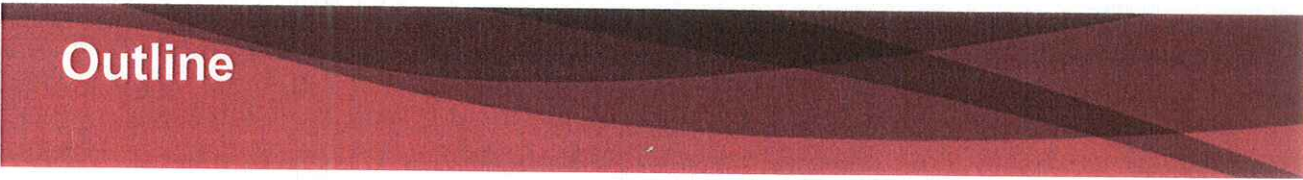


**national treasury**  
Department:  
National Treasury  
REPUBLIC OF SOUTH AFRICA



## Outline

1. National Climate Change Response – White Paper (NCCR – WP)
2. Quantifying Green House Gas Emissions
3. The impact of Climate Change
4. The National Development Plan
5. Options to intervene and the rationale for a carbon prices / tax
6. Distributional & Competitiveness concerns
7. The carbon tax policy development & consultation process
8. Carbon tax design and carbon offsets
9. Carbon tax and carbon budgets / DEROs
10. Environmental and economic impact
11. Summary and next steps





# South Africa's National Climate Change Response White Paper, 2011

- South Africa's response to climate change has two objectives:
  - Effectively manage inevitable climate change impacts through interventions that build and sustain South Africa's social, economic and environmental resilience and emergency response capacity.
  - Make a fair contribution to the global effort to stabilise greenhouse gas (GHG) concentrations in the atmosphere at the level that avoids dangerous anthropogenic interference with the climate system within a timeframe that enables economic, social and environmental development to proceed in a sustainable manner.
- One of the elements in the overall approach to mitigation is: The deployment of a range of economic instruments to support the system of desired emissions reduction outcomes, including the appropriate pricing of carbon and economic incentives, as well as the possible use of emissions offset or emission reduction trading mechanisms ...

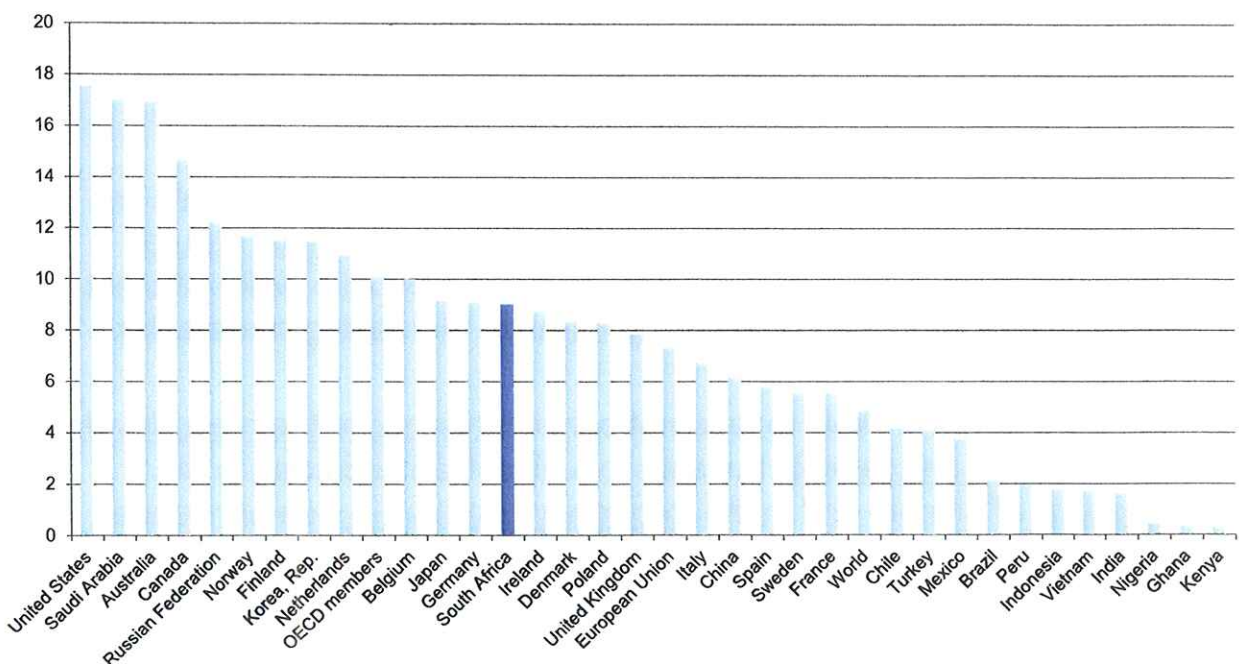
## South Africa's response to its economic & social challenges and to climate change

