

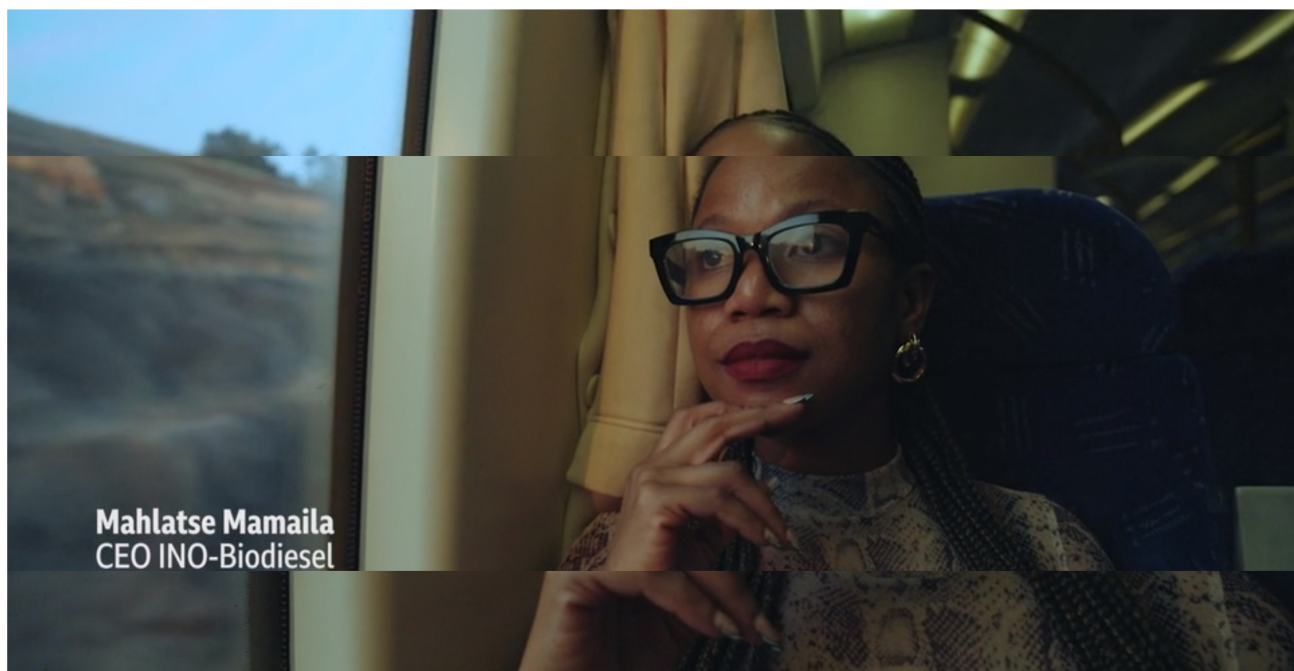


How the next generation of South African entrepreneurs is fuelling the future

From converting cooking oil into biodiesel to auctioning solar cells to anyone in the world, here are some bright ideas sparking change for the country — and beyond.

Whether it's the climate crisis or the increasing glut of plastics, the world is full of existential challenges. But many people are also waking up to the opportunities these present to provide solutions. To reach net zero emissions by 2050, investment in cleaner energy will need to more than triple, to US\$4 trillion, by 2030, according to the International Energy Agency (IEA).

In places like South Africa, where 80% of the country's power grid relies on coal, rolling blackouts have become routine and less than 8% of the population recycles, a new wave of dynamic young entrepreneurs has rallied around the need for change. They have stepped up to launch cleaner energy projects, help tackle structural social problems, and build a brighter future – but not just for their nation. The changes they're sparking could spread far beyond South Africa's borders.



Harnessing the power of the sun

Many countries have grappled with energy crises recently, but in few places has it been felt as acutely as in South Africa. In recent years, load-shedding – or planned power cuts – has been a regular and frequent part of daily life.

