

Low-carbon policy inputs

Redirecting fossil fuel subsidies to fund sustainable development

- **Redirecting fossil fuel subsidies** is an obvious way to stimulate the emergence of a low-carbon economy and provide for social protection of affected workers.
- In the **liquid fuels sector** alone, South Africa's fiscus hands fossil fuel producers between R6.5 billion and R29 billion per year, and forgoes between R35 million and R4.8 billion revenue through indirect subsidies, and this excludes the price support received by Sasol via the regulated fuel price. (The range of figures from different studies is so wide because data is buried and calculations differ.)
- This against **overstretched public expenditure** of R1 671 billion in the 2018/19 budget. What government spends on these subsidies and loses in revenue would reduce the fiscal deficit of R180 billion (we pay a lot to service national debt). VAT was increased from 14% to 15% to raise an extra R16 billion revenue, which affects everyone's pocket and the poor disproportionately. If the fossil fuel subsidies fell away, VAT could be reduced to 12.2%.
- Fossil fuel subsidies consume public funds that can be used for **other pressing socio-economic needs**, like affordable clean electricity and water for the poor, public transport, and job creation programmes through low-carbon entrepreneurship.
- Continued subsidies undermine efforts to reduce greenhouse gas (GHG) emissions and to **reach sustainable development targets**, and South Africa's international climate change commitments under the Paris Agreement.

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CHARACTERISTICS OF FOSSIL FUEL SUBSIDIES IN SOUTH AFRICA

- Subsidies reduce the risks for producers to invest in and run fossil fuel-producing businesses.
- Government supports the production and use of fossil fuels:
 - Directly by supporting coal-fired electricity and the conversion of coal into liquid fuels
 - Indirectly through the provision of supporting infrastructure.
- Subsidies take many forms tax reductions, interest-free loans, insurance, and even infrastructure development in support of fossil fuel extraction.
- There is some research into identifying and quantifying these subsidies, but we still lack a systematic inventory of the subsidies and their beneficiaries.
- The exact quantum of fossil fuel subsidies in South Africa remains unknown.

POLICY CONTRADICTIONS

- Government sustains historically-grown fossil fuel businesses, while trying to implement a carbon tax and a Climate Change Bill aimed at reducing GHG emissions in the long-term.
- The National Development Plan aims to support a transition towards a low-carbon society, while recommending the expansion of coal mining, coal exports, and related infrastructure.
- Eskom continues to receive interest-free loans and emergency bailouts that reward financial mismanagement and the expansion of coal-fired power plants.
- Sasol continues to receive support for its operations with price protection, while a carbon tax process is underway to increase the cost of emissions-intensive businesses.



THE IMPACT OF **FOSSIL FUEL SUBSIDIES**

Fossil fuels are hidden and historically built into the core of the South African economy. Reforming fossil fuel subsidies might become one of the hardest parts of the country's low-carbon economy transition.

South Africa's emerging energy transition is considered one of the most difficult in the world, because of its heavily coal-based energy system. Over many decades, a number of powerful political and economic actors have benefitted from these structures. Change in political rule since 1994 led to minor tinkering in the structure of the beneficiaries, but has not reformed the subsidy regime. The government is contradicting its own attempts to implement weak climate policies while it sustains a carbon-intensive economy based on coal-fired electricity and coal-based fuel.

This policy paper sheds some light on the nature of fossil fuel subsidies in South Africa, although their full scale remains largely unknown.2

What are fossil fuel subsidies?

Fossil fuel subsidies are public funds in support of businesses that produce fossil fuels and make it cheaper for consumers to buy fossil fuel-based products. While subsidies are provided to facilitate both production and consumption of fossil fuels, in this paper, we only focus on the supply-side subsidies. These are subsidies that support the production of fossil fuels.

Fossil fuel subsidies appear in different forms, which make them difficult to spot. They can take the form of:

- Tax reductions, low or interest-free credit or insurance, for example, for building new coal power plants
- Trade restrictions that favour the trade of coal, oil, gas, and so on
- Price controls
- Purchase mandates.