- South Africa voluntarily committed (at COP 15 in 2009) to curb GHG emissions by 34% by 2020 and 42% by 2025 below the BAU trajectory with emissions peaking in 2020 - 2025, stabilising in 2025 - 2035 and declining in absolute terms from around 2035, subject to support from developed countries in the areas of climate finance, capacity building & technology transfers.
- Promoting higher levels of economic growth & job creation are key policy objectives
- However, economic growth since the great recession in 2008/09 has been relatively weak
- So how do we balance the need for higher levels of growth and the energy & carbon intensive nature of our economy with our desire and commitment to help reduce GHG emissions.
- “the **choices – the trade offs** – we are told we must make between financial success and environmental success, between doing well and doing good, **are just plain false** (Confessions of a Radical Industrialist, Ray Anderson (with Robin White, 2009) (page xv – xvi)”.

# IEA: GHG – emissions: Sectoral Approach

Mt of CO2: CO2 Sectoral Approach					
Country		2010		2008	
B	People's Republic of China	23.84%	1	22.07%	1
	United States	17.73%	2	18.95%	2
B	India	5.37%	3	4.88%	4
B	Russian Federation	5.22%	4	5.40%	3
	Japan	3.78%	5	3.91%	5
	Germany	2.52%	6	2.71%	6
	South Korea	1.86%	7	1.70%	9
	Canada	1.77%	8	1.87%	7
	Islamic Republic of Iran	1.68%	9	1.69%	10
	United Kingdom	1.60%	10	1.74%	8
	Saudi Arabia	1.47%	11	1.31%	13
	Mexico	1.38%	12	1.37%	12
	Indonesia	1.36%	13	1.24%	17
	Italy	1.32%	14	1.48%	11
B	Brazil	1.28%	15	1.23%	18
	Australia	1.27%	16	1.31%	14
	France	1.18%	17	1.26%	16
B	South Africa	1.15%	18	1.31%	15
	Poland	1.01%	19	1.01%	21
	Chinese Taipei	0.89%	20	0.89%	22
	Spain	0.89%	21	1.08%	19
	Ukraine	0.88%	22	1.05%	20
	Turkey	0.88%	23	0.89%	23

## CO<sub>2</sub> emissions (metric tons per capita) in 2010 (WB, 2014)





# GHG Inventory, 2010 - Estimates

2010: GHG Inventory (Estimates) -- Categories	Emissions - CO2 Eq (Gg)	Emissions - CO2 Eq (Gg)	Total Emissions - CO2 Eq (Gg)	Percentage Contribution
<b>1 - Energy</b>			<b>428 368</b>	<b>82.66%</b>
<b>A - Fuel Combustion Activities</b>			<b>402 817</b>	<b>77.73%</b>
1.A.1.A - Electricity		236 798		45.69%
1.A.1.B - Petroleum Refining		2 284		0.44%
1.A.1.C - Manufacture of Liquid Fuels (Synfuel )		28 611		5.52%
1.A.2 - Manufacturing Industries and Construction		41 117		7.93%
1.A.3 - Transport		47 607		
Civil Aviation	3 670			
Road Transport	43 440			8.38%
Rail Transport	497			
1.A.4 - Other Sectors		44 684		8.62%
<b>B - Fugitive emissions</b>			<b>25 551</b>	<b>4.93%</b>
<b>2 - Industrial Processes and Product Use</b>			<b>44 351</b>	<b>8.56%</b>
<b>2.A - Mineral Industry</b>		4 793		
Cement production	4 187			
Lime production	502			
Glass Production	104			
<b>2.B - Chemical Industry</b>		1 011		
<b>2.C - Metal Industry</b>		37 513		
Iron and Steel Production	24 147			
Ferroalloys Production	11 809			
Aluminium production	1 468			
<b>3 - Agriculture, Forestry, and Other Land Use</b>			<b>(25 714)</b>	<b>(4.98%)</b>
<b>4 - Waste</b>			<b>19 806</b>	<b>3.82%</b>
<b>Total National Emissions and Removals</b>			<b>518 239</b>	<b>100.00%</b>
<b>International Bunkers</b>			<b>2 572</b>	

## The Poverty Impacts of Climate Change, Economic Premise, The World Bank, March 2011. Number 51

- Over the last century, the world has seen a sustained decline in the proportion of people living in poverty. However, there is a growing concern that climate change could slow or possibly even reverse progress on poverty reduction.
- This concern is rooted in the fact that most developing countries are more dependent on agriculture and other climate-sensitive natural resources for income and wellbeing, and that they also lack sufficient financial and technical capacities to manage increasing climate risk (adaptation).
- Climate change is likely to lead not only to changes in the mean levels of temperatures and rainfall, but also to a significant increase in the variability of climate and in the frequency of extreme weather-related shocks.
- ...much of the poverty impact is expected to be concentrated in Africa and South Asia, both of which would see more substantial increases in poverty relative to a baseline without climate change.



