

Meeting Africa's energy-related goals

Peter Middleton

COMMENT



During the second week of June, I attended the International Energy Agency's IEA Annual Global Conference on Energy Efficiency, which was held in a small Danish city called Sonderborg. This to showcase the impact that integrated district wide energy-efficiency initiatives, coupled with investment in a full suite of green technologies, can have on reducing carbon emissions to net-zero.

In summary, through its ProjectZero initiative that began in 2007, the Sonderborg municipality, in partnership with local industry, businesses and its residents, has reduced its carbon emissions by 52% and is on track to be a carbon-neutral region by 2029.

Much of the world has changed in these 15 years. The almost forgotten global financial crises that began in 2007/2008; Eskom started load shedding in that year; and in South Africa, the state-capture years followed. CO₂ levels in the atmosphere have risen from around 385 ppm to 421 ppm, only 9 ppm away from the 'safe' 1.5° warming threshold; the COVID pandemic hit and continues to threaten every country on the planet; and now we have a war in Ukraine that is creating global energy, food and cost of living crises.

The IEA has more recently released a special report entitled; 'The Africa Energy Outlook 2022'. Citing Russia's invasion of Ukraine, the report notes that food, energy and other commodity prices are soaring, increasing the strains on African economies already hard hit by the COVID-19 pandemic. Overlapping crises are affecting many parts of Africa's energy systems, including reversing positive energy-access trends, with 25-million more people in Africa living without electricity today compared with before the COVID pandemic.

Africa, the IEA notes, is also already facing more severe effects from climate change than most other parts of the world – including massive droughts – despite bearing the least responsibility for the problem. "Africa accounts for less than 3% of the world's energy-related CO₂ emissions to date and has the lowest emissions per capita of any region."

The IEA suggests that the global clean energy transition holds new promise for Africa's economic and social development, with solar, other renewables and emerging areas such as critical minerals and green hydrogen, offering strong growth potential if managed well.

"Africa has had the raw end of the deal from the fossil fuel-based economy, receiving the smallest benefits and the biggest drawbacks, as underlined by the current energy crisis," said Fatih Birol, the IEA executive director. "The new global energy

economy that is emerging offers a more hopeful future for Africa, with huge potential for solar and other renewables to power its development – and new industrial opportunities in critical minerals and green hydrogen."

"The immediate and absolute priority for Africa and the international community is to bring modern and affordable energy to all Africans – and our new report shows this can be achieved by the end of this decade through annual investment of \$25-billion, the same amount needed to build just one new LNG terminal a year," Dr Birol added. "It is morally unacceptable that the ongoing injustice of energy poverty in Africa isn't being resolved when it is so clearly well within our means to do so."

Hear! hear!

The report explores a Sustainable Africa Scenario in which all African energy-related development goals are achieved on time and in full. This includes universal access to modern energy services by 2030 and the full implementation of all African climate pledges.

Ensuring affordability is cited as an urgent priority, with increased energy efficiency essential, since it reduces fuel imports, eases strains on existing infrastructure and keeps consumer bills affordable. From a generation perspective, Africa is noted to have 60% of the best solar resources in the world but currently only 1% of the installed PV capacity, which is already the cheapest source of power in many parts of Africa.

For the continent's industrialisation, however, the IEA points towards expanding natural gas use. More than 5 000-billion m³ (bcm) of natural gas resources have been discovered to date in Africa that have not yet been approved for development. These resources could provide an additional 90 bcm of gas per year by 2030, which may well be vital for Africa's domestic fertiliser, steel, cement and water desalination industries.

Cumulative CO₂ emissions from the use of these gas resources over the next 30 years would be around 10-billion tonnes, but If added to Africa's cumulative total today, they would bring its share of global emissions to a mere 3.5%.

From a resource perspective, Africa's minerals are critical for multiple clean energy technologies and new export markets and, if managed well, these could more than double Africa's export revenues by 2030.

Overcoming difficulties can lead to opportunities. Wouldn't it be great to see Africa emerge from these troubled times as a Sonderborg-like success story.



SAICHE
The South African Institute
of Chemical Engineers

sassda
southern africa stainless steel
development association



SAIW
Southern African Institute of Welding



STEEL
SOUTHERN AFRICAN INSTITUTE OF
STEEL CONSTRUCTION



AFSA
ALUMINIUM FEDERATION
AFRICA
Aluminium – light, strong and beautiful

MechChem Africa is endorsed by: