

Milken-Motsepe prize finalists open up SA green energy opportunities

By  Lindsey Schutters

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Stellenbosch was buzzing with the return of students and Varsity Cup rugby, but there was another movement starting. The university engineering building hosted live demonstrations by four of the five finalists (one was in Nigeria) for the [Milken-Motsepe Prize in Green Energy](#) and each team had the same 24 hours to generate a minimum of 65kWh of electricity from their solutions. The grand prize is \$1m in cash, with a runner-up prize of \$250,000.



Stellenbosch University hosted the demonstration leg of the Milken-Motsepe Green Energy Prize competition.

“They’re all here right now, except for the one team who’s in Nigeria that’s testing simultaneously. They’ll go another round where they use all of the data from this, then we will collect and give back to our judges,” explains Milken Institute senior director of social innovation, Emily Musil Church, about the competition.

“They will again have a chance to add any documentation they want, other investments they’ve gotten, business plans, all of that, and the judges will sit and deliberate. No one will know until our livestream we’ll have from our global conference in Los Angeles in May this year.”

“We’re gonna fly all five teams to Los Angeles because we want all of them to get the opportunity to be at this conference and get to meet their investors and potential partners.”



MTN makes big gains in solar renewable energy project

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Among the finalists – [AfTrack](#), [Newdigit Technologies](#), [Smart Agri-Centres](#), [Omnivat](#), and GEG Geosleeve – Omnivat and GEG Geosleeve stand out as catalysts for other green energy markets that could expand to critical minerals.

Larger industry

Omnivat’s containerised units combine electricity from solar PV panels with water purification and hydrogen energy. The

RO-filtered water and solar power run the electrolyzers which feeds the hydrogen fuel cell and generates electricity.

It's a vision of a working use case for the hydrogen economy that the Ramaphosa administration has placed at the heart of South Africa's Just Energy Transition with an estimated R320bn investment requirement.



Omnivat's containerised system included a hydrogen fuel cell.

GEG Geosleeve aims to unlock South Africa's geothermal energy potential with its innovative thermoelectric installation. The system of thermoelectric panels is designed for temperatures of around 100°C – which is below the threshold considered to be viable for largescale geothermal energy use.

But within the panel is a layer of bismuth-based metal alloy that becomes bismuth telluride that can generate electron flow if there is a large temperature differential on opposite sides.

Unlikely sources

South Africa has about 87 hot springs within and on the margins of the Kaapvaal Craton, such as the Cape Fold Belt and the Limpopo Belt. While maximum recorded surface temperatures of 67.5°C, GEG – who operate geothermal energy complexes in Kenya – estimates that there is sufficient heat to make the solution commercially viable.

It would also make use of local bismuth deposits which would further drive down material costs.



GEG Geosleeve had a novel installation

“We can only have one winner, unfortunately, but this is also part of the business opportunity. From what I've seen in other competitions, I've been doing this type of work for 10 years now, you see a lot of companies that get started this way,” says Musil Church.

“So part of what we want is exactly this, them to get exposure and people say ‘well, that's really cool’ and be inspired to find other solutions. It's important in a time when there's so much bad news out there.”

All the finalists will have an opportunity to present at [Africa's Green Economy Summit](#) happening in Cape Town from 21-23 February.

ABOUT LINDSEY SCHUTTERS

Lindsey is the editor for ICT, Construction&Engineering and Energy&Mining at Bizcommunity

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