# National Development Plan 2011: on Climate Change

- “Emissions of carbon dioxide and other greenhouse gases are changing the earth’s climate, potentially imposing a significant global cost that will fall disproportionately on the poor (p.35)”.
- “.... South Africa can manage the transition to a low-carbon economy at a pace consistent with government’s public pledges, without harming jobs or competitiveness (p.51)”.
- “By 2015 ... carbon-pricing mechanisms have been put in place (with appropriate exemptions). These are supported by a wider suite of mitigation policy instruments that target specific mitigation opportunities (p.214)”.
- “.... reduce carbon emissions from the electricity industry from 0.9kg per kilowatt-hour to 0.6kg per kilowatt-hour”.
- “... it is possible to both reduce greenhouse gas emissions from electricity production and still grow the minerals and mineral processing sectors”.

## Externalities

- “Externalities refers to situations when the effect of production (and) or consumption of goods and services imposes costs or benefits on others which are not reflected in the prices charged for the goods and services being provided”.
- Positive externalities (“spillovers”) : Research & Development, Health, e.g. immunization, basic education, road safety, street lighting, energy efficiency savings, etc.
- Negative externalities (“spillovers”) : Local air pollution, noise, congestion, water pollution, GHG emissions – climate change, etc.

# Options for Intervention

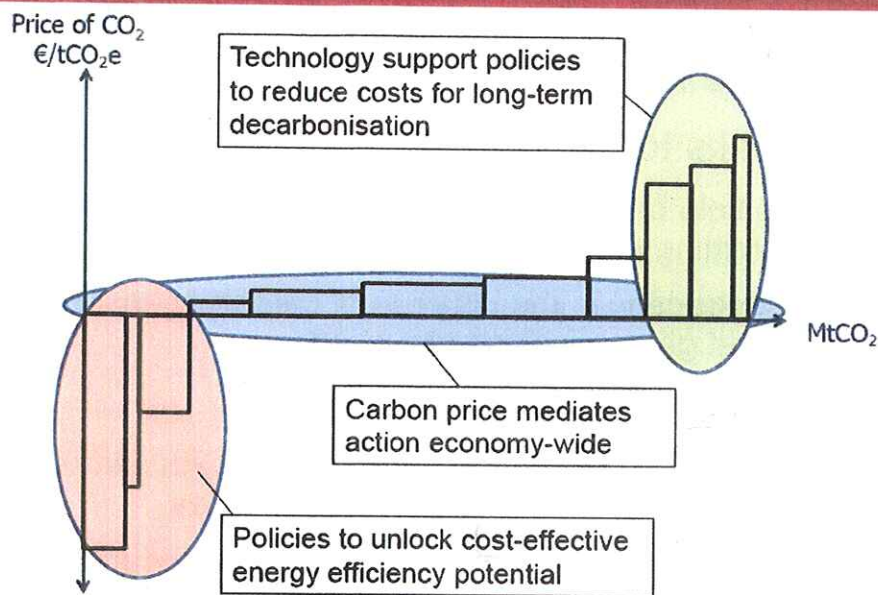
- **Command-and-control measures (Regulations):**
  - Use of legislative or administrative regulations that prescribe certain outcomes;
  - Usually target outputs or quantity, e.g. minimum ambient air quality standards, within which business must operate.
- **Market-based instruments:**
  - Policy instruments that attempt to internalise environmental externalities through the market by altering relative prices that consumers and firms face;
  - Utilise the price mechanism and complement command-and-control measures. Under certain circumstances MBIs are considered more efficient than command-and-control measures

# Rationale for a carbon tax / price

- A carbon tax is a means by which government can intervene by way of a market based instrument to appropriately take into account the social costs resulting from carbon emissions.
- A carbon tax seeks to level the playing field between carbon intensive (fossil fuel based firms) and low carbon emitting sectors (renewable energy and energy efficient technologies).
- Although this option does not set a fixed quantitative limit to carbon emission over the short term, a carbon tax at an appropriate level and phased in over time to the “correct level” will provide a strong price signal to both producers and consumers to change their behaviour over the medium to long term.
- “The introduction of a carbon price will change the relative prices of goods and services, making emission-intensive goods more expensive relative to those that are less emissions intensive. This provides a powerful incentive for consumers and businesses to adjust their behaviour, resulting in a reduction of emissions”.



