ENVIRONMENTAL FISCAL REFORM IN SOUTH AFRICA

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- Environmental fiscal reform in South Africa
  - Addressing market failures
  - Tax design considerations
  - Tax reform options
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Introduction – Policy Context

- South Africa has developed important policy frameworks and strategies that seek to address environmental challenges such as climate change and ensure a coordinated, consistent government policy response. These include:
  - **National Climate Change Response Policy**
  - **National Strategy for Sustainable Development and Action Plan** which identifies **5 strategic priorities**:
    - Enhancing systems for integrated planning and implementation
    - Sustaining our ecosystems and using natural resources efficiently
    - Towards a green economy
    - Building sustainable communities
    - **Responding effectively to climate change**
- **Its not just the quantity of growth but also the quality of growth that matters – environmental resources should be managed sustainably.**

Economic Rationale for Government Intervention

ENVIRONMENTALLY-RELATED MARKET FAILURES:

- **Provision of public goods**: Non rival and non-excludable in consumption.
- **Negative externalities:**
  - **Occurs when an individuals action has an impact on others and the costs of these impacts are not reflected in the price of a good or service. Can result in resource under-pricing and therefore overconsumption.**
- **Information asymmetry:** Occurs when during a transaction, one party has better information than the other or information is costly to obtain. In new, rapidly changing markets, such as for green technologies, some participants will lag behind current information.
- **Research, development and technology innovation**: may not be possible for a firm to capture the full benefits of an innovation as the information can be readily passed on at a minimal cost.

Policy Instruments to Support Sustainable Development – Sustainable production and consumption patterns

Regulatory / Command and Control Instruments	Economic / Market Based Instruments	Research and education instruments	Cooperation instruments	Information instruments
Norms and standards	**Environmental taxes**	Research and development	Technology transfer	Consumer advice services
Environmental liability	**Fees and user charges**	Education and training	Voluntary agreements	Sustainability reporting
Environmental control and enforcement	Removing environmentally harmful subsidies (perverse incentives)			Environmental quality targets and environmental monitoring
	Environmental financing			Eco labelling
	Subsidies			Information centres
	Tradable certificates / permits			

Environmental Fiscal Reform

- An **Environmental Fiscal Reform Policy Paper** (published in April 2006) provides a foundation to build on and support environmentally related initiatives in South Africa.
  - ❑ Maintenance of a coherent tax policy framework;
  - ❑ Development of a coherent process and framework to consider and evaluate environmental taxes; and
  - ❑ Consider both environmental and revenue outcomes and the "double-dividend" hypothesis.
- **Key principles of taxation**:
  - ❑ Efficiency
  - ❑ Equity
  - ❑ Simplicity
  - ❑ Transparency & certainty
  - ❑ Tax buoyancy

Criteria / Design considerations for environmentally related taxes, 2006 paper

- **Environmental effectiveness** – linked to the environmental externality and aim for best design possible;
- **Tax rate & revenue** – tax rate to be phased-in, revenue use in terms of government priorities;
- **Support for the tax** – public support and acceptance is important (e.g. tax payer morality);
- **Legal, technical & administrative feasibility**:
  - *Define taxable commodity - tax base*; or nature of incentive;
  - *Setting the tax rate;*
  - *Tax avoidance and evasion;*
  - *Collection costs; and*
  - *Compliance costs.*
- **Competitiveness impacts** – may require phase in approach to allow adequate time for adjustments;
- **Distributional impacts** – compensating measures may need to be considered; and
- **Adjoining policy areas** – is the instrument capable of contributing to other social and economic objectives?

Internalisation of Externalities – Competitiveness Issues

- Internalising negative externalities comes at a price.
- Aims to **internalise externalities to a socially optimal level cannot always be achieved immediately**.
- There are "**win-win" cases** where more environmentally informed business practices could lead to corresponding improvements in competitiveness.
- Improved environmental performance may also improve access to certain markets – notably in the export sectors.
- However, these benefits are not immediately possible in all cases.
  - **A phased approach taking account of potential impacts on competitiveness must be adopted to give specific sectors time to adjust**.

Distributional Issues – Impact on the Poor

- 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.
- Tradeoffs need to be well managed.

