

Economic model shows trust in government is linked to takeup of renewables

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South Africa [relies heavily](#) on energy from coal-fired power stations, which emit large quantities of carbon. But making the transition to greater use of renewable energies, such as solar, is being hampered by a

number of factors. Chief among them is corruption, which is affecting the quality of institutions.

In [a recent paper](#) I set out how perceptions of corruption in the country's institutions have had a huge impact on the country's transition to clean energy. This is particularly true of institutions involved in energy, such as the state power utility Eskom.

My findings were based on an econometric model we developed, based on [economic theory](#). It highlighted how perceptions of corruption and the effectiveness of government institutions influenced attitudes towards the country's energy transition efforts.

Econometrics combines statistics, mathematical models and economic theories to understand and model economic problems. It uncovers the relationships and effects of various economic elements.

The model showed that greater trust in institutions would make people, policymakers and businesses more inclined to adopt [renewable energy](#) practices.

The study also found that the quality of the regulatory framework and government's effectiveness shaped people's views. This in turn affected decisions around adding renewable energy to the supply mix.

These findings matter because South Africa's energy transition faces a host of challenges. These range from technical and financial challenges to broader political, socioeconomic and institutional hurdles. The key to a successful energy transition is policy that's aligned with what the environment and the society need. It's essential to improve institutional quality, put anti-corruption procedures in place and have clear rules.

Energy mix and vision

The energy situation in South Africa has changed significantly [since the mid-1990s](#). Then, coal made up 73%-76% of the primary energy mix. Oil made up 21%-22%.

By 2022, coal's share had fallen to almost 69%. The share of renewable energy sources had increased to roughly 2.3%.

Our study supports [others](#) which show that 2008 was a turning point for the South African economy, particularly the energy sector. The factors involved included:

- the global financial crisis
- changes in [government policies](#), such as [monetary policies](#)
- leadership changes in the country and at Eskom
- power cuts and rising electricity prices
- a downturn in the economy.

Institutions and economic implications

This research was designed to understand the impact of national policies, governmental efficiency and past dependency on fossil fuel. I based the models on historical data about the energy mix and governance scores.

The analysis focused on the share of renewable energy in South Africa's total final energy consumption. I used this as a proxy for the nation's shift to cleaner energy.

Institutional quality is a complex concept. In our modeling exercise we therefore used three of the [World Governance Indicators](#) to stand for institutional quality:

- corruption perception index

- regulatory quality—perceptions of government's ability to make regulations that support private sector development
- government effectiveness—perceptions of the quality and trustworthiness of public services.

The first model confirmed a [positive relationship](#) between perceptions of corruption-free institutions and the rollout of renewable energy. More renewable energy has been produced when governance scores have been highest.

The second model showed that transparent and effective regulation potentially hindered the adoption of cleaner alternatives. This can be explained by the fact that regulatory decisions have mostly supported the country's energy dependence on fossil fuels. The energy markets, especially those for electricity, are doing better because of more sensible, open, and high-quality rules. As a result, this reduced the desire to switch to more environmentally friendly, renewable options.

Finally, the third model indicated a negative relationship between higher government effectiveness and the share of renewable energy. Close ties between stable governments and the conventional energy sector are common. This can influence policy choices. If these well-established businesses oppose reforms that jeopardize their interests—much like the fossil fuel sector does—the promotion of renewable energy sources may suffer.

I also saw that there had been a slow rate of change in renewable energy share. That can be attributed to slow procurement processes, coupled with potential lobbying and corruptive practices.

Next steps

South Africa has a new [Integrated Resource Plan 2023](#) which proposes a

near-term (2023-2030) plan that combines gas, solar, wind and battery storage.

But to boost the adoption of cleaner energy, South Africa needs to take [urgent action](#) to fight corruption and improve confidence in the country's institutions.

Policymakers should focus first on making regulatory changes. Efficient procurement procedures and honest practices would speed up the shift to renewables. What's needed are streamlined procurement, greater transparency and more competition.

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