## The Core Policy Mix – a carbon price, energy efficiency and technology policies (IEA 2011)



## Distributional concerns

- The poor and low-income groups are often hardest hit by negative environmental externalities.
- Important for environmentally-related fiscal policy to ensure that environmental instruments are pro-poor where possible, or at least do not place a disproportionate burden on low-income groups.
- A sustainable growth path should provide protection and support to the poor.
- Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

## Competitiveness impacts

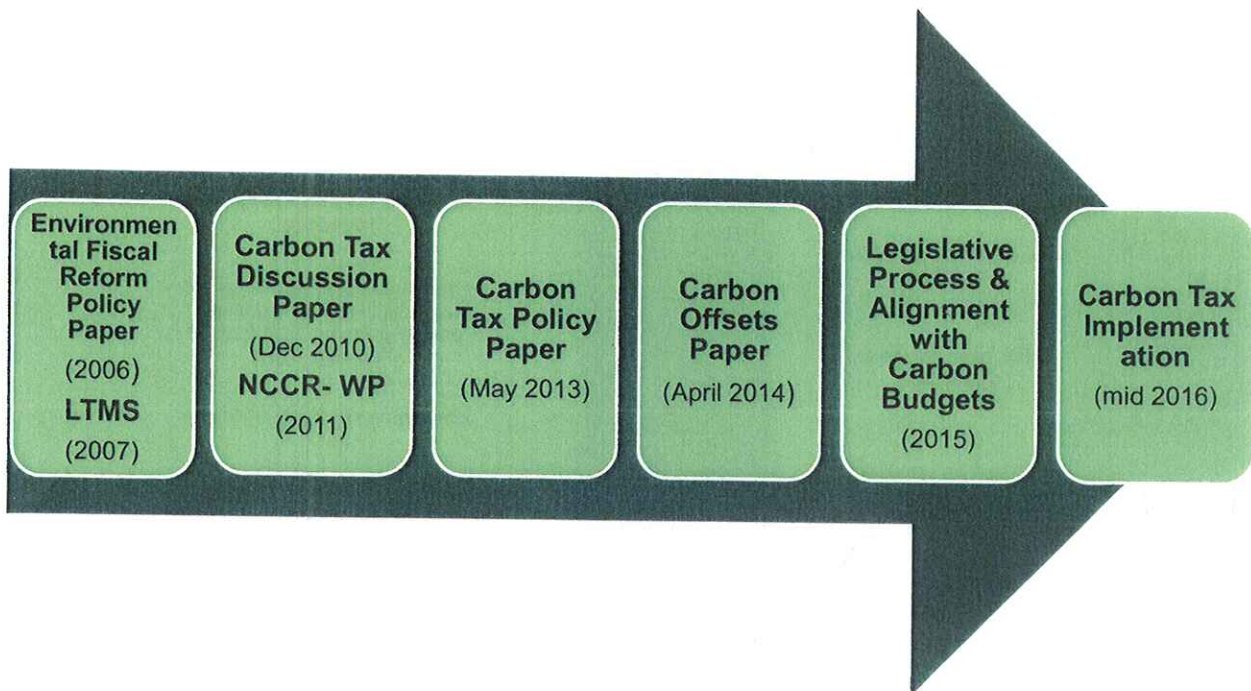
- Potential adverse impacts on international competitiveness of trade exposed industrial sectors.
- Carbon tax seeks to:
  - Level playing field between carbon intensive (fossil based firms) and low carbon emitting sectors.
  - Result in a contraction in the long run of carbon intensive sectors and contribute to net ghg emissions reductions.
- First mover competitive advantage gains:
  - Early adoption of low carbon intensive growth path can result in competitive advantage in low carbon technologies
  - Incentives created for research, development, innovation, energy efficiency etc.

## Border tax adjustments (BTAs)

- BTAs forms part of policy proposals by developed countries targeted at countries not participating in global emissions reduction agreements.
- What are BTAs?
  - Taxing imports according to emissions associated with their production at the same carbon price as domestically produced goods and services.
  - Imports will be taxed at a rate equal to the “domestic” carbon tax / carbon price.
- BTA's seek to achieve two objectives:
  - Provide competitiveness offsets for domestic producers.
  - Address possible carbon leakage concerns – reduction of emissions in a taxing country results in increases in emissions in other countries.
- BTA's
  - Will impact negatively on countries that don't take appropriate action to price carbon.
  - Might also impact negatively on global trade.



