase of the tax. Analysis shows that due to the oligopolistic nature of South Africa's emissions profile, a domestic ETS would not deliver as an efficient and effective carbon pricing measure. About four companies account for between 55 and 60 per cent of South Arica's GHG emissions and this has liquidity implications to establish the carbon market. The advantages and

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
			the transition from a carbon tax to an emissions trading scheme (ETS) should be brought forward. There could be benefits for South Africa establishing linkages with international carbon markets early.	disadvantages of both carbon taxes and emissions trading schemes were discussed extensively in the 2010 Carbon Tax Discussion Paper and the 2013 Carbon Tax Policy Paper. In line with the 2011 NCCR—WP, government will investigate the feasibility of an ETS to complement, rather than replace the proposed carbon tax post 2020. The possibility of a domestic ETS, to complement the carbon tax, would however only be considered in the context of an effective linkage with carbon pricing systems in other jurisdictions.
Industry organisations Companies Academia State-owned entities	**Earmarking / revenue recycling**	Support	The carbon tax policy provides for the recycling of the carbon tax revenues through mechanisms such as a reduction in the electricity generation levy, credit rebate for the Renewable Energy Premium, and energy efficiency savings tax incentive. Several respondents support the explicit earmarking of the carbon tax revenues and that there should be annual reporting on the use of the funds. Stakeholders noted that the draft Bill does	The rigid earmarking of specific tax revenue streams is generally not in line with sound fiscal management practices. However, based on the economic modeling analysis undertaken, the efficient and effective recycling of revenue will be vital for the required structural adjustment to support the transition to a low carbon, climate resilient economy. The three categories of revenue recycling mechanisms proposed under the carbon tax policy package are:

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
			not include a commitment for revenue recycling and there are concerns that this concession may be excluded in future. It was suggested that the Bill confirms that the carbon tax will be revenue-neutral and that clear guidelines be developed to inform how the revenue will be allocated to ensure transparency, improved energy management and environmental quality.	• tax shifting: reducing or not increasing other taxes (electricity generation levy) • tax incentives: including the Energy efficiency savings tax allowance • "soft" earmarking (on budget allocations): enhanced free basic energy / electricity programme, improved public transport The energy efficiency tax incentive is already encoded in legislation; section 12L of the Income Tax Act. The credit for the renewable energy premium is already incorporated in the Draft Carbon Tax Bill. . Should there be surplus revenue from the carbon tax after the fore-mentioned revenue recycling measures, additional revenue recycling measures could be considered as part of the on budget support mechanisms.
Industry organisations Companies State-owned	**Electricity price neutrality – electricity generation levy and renewable energy credit**	Support	The proposed reduction of the electricity generation levy which applies to non-renewable, fossil based electricity generation at the rate of 3.5c/kWh is supported. However, clarity is requested on the amount by which the electricity levy will be reduced	The electricity levy reduction will be achieved through a credit for the electricity generation levy paid by electricity producers for the first phase. For the first phase, the impact on electricity prices as a result of the introduction of the carbon tax will be zero. Section 6(2) of

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
entities Government departments			to help companies determine their actual tax liability. The issue of double taxation has also been raised and it is argued that the electricity generation levy and the Renewable Energy Independent Power Producer Procurement Programme are comparable to carbon taxes. There are requests to either remove both these components or implement only the carbon tax.	the bill has been amended to allow a credit for the electricity generation levy payable against the carbon tax liability of a particular taxpayer that is, all electricity generators. These two measures, plus the energy efficiency tax incentive, would leave very little if any additional revenue left for further recycling during the first phase, until 2020. The electricity generation levy and the renewable energy premium seeks to implicitly price GHG emissions but does not aim to explicitly price externalities into the final price of electricity. This is the intention of the carbon tax. The combined effect of the implicit and explicit carbon price will however need to be considered, but this is unlikely to reflect the full marginal external costs of climate change in the near future. The commitment to ensure that the carbon tax does not impact the electricity price holds for the period up to 2020, primarily to provide relief for sectors currently in distress such as mining and steel.
Industry	**Renewable**	Support	It was suggested that the credit for the	Accepted. The bill has been amended to

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
organisations	**Energy Credit Premium – definition of Renewable energy producers and calculation of the IPP premium**		renewable energy premium should include all renewable energy producers and not be limited to independent power producers under the REIPPPP. Clarity was requested on the methodology which will be used to determine the IPP premium.	provide the credit for all renewable energy producers including private producers, and is not limited to the IPP programme. The amount will be determined by the Minister of Finance by way of a notice. Discussions are underway with Eskom, NERSA and the REIPPPP office to finalise the methodology.
Industry organisations Companies Academia NGOs	**Inclusion of tax rate in the Bill**	Support	Respondents requested clarity on the increase in the tax by 10 per cent per annum as stipulated in the policy paper and recommended that the increase should be specified in the bill. It is further recommended that the tax rate starts low as proposed and it should be increased annually as previously proposed. Academia, NGOs and some individuals strongly supported carbon pricing through the carbon tax. Some companies, academia, international organisations, NGOs, individuals and government entities of the view that the proposed carbon tax rate is relatively low taking cognisance of the high level of tax free allowances hence insufficient to provide the	Section 5 of the carbon tax bill has been amended to include the headline, marginal tax rate of R120/tCO_{2e} and specifies the annual increase to the nominal carbon tax rate by the rate of inflation plus 2 per cent up to 31st December 2020, and inflationary adjustments thereafter. This will help to provide more certainty to firms. To ensure a smooth transition to a low carbon economy and at the same time encourage significant reductions in GHG emissions over the medium to longer term the effective carbon tax will be phased-in gradually and increased during the second phase. This approach takes cognisance of the developmental changes that South Africa has to deal with and is fully in line

