

RENEWABLE FINANCE

Africa's best chance?

Renewables could finally overhaul Africa's energy economics, giving it more global clout than ever. But only if the financial ecosystem is reinforced – and fast. Michelle Meineke reports.

It's a stark paradox. Home to the world's fastest growing population and the world's richest solar resources, Africa still has 600mn people without access to electricity. The continent has only installed 5 GW of solar PV – less than 1% of the global total. And that's not to mention the largely untapped potential of wind, hydro and geothermal resources across the world's second-largest continent. But incentives to bolster renewable energy are quickly mounting (see box: *Pressure points*).

'The vast reduction in the cost of renewables has opened the door to more distributed energy resources. I liken renewable energy to the mobile phone market. Statistics show that more Africans use smart mobile payment applications than western nations,' says Mohammed Atif, Market Area Manager of the Middle East and Africa for DNV GL. 'When Africa advanced its communications, it did not follow the traditional path, a large and interconnected network with a national telecom operator. Instead, it went straight to mobile. Now, I see Africa leapfrogging in the renewables market and creating a unique market, as it has done with communications.'

Data echoes this bullish sentiment. In 2018, approximately \$2.8bn was spent on renewable projects in sub-Saharan Africa (excluding South Africa) – a regional record and \$600mn more than the previous year, according to research firm BNEF. In 2021, some 1.2 GW of PV is expected to come online outside of South Africa, which is twice the amount commissioned in 2018. And record-low tariffs for sizeable solar projects in the neighbouring Middle East are also helping drive state and private interest.

Building momentum

Each African nation has its own low carbon growth plan, as you'd expect on a continent of 2,000 languages and 1.2bn people. 'Of the 54 countries in Africa, I think that around 30 have declared a plan for renewables in their



energy mix,' says Chris Chijiutomi, Director and Head of Infrastructure Equity at CDC Group, a UK government-owned development finance institution. 'There is real traction taking place in some ten countries. Many have had plans for renewables long before the Paris Agreement emissions target of net zero by 2050.' The firm aims to invest \$2bn in African businesses over the next two years.

In late 2018, ACWA Power brought its 150 MW Noor III central tower plant online in Morocco, with nearly eight hours of storage capacity. It is the world's largest operational concentrated solar power (CSP) tower plant and was only the second to integrate molten salt storage technology at the time. It will help diversify Morocco's energy mix, which previously relied on imported fuels to meet 97% of demand.

To the south, in Senegal, is West Africa's first utility scale wind farm, the Parc Eolien Taiba N'Diaye (PETN) project. Last December, the 159 MW project was connected to the national electricity grid for the

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Photo: CDC Group

first time. It will boost Senegal's generation capacity by 15% on completion this year, according to energy firm Lekela.

To the east, Egypt's Benban Solar Park is among the largest in the world, with the \$2.1bn installation currently supplying nearly 1.5 GW to the national power grid. The continent's east is also home to Africa's largest wind farm, the Lake Turkana Wind Power project in Kenya. Officially inaugurated last year, the 365 turbines generate 310 MW. Meanwhile, South Africa, the continent's second-biggest economy has spent the last decade developing successful solar projects and renewable supply chains. Rwanda is also making good progress in strengthening its foothold in the green energy market.

Nigeria, the continent's biggest economy and home to nearly 200mn people, is just beginning its journey. But the OPEC member provides the biggest untapped opportunity for renewables in Africa, based on the size of its power deficit relative to its

population, as well as its abundance of natural solar and hydro resources.

There's a lot of work to do. Nigeria aims to have a 20% (unconditional) to 45% (conditional) reduction in greenhouse gas emissions by 2030 compared to the business-as-usual scenario. At the same time, the country wants to increase its oil production to 2.5m b/d and become a net exporter by 2020. It also aims to end gas flaring in nine years.

Narrowing the chasm

Despite being home to 17% of the world's population, Africa accounts for just 4% of global power supply investment. Achieving reliable electricity supply for all would require an almost fourfold increase, to around \$120bn a year up to 2040, according to research from the International Energy Agency (IEA).

The good news is that investors are keen on Africa, as illustrated by the 30-plus companies from 12 nations that participated in Egypt's Benban project – Spain's Acciona, UAE-based Alcazar Energy, Italy's Enerray, France's Total Eren and EDF and China's Chint Solar were among them. They just need some reassurance.