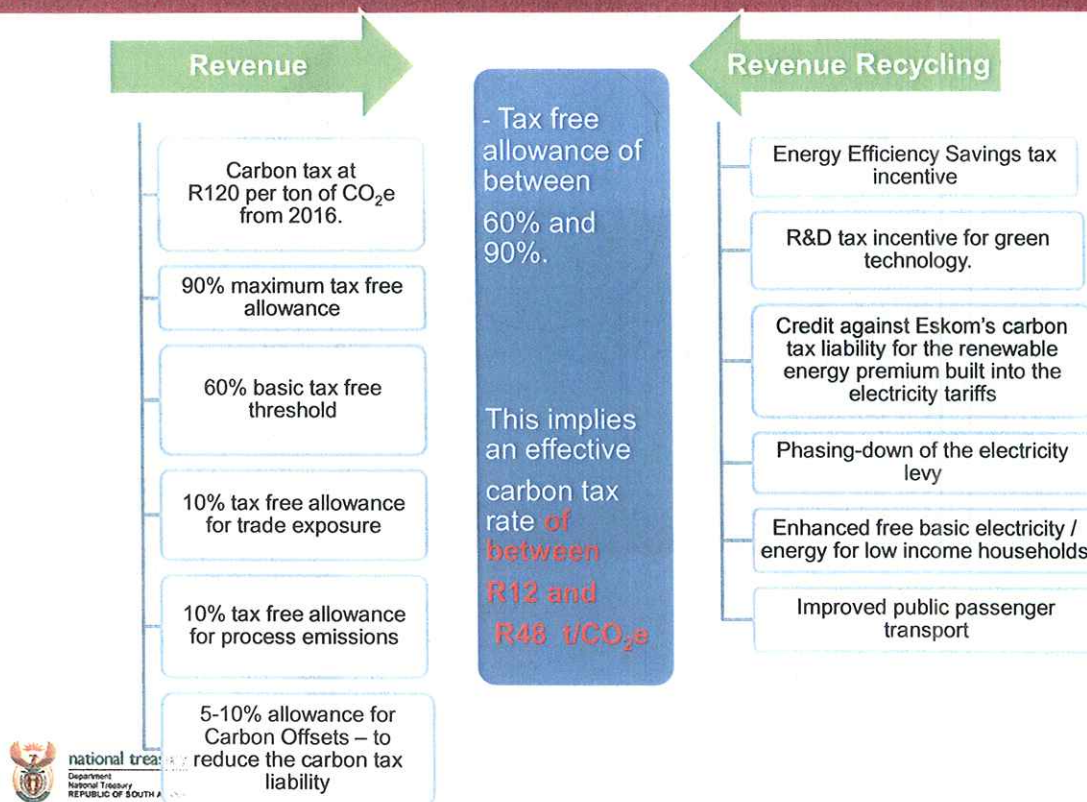
# Progression of Carbon Tax Policy Proposal



## Comments on 2013 Carbon Tax Policy paper - high level summary (115 submissions)

- **52.2%** support a carbon tax as a carbon pricing mechanism;
  - **26.1%** gave a yes and **26.1%** a qualified yes (yes-but) and propose that elements of the proposed carbon tax design be tweaked to improve the effectiveness of the tax and reduce potential negative consequences;
- **41.7%** (no-but) **acknowledge the need for a carbon price**, but either did not propose a specific measure to that end or felt that command and control measures and other instruments should be pursued (e.g. the implicit carbon price in the IRP2010, **an emissions trading scheme**, etc.) to achieve an effective reduction in GHG emissions;
- **94%** of the submissions (yes, yes-but & no-but groups) acknowledged the need for a carbon price;
- **6%** felt climate change cannot be linked to anthropogenic emissions and hence there was no need for carbon pricing.

# Overview of the proposed carbon tax policy package



19

## Proposed carbon tax design features (1)

- A carbon tax at R120 per ton of CO<sub>2</sub>e above the suggested thresholds with annual increases of 10 per cent until 2019/20 is proposed as from middle 2016 (1 July ?) .
- A basic tax-free threshold of 60 per cent is proposed.
- Additional tax-free allowance for process emission (10%)
- Additional relief for trade-exposed sectors (max 10%)
- Carbon offsetting allowed to reduce carbon tax liability (max 5% or 10%)
- The overall tax-free allowance for an entity will be capped at 90 per cent of actual verified emissions.
- Tax-free thresholds will be reduced during the second phase (2020 to 2025) and may be replaced with absolute emission thresholds thereafter.

20



## Carbon Tax Design: Tax Base Considerations (1)

- The carbon tax will cover all direct GHG emissions from sources that are owned or controlled by the relevant entity (Scope 1) emissions.
- These emissions relate to energy use (i.e. fuel combustion and gasification) and non-energy industrial processes.
- For all **stationary** direct and process emission sources - based on fuel inputs with approved emissions factors, or an approved transparent and verified monitoring procedure.
- For **non stationary** ghg emissions (i.e. liquid / transport fuels) the carbon tax to be incorporated into the current fuel tax regime – an add on.

## Carbon Tax Design: Tax Base Considerations (2)

- Entities that engage in activities that produce direct GHG emissions will be liable for the tax and will need to submit their tax returns based on their own / self assessment of emissions.
- Department for the Environment (DEA) is working on the development of mandatory reporting requirements of emissions in South Africa for economic sectors through the National Atmospheric Emissions Inventory System (NAEIS), which shall begin in January 2016.
- The NAEIS / DEA will help the verification process of the self reported GHG emissions for the purpose of the carbon tax liability. (for SARS' auditing purposes)

## Revenue Recycling (1)

- In general, “full” earmarking of specific tax revenue streams are not in line with sound fiscal management practices. However, the efficient recycling of revenue is important.
- Revenue recycling mechanisms for structural adjustment:
  - **tax shifting**: reducing or not increasing other taxes (potential phasing-down of the electricity levy)
  - a range of environmental **tax incentives**, including Energy efficiency savings tax allowance
  - **“soft” earmarking** (on budget allocations): enhanced free basic energy / electricity programme, improved public transport, Carbon Capture and Storage rebate