Potential for achieving the double dividend and tax shifting

- Taxes on labour (income and pay-roll taxes) are necessary to raise revenue for public spending programmes.
- Argued that if additional revenues can be generated through environmentally-related taxes, taxes on labour and the associated distortions this brings with it can be reduced.
- This **concept of *taxing bads*** (such as environmental pollution) and ***reducing taxes on goods*** (e.g. labour) has been termed the ***double-dividend hypothesis*.**
  - asserts that a win-win situation could be achieved in that not only is an **improvement in environmental quality secured** (the first dividend), but gains in **economic efficiency and employmen**t could also be realised (the second dividend).
  - **Tax shifting** can effectively minimise the overall tax burden on affected sectors and still create required behavioural incentives.

OPTIONS FOR REVENUE USE

- How the revenues are used could be an important issue where revenue-raising potentials are significant. There are essentially **four different uses** (although not necessarily mutually exclusive) to which the revenues could be put:
  - Revenues accrue to the fiscus and are **allocated to priority spending** needs **through the normal budgetary process**;
  - Revenues accrue to the fiscus and are **used as part of a tax-shifting exercise** to reduce the marginal tax rates of other distortionary taxes such as taxes on labour;
  - Revenues are **earmarked or *ring-fenced* for spending on specific environmental programmes** (*explicit / hard* earmarking); and/or
  - Revenues accrue to the fiscus but **there is some form of *agreement* that spending on environmental programmes will be increased through on-budget channels (*implicit / soft* earmarking)**.

Revenue recycling measures

- Revenue recycling
- Revenue neutrality
- Earmarking of revenue
- Environmental Funds

- For many stakeholders, there is a link between revenues from environmentally-related taxes and spending on the environment.
- In general, **"full" earmarking is not in line with sound fiscal management practices**.
- Need to consider different incentive / revenue use options {revenue recycling such as "soft" earmarking (on budget allocations) or reducing (or not increasing) payroll taxes}.

REFORMS TO EXISTING ENVIRONMENTALLY RELATED TAXES

- **General Fuel Levy**
  - Petrol
  - Diesel
  - Biodiesel
- **Motor Vehicle Taxes and Fees**
  - Excise duty – relatively low currently and based on the value of a vehicle.
  - Reforms to incorporate environmental criteria such as CO_2 emissions, engine size and / or energy efficiency.
  - Vehicle licencing fees
- **Solid Waste Management** – promoting the idea of the waste management hierarchy. Possible instruments include:
  - Product taxes (plastic bags levy, incandescent light bulbs, tyres etc.)
  - Deposit refund schemes (glass bottles)
  - Disposal taxes (landfill charges and / or taxes?)

NEW ENVIRONMENTALLY-RELATED TAX INSTRUMENTS

- **Electricity**
  - Electricity consumption tax; and/or
  - Fossil fuel input tax.
- **Water supply and use**
  - tax instruments probably less appropriate than alternative allocative instruments such appropriate pricing and / or tradable permits;
- **Waste water**
  - DWS has already taken the initiative in this area and is in the process of developing the Waste Water Discharge Charge System (WDCS);
- **Air Quality Act**
  - Includes penalties or non-compliance fees.

Overview of Environmentally Related Taxes

- Several environmentally related taxes have been and are proposed for implementation:
  - **Proposed Carbon Tax** – aim of the carbon tax is to put a price on the environmental and economic damages caused by excessive emissions of greenhouse gases
  - **Electricity generation levy –** applies to non-renewable based electricity generation including fossil and nuclear based generation
  - **Plastic bag levy** – aims to counter the dispersion of plastic bags that end up as wind-blown litter or in waste facilities
  - **Incandescent globe tax** – to encourage the use of more efficient compact fluorescent bulbs and reduce electricity demand (R6/light bulb)
  - **Motor vehicle CO_2 emissions tax** – aims to encourage consumers to use more fuel-efficient, low-carbon-emitting vehicles, and manufacturers to improve fuel efficiency
  - **Fuel taxes –** raise general revenue, fund compensation for road accidents, and help to address pollution and congestion
  - **Tyre Levy** – intended to reduce waste, while encouraging reuse, recycling and recovery, and discouraging disposal into landfills (R2,30/kg tyre)