World Economic Forum, 2018. Energy Transition Index 2018. Available at: http://reports.weforum.org/ fostering-effective-energy-transition-2018/country-profiles/#economy=ZAF

This policy brief builds on research conducted at the Energy Research Centre, University of Cape Town published as: Burton, J., Lott, T. & Rennkamp, B., 2018. Sustaining Carbon Lock-in Fossil Fuel Subsidies in South Africa. In J. Skovgaard & H. van Asselt (Eds.) *The politics of fossil fuel subsidies* and their reform. Cambridge: Cambridge University Press. The book is openly accessible at Cambridge University Press.

The basic function of these subsidies is to shift risks away from fossil fuel producers. Usually large investments like building coal power plants come with high risks, but 0% loans (-10% of the prime interest rate that determines your home loan), help to reduce these investment risks. Unlike homeowners, Eskom and other beneficiaries also don't have to worry about the risks inherent in flexible interest rates that impact the loan amounts to be repaid.

Fossil fuel subsidies are harmful because they undermine efforts to reduce the world's emissions to slow climate change, and to sustain clean air and water resources. Production subsidies sustain emission-intensive businesses artificially and slow down efforts to change towards climate-friendly technologies.

What are the main fossil fuel subsidies ³

| Type of subsidy | What it covers |
|--|---|
| Access, information and research | Policies that determine access to resources (e.g. leasing auctions, royalties, production-sharing agreements), and access and provision of market-related information. |
| Foregone earnings | The difference between real earnings that have actually been achieved and those earnings that could have been achieved. |
| Infrastructural investments | For example, building transport infrastructure to mines, and railways for coal cargo. Direct subsidies are also usually used in support of infrastructural investments. |
| Low or interest-free credit or insurance | A type of loan that does not require the borrower to pay interest. |
| Offtake agreement | An agreement between a producer of a resource and a buyer of a resource to purchase or sell portions of the producer's future production at the current price. |
| Price controls | Regulated pricing that benefits consumers or producers. |
| Purchase mandates | A requirement by law for businesses and individuals to purchase or otherwise obtain a good/service. |
| Tax reductions | Anything that reduces the amount of total tax that an individual or business must pay. |
| Trade restrictions | An artificial restriction on the trade of goods/services between two countries. |

³ Kuplow, D., 2018. Defining and measuring fossil fuel subsidies. In J. Skovgaard & H. van Asselt (Eds.) The politics of fossil fuel subsidies and their reform. Cambridge: Cambridge University Press.



How much money are we talking about?

What are the global amounts?

International organisations like the International Monetary Fund (IMF) and the International Energy Agency (IEA) have estimated the world's total expenditure on fossil fuel subsidies:

- The IMF finds global subsidies go up to US\$5.3 trillion⁴ (R76.02 trillion).⁵ These estimates are so huge because they include the costs of air pollution on health and other so-called externalities.
- Alternative estimates in 2015 from the IEA did not include the above costs, but still added up to US\$325 billion or R4 661 billion.

To put it into perspective, in 2016:

- The total spending on poverty-reduction through Overseas Development Assistance (ODA) alone was around US\$142 billion (R2 036 billion).
- South Africa's entire GDP was around US\$295 billion (R4 554 billion) in the same year.⁶
- Public expenditure in South Africa was around US\$100 billion (R1 434 billion) per year.⁷

Estimates for South African expenditure on fossil fuel subsidies vary. Studies and attempts to estimate these subsidies are very scarce. Our study of the liquid fuels sectors found that since 2008:

- Direct transfers have ranged between US\$454 million (R6 507 million) and US\$2.09 billion (R29 billion) per year.
- Quantified revenues foregone have been between US\$2.45 million (R35.12 million) and US\$336 million (R4 816 million).8

South Africa's foregone earnings should go to the government, however they go to the companies instead. The exact total of South African expenditure on fossil fuel subsidies is unknown. Our estimates do not include the price support received by Sasol via the regulated fuel price, which is why the full amounts of these subsidies will be considerably larger. Exact quantifications that include the regulated fuel price will require further research.