Not only is sunshine abundant and available to everyone in South Africa – “No one owns the sun,” says Abe Cambridge, founder of Sun Exchange – it’s also the world’s cheapest energy source.

Solar energy isn’t widespread in South Africa, however, because of the start-up costs the technology requires. Sun Exchange has set out to address this issue.

The company identifies locations like schools, farms, and retirement homes that are eager to access solar power but lack the financial resources to do so. It then obtains funding for projects by auctioning individual solar cells to anyone in the world, starting at just a few dollars. Cambridge explains that Sun Exchange set a low barrier to entry to make solar investments accessible to everyone – especially those who can’t install panels themselves. Users can build their solar portfolios on Sun Exchange for as little as \$4.

Once the project is funded, Sun Exchange sends its skilled local staff to install the panels. The investors who bought the solar cells generate income by selling their power back at a fixed rate, while the organisations benefit from a cheaper source of energy over a 20-year purchase agreement. So far, Cambridge says, more than 40,000 individuals and 100 corporations across the world have invested in Sun Exchange’s 80-plus solar projects in South Africa.

The Germany-based reinsurance group Hannover Re, for example, recently backed a 13,824-panel project for the Cape Town Society for the Blind. Cambridge expects the project to save the society about \$115,000 (ZAR 2.2 million) in power costs over its lifespan. He estimates it will keep 1,575 tonnes of carbon out of the atmosphere as well.

“South Africa right now needs around ZAR 1.5 trillion to be invested over the next five years to meet its carbon emission reduction plans. That’s \$84 billion in South Africa alone. We’re looking forward to this challenge.”

“You can do something good for the environment while making money,” says Cambridge. “It’s not an either/or.”



Fuelling rural growth

Mahlatse Mamaila just needed one good story to change her life – and the lives of many others. A former financial adviser from Limpopo, Mamaila made a 180-degree pivot from her career path during the pandemic after she began reading about biodiesels, a resource that climate change experts believe is essential to global decarbonising efforts. As fuel prices soared, she realised biodiesel could help fill the energy gap in places like South Africa. What's more, it could also build new revenue streams for food vendors in rural areas who operate on razor-thin margins.

In late 2020, she started learning how to collect, process, and convert used cooking oil into biodiesel. Early last year, she launched Ino Biodiesel and started doing it.

The last week of every month, she visits her 10 suppliers in Gauteng and Limpopo. "We buy cooking oil from local and youth-owned restaurants selling kota [sandwiches] and fish and chips, and abomama [mothers] who make magwinya [doughnuts]," she explains.

"I believe we young entrepreneurs are the change we wanted to see when we were growing up.

From every 100 litres of oil, Mamaila can make 80 litres of biodiesel, which the company sells to businesses like mining companies and construction firms. Currently, Ino Biodiesel produces 40,000 litres per month – without industrial-scale space or resources. The product has been so well received that demand has rapidly outgrown supply.

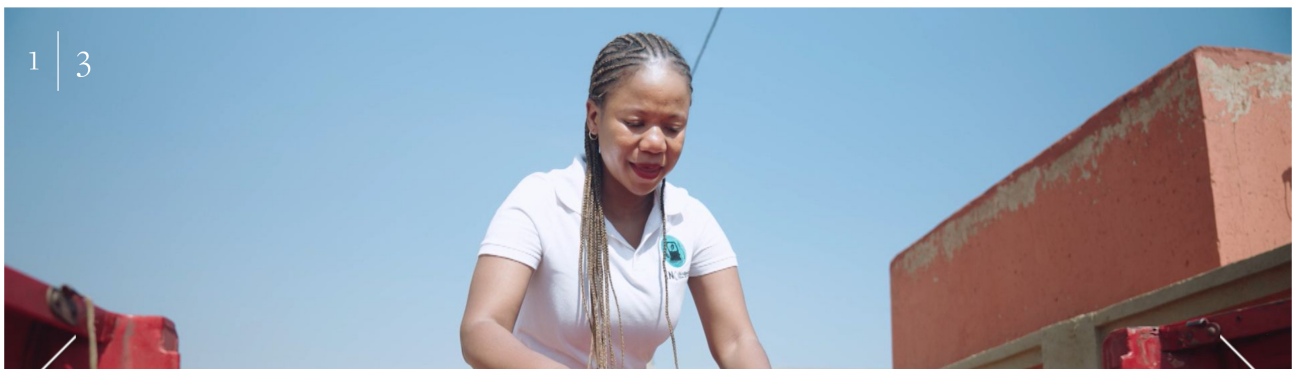
"Access to market is not a problem," she says. "There are a lot of opportunities across South Africa's nine provinces. The challenge is, how do we reach them when we don't have the funding, equipment, or storage capacity?"

