

WORLD

South Africa Can't Afford to Quit Coal. Will Rich Countries Pay for the Transition?

Pressure to end coal-powered electricity generation has fired tensions between already-industrialized nations and developing ones

By [Alexandra Wexler](#) and [Gabriele Steinhauser](#) / Photographs by Daylin

Paul for *The Wall Street Journal*

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EMALAHLENI, South Africa—The gleaming new chimneys and hulking generators of what will soon be the second-largest coal-fired power plant in the Southern Hemisphere are at the center of South Africa's \$20 billion, 50-year bet to fuel economic growth and lift its population out of poverty.

Now, South Africa and its Kusile Power Station have also become a test case for whether rich nations can help poorer ones transition away from the dirtiest fossil fuel.

At [the international climate summit in Glasgow](#), meeting host U.K. has called on negotiators from nearly every country to “consign coal power to history” as part of a broader ambition to cut global greenhouse-gas emissions to net zero by 2050. That, climate scientists say, is indispensable for limiting the rise in global temperatures to 1.5 degrees Celsius compared with preindustrial levels and containing the most catastrophic effects of climate change.

Major economies, including the U.S., the European Union and most recently China, have banned state lenders from financing overseas coal projects. Multilateral development banks and commercial lenders are following suit, making it more difficult to find funding not only for new plants but also for maintaining existing ones. The [U.S. and EU are also moving to impose tariffs on imports based on the carbon dioxide emitted](#) during their production, a policy that will make goods from coal-dependent economies less competitive.

This pressure to end coal-powered electricity generation has fired tensions between developed nations, which industrialized thanks to the inexpensive and reliable energy source, and developing ones, which have poured hundreds of billions of dollars into new

coal infrastructure. Global coal capacity, now responsible for close to 40% of electricity generation world-wide, has nearly doubled since the turn of the millennium, with much of the growth coming from emerging economies, including China, India, Indonesia and Vietnam.

At the nexus of this standoff are countries like South Africa, which gets more than 80% of its electricity and nearly one-fifth of its liquid fuel from coal and says it lacks the money to overhaul its power system while repairing its pandemic-ravaged economy.

One of the top-10 coal producers in the world, the country has spent the equivalent of 6% of its annual gross domestic product on two huge coal-fired power plants that will only become fully operational in the coming years. It is the most coal-dependent country in the Group of 20 major economies.

It is also suffering some of the most extreme effects of climate change. Average temperatures in South Africa are 1.7 degrees Celsius higher than at the start of the 20th century, compared with around 0.9 degrees globally. Scientists say severe droughts, such as the one that saw Cape Town nearly run out of water three years ago, heat waves and flooding have already become more frequent.

South Africa's government says it is willing to help achieve the 1.5 degree target—provided that wealthy countries, along with international development banks, come up with more than 400 billion rand (\$26.6 billion) to transform its power system.

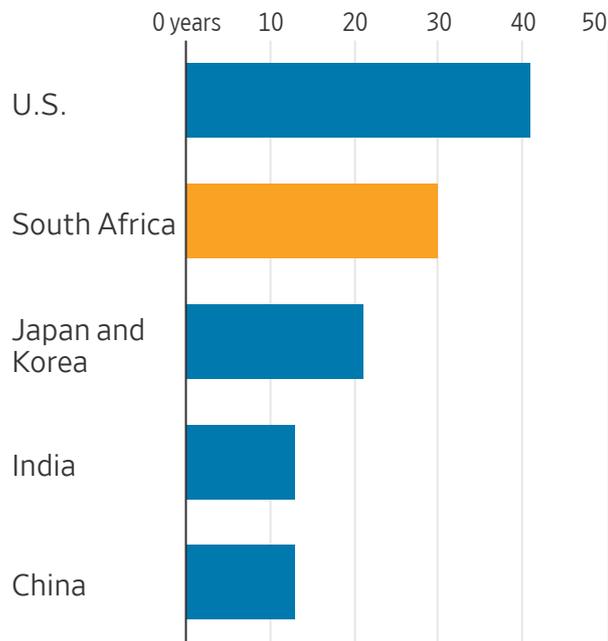


To help meet global climate goals, coal-fired plants such as Kusile would need to be retired long before the end of their planned lifespans.