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
			necessary strong price signals to encourage/ incentivise behaviour change.	with the internationally acceptable principle of common but differentiated responsibilities and respective capabilities (CBDR – RC).
Industry associations Companies	**Liquid fuels - Pass-through of the carbon tax**	Support	Fuel prices are regulated in South Africa and refineries are unable to recover the costs of a carbon tax, to the extent that they might have been able in a competitive price setting environment. It is recommended that a cost pass-through mechanism for the petroleum sector should be explored as part of the tax design to provide certainty to the sector.	Given the regulated nature of fuel prices in South Africa, and that refineries are unable to recover these costs; a limited transparent and equitable pass through mechanism could be considered. Such a possibility is being explored with the industry. One option is the establishment of an industry benchmark – based on the technologies for the oil refinery industries and the quantum of the carbon tax would be determined based on how a firm performs against this benchmark. A firm operating below this benchmark could potentially be allowed to pass through some of the carbon tax to the consumer. This possibility was discussed with the industry in the April 2016 consultation process and the industry is currently working on establishing an industry benchmark.
Industry associations	**Taxation of non-stationary**	Oppose	Further clarity was requested on the taxation of non-stationary, mobile GHG emissions	Transport sector non-stationary GHG emissions arising from liquid fuels will be covered by the

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
Companies International organisations	**emissions**		from the transport sector and how the carbon tax will be applied.	carbon tax regime and incorporated into the current fuel tax regime as an add-on. This will result in a higher effective tax on diesel than on petrol due to the higher carbon intensity of diesel fuel relative to petrol. Assuming a 60 per cent tax free threshold (only 40 per cent of emissions taxed at R120 per ton) the estimated carbon tax will amount to 11 c/litre for petrol and 13 c/litre for diesel.
Industry associations International organisations	**Taxation of domestic aviation**	Oppose	The aviation industry supports the goal of GHG mitigation however; it does not support the imposition of a carbon tax for, both international and domestic aviation. The global aviation industry through the International Civil Aviation Organisation (ICAO) has agreed to the use of global market-based measures (MBMs) under the ICAO Assembly. The MBM will be implemented in the form of a Carbon offsetting and Reduction Scheme for International Aviation (CORSIA). It is the view of the aviation industry that the solution for domestic aviation should be aligned with international aviation.	South Africa supports a global approach to address GHG emissions from the international aviation sector, which might include the use of an appropriate carbon pricing measure, such as an internationally agreed carbon tax. Enforcing regional carbon pricing measures on the international aviation sector (for example, by including the aviation sector in the EU ETS) could be disruptive and distortionary. Therefore, a decision on the inclusion of domestic aviation within the South African carbon tax was delayed to until after the ICAO global assembly in October 2016. At the tri-annual Assembly of the ICAO in October 2016, countries agreed to implement the CORSIA as the agreed global market-based

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
			Industry was also of the view that the decision to subject domestic aviation to the carbon tax should be deferred until after the 39th Assembly of ICAO in October 2016 to take into account the outcome from the assembly.	measure to deal with emissions in the sector. The CORSIA is designed to offset carbon dioxide (CO_2) emissions generated by international aviation activities above 2020 levels and contribute to the carbon neutral growth of the sector from 2020 onwards. The detailed technical rules to put the system in place at the national level are still to be developed. However, since South Africa did not opt into the voluntary pilot phase or Phase I (2021-2026), its participation in the scheme might only be during the mandatory Phase II (as of 2027), there is a case for keeping the domestic sector in the carbon tax net so aviation emissions are accounted for. Following consultations with industry in November 2016, National Treasury is still of the view that emissions from domestic flights should be subject to the domestic carbon tax regime. It is proposed that the carbon tax be applied according to the carbon content of fuels used for domestic flights. The proposed domestic policy regime for aviation could then be incorporated within an international

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
				approach for this sector (as and when the national technical rules are developed). Discussions are underway with the Department of Transport and the aviation industry to consider the options for integration of the CORSIA mechanism for domestic aviation within the carbon tax.
Industry associations Companies	**Performance allowance – Benchmarks**	Support	The performance allowance was broadly supported. Clarity was requested on the envisaged process and timeframes for approving benchmarks.	The benchmark report entitled "Emissions Intensity Benchmarks for the South African Carbon Tax"[1] was published in 2014 followed by a workshop in May 2015. At this workshop National Treasury proposed that the industry initiates a process to calculate appropriate and acceptable benchmarks, using the proposed guidance framework laid out in the report. During the consultations held in April 2016, the performance allowance was widely supported and some sectors such as petroleum refining and cement have initiated processes for developing benchmarks. National Treasury has been engaging with the various industries / sectors / firms and is awaiting their formal submissions once the studies have been finalised. Such submissions would form the

[1]Available from: http://ntintranet/publications/other/GHG_Emissions_Intensity_Benchmarks_for_SA_Carbon_Tax.pdf

