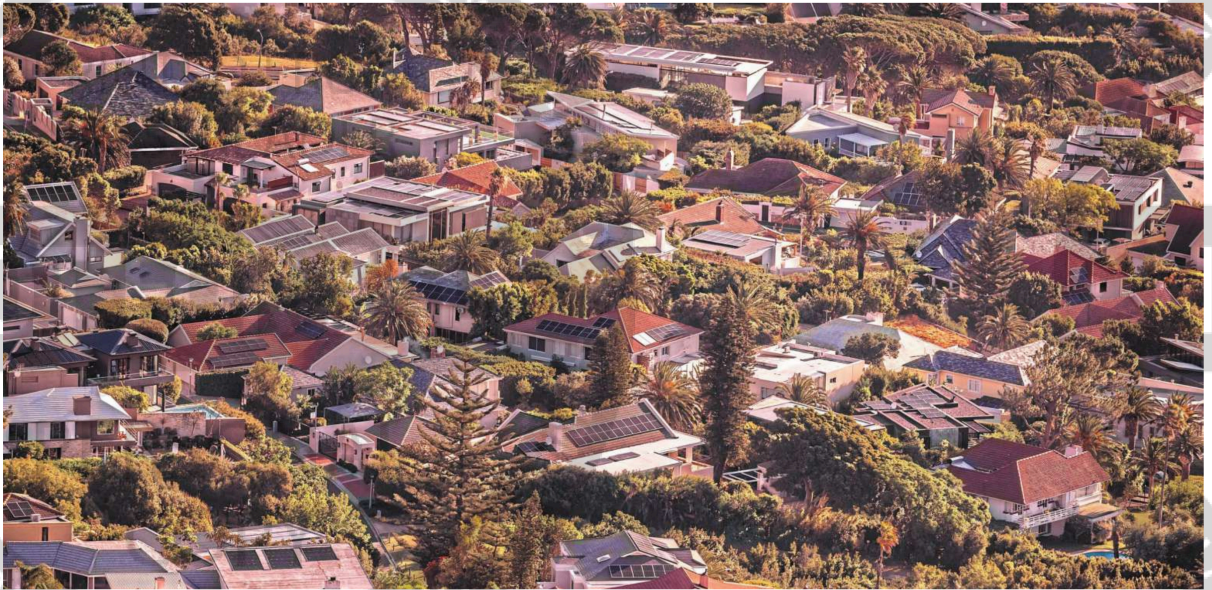


A concentration of solar panels on rooftops of private homes in the suburb of Camps Bay in Cape Town, South Africa. Chinese panels are now so affordable that businesses and families are snapping them up, slashing their bills and challenging utilities. — Gulshan Khan/The New York Times



Cheap solar rewires South Africa

By SOMINI SENGUPTA

ISMET Booley, a dentist in Cape Town, had a serious problem a few years ago. Patients arrived for appointments, only to find the power had gone out.

No electricity meant no X-rays, no fillings, no root canals.

"I just couldn't work," Booley said.

South Africans like Booley have found a remedy for the power cuts that have plagued much of the developing world for years.

Thanks to sharply falling prices of Chinese-made solar panels and batteries, they are increasingly generating their own electricity from the sun.

These are not the small, basic solar lanterns that once powered a single light bulb or television in rural areas.

Today, solar-and-battery systems are being deployed across South Africa's economy — in auto plants and wineries, gold mines and shopping malls — reshaping daily life and business in Africa's most industrialised nation.

The shift has been startlingly fast. Solar has risen from virtually nothing in 2019 to around 10% of South Africa's electricity-generating capacity today.

For the first time in more than a century, South Africans are no longer entirely dependent on giant coal-fired power stations.

That is forcing the country's already battered state utility, Eskom, to rethink its business as revenues drain away.

Joel Nana, a project manager at Sustainable Energy Africa, called the shift "a bottom-up movement" to escape a generations-old problem.

"The broken system is unreliable electricity, expensive electricity or no electricity at all," he said. "We've lived with this forever."

What is happening in South Africa is playing out across the continent, driven by China's determination to dominate clean energy.

Over the past decade, while the United

"South Africa consumes advanced green technologies without capturing the industrial benefits. The jobs are created elsewhere."

Marvellous Ngundu

States expanded fossil fuel exports, China poured investment into renewables.

Today, Chinese firms produce so many of the world's solar panels, batteries and electric vehicles that prices have collapsed.

Tariffs have slowed their advance in the US and Europe, but Africa — where about 600 million people still lack reliable power — has become a vast new market.

Solar imports from China rose 50% across Africa in the first 10 months of 2025, continuing a sharp upward trend, according to Ember, a British energy think tank that analysed Chinese export data.

South Africa was the largest destination. But it was far from alone. Sierra Leone imported solar equipment equal to more than half its total existing power capacity. Chad imported nearly half.

China stands to gain far more than sales alone. Its state-owned companies are building utility-scale solar farms in South Africa and other developing economies.



Solar panel installations at the Lanzerac Wine Estate in Stellenbosch. — Gulshan Khan/The New York Times

Power China is also bidding to help expand South Africa's overstretched electricity grid.

The country needs about 14,000km of new transmission lines to move rising volumes of solar power around the country. The price tag: roughly US\$25bil.

"Obviously we don't have money for that," said Samantha Graham-Mare, South Africa's deputy minister for electricity and energy.

China does.

Chinese state-owned firms are among several international groups bidding on contracts to build and operate the new lines — a model Beijing already uses in countries such as Brazil and the Philippines.

Yet the solar boom does little to solve one of South Africa's biggest challenges: jobs.

Installation work is largely local, but the panels, batteries and inverters are overwhelmingly made in China.

"The trade-offs are significant," said Marvellous Ngundu of the Institute of Security Studies in Pretoria. "South Africa consumes advanced green technologies without capturing the industrial benefits. The jobs are created elsewhere."

The rapid move by households and firms to install their own power has become a headache for Eskom. Every kilowatt generated privately cuts into its revenues, even as its ageing coal fleet remains costly to maintain.

During the worst bouts of power cuts — known locally as "load shedding" — elec-

tricity was switched off for hours at a time, battering the economy and fuelling public anger. The last major wave came in early 2024.

Graham-Mare installed solar panels at her own home. Her electricity bill fell by two-thirds.

Multiply that across tens of thousands of homes and businesses and Eskom faces what South Africans call a "death spiral": wealthier customers slash their bills with solar, Eskom loses income, prices rise, and even more people defect.

Illegal connections and years of mismanagement have only deepened the crisis.

In the past five years, South Africans have installed more than 7 gigawatts of solar capacity — about a tenth of the national total. Most of it is privately owned.

Unable to stop the shift, Eskom has begun to adapt. It has scrapped onerous licensing rules, allowed customers to sell power back to the grid, and introduced fixed connection charges so people pay simply to remain hooked up.

The utility plans to install large solar arrays at decommissioned coal plants and says it aims to shift decisively towards cleaner energy by 2040.

"That's where the world is moving," said Nontokoze Hadebe, Eskom's sustainability chief. — ©2026 The New York Times Company

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