At the summit last week, the U.S., Germany, France, the U.K. and the EU said they would mobilize \$8.5 billion over the next three to five years to help South Africa quit coal, including by replacing coal plants with renewable energy and finding new livelihoods for mining communities.

The participating governments said the financing pledge, the first of its kind globally, could become a blueprint for encouraging other coal-dependent developing countries to move away from the severely polluting fuel.

Average age of existing coal power plants in 2020, selected countries



Source: International Energy Agency

The International Energy Agency estimates that developing economies will have to retire coal plants at about half of their historic lifespan—just 25 years—to achieve net-zero emissions by 2050. The average retirement age of advanced economies' plants under the same scenario will be 40 years.

Key elements of the South Africa deal, including how much of the funding will come from governments rather than private investors and what kind of interest rates they would charge, are yet to be decided.

In his own speech at the summit, South African President Cyril Ramaphosa called the deal an “important breakthrough” but suggested that more help was needed to decarbonize his country’s economy. “Our ability to do so will be determined by the extent of support that we receive from developed economies,” he said.

The reverberations from the global energy shift are felt in places like eMalahleni, a scattered industrial town of around 450,000 people whose name translates to “place of coal” from the Zulu language. Entire neighborhoods, many consisting of corrugated-iron shacks without proper access to electricity, abut open-pit coal mines and mining dumps.



Kwa-Guqa township, in the municipality of eMalahleni, is surrounded by coal mines, heavy industry and coal-fired power stations.

Eight coal-fired power plants within a 35-mile radius of the city have constituted the engine of South Africa's broader mining and industrial sectors for decades. A thin layer of soot coats anything left outside and pollution can color the sky gray-brown for days.

Just off the highway connecting eMalahleni to Johannesburg, state power company Eskom Holdings SOC Ltd. is building Kusile Power Station, a 4,800-megawatt steel-and-concrete behemoth expected to become fully operational in 2025. Like its near-identical sister plant Medupi Power Station—located close to South Africa's border with Botswana and financed in part through a \$3.75 billion loan from the World Bank—Kusile's estimated lifespan is another 50 years.

Greenpeace and other environmental groups say that the Mpumalanga Highveld, the inland plateau surrounding eMalahleni, suffers some of the highest levels of air pollution on the planet. Every year, more than 2,000 South Africans die prematurely from illnesses caused or exacerbated by air pollution emissions from the coal industry, according to studies by government researchers and environmental groups.

“I have to choose between my husband's work, which puts food on the table and buys medicine for my child, and her health,” said Mbali Mathebula, whose older daughter, Princess, regularly suffers asthma attacks. Her younger daughter, Asemahle, is starting to show symptoms of the disease. “It's not a choice I want to make.”



Mbali Mathebula says her younger daughter, Asemahle, shown outside their home in Kwa-Guqa township, suffers from respiratory conditions related to poor air quality.

Ms. Mathebula's husband, Jabu Mamayila, works at Secunda Synfuels Operations, a giant apartheid-era plant owned by Johannesburg-listed Sasol Ltd. that turns coal into liquid fuel and, according to data from the EU's satellite observation program, is the largest single emitter of greenhouse gases in the world. Sasol said it doesn't know how Secunda's emissions compare with other plants globally. It plans to cut companywide greenhouse-gas emissions by 30% by 2030, compared with 2017 levels.

For many South Africans, the region's smokestacks and mining pits have long held the promise of a better future in a country where the official unemployment rate has reached a record 34.4%. Household incomes here are 25% above the national average and nearly half of the local economy and one in four formal jobs depend directly or indirectly on the coal industry, according to Trade & Industrial Policy Strategies, a Pretoria-based research institute.

Mlungisi Paul, a 36-year-old father of three, watched his older brother build a life as a coal miner, as unions with close ties to the ruling African National Congress ensured higher wages and better job security. "I saw him doing it, so I also wanted to do it," said Mr. Paul.