## Revenue Recycling (2) Tax Shifting and Tax Incentives

- **Businesses Incentives**
  - Energy efficiency savings tax incentive - Taxpayers that can prove EE savings from implementing an energy efficiency measures can claim the allowance (as from Nov 2013 already)
  - tax relief for CER credits (already in place – scope could be broaden)
  - Research and development tax incentive (already in place could be enhanced)
- **Electricity Sector**
  - Possible phasing-down of the current electricity levy (energy tax) could be considered.
  - The Integrated Resource Plan (IRP) outlines the envisaged energy mix and might therefore impose some indirect carbon price. The ‘actual’ implicit carbon price relating to renewable energy of the current electricity supply in any given year will be consider as a rebate against that year’s carbon tax liability.



## International competitiveness and carbon leakage

- A trade exposure allowance (providing a special maximum 10 percent tax-free threshold for EITI sectors) has been proposed.
- This concession will be structured as a graduated relief. Based on a firms exports as a percentage of output or sales - - an indication of their trade intensity.
- The measure however primarily focuses on the trade exposure of businesses and does not examine their emissions intensity.
- Further refinement might be required to ensure an optimal provision for international competitiveness relief for trade exposed and emission intensive sectors (scope 1 direct emissions).
- Some private sector stakeholders have requested that border carbon adjustments (BCAs) be explored; e.g. cement, steel, (and even electricity in future), etc.

## Alignment between DEROs / Carbon Budgets and the Carbon Tax Design

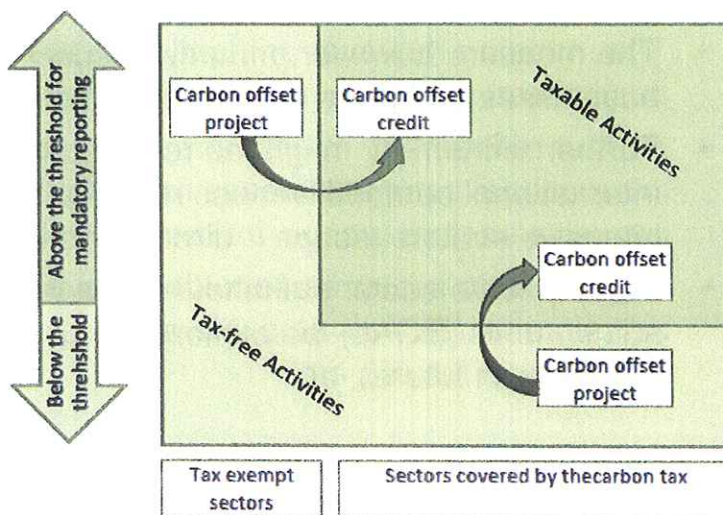
- A process of aligning the carbon tax design and the DEROs/CBs is under way and should be completed within the next few months.
- It is envisaged that during the first phase of the carbon tax (2016-2020) the carbon budgets will be indicative.
- During this period, the total emissions minus all the relative tax free thresholds (up to 90%) will be the reference point.
- During the subsequent tax phases (from 2021 onwards), the alignment could be designed around carbon budgets as absolute thresholds (absolute units of MtCO<sub>2</sub>-eq.), with the carbon tax applying to the emissions above that level.
- The alternative would be migrate to a emissions trading scheme (after say 2025) with the auctioning of allowances and some free allocations based on benchmarking



## Policy intent of carbon offsets scheme

The carbon offset component of the carbon tax has a dual purpose:

- To serve as a flexibility mechanism that will enable industry to deliver least cost mitigation, i.e. mitigation at a lower cost to what would be achieved in their own operations, and thereby lower their tax liability; and
- To incentivise mitigation in sectors or activities that are not directly covered by the tax and/or benefiting from other government incentives, especially, transport, AFOLU, waste.



## Carbon offsetting under the carbon tax

- It is proposed that initially carbon credits developed under certain internationally recognised carbon offset standards be permitted.
- A potential domestic standard would primarily cover the types of projects that are not well catered for under international standards.
- A specific set of **eligibility criteria for carbon offset projects** has been devised to ensure effective implementation of the offset mechanism:
  - Projects that generate carbon offset credits must occur **outside the scope of activities subject to the carbon tax**.
  - **Only South African based credits** will be eligible for use within the carbon offset scheme.
  - Carbon offset projects registered and / or implemented before the introduction of the carbon tax regime will be accepted subject to certain conditions and within a specific timeframe.
  - **Lists of both eligible and ineligible projects should be introduced.**



## Summary of comments on the 2014 Carbon Offsets Paper – 77 written submissions

- 53.2 per cent support (yes) the design of carbon offset scheme as outlined in the carbon offsets paper with some minor suggestions;
- 40.3 per cent support the use of carbon offsets, but propose amendments to the design features (yes-but).
- In total 93.5 per cent of the submissions either fully (yes) or with some conditions (yes-but) support the carbon offsets scheme;
- 6.5 per cent of respondents felt that carbon offsets scheme would undermine the declared objective of the carbon tax and should thus be scrapped (no).