⁴ Coady, D., Parry, I., Sears, L. & Shang, B., 2015. *How Large Are Global Energy Subsidies?* Washington, DC: International Monetary Fund.

⁵ All exchange rates in this paper are based on the Forex rate of 1 US dollar = approximately 15.05 South African Rand as of 19 September 2018, https://www.bidvestbank.co.za/business-banking/forex-services/ forex-calculator.aspx.

⁶ Skovgaard, J. & van Asselt, H. 2018. The politics of fossil fuel subsidies and their reform: An Introduction. In Skovgaard, J. & H. van Asselt (Eds.) *The politics of fossil fuel subsidies and their reform.* Available at: http://www.oecd.org/dac/development-aid-rises-again-in-2016-but-flows-to-poorest-countries-dip.htm.

⁷ National Treasury, 2018. 2018 Budget Highlights, Pretoria, Available at: http://www.treasury.gov.za/documents/national%20budget/2018/sars/Budget%202018%20Highlights.pdf.

⁸ Burton, J., Lott, T. & Rennkamp, B., 2018. Sustaining Carbon Lock-in Fossil Fuel Subsidies in South Africa, in J. Skovgaard & H. van Asselt (Eds.) *The politics of fossil fuel subsidies and their reform.*

What could R29 billion rather be spent on?



The graph shows government expenditure by function from the 2018/19 national budget. In each category, the second bar shows how the budget would increase if R29 billion were added to that category, instead of it being spent on direct fossil fuel subsidies.

Redirecting R29 billion to other government spending programmes could do the following:

- It could improve social grants, in the context of South Africa's extreme poverty and 27% unemployment. As at 1/10/18, a pensioner who is single, with an annual income of less than R78 120 and assets not exceeding R1 115 400, gets R20 400 a year. That could be doubled for 1.4 million pensioners. The grant per child of a single parent earning less than R4 000 monthly is R410 per month. We could give R1 703 to a parent (not just the poor ones) of every one of the 17 million children younger than 15.10
- It could more than double the R23 billion in the 2018/19 national budget for 'Job creation and labour affairs', to fund job creation in a just transition to a low-carbon economy.

⁹ National Treasury, 2018. Budget Review 2018. Republic of South Africa, Pretoria. 21 February 2018. Available at: http://www.treasury.gov.za/documents/national%20budget/2018/review/FullBR.pdfc Accessed 22/10/18.

Demographic statistics come from Stats SA. Unemployment: Stats SA, 2018. Quarterly Labour Force Survey Quarter, 1 2018. Available at: http://www.statssa.gov.za/?p=11139. Children: Stats SA, 2018. Mid-year population estimates 2018. Available at: http://www.statssa.gov.za/?p=11341.Social grant data is from SASSA. Available at:http://www.sassa.gov.za/index.php/ newsroom/345-new-social-grantamounts. All accessed 29/11/18.

Low-carbon policy inputs



- It could significantly boost agriculture and rural development, to which the national budget gives only R30 billion.
- It could almost double support for industrialisation and exports, currently with a budget of R33 billion, thereby benefitting the whole economy not just the narrow fossil fuel interests.
- It could increase police salaries, or help alleviate the slow course of justice and over-crowded prisons. The national budget has R99 billion for police services and R45 billion for law courts and prisons.
- It could cover half the cost of fee-free higher education and training, set to cost R57 billion over three years.

Why do we need reform to the fossil fuel subsidies?

Phasing out fossil fuel subsidies is essential to reduce emissions that cause harmful climate change. Scarce public resources should push industry towards low-carbon, climate-resilient and poverty-free development pathways. Sustaining fossil fuel industries through hidden subsidies jeopardies any GHG emissions reduction targets and uses funds that will be needed to achieve other important policy goals. This is particularly problematic in a developing country such as South Africa with limited public funding and more people in need of help.



An additional 29 000 schools can be built (at an average cost of R10 million) if the R29 billion fossil fuel subsidy is redirected.



HOW GOVERNMENT SUBSIDISES FOSSIL FUEL PRODUCTION

The government supports the production and use of fossil fuels directly – through supporting coal-fired electricity and the conversion of coal into liquid fuels; and indirectly through the provision of supporting infrastructure.