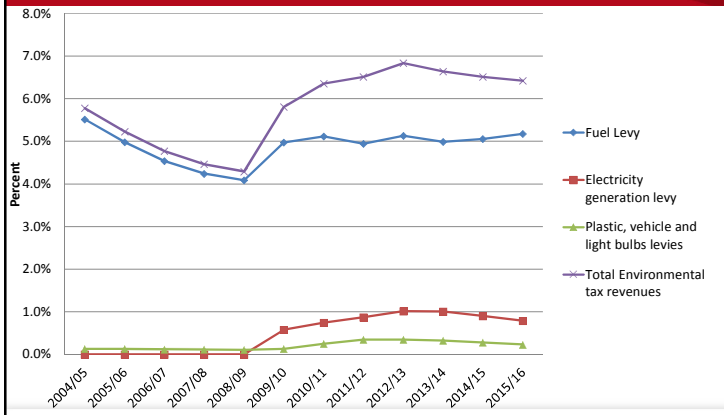
Direct and indirect tax instruments

- **Direct Taxes** (income)
  - Personal Income Tax / Individuals
  - Corporate Income Tax
  - Dividend withholding tax (Previously Secondary Tax on Companies)
  - Estate Duty
  - Donations Tax
  - Payroll Taxes
    - Skills Development Levy
    - Unemployment Insurance Fund Contributions
- **Indirect Taxes** ("consumption")
  - Value Added Tax (VAT)
  - Excise Duties (Specific and Ad Valorem)
  - Custom Duties
  - Transfer Duties (Properties)
  - Securities Transfer Tax (Financial transactions - shares)
  - **Environmentally-related taxes**
    - Fuel Levy
    - Electricity levy – non-renewable generation
    - Plastic Bag Levy
    - Tax on incandescent light bulbs
    - Motor vehicle CO_2 emissions tax

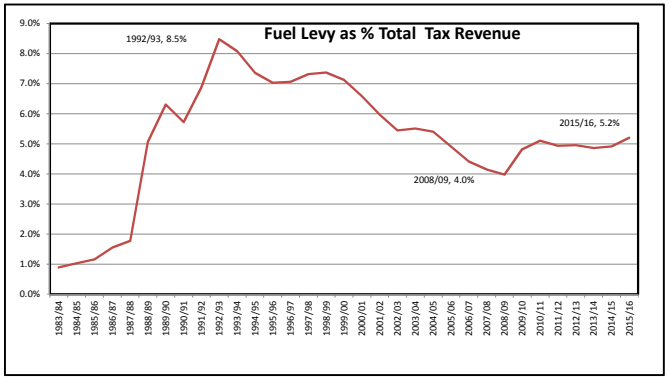
Revenues from Environmental Taxes (2004/05 – 2015/16)

Year Revenues (R'000s)	Fuel Levy	Air passenger departure tax	Plastic bag levy	Electricity generation levy	CO2 tax motor vehicle emissions	Incandescent light bulb levy	Environmental Tax Revenues (total)
2004/05	19 190 431	412 176	41 214	0	0	-	**20 097 211**
2005/06	20 506 666	458 158	61 385	0	0	-	**21 545 752**
2006/07	21 844 641	484 823	75 128	0	0	-	**22 964 543**
2007/08	23 740 511	540 635	86 314	0	0	-	**24 994 409**
2008/09	24 883 776	549 365	78 563	0	0	-	**26 139 632**
2009/10	28 832 536	580 326	110 510	3 341 691	0	63 880	**33 683 660**
2010/11	34 417 577	647 810	258 222	4 996 366	625 891	151 083	**42 779 953**
2011/12	36 602 263	762 416	53 832	6 429 721	1 617 353	143 787	**48 186 761**
2012/13	40 410 389	873 060	150 817	7 983 940	1 567 382	136 792	**53 850 430**
2013/14	43 684 654	878 697	169 243	**8 818 930**	**1 711 179**	71 802	**58 165 426**
2014/15	48 466 532	906 575	174 298	8 648 170	1 483 337	90 877	**62 424 877**
2015/16	**55 607 288**	941 226	183 358	**8 471 774**	**1 276 880**	51 801	**68 985 590**

Environmental Tax Revenues (% of total tax revenues)



