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# ANALYSIS | Why you should care about where your energy comes from

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Coal is the biggest source of electricity production in the country, as well as the biggest contributor to greenhouse gas emissions.

Waldo Swiegers/Bloomberg

*Most of South Africa's energy is generated from fossil fuels – with coal being the dominant resource. But the transition away from coal isn't simple – it's been a driver of the country's industrialisation and job creation, writes Lameez Omarjee.*

A few years ago, I participated in a press trip to a coal mine owned by one of South Africa's biggest companies. I can't say that visiting a coal mine was on top of my list of things to do before I die, but it turned out to be one of the things I was grateful to have done in my lifetime.

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Before that day, I didn't think much about where the energy I use comes from. I didn't think beyond the petrol pump every time I filled up my car. But being underground, watching miners going about their work vaguely reminded me of a concept I learnt back in high school of how coal can be turned into liquid fuel with Fischer-Tropsch technology.

That train of thought didn't continue for long. Whenever I need light, all I do is turn on a switch without thinking twice about the coal being fed into Eskom's power stations. Isn't that how most of us think about electricity? You just push a button and then things are expected to heat up or move.

I wouldn't expect anyone to think of coal mines in Mpumalanga and the air pollution from burning coal every time they use an appliance. But given that we are living during a climate crisis, we need to think more deeply about our energy sources - and find ways to do things differently.

According to the Climate Transparency Report of 2021, released in October last year, fossil fuels

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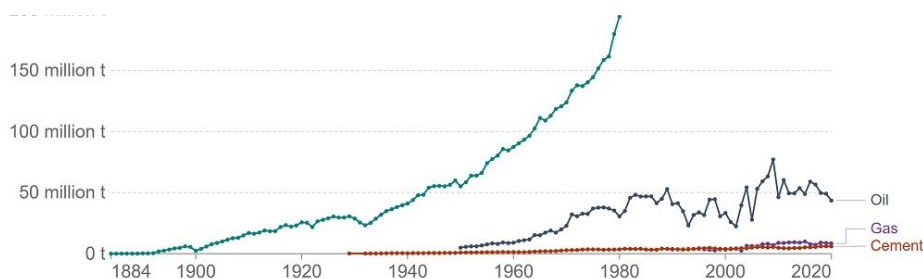
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Source: Global Carbon Project

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Data from the Global Carbon Project shows coal has consistently contributes the most to South Africa's carbon emissions.

The coal-dominated power sector is responsible for more than half (55%) of South Africa's greenhouse gas emissions, according to the Climate Transparency Report.

Globally there are efforts to limit global temperatures rising beyond 1.5 °C by 2030. To achieve this, **coal has to be scaled back by 58%**, the Intergovernmental Panel on Climate Change recently noted.

Last week the G7 countries **agreed to phase out coal power** - but did not give a timeline. They plan to decarbonise their power sectors by 2035, Reuters reported.

Domestically – the Integrated Resources Plan of 2019 outlines the gradual decommissioning of ageing coal-fired power plants. According to the plan, about 5 400MW is to be decommissioned by the end of this year, 10 500MW by 2030 and 35 000MW by 2050. As it is, our generation demand is around 32 000MW. Currently government is scrambling to get alternative generation capacity - renewables, gas and nuclear – online in time to avoid a worsening energy crisis.

South Africa has also adopted a revised Nationally Determined Contribution – to limit annual emissions to a **range between 350 and 420 megatons of carbon dioxide** equivalent by 2030.

Government is encouraging emissions reductions through a carbon tax. It will also introduce sectoral emissions reduction targets.

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But the shift away from coal won't be smooth sailing. The country's dependence on coal dates back to the late 1800s, serving as a cheap source of power for mining operations.

A 2021 study by economists Neva Makgetla and Muhammad Patel of independent think tank Trade & Industrial Policy Strategies (TIPS), indicates that **in 2019 South Africa accounted for**

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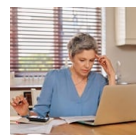
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**3.6% of global coal production** and in the 2010s was responsible for 5% of exports. In 2018, the coal value chain (including mining and electricity generation) contributed to 5.4% of GDP. According to the International Energy Agency, **63 million tons of coal were exported from South Africa in 2020**.