## Carbon Tax Modelling



# Carbon Tax Modelling

- Several studies have been undertaken to estimate the impact of carbon pricing in South Africa.
- Generally the carbon tax will result in emission reductions, and depending on revenue recycling assumptions the impact on economic output growth will be neutral to a small negative.

## Carbon Price Modelling Studies in SA

	University of Pretoria, 2006	University of Cape Town for Long Term Mitigation Scenarios, 2007	World Bank, 2009	University of Cape Town, 2008	National Treasury, 2010
Type & scope of modelling	Static CGE model based on 2000 SAM	Static CGE Model based on 2000 SAM	Static CGE Model based on 2003 SAM	DCGE model based on 2000 SAM	Dynamic CGE model based on 2005 SAM
Carbon pricing modelled	Tax rate of R35 (\$3.8) per tCO <sub>2</sub> emissions as: <ul style="list-style-type: none"> <li>• Carbon tax</li> <li>• Fuel tax</li> <li>• Electricity tax</li> <li>• Energy tax</li> </ul>	Tax rate simulations of R25 (\$2.73) to R1000 (\$109) per tCO <sub>2</sub> . Energy input tax imposed on coal, crude oil and gas	Tax rate of R96 (\$10) to R165 (\$18) per tCO <sub>2</sub> : <ul style="list-style-type: none"> <li>- Pure carbon tax (based on carbon content)</li> <li>- Excise tax on energy inputs (coal, gas and crude oil)</li> <li>- Sales tax on energy-intensive sectors</li> </ul>	Tax simulations as of 2007 study, but imposed as a sales tax on used of commodities producing high levels of emissions to impact economic behaviour	Tax rate of R100 (\$11), R150 (\$16.5) & R200 (\$22) per tCO <sub>2</sub> : <ul style="list-style-type: none"> <li>- Tax imposed upstream on fossil fuel inputs</li> <li>- Tax is introduced gradually over a 10-year period (from 2012).</li> </ul>



# Carbon Price Modelling Studies in SA

	University of Pretoria, 2006	University of Cape Town for Long Term Mitigation Scenarios, 2007	World Bank, 2009	University of Cape Town, 2008	National Treasury, 2010
Type & scope of modelling	Static CGE model based on 2000 SAM with overall Leontief production and constant elasticity of substitution (CES) sub structures	Static CGE Model based on 2000 SAM + energy modelling exercise that considers mitigation scenarios for the energy system by employing a Markal model	Static CGE Model based on 2003 SAM and with zero substitution through Leontief technology of fixed coefficients or combining inputs through CES function	Dynamic CGE model based on 2000 SAM – models structural shifts, energy efficiency impact and investment required	Dynamic CGE model - contains a series of production functions (disaggregated by sector) & series of household demand functions (disaggregated by income group)
Carbon pricing modelled	Tax of R35 per tCO <sub>2</sub> emissions as: <ul style="list-style-type: none"> <li>Carbon tax</li> <li>Fuel tax</li> <li>Electricity tax</li> <li>Energy tax</li> </ul> (All taxes modelled have a comparable effect on emissions.)	Tax simulations of R25 to R1 000 per tCO <sub>2</sub> . Energy input tax imposed on coal, crude oil and gas	Tax of R96 to R165 per tCO <sub>2</sub> : <ul style="list-style-type: none"> <li>Pure carbon tax (based on carbon content)</li> <li>Excise tax on energy inputs (coal, gas and crude oil)</li> <li>Sales tax on energy-intensive sectors</li> </ul>	Tax simulations as of 2007 study, but imposed as a sales tax on used of commodities producing high levels of emissions to impact economic behaviour	Tax of R100, R150 and R200 per tCO <sub>2</sub> : <ul style="list-style-type: none"> <li>Tax imposed upstream on fossil fuel inputs</li> <li>Tax is introduced gradually over a 10-year period (from 2012).</li> </ul>