'Investors need a stronger regulatory and legal framework to promote investment and the flow of capital,' explains Chijiutomi. 'Investors are used to making a call on risks that they can manage. They need to know the ground rules. Understandably, these differ across the continent. Some markets – such as South Africa, Tunisia, Egypt and Morocco – have created regulatory and legal frameworks. They have a clear roadmap and an accountable regulatory body, and they engage the private sector via some unbundling in their electricity markets.'

Greater clarity is also needed in the procurement process, especially when it comes to counterparties' solvency and the future role of subsidies. Sometimes, when a company digs

deeper in the electricity chain, it finds that tariffs are not as cost reflective as required. This risks making the sector financially unsustainable, thus weakening investors' confidence – never a good sign for a developing market. Continuity in governance is also critical.

'When a new administration comes in, they sometimes go back to check the transparency and financial validity of a project, and so on. That takes time and before you know it, the election cycle comes around again, with little implementation achieved,' says Chijiutomi. 'I was personally involved in developing a utility scale solar renewable project in northern Nigeria in 2012. This project, along with others, had agreements and initial approvals with government. It is still not implemented.'

Generally, investments must flow towards improving grid arrangements, for both large and smaller entities, as well as deepening trade connections. Even the countries that have progressed the fastest now need to modernise their grids to sustain the scale of renewable power required to hit national energy targets. Improving the environmental, social and corporate governance of private entities – ie in mining, one of Africa's biggest industries – would also accelerate progress.

Opinions are mixed on the value of foreign influences in Africa's energy market. Many stakeholders in Africa's energy market believe China's financial and technological support is pivotal to the continent's low-carbon growth. Others argue that it's time to ease dependence on foreign crutches.

'Africa should focus on strengthening its own cross-border coordination and grow the African Union,' DNV GL's Atif says. 'The best outcome for the continent is for the renewables market not to be dominated by foreign influences, but to evolve into a global influencer.' ●

Pressure points

Africa faces a very tall order. To start with, its population is booming. One in two people added to the world population between today and 2040 will be African, likely exacerbating the fortunes of the 416mn people already living in poverty. Of course, this translates into an energy-hungry continent. Africa's projected growth in oil demand is higher than that of China and second only to India. And it's also tipped to be the third-largest source of global gas demand growth – a very expensive position to be in.

Add to this that electricity demand in Africa is 700 TWh, with the North African economies and South Africa accounting for more than 70% of the total. Yet it is the other sub-Saharan African countries that will see the fastest growth to 2040. Electricity demand more than doubles in the IEA's Stated Policies Scenario to over 1,600 TWh in 2040. Finally, consider that Africa – highly vulnerable to a changing climate – has also pledged to support the Paris Agreement, a herculean task even for regions with stable energy economics.

Renewables represent the main relief switch in this pressure cooker. But nations must hurry. In the IEA's Africa Case, solar PV deployment reaches 320 GW in 2040, overtaking hydropower and natural gas to become the largest electricity source in Africa in terms of installed capacity.

But – and this is a big but – this would mean an astonishing rate of progress in less than two decades. While perhaps radical, it's very necessary. Potentially, 90% of the global population without access to electricity and almost 50% without access to clean cooking could be living on the African continent by 2040.

'Infrastructure funding is not for the faint hearted – you need to be a long-term investor willing to provide long-term capital, while working long-term with governments and multiple stakeholders'

Chris Chijiutomi,
CDC Group

Impact of COVID-19?

Looking at sub-Saharan Africa alone, the economic and social impacts of the pandemic are immense. The World Bank warns that the impact will cost the region \$37–\$79b in output losses in 2020, weakening supply chains and exacerbating regulatory uncertainty. Economic growth is expected to contract from 2.4% in 2019 to between -2 and -5% in 2020 – triggering the region's first recession in 25 years.

The good news is that political momentum appears on track,

especially as the deployment of renewables is central to the African Union's Agenda 2063 and the UN Agenda 2030 on Sustainable Development.

'It is now even more urgent to fast track energy access efforts. It is time to use Africa's enormous renewable energy resources for the benefit of the African people in response to the coronavirus pandemic,' says Dr Amani Abou-Zeid, Commissioner for Infrastructure and Energy of the African Union Commission.