Although scaling remains top of mind, Mamaila has set her sights on more than simply fuel. She works with women in Limpopo to grow agricultural products that can provide food security during shortages or be turned into oil, and she has provided 3,000 litres of biodiesel to schools and medical clinics to keep them powered during load-shedding periods.

There's also an educational component. Among other outreach initiatives, Mamaila has taught students the ins and outs of biodiesel and spearheaded clean-water programmes.

"We're so excited to get more youth to participate in our programme and expose themselves to environmental issues and greener energy."

By next year, Mamaila plans to expand into more rural communities, including those in the provinces of Mpumalanga and KwaZulu-Natal. "In the village, we're excluded from climate action," she says. "We hear about it on TV, but we don't get the opportunities to participate. That's why I'm working in these communities."





Mahlatse Mamaila _Ino Biodiesel

Producing a paradigm shift through plastics

Plastic waste is a persistent global problem. The OECD estimates that only 9% of plastic waste gets recycled, and almost a quarter of it is mismanaged. In South Africa, that problem has an unusual twist. Just 7.5% of South Africans recycle, and yet the country enjoys a 57% recycling rate. That impressive figure is thanks to an informal network of waste-pickers, or reclaimers.

Each day, thousands of South Africans wade into landfills to pluck out paper and packaging waste, haul it to recycling centres, and sell it for cash. Regenize founder Chad Roberston has set out to not only provide reclaimers with greater safety, security and dignity, but also to encourage more communities to reduce, reuse, and recycle.

"[Going into landfills] is an undignified way to get the material," he says. "They compete with thousands of other reclaimers to get the recyclables, dealing with organic waste, medical waste, and more, all in one dirty bag."

"And it's a dangerous job. Reclaimers travel [on foot or bicycles] many kilometres on highways and get paid in cash, so they're quite exposed to getting robbed."

Regenize is addressing these dangers by decentralising waste collection.



Photo courtesy of Regenize

Each day, sorted waste from local communities is sent to Regenize's collection hubs, where the separated waste can

Each day, sorted waste from local communities is sent to Regenize's collection hubs, where the separated waste can be bailed for easy transport. Currently, Regenize has seven such hubs, each of which can serve around 800 households. "But we hope to reach 100 hubs by 2026," says Robertson.

Regenize also provides reclaimers with uniforms, personal protection equipment and smartphones to connect with communities that recycle, as well as trolleys for hauling the waste. To encourage people to pitch in, Regenize offers payments in its digital currency, the Remali. These tokens can be spent on groceries, phone data, and more, including at zero-waste "spazas," informal convenience stores Regenize recently opened in several low-income communities.

Above all, these efforts unite communities and humanise informal workers. "The reclaimers get respect from residents because they are now providing them a valuable service," Robertson says. "This gives them dignity."

"The bigger vision of Regenize is to enable and encourage people to live what we call imperfect zero-waste lifestyles. You don't have to be perfect. As long as you're doing something – recycling, reducing, reusing – we want to encourage that."

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