

Featured article

Guest authored by Dr. Richard Norris

Will net zero undermine the rise of Africa?

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Dr. Richard Norris

CEO, Pandreco Energy Advisory



Biography

Dr. Richard Norris is a Fellow of the Canadian Global Affairs Institute and separately runs his consultancy firm, Pandreco Energy Advisory. He is a leading author and speaker on the role of energy in society and economics. He advises public and private bodies on macro strategy as well as on specific energy investments.

Dr. Norris' career has spanned research (Imperial College/BP), operational experience (Elf Aquitaine/Total), management (Geopetrol/Candax) and board roles (Candax/ Eland PLC/Duna Energia), as well as debt financing (BNP Paribas/BTG Pactual) and equity investments (Helios Investment Partners/BTG Pactual and Family Offices).

He holds a BSc in Geology, an MSc in Petroleum Geology and a PhD in Petroleum Engineering (Imperial College, London). Richard is also a Director of Maha Energy AB.

Please note that the opinions expressed in the section of the Annual Report are those of Dr. Richard Norris. They do not purport to reflect the opinions or views of Savannah Energy.

Africa's share of cumulative global greenhouse gas emissions is minuscule, despite being home to 18% of the current global population. It is inevitable that energy demand on the continent will increase through development and through population increase. No country or region has developed without the extensive use of hydrocarbons – should Africa be the testing ground for net zero development?

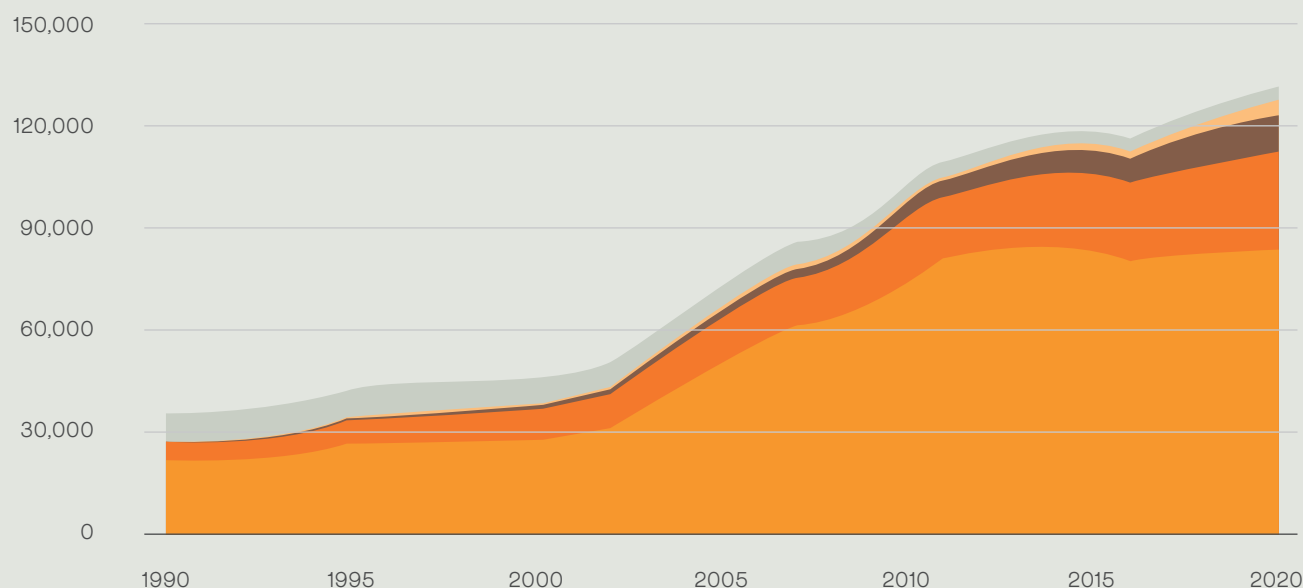
Lessons of history

Let us start with the USA – the iconic skylines of New York, Chicago and Los Angeles, the vast six-lane freeways and the suburban sprawl around every city, the industrialisation of agriculture, the massive dams and canals, its nuclear reactors and electrical grid, its oil and gas production, refineries and distribution networks. Now consider this: China poured more concrete in a two-year period (2011–2013) than the USA did in the whole of the 20th century¹.

Even given that China has a population three and a half times that of the USA, this statistic on concrete is astonishing. It is a reflection of the extraordinary pace at which China has played catch-up (and indeed surpassed) on its infrastructure. Concrete is the bell-weather, but this trend is repeated across almost all resources and commodities.

It is tempting to suggest that China's rapacious demand has been due to its role as the manufacturing centre for the world. Whilst this is partly true, it is clear that these gargantuan amounts of concrete, steel and – by extension – energy have been flowing into infrastructure and not simply into consumer

Total primary energy supply (Petajoules)



Source: climate-transparency.org

● Coal ● Oil ● Natural Gas ● Nuclear ● Renewables ● Other

goods for the West. This rapid urbanisation and industrialisation have gone hand-in-hand with increasing energy demand. Whilst we hear a lot about China being a global leader in the installation of renewable energy, it is easy to see that the industrialisation and development of China has been built, just like for all “Western” countries, on coal, oil, gas, nuclear and hydro.