# Carbon Price Modelling Studies in SA

	University of Pretoria, 2006	University of Cape Town, 2007	World Bank, 2009	University of Cape Town, 2008	National Treasury, 2010
Revenue recycling measures modelled	<ul style="list-style-type: none"> <li>Direct tax break, labour and capital</li> <li>Indirect tax breaks to all households (VAT)</li> <li>Reduction in the price of food</li> </ul>	<ul style="list-style-type: none"> <li>Production subsidies for nuclear or renewable energy and biofuels</li> <li>Food subsidies</li> <li>General VAT &amp; PIT subsidies</li> <li>Household transfers</li> </ul>	<ul style="list-style-type: none"> <li>Reductions in distortionary indirect taxes: production taxes, sales taxes, value-added taxes, and import tariffs</li> <li>Lump sum transfers to households</li> </ul>	Examines scenarios associated with the Long Term Mitigation Scenarios modelling	<ul style="list-style-type: none"> <li>Recycling: VAT, PIT, CIT, transfers to households and/or government investments</li> </ul>
Results	<ul style="list-style-type: none"> <li>Model finds potential for double or triple dividends (GHG reduction, GDP growth &amp; poverty reduction) if revenue is recycled through lowering existing taxes</li> <li>All taxes yield an emissions dividend, with carbon tax being the most effective</li> <li>The food tax hand-back reduces poverty more than other recycling measures.</li> </ul>	<ul style="list-style-type: none"> <li>A tax of R75 per tCO<sub>2</sub> and increased to around R200 per ton seems appropriate.</li> <li>Food subsidy yields the most positive result, with marginal increases in GDP at low levels of taxation.</li> <li>Revenue recycling schemes (biofuel, food VAT) have a positive effect on employment.</li> <li>Tax &gt;R600 per ton: Coal to liquid plants not viable.</li> </ul>	<ul style="list-style-type: none"> <li>All taxes drive a 15% reduction in CO<sub>2</sub> emissions</li> <li>A direct carbon tax imposes the lowest distortion compared with taxes on energy or energy-intensive sectors.</li> <li>If revenue is recycled to reduce pre-existing tax distortions, the net welfare cost becomes negligible;</li> <li>The impact on the GDP or consumption is generally less than 1 per cent</li> </ul>	<ul style="list-style-type: none"> <li>If CO<sub>2</sub> tax is combined with tax relief or re-investment of additional revenue, economic impact is positive</li> <li>CO<sub>2</sub> tax is effective in reducing CO<sub>2</sub> emissions</li> <li>Employment for semi- and unskilled labour rise with increase in investment</li> </ul>	<ul style="list-style-type: none"> <li>With R200 tax emissions decline by 34% by 2020 and over 42 per cent by 2025, relative to the baseline.</li> <li>If carbon tax revenues are recycled via VAT rate, it leads to a smaller negative impact on GDP (-0.2) by 2035.</li> <li>Reductions in CIT or PIT see the GDP decrease by 0.4 per cent by 2035.</li> <li>Recycling revenue by increasing government savings and investment results in positive gains.</li> </ul>



## Summary of results, National Treasury 2010

- The overall impact of a carbon tax depends largely on how government recycles the carbon revenues as well as the availability and affordability of greener technologies.
- The overall impact on output when revenues are recycled through decreasing other direct or indirect taxes is small negative. Any environmental benefits from emissions reductions are not taken into account as SA is a climate taker.
- Recycling revenue by increasing government savings and investment has large positive gains. Using the revenues to increase transfers to households marginally reduces inequality but results in a small net reduction in GDP as most of the additional revenues are consumed.
- Carbon taxes causes a marginal reduction in inequality. It reduces the profits of carbon intensive sectors and hence the rents which accrue to the top deciles of the income distribution.

## Summary of results, National Treasury 2010

- The carbon tax serves as an economic signal to shift resources away from carbon intensive sectors to greener sectors of the economy. These sectors are generally more labour intensive thus having a positive impact on employment.
- The smooth transition to a greener economy depends on the affordability and availability of alternative technologies and production inputs. Any policy that raises the cost of these technologies or decreases their availability in the domestic market will increase adjustment costs and retard the transition.
- Substantial potential gains from avoiding possible retaliatory tariffs and sanctions as well as lower demand for dirty SA products.
- Need to focus on how to optimize the design, the revenue recycling and the complementarity with other policies.



# World Bank, Partnership for Market Readiness Modelling (preliminary estimates) (2015)

Modelling shows that the implementation of the carbon tax will result in only a marginal reduction in economic growth but with significant environmental and other co-benefits.

## Environmental Impact

- The carbon tax as currently proposed can reduce South Africa's GHG emissions by between 35 percent and 45 percent by 2035.

## Economic impact

- The impact will depend on the specific implementation pathway of the tax (including phasing out of the tax free thresholds) as well as the choice of revenue recycling.
- Estimated impact on economic output of around 1.5% below business as usual (baseline) over the 2016 - 2035 modelling period.
- Any negative impact on economic output can be mitigated by the effective recycling of revenues to ensure a smooth transition to a low-carbon economy.
- The phasing down of the electricity levy and other revenue recycling measures will significantly reduce the impact of the carbon tax on electricity prices.

## Summary

## Summary and next steps

- Policy development & public consultation with regard to a carbon price / carbon tax in South Africa commenced in 2010
- The Climate Change Response White Paper in 2011 provided the broader policy context for a carbon price / tax as one of a suite of measures to address the challenge of climate change and the transition to a low-carbon economy
- Concerns about the impact of higher electricity prices on low income households and on the international competitiveness of South African firms (especially the mining & manufacturing sectors) are uppermost.
- The emission trading schemes in China and the carbon tax initiatives in Mexico, Chile and other developed and emerging should be noted.
- The Carbon Tax Bill will be submitted to Cabinet for approval for publication for public comments within the next month.

## Thank you

## Questions?