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# Winds of change favouring SA's renewable energy sector

## **KEEPING CURRENT**

### Lelo Mdhladhla

HANGE is the only constant." This quote by Heraclitus, the pre-Socratic Greek philosopher, is iconic not just for it's simplicity, but also for its stark truth. It is based on the proven premise that the only certainty is continuous change, and adaptation to the change in our environment is the only means to remain

relevant. This is particularly apparent in the renewable energy industry, against the backdrop of an increasingly Vuca (volatile, uncertain, complex and ambiguous) world.

Renewable energy has now emerged at the forefront of the global energy landscape.

In 2017 China spent \$126 billion (R1.65 trillion), or 45 percent of the global total, investing in renewables, followed by the US at \$40bn.

The total global spend on renewables exceeded \$250bn for the first time in 2017. Recent years have seen accelerating market presence for renewable energy, driven by technological progress, declining costs, and evolving societal and consumer preferences.

As renewable energy adds scale, the favourable underlying forces look set to remain strong; and with more certainty in the regulatory environment we will see accelerated changes going forward.

Below are five main trends that will have an enormous impact in the renewable energy in industry for South Africa.

#### Precedent

**1. Decentralisation:** In 2017 the Department of Energy (DoE) gazetted legislation allowing independent power producers to construct and operate projects without a generation licence condition subject to the following provisions:

a) The generation capacity of the project must be equal to or less than 1MW.

b) All administrative requirements have been fulfilled as stipulated by the National Electricity Regulator of South Africa (Nersa).

Furthermore, Nersa has released a draft consultant paper on small-scale embedded generation (the process of generating electricity at a specific location and then connecting it to the grid).

These changes in the regulatory environment show that there is a growing trend to move to distributed and embedded generation, and policymakers are taking steps to create an enabling environment for diversified energy generation.

We will see a shift from a traditionally vertically integrated electricity industry to a matrix-structured one whereby there will be greater proliferation of smaller power generators as opposed to a few large generators.

Therein lies the opportunity for a decentralised electricity market.



to Caledon Wind Energy is a commercial wind farm near Caledon in the Theewaterskloof Municipality in the Western Cape. Recent years have seen accelerating market presence for renewable energy, driven by technological progress, declining costs, and evolving societal and consumer preferences.

# Well-designed renewables bids can lead to greater uptake

#### **Hebren James**

TO MEET the needs of growing populations and allow economic development, countries in Africa need to radically increase energy supply.

Even though about one billion people in sub-Saharan Africa alone are expected to have access to electricity in 2040, the World Bank Group anticipates a shortfall of an estimated 530 million people living in the region who still won't have access to electricity by then, because of population growth.

We are seeing a rise in wind and solar capacity in Africa, but uptake has been slow in comparison with other geographies, especially considering the opportunities available across Africa. With an assortment of challenges facing the African energy market, how can well-designed renewables bids lead to increased uptake across the continent?

**2. Technology improvements:** Continuous technological innovation is also a key driver in the renewable power generation market. Innovations that unlock efficiencies in manufacturing, reduce installed costs or improve performance for

There is no doubt that the private sector can make invaluable contributions by carrying out the all-important work of developing and building renewables projects swiftly, efficiently and according to industry best practice, showing the value of these projects for the countries' economies and communities.

When you look at a project's expected outcome in terms of value it's apparent that there are three fundamental factors. The first is the quality of the project, which is primarily established during the planning phase, and the second priority factor is how the contracts are assembled.

Having an international wind turbine manufacturer responsible for the whole project will decrease local involvement and drive up costs. From other markets, we see that local active developers who can split up their projects into several packages are most successful.

The third factor is the quality of the

power-generation, equipment will take on increasing significance. and business their roofs.

This is especially true with solar photovoltaic power generation where costs have reduced by more than 70 percent in recent years, making it easy for home owners

and businesses to install solar systems on their roofs.

puters so that the record cannot be altered

relates to the execution phase, and this

impact on the business environment for

developing and building renewables pro-

jects is the global move from systems

largely based on feed in tariffs (FITs) to

African countries have been quick to

adopt the auction model, despite the slow

movement of the market in recent years,

with the support of key international

influence the auction model has had in

creating enthusiasm in policy circles

around the potential of renewables as

There is no doubting the positive

financing institutions such as the IFC

competitive power auctions.

Model

One factor which is having a major

can directly affect a project's outcome.

Blockchain is a decentralised, distributed and public digital ledger that is used to record transactions across many com-

implementation of the project, which fossil fuel power projects. However, the

governments realise that wind and solar Hebren James is the South Africa Country

are cheaper and faster to deploy than director at K2 Management.

retroactively without the alteration of all subsequent blocks and the collusion of the network.

rapid decline in prices fostered by the

auctions system creates new challenges.

mitting incorrect bids and as a result are

then unable to execute a project and need

to renegotiate the terms of the bid sub-

mitted. Projects need to be well-designed,

bidding companies need to have a firm

grasp on supply chain and logistics, as

well as future projections to secure bids

that are both competitive and ensure that

renewables across the African contin-

ent, and projects that are more desir-

able, attract investment from an early

stage. Improving a project's viability and

deliverability will ultimately boost such

There is a strong investment case for

projects are realisable once won.

a project's desirability.

It is not peculiar to see companies sub-

This technology, while in its relative infancy in South Africa, is already being used to enable energy trading in other developing markets.

For example, in Argentina, a platform called Greenum has been developed. Greenum is the world's first blockchain powered sustainable, scalable and secure energy and data trading platform.

Contract Products State

Greenum enables contributors (people and companies) to invest in green energy projects across all renewable technologies, globally. There are two pilot projects currently under way in Cyprus, and Israel.

**3. Competitive procurement:** As competitive procurement drives costs lower, a wide range of project developers are positioning themselves for growth.

The Renewable Energy Independent Power Producer Programme (Reippp) has been a shining example of a private-public partnership that was executed with transparency and efficiency.

The competitive procurement process is recognised globally as one of the best programmes of its kind and for good reason.

With R192bn invested thus far and R56bn to come as a result of the recently signed 27 power projects, there is still enormous potential for renewable power generation going forward.

However, in the context of reduced demand for South Africa, we await further direction from policymakers as to the rate at which power will be procured in years to come.

**4.** A large base of experienced, internationally active project developers: The global increased focus on renewables has created a large base of developers who regularly bid in procurement programmes across varying geographies.

The opportunity is for South African developers to take advantage of programmes like the Reippp to upskill and create the internal competencies within their own companies that will enable them to bid in other markets and win bids to construct projects. This was emphasised at the recent African Utilities Week in the programme section dedicated to discussions on the Reippp.

**5. Resource Planning:** In recent years, this has probably been the most debated element of energy policy in the South Africa. Investment decisions made in recent years are based on the 2010 version of Integrated Resource Plan (IRP), which assumes far higher demand and materially different technology costs than is currently the case.

The DoE has confirmed that the IRP will be presented to the cabinet on August 15 and, on approval, will be published in the Government Gazette. The IRP is a key legislative tool.

To drive inclusive economic growth, it will be imperative for private, public and civil associations to leverage the energy sector to create sustainable employment, and SMME opportunities for all.

Furthermore, the energy sector has been identified as a key contributor to the \$100bn investment goal set by President Cyril Ramaphosa. The opportunity for us as professionals and academics in this industry is to capitalise on these trends to create a more vibrant energy market.

Lelo Mdhladhla is the chief marketing officer for POWERX.