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
				basis for the development of the Regulations as provided for in the draft Carbon Tax Bill.
Industry associations Companies	**Trade exposure allowance**	Support	Concerns were raised on the structure of this allowance and consultations with sectors and specific companies revealed a preference for sector rather than company based tax-free thresholds for trade exposure. The inclusion of exports only was viewed as an inappropriate measure of trade exposure of a sector as certain sectors are facing increased competition from imports for example, the cement sector.	Following consultations on the carbon tax bill, the design of the allowance has been adjusted from a company to a sector-based trade exposed allowance which includes imports in the formula. Trade intensity will be used as a proxy for trade exposure which will be determined at a sector or subsector level based on the World Customs Organisation: Harmonised System Convention (HS Code) classification for final products only.
Companies State owned entities NGOs	**Carbon Offsets**	Support	Companies generally support the inclusion of the offset mechanism as a means to drive least cost mitigation. Specific suggestions include that: • The offset allowance not be limited and request the removal of the cap on the allowance. • The eligible projects under the offset scheme be expanded to include projects that reduce scope 2 emissions.	The offset cap will remain limited to 10 per cent so as to ensure that firms make real efforts to mitigate their own emissions and maintain a strong carbon price signal. Limitations on offsets are common in most carbon pricing schemes for this very reason. • There is already an incentive in place to assist companies to reduce their Scope 2 (indirect) emissions. The energy efficiency savings tax incentive was

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
			• The need to reconsider the geographic restrictions to South African projects and cost effectiveness of using international standards in the first phase especially for small-scale projects. The NGO sector is of the view that the offset allowance should not be permitted as it undermines the intent of the policy and would not achieve the objective of reducing GHG emissions.	implemented in 2013 and helps companies to reduce both their energy (electricity and fuel) consumption and their Scope 2 (indirect) GHG emissions. National Treasury agreed to review the eligibility criteria for carbon offsets in consultation with the Department of Energy, IPP office and the Department of Environmental Affairs (DEA). For the first and second phases of the carbon tax, the carbon offset projects will be limited to South Africa to encourage real mitigation in South Africa. Options for expanding the scope of offset projects regionally can be considered thereafter. Work on the framework for the development of local standards will commence shortly.
	TECHNICAL / LEGAL			
Industry associations Companies	**Persons subject to the tax**	N/A	Suggested that reference to the reference to DEA Priority Pollutants Declaration is removed.	Accepted. The definition of the person liable for the tax has been amended and defined as persons undertaking activities defined in Schedule 2 of the Carbon Tax Bill. This list of

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
State owned entities			Definitions of who is liable and on which activities should be aligned between the draft Bill and reporting regulations i.e. 'data provider' and 'person', 'conducts an activity' and 'reporting boundaries for each installation based on operational control.	activities is aligned with the GHG Reporting Regulations and Technical Guidelines.
Industry associations Companies State Owned Entities	**Tax payment thresholds**	Oppose	Requests clarity on whether there is any energy consumption or GHG emissions threshold that determines whether a company is liable for the carbon tax. It is recommended that the threshold be applied in line with the GHG Reporting Regulations	Accepted. Schedule 2 of the bill has been amended to include a column on the thresholds that will apply for the activities covered under the carbon tax. This is aligned with the thresholds prescribed in the Technical Guidelines of the National GHG Emission Reporting Regulations (NGERs). The NGERs have a series of thresholds as follows which will apply for purposes of the carbon tax as well: • Combustion emissions – Thermal input threshold • Fugitive emissions – Operation-specific thresholds • Process emissions – primary product type thresholds
Industry	**Tax deductibility**	Support	Several commentators requested clarity on	Section 11 a of the Income Tax Act provides for

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
associations Companies State owned entities	**of the carbon tax**		the whether the carbon tax will be tax deductible for income tax purposes. It is argued that in the absence of any specific legislation stating otherwise, general tax principles would have to be applied.	any expense deemed to be in the production of income, to be deductible for income tax purposes. In line with the Income Tax Act, to the extent that the carbon tax forms part of a company's business expense it may therefore be deductible for income tax purposes.
Industry associations Companies	**Schedule 2**	N/A	Recommended that the activity list should be defined for the bill and the IPCC code as per the DEA regulations should be included.	Accepted. Schedule has been amended to include the IPCC code.
Industry associations Companies	**Administration of the carbon tax**	N/A	Effective administration of the carbon tax will require clear and formalized lines of communication and responsibilities to be established between regulatory agencies and departments. A strong relationship between SARS and DEA will be needed, since the latter has the primary responsibility for monitoring GHG emissions. It was noted that: • Real time access to the NAEIS system will be required by all of the regulatory bodies. • Reporting requirements to two different departments will require coordination and sequenced timing to ensure all information is available to	This has been noted and discussions between the NT, SARS, and DEA on a streamlined administration system has commenced. As per the explanatory memorandum, the South African Revenue Service (SARS) will be the main implementing administrative authority on tax liability assessment. In order to audit the self-reported tax liability by entities, SARS will be assisted by the DEA. The DEA will lead the MRV process, collecting the GHG emissions data which will form the tax base hence incorporating the carbon tax within the National Atmospheric Emissions Inventory

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
			taxpayers so that they can calculate their liabilities and authorities can to process and verify the return. • Clarity was requested on the registration process of SARS and the linkages with the registration process of DEA.	System (NAEIS – part of the South African Air Quality Information System, SAAQIS).
Industry associations Companies State Owned Entities	**Schedule 1: Use of Tier 1, 2 and 3 Emissions Methodologies and emissions factors by GHG**	Support	Stakeholders commented that not all emission factors are calculated by a default emission factor as reflected in the schedule. It is noted that the reporting regulations provide for three tiers of methodology for reporting as follows: Tier 1: activity data and IPCC default emission factors Tier 2: technology specific emission factors also referred to as country specific factors. Such emission factors have already been approved by DEA for some sectors. Tier 3: company or activity specific data and use of a variety of methods including mass balances. It is recommended that the Draft Carbon Tax Bill make allowance for companies to use alternative emissions factors that are not	Accepted. The emission factors presented in the tables of Schedule 1 are the default emission factors based on the 2006 IPCC Guidelines. These form the barest minimal in terms of reporting requirements and are the fall back for companies who cannot develop higher tier methodologies for their activities. This does not preclude the use of Tier 2 and Tier 3 methodologies. Section 4(2) of the bill provides for the use of alternative methodologies as approved by the DEA for determining the GHG emissions of a taxpayer. Accepted. Schedule 1 of the Bill has been amended and will provide emissions factors for each GHG, rather than emissions factors that are converted to CO2e, for the different fuel types and activities.

Affected Stakeholders	What do they see as the main benefits, costs and risks	Do they support or oppose the proposal?	What amendments do they propose?	Have these amendments been incorporated in your proposal?
			listed in Schedule 1, Table 3. Requests that the NT allow for Tier 3 methodologies like emissions models, material carbon balances and continuous emission measurement to be used.	

1.6. Describe possible disputes arising out of the implementation of the proposal, and system for settling and appealing them. How onerous will it likely be for members of the public to lodge a complaint and how burdensome and expeditious is the proposed dispute-settlement procedure?

Possible disputes could arise around:

- Establishment of the reporting mechanisms and enforcement of reporting requirements;
- Establishment of the sectoral benchmarks (Z-factors);
- Assessment of emissions and the likely impact of offsets and efficiency measures, and by extension the amount of allowances and incentives provided;
- Timelines for acceptance of eligible carbon offset projects and allowance of credits to reduce tax liability;
- Access to recycling resources for both business and poor households;
- Design and timing of incentives and support mechanisms;
- Design of the mix of measures (carbon tax and others) for the post 2020 period, including future changes to rates, allowances and incentives.

For any disputes with regards the tax liability, the normal procedures as provided for in the Tax Administration Act would be followed and the timelines provided by SARS. With regards to timelines for acceptance of carbon offset projects and allowed carbon credits, the Carbon Offset Administrator will be required to stick to the timelines provided for in the manual for project developers.

For any disputes with regards the reported/ estimated emissions, that is in cases whereby industry sector/company challenges the emission factors and/or methodologies that are proposed through the National Greenhouse Gas Emission Reporting Regulation, guidance is provided on how industry can challenge prescribed methodologies and make proposals on new methodologies. The regulations make it clear that in such cases, companies can lodge such queries directly to the national inventory unit of the DEA in accordance with Regulation 10(2) and parameters for the responses as provided.

The monitoring, reporting and verification system is in accordance with the National Environmental Management: Air Quality Act under which the Greenhouse Gas Reporting Regulations have been developed. SARS will be responsible for the collection and administration of the carbon tax and any regulatory action through auditing companies' reported emissions will be in terms of the Customs and Excise Act.

2. Impact Assessment

2.1. Describe the costs and benefits of implementing the proposal to the groups identified **in point 1.5 above**, using the following chart. Add more rows if required

Group	Implementation Costs	Costs of changing behaviour	Costs/Benefits from achieving desired outcome	Comments
Energy intensive producers (mostly mines and refineries)	Measurement, verification and reporting on GHG emissions	Need to be innovative around energy and carbon saving and offset measures, which could require large upfront capital investments	Cost of tax – starts low but may go much higher. Uncertainty may depress investment. Improved competitiveness in the long run Reduced risk of carbon taxes imposed by other countries in future	Not likely to be able to reduce energy intensity very significantly, so not clear if can remain competitive if all costs of emissions are internalised. Depends largely on commodity cycle and developments in other countries.
Other producers	As above	As above	Cost of tax – should not be a determinant factor for these companies, by definition (electricity typically no more than 15% of costs) Improved electricity reliability as demand reduced Reduced impacts of climate change Improved competitiveness in the long run Reduced threat of carbon taxes imposed on exports	Net impact will depend in large part on the extent of recycling and diversification of investment away from emissions-intensive activities
Workers	None	None	Workers in energy intensive industries could lose jobs Other industries could however create more jobs in longer run Reduced threats from climate change	Net effect on employment depends on how producers adjust, and in particular on the ability to diversify investment away from emissions-intensive activities
Poor households	None	None	Higher cost for energy and transport Expected to be offset by government subsidies Impacts on employment will affect incomes	Impact will depend on extent of recycling

Recycling measures will go some way in mitigating the higher cost of energy, which was the main concern of stakeholders. The tax design itself has a number of allowances designed to mitigate competitiveness and distributional impacts including the trade exposure, carbon offsets, performance and high tax-free allowances. In addition, the National Treasury introduced the Energy

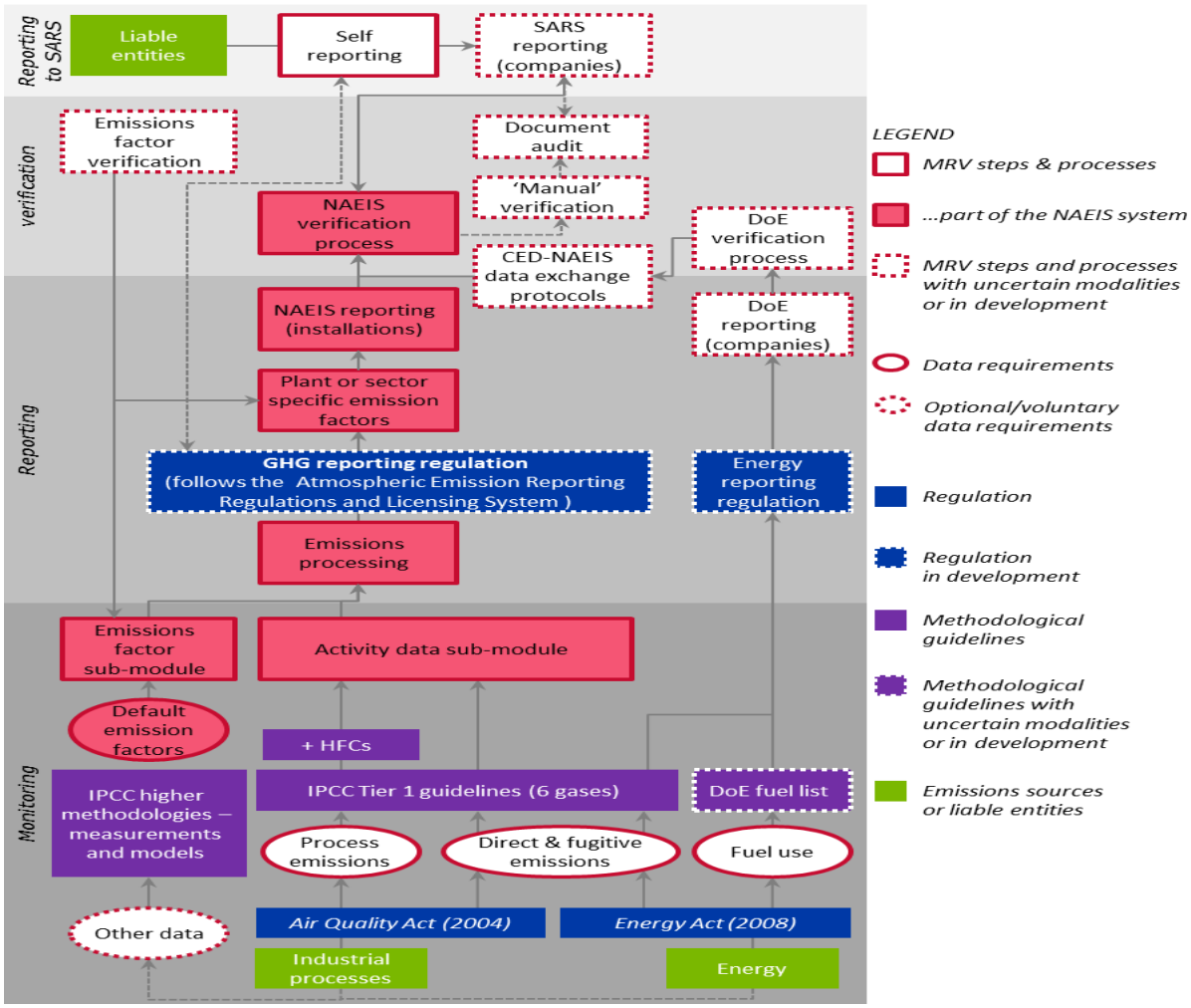
Efficiency Savings (EES) tax incentive in November 2013. This tax incentive allows taxpayers to claim deductions of 95 cents per kilowatt-hour, or kilowatt hour equivalent, of energy efficiency savings made against a baseline measured at the start of each year of assessment. The EES tax incentive was originally planned to form part of the broader pack of recycling measures under the carbon tax to attract the low-hanging fruit in energy efficiency. The actual implementation of the EES tax incentive in the absence of the carbon tax has already resulted in a benefit to the economy as well as energy intensive sectors at a cost to the fiscus.

2.2. Describe the changes required in budgets and staffing in government in order to implement the proposal. Identify where additional resources would be required for implementation. It is assumed that existing staff are fully employed and cannot simply absorb extra work without relinquishing other tasks.

The administration of the carbon tax bill will comprise general administration and revenue collection by the SARS; monitoring and verification of emissions data by DEA and maintenance of a mandatory GHG inventory database; and administration of the carbon offsets scheme by the Designated National Authority within the Department of Energy.

The anticipated costs are: R20 million each for SARS and DEA in the first year to set up systems and around R5 million a year for each agency thereafter. Some of the initial set-up costs may be met through a grant awarded to South Africa from the World Bank's Partnership for Market Readiness.

The diagram below shows the envisaged carbon monitoring, reporting and verification system (MRV). The DEA will lead the MRV process, collecting the GHG emissions data which will form the tax base hence incorporating the carbon tax within the National Atmospheric Emissions Inventory System (NAEIS – part of the South African Air Quality Information System, SAAQIS). The DEA will work closely with the DoE, as a joint implementation partner in the carbon tax MRV work. DEA will directly collect the GHG process emissions information and the DoE, which is developing the Central Energy Database, will supply energy combustion data to the NAEIS. It is envisaged that this will be implemented through the National Atmospheric Emission Reporting Regulations(NGER) of the DEA and the Energy Reporting Regulations of the DoE. Administrative capacity will need to be developed by the above mentioned entities.