Roadmap for Africa

As the world ramps up its efforts to decarbonise, it is reasonable to question whether the roadmap for post-industrial Western nations should be applied to countries in development. Africa’s “energy transition” is one that should first and foremost lift people out of poverty. There is a moral obligation to at least not hinder Africa in its development. At the same time there is an overriding narrative that Africa’s development should be part of the global decarbonisation effort. As noted above with reference to the USA and China, rich countries have become wealthy from the enormous leverage of using hydrocarbons:

- The lesson of history is that wealthy societies have been built on hydrocarbons.
- The message to Africa is to ignore this lesson and look to an unproven low-carbon developmental path.

Whilst Africa is a continent not a country, the parallel to China 30 years ago is still useful: a starting point of populations of 1 to 1.3 billion, of both rural and urban populations, limited infrastructure and low energy use. There are, however, many significant differences – not least of which is that Africa consists of 54 independent countries whereas China is a single one with a strong centralised administrative function.

Two that are of note are:

- (1) The population of Africa is due to double to 2.4 billion by 2050, and by some estimates reach 4.2 billion by 2100²; China’s population has been plateauing over the last 30 years and is now shrinking.

- (2) Africa has vast natural resources – traditional hydrocarbons and rich mineral concentrations as well as areas well suited to solar, wind, hydro and geothermal. Whilst China has some minerals and coal, as well as hydro, wind and solar potential, it is a major importer of oil and gas.

Given the lessons of development from countries such as Korea, Japan and most recently China, it is impossible to imagine that the forces of population growth, industrialisation and urbanisation won’t come without a monumental call on the “Four Pillars” (concrete, steel, plastics and ammonia)³, which in turn implies an equally monumental increase in Africa’s need for energy.

The OECD diktat, that Africa should not use hydrocarbons and focus only on “low-carbon” energy is predicated on an assumption that low-carbon energy is of equal value or utility. Whilst this is mostly true for hydroelectricity and geothermal, the core development pillars needed for infrastructure and industrial development require more than just wind, solar and batteries. Invested on “sunk” carbon is not a concept we ever think or hear about but it is worth considering in the context of development – the idea that energy is converted into infrastructure and that this is a gradual process that means you are benefiting from deployed energy/carbon emitted from decades or even centuries ago. Some examples: the Golden Gate Bridge in San Francisco was built in 1933–38, the Hoover Dam in 1931–1935, the M1 Motorway in the UK was opened in 1959 and the TGV high-speed railway connecting Paris to Marseille in France was originally built in the 1850s and upgraded to TGV specifications in the 1980s and 1990s.

By applying soft and hard (financial) pressure to only invest in low-carbon energy, wealthy countries are blind to their Carbon Privilege. The view from the moral high ground is made possible thanks to the infrastructure created over generations of carbon-intensive building.

Featured article continued

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Modern Chinese high-speed railway, China

Leap-frogging

The conundrum that is faced by Western activists, politicians, journalists and bankers is that by campaigning hard to “keep it in the ground” they are hurting the very people they are trying to help.

To side step this inconvenient truth, we hear magical plans to help countries “leap-frog” from wood and charcoal direct to wind, solar and batteries, using the neat analogy of how many countries skipped landlines to mobile telephones and e-payment systems.

Renewable energy can provide a fast and clean path to access to electricity, which has enormous benefits to households and communities. However, “access to electricity” and industrialisation are not the same thing. For the industrialisation and urbanisation of entire countries, access to robust dispatchable high-grade energy is fundamental. There are no examples of countries that have industrialised without a reliance on fossil fuels; “leap-frogging” will not work.

There is no shortage of irony to be found in the difficulties faced by countries/regions leading decarbonisation efforts. Germany is the poster-child with enormous expenditure leading to unintended consequences of increased coal and gas use. So, whilst the wealthy G7 and G20 countries hand out lessons in decarbonisation, the wider collection of “BRICS+” countries walk a different path – maintaining a reliance on traditional fuels, with a focus on social cohesion within a broader framework of development and energy security, holding decarbonisation as a secondary (if that) objective.

Carbon justice

Given the foundational strength that wealthy countries have from their legacy carbon-intensive infrastructure, it is problematic to push Africa into development using only low-carbon energy. There is, after all, the concept of a remaining Carbon Budget – that is, the amount of carbon emissions between the number not to be exceeded to keep the planet on the modelled 1.5°C trajectory (2,890 Gt) and the cumulative human-derived emissions (2,479 Gt), resulting in a remaining “budget” of 411 Gt.

A study published in *Scientific American*⁴ in 2023 showed how countries such as the USA have used more than their “fair share” of the Carbon Budget – and emphasised the importance of these over-consuming countries to rapidly ramp-down their emissions. Whilst that sounds good, it is clear that this remaining balance of 411 Gt can neither be met, nor equitably distributed.

