

South Africa can reduce emissions and create jobs. A tough task, but doable

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South Africa has the dubious distinction of having one of the highest rates of unemployment and inequality in the world. It is also one of the world's most emissions-intensive economies, measured in greenhouse

gas emissions per unit of economic output.

The co-existence of high unemployment and high emissions intensity is not a coincidence. South Africa's history of segregation and apartheid has had profound implications for its development path. Choices were made that favored investment in capital rather than labor. Economic growth was based, in part, on cheap (coal-based) energy, overlooking its high emissions.

Coal has been the dominant fuel in South Africa's energy economy. In addition to coal-fired power, about 30% of liquid fuel supply comes from converting coal to liquid, a technology employed by the energy company Sasol. The political economy of energy supply, then, is dominated by a duopoly—the state power utility Eskom, and Sasol. Significant actors include coal mining firms upstream and electricity-intensive industry downstream.

South Africa's emission intensity (emissions per unit of output) in 2018 was 2.5 times the global average. That's about five times higher than in the US. Four-fifths of emissions are attributable to [energy supply](#) and use.

The large oligopolistic firms engaged in the processing of minerals and basic chemicals production were able to exercise market power and charge import parity prices to downstream producers in South Africa. This limited downstream manufacturing development.

In a [paper published last year](#) we outlined the key drivers of South Africa's historical development path. We then considered how South Africa could develop in a way that creates jobs without producing such a high level of emissions. This article focuses on the solutions.

The country's energy crisis

South Africa has experienced [frequent power outages since 2006](#). Many older coal plants have failing units mainly because of insufficient maintenance. Even the new power stations, Medupi and Kusile, have not operated consistently because of design flaws. This would suggest a compelling case to build generation capacity fast. Wind and solar photovoltaic projects have short lead times.

Yet these proposals have met resistance.

A program to procure [renewable energy](#) from independent power producers is widely considered a success. Renewable energy has grown rapidly but it is still a relatively small share of electricity generated. The country needs a much faster pace of investment to achieve a just energy transition.

Due to mismanagement and large-scale corruption, Eskom has drastically underperformed and is severely indebted. The crisis has galvanized action to unbundle the utility. The idea is to divide it into three separate companies—generation, transmission and distribution.

Eskom has a just energy transition plan and has committed in principle to net-zero CO₂ by 2050. There is an opportunity to access international climate finance, which would support the plan, phase coal out and support socio-economic development.

Political support has given momentum to this plan.

Policy options for reduced emissions and job creation

A strategy for employment-intensive and low-emissions development would include:

- changes to incentives and subsidies provided by the government
- appropriate regulation.

The proper pricing of energy is a first step. There has been limited public debate on fossil fuel subsidies. Estimates are that these amount to between R6.5 billion and R29 billion per year. They accrue to all consumers of fuel.

Subsidies should be applied, instead to repowering coal-fired power stations, to provide electricity from renewable energy sources. Eskom plans to do this repowering. One feasible option may be to add a levy on power prices to fund localisation of renewable energy and provide training for renewable energy and energy service companies.

Renewable energy can create net employment gains, even as jobs decline in coal mining. One study of the employment co-benefits found that 1.2 million job years could be created along the renewable energy value chain. This is more than double the number indicated in the government's Integrated Resource Plan.

Policy must promote new development in activities and sectors to build on the country's potential comparative advantage—labor—and prepare for low emissions development. Such policies will have a varied impact depending on employment and emissions intensity of the sector in question. For instance, higher electricity prices or carbon taxes are likely to have the greatest negative impact on high-emissions sectors, many of which are also capital-intensive.

Yet South Africa could build comparative advantage in light manufacturing, and create low-emissions employment in agriculture.

Supporting employment and reducing poverty

The incentive structure (accompanied by appropriate regulation) needs to shift in support of greater employment intensity. For example, it is better to subsidize training rather than capital investment. And it's better to encourage the building of worker housing close to workplaces rather than infrastructure for heavy industry.

More comprehensive wage subsidies could change firm behavior and increase the competitiveness of labor-demanding activities. On the other hand, it makes little sense, in South Africa's high unemployment environment, to offer incentives for capital investment, as have been applied to sections of heavy industry and other sectors.

Rather, industrial and other policies need to support light manufacturing, both to grow exports and to compete more effectively in the domestic market. Light industries draw on the local, semi-skilled labor force, experience in the region, and established infrastructure. Examples include apparel, metal products, household semi-durables, and electronics assembly.

There is also scope to support small and medium energy service companies that provide energy efficiency and small-scale renewable energy services.

Agriculture is a very labor-intensive sector both in terms of employment per unit of output and in terms of its employment multiplier. The destruction of the peasantry through land dispossession has limited the sector's employment potential but opportunities still exist.

With greater and more focused support, the agricultural sector could play an important role in development. Such policies will have a varied impact depending on employment and emissions intensity of the sector

in question.

Next steps

South Africa faces huge challenges and pressing socio-economic issues. At the same time, it needs to contribute to climate action. The policy instruments proposed above can be thought of as a policy package—coordinated across industrial, energy, climate and other policy domains.

Historically, the economy has been on a development path that has given rise to the minerals-energy complex. This distorted growth path locked South Africa into low employment and high emissions development, and it has proved difficult to shift direction. The adjustment costs are high and there are also strong political economy interests in support of the current direction.

An integrated employment and mitigation strategy is required to shape (or reshape) the development path of the economy. This means aligning the two objectives, seeking synergies across industrial, [energy](#) and climate policy, and managing trade-offs.

Such a strategy is more aligned with South Africa's real comparative advantage—labor—and will produce more rapid, sustainable and inclusive growth. In the past there was a connection between high emissions and low employment intensity. We argue that employment-intensive growth and a low emissions strategy can complement each other.

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