The supporting structures of the DEA and DoE MRV system and the implementation of the offset mechanism will require additional funding and this will be supported initially through the World Bank Partnership for Market Readiness project. The MRV System for the Carbon Tax is currently being developed includes the following elements:

- Develop a communication module and alignment between the DoE central energy database to the National Atmospheric Emissions Inventory System (NAEIS) .
- The South African Revenue Service (SARS) will be the main implementing administrative authority on tax liability assessment. In order to audit the self-reported tax liability by entities, SARS will be assisted by the DEA. The carbon tax auditing of GHG emissions will rely on the NAEIS for verification purposes. Discrepancies between its functionalities and the SARS' needs and systems are being examined and alignment of systems will be implemented.

On-going operational support will require budgetary allocations to the implementing departments.

Staff in the DEA, DoE and regional entities will be trained on the carbon tax design features and implementation modalities. Training will be essential for industry participants, in particular

SMEs, on the implications and requirements of the carbon tax to enable effective implementation.

2.3. Describe how the proposal minimises implementation and compliance costs.

Oversight systems are being developed through the DEA and DoE to support SARS. As highlighted above, the carbon tax will utilise already existing or in-process systems in the various departments to which some modifications might be required which minimises implementation costs. The technical capacities that already reside in each department will also be utilised for the carbon tax processes, for example the DoE currently hosts the Designated National Authority (DNA) with expertise in facilitating the clean development mechanism (CDM) in South Africa and they will now be responsible for administering the carbon offsets.

3. Managing Risk

3.1. Describe the main risks to the achievement of the desired ends of the policy/bill/regulations/other and/ or to the national priorities (aims) that could arise from adoption of the proposal. Also describe the measures taken to manage the identified risks. Add more rows if necessary.

a. Tax is set too low, leading to limited impact on GHG emissions and the risk that firms and households might not be incentivised enough to change their behaviours.
b. Uncertainty about tax levels in future phases of the carbon tax deters investment now.
c. Tax leads to significant decline in investment in mining value chain without growth in other industries and especially in exports, leading to slower overall economic growth and job losses.
d. DEA and DoE do not establish effective systems to monitor, report and verify emissions in time and communicate timeously with SARS.
e. Revenue recycling is not as high as anticipated, leading to a net transfer of income from business without compensation and a consequent decline in investment and growth.
f. Final carbon budgets determination methodology could make it difficult for a cost effective alignment with the carbon tax

Identified Risk	Mitigation Measures
Tax is too low to affect behaviour change	Review after phase 1 to determine impacts and how allowances, incentives and tax rates could be changed to have an impact on behaviour and support adaptation.
Uncertainty about tax levels in future phases of the carbon tax deters investment now	The bill has been revised to incorporate the tax rate and relative thresholds. Beyond the first phase, significant tax rate changes can only be expected if emissions continue to increase even after introduction of the tax but such increases will be done through the tax process, subject to stakeholder consultation, Parliamentary oversight and

	approval. Review of the effectiveness of the tax and changes in the level of emissions in the first phase should inform the level of allowances and tax rates.
Tax leads to slower economic growth and job losses	Review after phase 1 to determine impacts. Ensure effective implementation of proposed allowances and incentives to support adaptation and permit offsets, and to minimise impact on exports
DEA, DOE and SARS not prepared	NT has engaged extensively with DEA and DoE to support preparations. DEA has published the Greenhouse Gas Reporting Regulations. The online reporting system has been initiated and the regulations are expected to come into effect in 2017. Development of the Carbon Tax Monitoring, Reporting and Verification System has been initiated to support DEA and DoE in aligning their reporting requirements.
Alignment with carbon budgets beyond 2020	Consultations on the best method to align the two instruments to be finalised, the alignment could be designed such that strict carbon budgets will be absolute thresholds (absolute units of MtCO2-eq.) above which the carbon tax applies.
Revenue recycling is not as high as anticipated	Review after phase 1 to determine impacts and how allowances, incentives and tax rates could be changed to have an impact.

3.2. Describe the mechanisms **included in your proposal** for monitoring implementation, evaluating the outcomes, and modifying the implementation process if required. Estimate the minimum amount of time it would take from the start of the implementation process to identify a major problem and remedy it.

The carbon tax bill is designed as framework legislation and allows for a phased introduction of the tax at relatively low rate initially. This provides flexibility on the adjustment of the rates and thresholds over time to ensure that emissions reductions are achieved whilst providing the space for firms to transition and make the required investments. This can also be changed over time (after consultation) if necessary.

- Administration of the tax: this process is on-going and feedback from this process and taxpayers will assist in identifying shortcomings in the framework. This may be addressed through various means including amendments to the Carbon Tax Act, regulations or accompanying Schedule
- The DEA will lead the MRV process, collecting the GHG emissions data, which will form the tax base which will be deposited into the National Atmospheric Emissions Inventory System (NAEIS). Entities will be liable for their fossil fuel combustion emissions, fugitive emissions and, industrial processes and product use emissions. The DEA will work closely with the DoE, as a joint implementation partner in the carbon tax MRV work. DEA will directly collect the GHG process emissions information and the DoE, which is developing the Central Energy Database, will supply energy combustion data to the NAEIS. This will be implemented through the National Greenhouse Gas Emissions Reporting Regulations of the DEA and the Energy Reporting Regulations of the DoE.

SARS will have access to the NAEIS for them to verify emissions reported by companies for their tax liability. The DoE currently hosts the Designated National Authority (DNA) and will also be responsible for administering the carbon offsets.

- Data and information collected as part of the reporting process may indicate changes that are required to the Carbon Tax Act, regulations or Schedule
- The current proposal is valid from an initial period up to 2020. The alignment of the carbon tax with the carbon budgeting system proposed by the DEA is currently underway. The interface options for the integration of the two instruments have been identified and clarity on the alignment will be provided by the end of 2017. This will allow for a revision of the mechanism and strengthening of the economic incentives and improvements in the administration of the system.