South Africa's economy is very carbon-intensive:

- Coal accounts for 65% of primary energy.¹¹
- Eskom generates 95% of South Africa's electricity, of which 90% is coal-fired.¹²
- Sasol's energy- and emissions-intensive coal-to-liquids process accounts for 25% of liquid fuels consumption.
- Eskom and Sasol consume roughly 90% of domestic coal and contribute to 55% of the country's GHG emissions.¹³

Putting this into perspective:

South Africa's carbon emissions are in the range of an industrialised country like Germany; but its energy-intensive economy translates this high-carbon input into a much smaller GDP of a middle income country.

¹¹ DoE (Department of Energy), 2010. South African Energy Synopsis. Available at: www.energy.gov.za/files/media/explained/2010/South_African_Energy_Synopsis_2010.pdf.

¹² Eskom, 2014. Integrated Report 2014. Johannesburg: Eskom.

¹³ Eberhard, A., 2011. The future of South African coal: market, investment, and policy challenges. Working Paper 100, Stanford University Program on Energy and Sustainable Development, Stanford; DEA (Department of Environmental Affairs), 2014. Greenhouse Gas Inventory for South Africa 2000–2010. Pretoria: DEA.



ESKOM AND SASOL CONSUME ROUGHLY 90% OF DOMESTIC COAL



Coal accounts for 65% of South Africa's primary energy



The Integrated Resource Plan (IRP) is the planning tool for electricity supply technology until 2030. ¹⁴ An updated version of this plan is currently available for public comment. The plan foresees coal production subsidies in the shape of Eskom's construction of the coal power plant Kusile, and two plants commissioned by two independent power producers. Research found that these plants are not necessary to meet the country's future electricity demand. The inclusion of these new coal plants in South Africa's electricity system will substantially raise electricity costs – by R20 billion – and increase GHG emissions over their lifetimes. ¹⁵

A minerals and energy hangover

Sasol and Eskom continue to be the main producers of fossil fuel-intensive goods in South Africa. Their operations add up to over half of the country's carbon emissions. ¹⁶ Mining and coal business structures have been established over the course of decades:

- Sasol operates their own mines, while Eskom maintains close relationships with other mines.
- Both corporations need coal for their core businesses of generating electricity and liquid fuels respectively.
- Eskom then sells electricity cheaply to mines and other energy-intensive businesses.

This network of mines, mining companies, state-owned enterprises and the state, became known as the Minerals-Energy Complex.¹⁷ This term describes a system of fossil fuel corporations that historically created the core of South Africa's economy and generated jobs and wealth for a minority, with strategic government support.





¹⁴ DoE, 2018. Integrated Resource Plan 2018. Pretoria: DoE. Available at: http://www.energy.gov.za/IRP/irp-update-draft-report2018/IRP-Update-2018-Draft-for-Comments.pdf.

¹⁵ Ireland, G. & Burton, J., 2018. An assessment of new coal plants in South Africa's electricity future: The cost, emissions, and supply security implications of the coal IPP programme, Research Report Series, Energy Research Centre, UCT. Available at: https://cer.org.za/wp-content/uploads/2018/05/ERC-Coal-IPP-Study-Report-Finalv2-290518.pdf.

¹⁶ DEA, 2014

¹⁷ Fine, B. & Rustomjee, Z., 1996. The Political Economy of South Africa: From Minerals-Energy Complex to Industrialization. London: C. Hurst & Co.



Apartheid-era industrial and energy policies have survived into democracy. Despite major political change at the end of apartheid in 1994, many sustaining subsidies have persisted, and new subsidies have emerged with justifications that echo the apartheid state.

How the government justifies fossil fuel subsidies post-1994

Direct government subsidisation of coal mining is limited. The government primarily subsidises the demand for coal via Eskom and Sasol indirectly, and provides infrastructural investments for coal extraction with roads and train lines

The government does not call its support 'fossil fuel-production subsidies', which could spark a debate on the justification of this expenditure. Instead it claims that these subsidies are supporting 'vital' or 'strategic' investments towards economic development.¹⁸ This framing presents subsidies as interventions, which have the aim of redistributing benefits of these investments across a divided society.¹⁹ In reality, they often benefit corporations and a politically-connected elite.