General fuel levy revenue



Year-on-year percentage increase in Environmentally related tax revenues

Year	Fuel Levy	Air passenger departure tax	Plastic bag levy	Electricity generation levy	CO_2 tax motor vehicle emissions	Incandescent light bulb levy	Environmental Tax Revenues (total)
2005/06	6.9%	11.156%	48.9%	0	0	0	7.21%
2006/07	6.5%	5.820%	22.4%	0	0	0	6.59%
2007/08	8.7%	11.512%	14.9%	0	0	0	8.84%
2008/09	4.8%	1.615%	**-9.0%**	0	0	0	4.58%
2009/10	15.9%	5.636%	40.7%	0	0	0	28.86%
2010/11	19.4%	11.629%	133.7%	49.5%	0	136.5%	27.01%
2011/12	6.3%	17.691%	**-79.2%**	28.7%	158.41%	**-4.8%**	12.64%
2012/13	10.4%	14.512%	180.2%	24.2%	**-3.09%**	**-4.9%**	11.75%
2013/14	8.1%	0.646%	**12.2%**	10.5%	9.17%	**-47.5%**	8.01%
2014/15	10.9%	3.173%	**3.0%**	**-1.9%**	**-13.31%**	26.6%	7.32%
2015/16	14.7%	3.822%	5.2%	**-2.0%**	**-13.92%**	**-43.0%**	10.51%

Policy Context for the Carbon Tax

- South Africa **signed** the Paris Agreement in April 2016 and **endorsed** the submission of its Nationally Determined Contribution (NDC - previously the Intended Nationally Determined Contributions).
  - The NDC requires that **emissions peak in 2020 to 2025, plateau for a ten year period from 2025 to 2035 and declines from 2036 onwards**.
  - GHG emissions expected to range between **398 and 614 MT CO_{2eq}**
- The **Paris Agreement** will require sizable reductions in energy-related carbon dioxide (CO2) in large emitters, including in developing economies. As part of South Africa's submission of the NDC, the **carbon tax** was noted as an important component of the country's **mitigation policy** strategy to lower greenhouse gas emissions.
  - The carbon tax policy forms an integral part of the **climate change** response policy package under the **National Climate Change Response Policy (NCCRP) of 2011**, and is recognised as an important instrument to ensure cost effective greenhouse gas (GHG) mitigation in the **National Development Plan**.
- **Carbon pricing** is environmentally effective. Pricing carbon increases the prices of carbon intensive goods and services and thereby promotes and strikes the **efficient balance** across the entire range of mitigation opportunities.

CARBON TAX DESIGN FEATURES: Rate, Tax-free Allowances and Recycling Measures

Revenue

- **Carbon tax at R120 per ton of CO_2e**
- 60% basic tax-free threshold
- Max of 10% tax-free allowance for trade exposure
- 10% tax-free allowance for process and fugitive emissions
- **Up to 5% performance allowance**
- 5% tax-free allowance for complying with carbon budgets information requirements
- **5 or 10% allowance for Carbon Offsets – to reduce the carbon tax liability**

- Tax-free allowances of **60-95%** - effective tax rate of **R6 - R48 t/CO_2e**
- No impact on electricity prices in the first phase

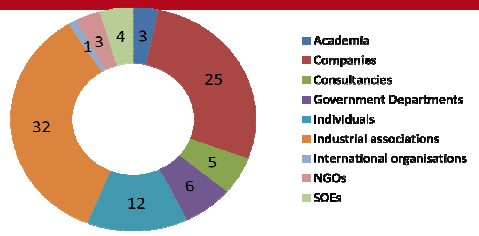
Revenue Recycling

- Energy Efficiency Savings tax incentive
- Credit against Eskom's carbon tax liability for the renewable energy premium built into the electricity tariffs
- Credit for the electricity levy
- Support for the installation of solar water geysers
- Enhanced free basic electricity / energy for low income households
- Improved public passenger transport & support for shift of freight from road to rail

Carbon Tax Policy Process - timeline

- **Environmental Fiscal Reform Policy Paper** (2006) **LTMS** (2007)
- **Carbon Tax Discussion Paper** (80 comments) (Dec 2010) **NCCR- WP** (2011)
- **Carbon Tax Policy Paper** (115 comments) (May 2013)
- **Carbon Offsets Paper** (77 comments) (April 2014)
- **Draft Carbon Tax Bill** (91 comments) & **Draft Regulations on Carbon Offset** (65 comments) (2015-16)
- **Revised Carbon Tax Bill to be published** 2017

Draft Carbon Tax Bill: Main Comments



1. **Electricity pricing and electricity levy;**
2. **Design of the trade exposure allowance;**
3. **The socio-economic impact of the carbon tax;**
4. **Alignment of the carbon tax policy with other climate change policies;**
5. **GHG Reporting framework and tax administration.**