4. Summary

4.1. Summarise the impact of the proposal on the main national priorities

National Priority	Impact
1. Social Cohesion	The poor and low income households will benefit in the long run if negative consequences of climate change can be addressed. More immediately they will continue to benefit from free basic energy allocations and over time better public transport. Development of carbon offset projects could enhance rural development through employment creation thereby improving livelihoods which supports social cohesion. Increased energy and transport prices (and their ripple effect) could have a negative impact on households.
2. Security (Safety, Financial, Food, Energy and etc.)	Climate change is a key threat to national security through both the impact on domestic communities and through potential regional migration and conflict. The credit for the electricity levy, free basic energy allowance and employment creation through offset projects will contribute towards reducing income inequality. Low carbon energy alternatives broaden the country's energy mix hence improving the country's energy security.
3. Economic Growth	A carbon tax with broad sector coverage implemented gradually and complemented by effective and efficient revenue recycling will help reduce GHG emission and at the same time have a marginal impact on GDP in the long run. The phasing in of the tax and the inclusion of revenue recycling measures, incentives and allowances should minimise the damage to energy-intensive industries while promoting growth in other sectors in the short run. The economic damage from climate change would be reduced.
4. Economic Inclusion (Job Creation and Equality)	Poor people are most likely to suffer from climate change as they are normally located within the vicinity of polluting industries. A reduction in GHG emissions consequently results in an improvement in the air quality which society will benefit from. Over time, the shift to less energy intensive industries should promote job creation, as these producers are generally also more labour intensive.
5. Environmental Sustainability	The introduction of the carbon tax seeks to primarily contribute towards environmental sustainability through GHG emissions reductions. The modelling analysis show that the carbon tax would lead to an estimated decrease in emissions of 13 to 14.5 per cent by 2025 and 26–33 per cent by 2035 compared with business-as-usual.

4.2. Identify the social and economic groups that would **benefit most** and that would **bear the most cost**. Add more rows if required.

Main Beneficiaries	Main Cost bearers
In the long run, society at large including poor households and individuals, due to lower GHG emissions, improved quality of the environment, and greater access to energy due to enhancement in the free basic electricity allocation; credit for the electricity levy and passenger transport. Entrepreneurs especially in renewable energy will be able to seize new emerging business opportunities.	Over the short and medium term, emissions intensive sectors, due to additional costs incurred for excessively high emissions. This will affect investors, workers and communities.

4.3. In conclusion, summarise what should be done to reduce the costs, maximise the benefits, and mitigate the risks associated with the policy/bill/regulations/other. Note supplementary measures (such as educational campaigns or provision of financing) as well as amendments to the draft itself, if appropriate. Add more lines if required.

a. On-going communication with stakeholders, and implementation preparations to ensure that they are aware of the latest developments and that they can take the appropriate actions to be ready for implementation. Uncertainty around the implementation of the carbon tax has been raised. This has been addressed through inclusion of the headline, marginal tax rate of R120/tCO_{2e} and specifying the annual increase to the nominal carbon tax rate for phase 1 and 2 in the Bill (see table below for nominal tax rates). The tax rate during phase one will be adjusted with a maximum of inflation plus 2 per cent. For subsequent phases, the tax rate will be adjusted with inflation only depending on the outcomes of the review as mentioned earlier. It should also be noted that the effective tax rate will be much lower due to the various tax free allowances built into the carbon tax design.

Projected tax rates for phase one:

	2018	2019	2020	2021	2022
Nominal Tax rate (R / ton CO_2 equivalent)	120	129	139	150	161

Notes:

1. Nominal tax rate adjusted with projected inflation (CPI) plus two per cent annually.

2. Projected inflation as per Budget 2017.

b. Reinforce the long-term benefits of the transition to a low carbon and more sustainable economy. Provide support for research and development initiatives such as cleaner production technologies, energy efficiency and carbon capture and storage.

4.4. Please identify areas where additional research would improve understanding of the costs, benefits and/ or risks of the policy/bill/regulations/other

More work is required to provide a long-term vision for a competitive South African economy in a carbon constrained world. The DEA is conducting further work on its regulatory instruments as another pillar of South Africa's mitigation system in addition to the carbon tax. This includes the development of methodologies for the Desired Emission Reduction Outcomes and the methodology and approach for determining allocations for the phase 2 Carbon Budgeting system.

A study on the principles and interface options for the alignment and integration of the carbon tax and carbon budget system for phase 2, post 2020, has been completed. Further consultations are underway by the DEA and the NT and DEA will provide further clarity on the post 2020 alignment by the end of 2017.

On-going monitoring of the carbon tax framework based on information from the DEA will assist in identifying areas where additional research may be required. Help develop methodologies to develop appropriate benchmarks of sectors to help understand the mitigation potential of sectors and production processes.

Further research to deal with competitiveness concerns and carbon leakage could be undertaken at a sector level. This could include investigating the impact of potential shifts in trade and investment patterns as well as the implications of carbon border adjustments, how it is likely to be implemented by other jurisdictions and if and how South Africa can implement carbon border adjustments where necessary, taking into account the practical challenges of implementing border carbon adjustments.

For the purpose of building SEIAS body of knowledge please complete the following:

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Annexure 1: Economic modelling and assumptions

Model assumptions

The study uses the University of Pretoria's General Equilibrium Model (UPGEM) which is a dynamic general equilibrium model of the South African economy. The model provides a quantitative description of the South African economy, and accounts for linkages and interactions between the various sectors and agents within the economy. The model was modified to allow for detailed analysis of the impacts of the carbon tax on the electricity generation mix and GHG emissions.