Powerful vested interests keep subsidies in place

Incentives for the production of fossil fuel-intensive goods are often hidden and unspoken. Often these operating rules were made a long time ago and continue to persist. Agreements occur behind closed doors, and between small circles of actors in some government departments and fossil fuel-intensive industries. Those benefitting from these funds resist any public debate or call to be transparent and accountable. It is difficult for civil society organisations and the public to get involved as there is very little information and few avenues available to influence decision-making. Policy-makers along with large parts of the society believe that fossil fuels are an essential part of the economy and the electricity supply.

The belief that fossil fuels are an essential part of the economy and the electricity supply, and that they are irreplaceable, is an important factor that can explain why subsidies remain unquestioned.

Sasol and Eskom contribute to 55% of South Africa's GHG

Sasol and Eskom

Other contributors to GHG emissions

¹⁸ For example: Transnet, 2007. Transnet Annual Report 2006–2007. Johannesburg: Transnet; National Treasury (2010). Budget Review 2010; DoE, 2016. Annual Report 2015–16.

¹⁹ Whitley, S., 2013. Time to Change the Game: Fossil Fuel Subsidies and Climate. London: Overseas Development Institute.



WHY FOSSIL FUEL PRODUCTION **SUBSIDIES PERSIST**

The Mineral-Energy Complex continues to be perpetuated due to the political allocation of coal contracts and the lack of reform of liquid fuels pricing. Support for fossil fuel production in South Africa focuses on a few large primarily state-owned organisations.

Keeping electricity prices low for corporations

Eskom has received government support and has passed this on in the form of 'underpriced' electricity to energy-intensive industries.²⁰ Benefits to producers and to very large, mostly corporate consumers of electricity, account for roughly 40% of Eskom's electricity sales.²¹ At the same time, residential electricity rates have continued to increase.

Eskom and coal contracts

Coal mining in South Africa benefitted from various apartheid laws that lowered the cost of doing business, including the ability to pay very low wages to mine workers and provide them with little or no labour, health or safety protections. This created a system of cheap fossil fuels extraction, with benefits accruing to either coal suppliers or commercial electricity users, who were frequently the same firms and who enjoyed unparalleled access to the state, including Anglo American and Gencor (later BHP Billiton).22

²⁰ Steyn, G., 2001. Governance, finance and investment: decision making and risk in the electric power sector. PhD thesis, University of Sussex, Brighton; NPC (National Planning Commission), 2011. National Development Plan: Vision 2030.

²¹ EIUG (Energy Intensive Users Group), 2015. About EIUG. Available at: www.eiug.org.za/about/.

Fine & Rustomjee, 1996; Burton, J., 2011. The role of industrial policy in meeting climate change mitigation objectives in South Africa. MSc thesis, UCT.

Esko m's coal costs were kept low via two contracting models:

- In the first model, Eskom provided capital to coal producers by financing production and guaranteeing an offtake agreement.
- The second model involved fixed-price contracts with mines, where coal sold to Eskom was subsidised from exports, with cheap coal passed through Eskom to benefit electricity users.²³

The allocation of coal contracts was designed to benefit specific companies and to develop local mining capacity with ethnic ties to the state, creating new (white) 'Afrikaner' capital as distinct from (white) English or 'imperial' interests.²⁴

Post-1994, the coal sector continues to rely on Eskom as the largest user of coal and to put similar contracting models in place. There are links between coal mining interests and members of the ruling party. Eskom also uses its market power to promote Black Economic Empowerment in coal – economic policy intended to redress the racial inequities of apartheid through privileging black or historically disadvantaged individuals. Eskom's support for new producers has created a small elite of black-owned mining businesses alongside sustaining the historically grown white capital. ²⁵

Eskom bailouts and crisis management

Eskom's unique role in the Mineral-Energy Complex and the electricity sector puts the organisation in a strong power position, both politically and commercially. Eskom is in charge of 'keeping the lights on' in the country. This slogan has become a credo in an organisation which employs 47 000 people. When the economy grew in the early 2000s, the government did not make provisions to add new generation capacity or prioritise maintenance of existing infrastructure, which resulted in rolling power cuts in 2008.