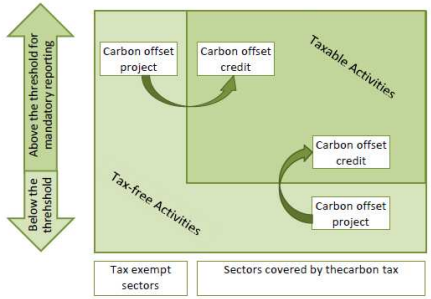
Coverage of tax and tax-free allowances

	GHG Emissions			
	Combustion	Process	Fugitive	
Tax free allowances				
Basic	60	60	60	
Process emissions	n/a	10	n/a	
Fugitive emissions	n/a	n/a	10	
Trade exposed	10	10	10	Max = 10
Performance based (Z - factor)	5	5	5	Max = 5
Carbon budget	5	5	5	
Offsets	10	5	5	
Total	**90**	**95**	**95**	

Carbon Offset Allowance – Policy rationale

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.
- The **offsets are limited to either 5 or 10 per cent so as to ensure that firms make real efforts to mitigate their own emissions.**



Carbon offset allowance (cont.)

- In 1st phase, permitted carbon credits should be developed under:
  - Clean Development Mechanism (CDM),
  - Verified Carbon Standard (VCS),
  - Gold Standard (GS);
- Allowance for potential domestic standard to cover project types not well catered for under international standards e.g. AFOLU;
- Specific **eligibility criteria for carbon offset projects** for effective implementation of the offset mechanism in South Africa includes:
  - Project activities 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.

Administration of the Tax

- The carbon tax will be implemented by the South African Revenue Service (SARS).
- The DEA will maintain a mandatory GHG inventory database. Regulations for mandatory reporting of GHGs have been published.
- The Department of Energy (DoE)'s reporting on energy use data will also be incorporated into the National Atmospheric Emissions Information System (NAEIS) maintained by DEA.
- SARS will liaise with DEA and will be able to access the GHG inventory and the NAEIS.
- The DoE currently hosts the Designated National Authority (DNA), which will be responsible for administering the carbon offset scheme.

Motor Vehicles Emissions Tax: Economic Rationale

- **Policy paper recognises the role for motor vehicle tax reforms to help achieve environmental objectives:**
  - Although the general fuel levy could be reformed to better contribute to air quality objectives, the limitations of this instrument must be recognised. In particular, it is difficult to create more targeted incentives.
  - **Supplementary reforms in vehicle taxation** could be used to this end and help **to incentivise** the introduction of **vehicles that produce fewer emissions and with increased fuel efficiency**.
- "… there is a **rationale for combining emissions standards** with **fuel taxes**, **differentiated vehicle taxes** and improved consumer information.
  - **Differentiated vehicle ownership and circulation taxes** can be used to guide consumers to purchase vehicles that make use of technology advances to improve fuel efficiency rather power, weight and comfort."
- **Reforms would need to distinguish between the environmental costs imposed by different vehicles.**
  - A range of different criteria including **vehicle type**, **fuel type**, and / or **emissions** could be used.
  - The external environmental costs resulting from the use of medium and heavy commercial vehicles are likely to be much higher than for passenger or light commercial vehicles, consideration could also be given to include these categories of vehicles in the excise duty net.

Tax design considerations

- **Defining the tax base**
  - Engine capacity
  - Fuel efficiency (l/km)
  - CO_2 emissions (g/km)
- **Scope of tax**
  - Motor vehicle coverage taking cognisance of the availability of vehicle certified emissions data.
- **Rate of tax**
- **Emissions threshold** above which emissions become taxable
  - Low emissions threshold means a broader tax base and lower rate of tax.
- Tax on **Purchase / Acquisition / Registration**
  - Circulation / Annual (license fee)
- The DME and NAAMSA had also developed the compulsory **Vehicle fuel economy and CO_2 Emissions Labeling scheme** involving the display of labels on motor vehicles at point of sale.
  - Label seeks to influence behaviour by providing information to new vehicle (car) buyers of the emissions and environmental damages.