Two baseline scenarios were considered in this study that is, a main and alternative baseline. The main assumptions for both scenarios are summarised below.

- Main baseline scenario: assumed average annual GDP growth of 3, 5 per cent from 2016 to 2035, constant inflation of 5,5 per cent and population growth of 1 per cent.
- Alternative baseline scenario: assumed average annual GDP growth of 2, 4 per cent from 2018-2035.
- Efficiency improvements and technology: No explicit assumptions were made regarding future improvements in efficiency and cost competitiveness of clean technologies relative to fossil fuel based sources in the electricity generation mix. The ratio of each electricity generation technology relative to total electricity generation remains fixed in the baseline relative to 2014 values, to more accurately isolate and measure the impact of the carbon tax.

The modelling analysis considers four different tax designs (T) in combination with five possible recycling schemes (R). In the T1 scenario, the tax is initially modelled as closely as possible to reflect the proposed design and with the tax rate increasing by 10 percent per annum over the period 2016–21, and thereafter by the assumed inflation rate (which is 5.5 percent under the main baseline assumptions). The agricultural and waste sector, however, are exempt from the carbon tax at all times.

In the focus scenario (T2), the tax is levied as in T1, but tax-free allowances are gradually removed at a rate of 10 percentage points per annum from 2021 onwards until all the industries are paying the full tax rate on all their emissions.

The main difference in the tax policy scenarios is the inclusion of the agriculture and waste sector and adjustments in the level of the tax free allowances post 2020.

- The revenue recycling scenarios comprise broad, production based recycling, broad or selective reductions in the VAT rate and targeted support for the renewable energy sector.
- For the revenue recycling scenarios, it is assumed that the revenues from the carbon tax are recycled such that the government deficit remains unchanged, that is the revenues are rechannelled into the economy.

Due to technical reasons, some of the design features of the tax, including the use of carbon offsets for some proportion of the liability, allowances for participation in the carbon budget process and the performance (z-factor) allowance could not be modelled. This might suggest that the initial

impact of the carbon tax might be muted, slightly less GHG emission reductions and lower impact on economic growth.

It is important to note that any possible negative impact from climate change and unabated emissions or benefits from reducing GHG emissions as well as co-benefits such as lower levels of local air pollution has not been factored into the modelling. Therefore, the model analysis and results is likely to underestimate the benefits of the carbon tax policy and should not be viewed as an assessment of the overall impact of introducing a carbon tax in South Africa.

Simulation results and broad findings from the report

The findings from the T2R1 scenario referred to as the 'focus' scenario are discussed below. In this scenario the tax-free allowances, as laid out in the proposed design of the tax, are gradually removed at a rate of 10 percentage points per annum for all sectors (except agriculture and waste), and revenues are recycled through a rebate to all firms proportional to their output.

The simulations suggest that the introduction of a carbon tax will contribute significantly to South Africa's GHG emissions reduction goals. The analysis shows the estimated reductions of 33 per cent by 2035 compared with business as usual.

The economy will continue to grow whilst emissions are reduced. The carbon tax is expected to lead to a reduction in the annual average growth rate of the economy of just 0.05 to 0.15 percentage points compared to business-as-usual. Sensitivity analysis shows that the carbon tax would have a similar modest impact even if the economy grows less quickly than expected.

The carbon tax also has a small impact on other macroeconomic aggregates such as employment, consumption and real wages. In the 'focus scenario', the annual growth rate in household consumption falls by 0.23 percentage points, employment falls by 0.07 percentage points, and real wages fall by 0.2 percentage points.

Simulation results suggests that concerns over 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. This is driven by sectors such as transport equipment, electrical machinery, and textiles and footwear sectors which are expected to experience increases in the annual growth rate of exports of around 7 per cent as a result of the carbon tax plus revenue recycling.

However, certain sectors are projected to experience declines in exports including the coke oven and iron and steel sectors, although in the latter case the sector's exports continue to grow over the period to 2035, just at a lower rate than if there were no carbon tax.

There will be a number of important sectoral winners and losers from the carbon tax and these are consistent with the objective of the carbon tax of promoting structural change. In 2035, the output from the nuclear, wind, hydro, gas and solar photovoltaic (PV) power generation sectors is expected to be more than 200 per cent greater than without a carbon tax.

Coal generation is likely to become less cost competitive with its output expected to be 46 per cent lower in 2035 than it would be without the tax. Other sectors that could experience a decline in output relative to the baseline include petroleum refining, other manufacturing, coke production

and the electricity supply sector. However, it should be stressed that this is a relative decline in output compared with the situation in which there is no carbon tax. All of these sectors are projected to grow in absolute terms by between 18 (coal generation) and 105 (other manufacturing) per cent over the period 2014 to 2035 even with a carbon tax.

The method of revenue recycling was found to be an important driver of the results. The analysis shows that a carbon tax with persistent tax-free allowances will yield substantially lower emissions reductions, but also have a smaller negative impact on GDP growth. The analysis suggests that broad, production based recycling such as the producer focused rebates is likely to yield smaller impacts on GDP but also less significant emissions reductions, whilst a narrow, clean energy focused support will lead to substantial decreases in emissions but a lower growth rate for the economy. The current design of the carbon tax include elements of broad based (electricity generation levy credit) and targeted support measures for low income households.