The resource has driven the industrialisation of the country, and job creation – a point Mineral Resources and Energy Minister Gwede Mantashe is always quick to remind us whenever talk of transitioning comes up.

The **"coal fundamentalist", as he has been dubbed**, has emphasised that if the transition is going to be just, then considerations need to be made for people whose livelihoods depend on the coal value chain. These views have been echoed by Forestry, Fisheries and Environment Minister Barbara Creecy and Eskom CEO André de Ruyter.

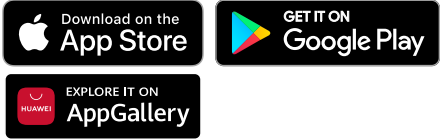
The industry is still a significant source of employment – as it can absorb low-skilled workers. The Minerals Council of South Africa's 2019 facts and figures indicate that the coal industry employs over 90 000 people, and represents nearly a fifth (19%) of employment in the mining sector.

A 2021 policy brief by TIPS **highlights the vulnerability of the 150 000 workers directly employed across the coal value chain** as activities in the industry decline. These workers include miners, those active in transport, and other industries linked where coal is a feedstock such as power generation, steelmaking, petrochemicals and cement production – some of these jobs can be preserved if alternative feedstocks are used, the brief suggested.

Coal demand will drop as power stations are decommissioned and as South Africans opt to go off-grid and power their households with solar PV to beat rising electricity prices and limit their exposure to load shedding.

The EU's carbon border tax, to be phased in from 2023, which penalises countries exporting goods with high carbon content, will also negatively impact coal demand. This **tax will significantly impact South Africa's iron and steel industries**, powered by coal.

The reduced reliance on coal will translate into job losses, the majority of which would be in Mpumalanga's Nkangala and Gert Sibande districts, TIPS highlighted. This is because the province is responsible for 80% of coal mining activities. A third of jobs in the Emalahleni municipality come from coal mining, power plants and servicing industries.



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### G7 pledge to decarbonise energy sectors by 2035

The G7's environment ministers have agreed to largely phase out greenhouse gas emissions from their energy sectors by 2035. The world's wealthiest nations ended three days of talks in Berlin on Friday aiming to tackle climate



It's clear that the energy sector is not only powering the South African economy but it is also an integral part of the economy. If the way the energy sector functions changes, then a significant part of the economy will have to be reconfigured - such as where jobs will be created, how workers can be reskilled, what new services and suppliers will be needed, what South Africa will export and where economic growth will come from if not from mining.

These are hard questions to answer, but to lessen our exposure to extreme weather events and leave behind a habitable planet for future generations, we have to shift our energy dependence away from fossil fuels. We will have to think differently about our energy use and how we meet our energy demands.

Green hydrogen is being touted as the clean fuel we need to power industries and even the transport sector. Part of the \$8.5 billion pledged by the US, UK, Germany, France and EU at COP26, will go towards **developing the emerging green hydrogen industry** along with electric vehicles and helping to decarbonise the electricity sector.

To ensure socioeconomic objectives are met amid these changes, the Presidential Climate Change Commission (PCCC) is working on developing a Just Transition Framework. The framework is meant to align the objectives of different stakeholders of society – communities, workers, youth, business, government and civil society organisations - to ensure the equitable sharing of risks and benefits that come with the transition. During a **recent multi-stakeholder engagement hosted by the PCCC**, it became apparent that this is a complex process, but it is necessary, and everyone can and should play a role.

For now, load shedding is making it easier for me to use less electricity and the petrol price hikes are discouraging me from driving my car unnecessarily. Perhaps it's wishful thinking, but I would like to think it's reducing emissions.

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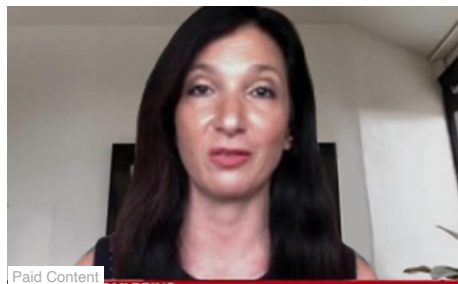
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