For three years, Mr. Paul shoveled coal onto a conveyor belt at a local power station. Then he found a post at a nearby mine, earning a monthly salary of 9,500 rand, nearly three times the South African minimum wage. As investment in the South African coal-mining industry dropped by almost half over the past decade, Mr. Paul's contract expired and he hasn't found a job since.

"I know sometimes people strike because of the environment, but I just want to work," he said.



Household incomes in the eMalahleni region are 25% above the national average and nearly half of the local economy and one in four formal jobs depend directly or indirectly on the coal industry.

In contrast to other major coal-dependent developing economies—including China and India—South Africa has promised to slash its greenhouse-gas emissions by the end of the decade. In a new pledge submitted in September, the government said it would lower its 2030 emissions by as much as 27% compared with 2017 levels.

That plan, which has won plaudits from the U.S. and other rich countries advocating a quicker phaseout of coal, places South Africa at the beginning of a difficult path to overhaul its power system.

Modeling from Meridian Economics, a Cape Town-based consulting firm whose director is an adviser to President Ramaphosa, shows that reducing South Africa's emissions in line with the 1.5 degree target would require all of the country's power generation from coal to be shut down by around 2040.

That is around three decades before the end of the 50-year lifespan of Medupi and Kusile and, without aggressive investment into alternative energy sources now, would leave the country with fresh gaps in its already-troubled electricity supply.

Some three million households in South Africa—a country of 60 million people—aren't connected to the electricity grid. For more than a decade, the economy has also been plagued by rolling blackouts, sometimes leaving major cities such as Johannesburg and Cape Town without electricity for more than seven hours a day.

Mineral Resources and Energy Minister Gwede Mantashe, a former union leader who is also the chairman of the ruling ANC, has warned that abandoning coal would be “economic suicide” for South Africa. His department's own climate and energy plans still foresee the construction of new coal plants to replace old ones.

Speaking at an energy conference on Tuesday, Mr. Mantashe said the rich countries' \$8.5 billion pledge was good, but shouldn't impose conditions on South Africa's energy plans. "We are a developing economy," he said. "Our biggest challenge is access to reliable, secure energy supply. We don't have that yet."



Promise Mabilo, an environmental activist with Vukani Environmental Justice Movement in Action, at her home near eMalahleni, which means 'place of coal.'

Globally, reaching net-zero emissions by 2050 will require a quadrupling of the annual pace of coal-power retirement in the decade to 2030 compared with the previous 10 years, according to the IEA. In the decade to 2040, 80% of retired capacity will have to come from developing and emerging economies, the agency says.

How rich countries support poorer ones in this effort will decide the future of regions like eMalahleni, where the South African government says it wants to preserve jobs by retrofitting coal plants with electricity generation from gas and solar panels. It also needs to rebuild transmission and distribution lines to make them compatible with renewable energy sources, according to a recent presentation by a senior official in President Ramaphosa's office.

SHARE YOUR THOUGHTS

What does the future hold for the fossil fuel industry? Join the conversation below.

Jesse Burton, a Cape Town-based senior associate at international climate and energy think tank E3G, says the \$8.5 billion pledged in Glasgow is a promising first step toward aiding South Africa's energy transition. Whether it will be successful depends on how much of the funding is new money coming from the participating governments, how

much will be in grants rather than loans and what proportion private investors are expected to contribute.

“We’ve seen that developed countries promise money and then don’t deliver it,” said Ms. Burton. “A lot of countries are going to look at how it goes here to see whether you can actually deliver an ambitious coal transition that is also fair and just.”

In eMalahleni, residents fighting the South African government to reduce dangerous air pollution are asking a similar question. “Canceling this whole thing of coal to go green is a good thing, but when are we starting?” said Promise Mabilo, whose 26-year-old son has battled with asthma for much of his life. “There is a lot of talking but less implementation.”

—*Aaisha Dadi Patel contributed to this article.*

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Write to Alexandra Wexler at alexandra.wexler@wsj.com and Gabriele Steinhauser at gabriele.steinhauser@wsj.com

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