The government entered a very expensive crisis mode and started issuing interest-free loans to recommission three mothballed coal plants and finance two new coal power stations. ²⁶ These emergency bailouts in the electricity sector have seldom been perceived as a 'fossil fuel subsidy' by government. It considers these expenditures as measures for energy security and industrial development in sectors that are important drivers of economic development.

²³ Eberhard, 2011; Matthews, C., 2015. Eskom: big clean-up costs. Financial Mail, 27 August 2015.

²⁴ Fine & Rustomjee, 1996

²⁵ Burton, J. & Winkler, H., 2014. South Africa's Planned Coal Infrastructure Expansion: Drivers, Dynamics and Impacts on Greenhouse Gas Emissions. Cape Town: Energy Research Centre, UCT.

²⁶ Nene, N., 2015. Remarks by Minister of Finance Mr Nhlanhla Nene. Available at: www.treasury.gov.za/comm_media/speeches/2015/2015060301%2520-%2520Eskom%2520Speech.pdf; Lott, T., Burton, J. & Rennkamp, B., 2016. The Political Economy of Fossil Fuel Subsidies in South Africa. Cape Town: Energy Research Centre, UCT.



Liquid fuels: fueling cars with coal

Making liquid from coal is a craft which has exclusively survived in South Africa. About a third of the petrol used in the country is still made from coal. Similar strategic objectives of energy security lead the apartheid government to invest in this technology, originally invented in Germany. During the period of international sanctions and oil embargoes the apartheid government heavily subsidised a liquid fuel industry, with Sasol a formerly state-owned enterprise, being the main beneficiary.

Subsidies largely operated via price regulation which kept the locally produced coal-based fuel cheaper than imports. As such, fuel pricing in South Africa has historically been based on an Import Parity Price (IPP) that guarantees returns for local refiners. Just to remind us, controlling prices to reduce the market risks for the producers is the main function of a fossil fuel subsidy.

The support for producing liquid fuels at Sasol was provided by controlling fuel prices, exercising tariff protection when the oil prices fell below a defined threshold, and investing into infrastructure that sustains the production of liquid fuel.



Indirect support for fossil fuel use

Government also privileges the *use* of fossil fuels and the related emissions in indirect ways. For example, through land for roads, and building and maintaining them. In 2006, it cost R7.2 million per kilometre of one lane to construct a road. If a freight haulier with a Gross Vehicle Mass of 28 tonnes (equivalent to the average E80/HV of 3.5) does a one-way trip, the direct road maintenance cost is R157/km, excluding operations and financing costs.²⁷ Coal trucks tear up our roads.

Of course we need good, well-maintained roads. Roads are used to a large degree by private cars and heavy-duty freight vehicles with internal combustion engines. Instead, relatively more could be spent on rail infrastructure to attract more freight to move on rail and provide a reliable passenger service, and on affordable public transport to better serve the needs of the majority. Ultimately trains and public transport can run on electricity supplied by renewable energy.

²⁷ Morton, B.S., Visser, A.T. & Horak, E., 2007. 'A lifecycle cost analysis of the Durban-Gauteng corridor: initial road corridor infrastructure costing.'; Morton, B.S., Visser, A.T. and Horak, E., 2007. 'A lifecycle cost analysis of the Durban-Gauteng corridor: road corridor maintenance costing.' Both papers from proceedings of the 26th South African Transport Conference.