Implementation of vehicle emissions tax

- **Emissions threshold**
  - Threshold set at 120g CO_2 /km for passenger vehicles
  - Threshold set at 175g CO_2 /km for double cabs
- **Tax rates**
  - **Passenger cars**: **R100 for each gram of CO_2** emitted above **120g CO_2 /km**
  - If emissions data is unavailable, a proxy formula to determine level of emissions will apply and include a significant penalty provision as follows:
    - CO_2 emissions (g/km) = 120 + (0.05 * engine capacity in cm^3) (for vehicles of engine capacity < 3000 cm^3)
    - CO_2 emissions (g/km) = 175 + (0.05 * engine capacity in cm^3) (for vehicles of engine capacity > 3000 cm^3)
  - **Motor vehicles for the transport of goods (87.04 (tariff subheading; 151.02 (item):** double-cab; a vehicle mass not exceeding 2 000 kg or a G.V.M. not exceeding 3 500 kg, or of a mass not exceeding 1 600 kg or a G.V.M. not exceeding 3 500 kg per chassis fitted with a cab
    - **Double cabs: R140 for each gram of CO_2** emitted **above 175g CO_2 /km**
    - Proxy / penalty if certified emissions unavailable:

      CO_2 emissions (g/km) = 195 + (0.07 x engine capacity in cm^3)

Waste management regulatory framework

- The National Environmental Management: Waste Act (No. 59 of 2008) is the principal legislation guiding waste management in South Africa.
- Following the enactment of the Waste Act, the Department of Environmental Affairs finalised the National Waste Management Strategy which was approved for implementation by Cabinet in November 2011.
- The Waste Act and the strategy are informed by the **Waste Management Hierarchy** which encourages
  - reduce or waste minimisation,
  - reuse,
  - recycling,
  - waste treatment and
  - finally disposal (to landfills), provided that all other options have been explored and exhausted.
- **Extended producer responsibility:** regulates that industry is responsible beyond the point of sale for particular products that have toxic constituents or pose waste management challenges, especially where voluntary measures have failed.

Plastic bag levy

- The former Department of Environmental Affairs and Tourism initiated discussions in early 2000 to ban the use of plastic bags, of which South Africa consumes about eight billion annually.
- As part of a compromised solution, Government, labour and industry entered into a memorandum of agreement to address the plastic bag waste problem. The specific policy measures included:
  - a ban on the use of thin filmed non-reusable plastic bags, and charging for plastic bags by retailers
  - The levy was introduced at a modest 3 cents per bag in 2004, payable by plastic bag manufacturers and importers (more than 80 micrometres)
    - Levy increased to 4 cents per bag from 1 April 2009 and to 6 cents per bag on 1 April 2013
    - adjusted to 8c/bag in 2016.
- Challenges – use of revenue

Concluding remarks

- Recognise the important role for environmental taxes to help achieve environmental objectives in a least cost manner.
- The design of environmental taxes need to take into account potential adverse impacts on industry competitiveness and poor and low income households. Compensatory measures may need to be considered.
- The ex post evaluation of the impacts of environmental taxes will be important especially in the context of climate change:
  - Linking carbon taxation with NDCs – is it possible to isolate the impacts of these taxes on emissions reductions?
- Policy alignment and integration will be important considerations to ensure that policies are complementary and enhance the economic incentive effects

Thank you.

Environmental tax revenues as percentage of total tax revenue

Year	Fuel Levy	Air passenger departure tax	Plastic bag levy	Electricity generation levy	CO2 tax motor vehicle emissions	Incandescent light bulb levy	Total Environmental tax revenues
2004/05	**5.5%**	0.1%	0.0%	0.0%	0.0%	0.0%	5.8%
2005/06	5.0%	0.1%	0.0%	0.0%	0.0%	0.0%	5.2%
2006/07	4.5%	0.1%	0.0%	0.0%	0.0%	0.0%	4.8%
2007/08	4.2%	0.1%	0.0%	0.0%	0.0%	0.0%	4.5%
2008/09	**4.1%**	0.1%	0.0%	0.0%	0.0%	0.0%	**4.3%**
2009/10	5.0%	0.1%	0.0%	0.6%	0.0%	0.0%	5.8%
2010/11	5.1%	0.1%	0.0%	0.7%	0.1%	0.0%	6.4%
2011/12	4.9%	0.1%	0.0%	0.9%	0.2%	0.0%	6.5%
2012/13	5.1%	0.1%	0.0%	**1.0%**	0.2%	0.0%	**6.8%**
2013/14	5.0%	0.1%	0.0%	**1.0%**	0.2%	0.0%	6.6%
2014/15	5.1%	0.1%	0.0%	0.9%	0.2%	0.0%	6.5%
2015/16	**5.2%**	0.1%	0.0%	**0.8%**	0.1%	0.0%	6.4%
Average	**4.9%**	**0.1%**	**0.0%**	**0.5%**	**0.1%**	**0.0%**	**5.8%**