CONTRADICTORY INTERESTS AT PLAY IN POLICY ARENA

Remarkably, the government has indicated to the Group of 20 countries (G20) that it has no 'inefficient' subsidies, although it continues to support fossil fuel subsidies heavily. At the same time, the government is trying to legislate and implement a carbon tax, a Climate Change Bill, and to establish an effective mitigation system to reduce GHG emissions — one of the outcomes that the National Development Plan must report progress on every year.²⁸

Sasol and other high-emitting companies have organised their opposition to stringent policies on fossil fuel subsidies and other related policies through the business associations, Energy Intensive User Group (EIUG) and Business Unity South Africa (BUSA). The EIUG represents 31 companies who consume about half of the country's electricity. The companies operate mostly in mining and manufacturing and employ half a million people. Sasol's lobbying teams consist of highly qualified personnel and sizeable teams who can comfortably join stakeholder meetings and outnumber the government team which is in charge of climate policy. They have resources for legal action and have already managed to stall the process of advancing legislation for air quality control for years.

Pulling in different directions within the government – while dragging out climate policy and sustaining strong fossil fuel subsidies at the same time – will not solve the climate change problem. Denying the existence of fossil fuel production subsidies or mislabelling them, will make it impossible to recognise, quantify and reform them. Setting the country onto a cleaner development pathway will be impossible as long as large parts of the limited resources continue to get diverted/prioritised for sustaining the operations of heavily polluting industries.

²⁸ DPME (Department of Planning, Monitoring and Evaluation), 2018. Plan of Action. Available at: https://www.poa.gov.za/environment/Pages/default.aspx.



WHAT CAN NON-STATE ACTORS DO?

Business, labour and civil society can:

- Create awareness about the issue and scale of fossil fuel subsidies.
- Publically debate the lack of alignment between the chapters of the National Development Plan that suggest expanding coal infrastructure and a transition to a low-carbon, climate-resilient just society at the same time.
- Scrutinise the ongoing, new and planned infrastructural investments in the country.
- Strengthen climate and renewable energy policy objectives by means of advocacy and their implementation by supporting state's institutional capacity.
- Watch out for hidden investment plans, such as the maintenance cost of refineries and coal plant renewal, which come as a massive cost to the taxpayer without us being aware of it.



The climate change mitigation debate in South Africa needs to move from improving efficiency within a projection of the existing economy, to innovation and options beyond the constraints of the current dispensation and structure of the economy. It may take step changes in the development path to achieve mitigation adequate to South Africa domestic and international commitments, and maximise economic development and social wellbeing. Business models presently unconsidered may be waiting in the wings.

The 'Low-carbon development frameworks in South Africa' project seeks to deepen understanding of, and reveal opportunities for, transitions to a low-carbon economy. It facilitates and develops contributions at the intersection of climate change mitigation, economic development and socio-economic dimensions, across immediate, medium and long-term horizons.

Working variously with government, business and labour, the project reaches from providing input to emerging government mitigation policies and measures; through investigating the business and socio-economic case for selected mitigation initiatives which hold growth potential in energy, transport, industry, waste, and land use; to analysing potential future economic trajectories and the systemic opportunities offered by these.

The project is funded by the International Climate Initiative (IKI) of the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety of Germany, and implemented by WWF-SA.

WWF South Africa's Policy and Futures Unit undertakes enquiry into the possibility of a new economy that advances a sustainable future. The unit convenes, investigates, demonstrates and articulates for policy-makers, industry and other players the importance of lateral and long term systemic thinking. The work of the unit is oriented towards solutions for the future of food, water, power and transport, against the backdrop of climate change, urbanisation and regional dynamics. The overarching aim is to promote and support a managed transition to a resilient future for South Africa's people and environment. The organisation also focuses on natural resources in the areas of marine, freshwater, land, species and agriculture.

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Authors Britta Rennkamp and Jesse Burton Reviewer Prabhat Upadhyaya, WWF Available at: www.wwf.org.za/report/fossil_fuel_ subsidies Contact for WWF South Africa: Saliem Fakir, Head: Policy and Futures Unit, telephone +27 (0)21 657 6600, e-mail sfakir@wwf.org.za Series editor Barbara Hutton Farm Design, www.farmdesign.co.za Photos: Unless otherwise indicated. all photos by Shutterstock.com or Google image search ('schools in South Africa') Published in 2018 by WWF-SA, Cape

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