As is well known, Africa has contributed almost nothing to historical carbon emissions – despite its population size. Thus, if Africa were to develop in a similar manner to China and use its “fair share” of the remaining Carbon Budget, this would imply that all other countries/regions would have to go to zero emissions (or even negative emissions) overnight to have any chance of meeting the global 1.5°C target. This is clearly not going to happen.

Which leaves a conundrum for Africa – subscribe to low-carbon development and be resigned to slower development and less wealth, or forge ahead with all resources (carbon and low carbon) with a view to increasing wealth, prosperity and resilience? This latter point is not trivial – if Africa will be subject to more climate disruptions, as is often quoted (for example, “Africa is one of the most vulnerable continents to climate change and climate variability”)⁵, the best defence is wealth and the capacity for adaptation that wealth provides.

Keeping people poor is not a solution.

It is immoral to assume Africa should remain under-developed because other countries have developed earlier. Moreover, the anti-fossil fuel militancy aimed at Africa, whether it be from UN climate influencers, European activists or Wall Street banks, should be questioned; indeed it should be refused.

The Overton window – A window of opportunity?

Two years ago, when I provided a macro-view for Savannah Energy’s 2020 Annual Report, the world was in a very different place. The global economy had had a decade of spectacular growth, predicated on ultra-cheap capital driving speculative markets in “tech” stocks and cryptocurrencies, from real businesses to Meme and tocks and the crazy NFT markets. At that time, the energy sector was like *A Tale of Two Cities* – “it was the best of times, it was the worst of times”. Renewable energy and climate tech were booming, turbo charged by



City street market, Lagos, Nigeria

policies, subsidies and cheap capital. Legacy energy was suffering from low returns, expensive capital and public disdain.

In the decade 2010-2020 in the absence of war, pandemics and famines and shocked by excesses of the markets, citizens of the “developed” world looked for purpose. Campaigning for change was easy: you could occupy the moral high ground and find your purpose; you could “make a difference”. Political decisions that would shape the economic direction of countries and indeed continents were being pushed by a one sided argument: witness the phase-out of nuclear power in Germany in April 2023.

In this Brave New World there would be no place for fossil fuels, and indeed there would be no need for fossil fuels.

I believe the myopic view that carbon dioxide emissions were the only problem facing humanity peaked at some point in 2019-2020. Since then, the complacent global order has been rocked by many obvious elements (pandemic, war in Ukraine, etc.). Less obvious has been the slow-build of energy insecurity.

From the summer of 2021 (pre-dating the war in Ukraine by at least six months) Europe started to experience energy-cost issues leading to rapidly growing inflation in all countries.

Complacency became replaced by real hardship for many as energy costs ate into household budgets. In the UK, for example, fuel poverty has risen sharply and could affect as many as eight million people⁶ (although some estimates put this as high as potentially two-thirds of all households⁷).

With families having to choose between “heat or eat” energy security and energy affordability became headline material, and a Rubicon was crossed – the “net zero at any cost” is no longer a message that people want to hear. The spread of ideas is rapid when people’s standard of living is impacted. This propagation is slower in the political class who have made net zero part of their identity – this group includes asset managers, journalists and academics as well as politicians.

In political science this change in acceptable policy, or how policy has its moment, or zeitgeist, is called the Overton window⁸. This policy window is not fixed and like a pendulum is swinging back from an extreme position.

One would hope that a dose of energy reality in richer countries will lead to less dogmatic, more pragmatic, efforts to support development.

A just transition

It is a given that the population of Africa will double by 2050. The right of the future 2+ billion people to industrialise, to develop and to have jobs should also be a given, yet it is being compromised by an over-emphasis on net zero ambitions and a misunderstanding of the importance of infrastructure: concrete, steel, plastics and ammonia and the energy required to develop an industrial heart.

One can look at the “Energy Transition” in OECD countries as being anywhere from underperforming to delusional but there is a relatively high degree of resilience that has been brought with historical energy/carbon. In the real world physics wins over platitudes and thermodynamics trumps arbitrary targets. The energy transition in developed countries is far from smooth: it is becoming increasingly expensive and will certainly not look like the green utopia that is hoped for.

As the “Green Utopian Vision” is replaced by a more practical and prosaic views on energy security and energy affordability in OECD countries and multilateral agencies, so their willingness to support all energy projects in Africa should mature.

If a more balanced and indeed “just” support for Africa’s development is not forthcoming, Africa should seek Carbon Reparations – if Africa cannot even use its fair share of the Carbon Budget, then it should be compensated.

As Indira Gandhi eloquently stated in Stockholm as long ago as 1972, at what is recognised as the first global environmental conference:

“On the one hand the rich look askance at our continuing poverty - **on the other, they warn us against their own methods.** We do not wish to impoverish the environment any further and yet we cannot for a moment forget the grim poverty of large numbers of people.”

Footnotes

Dr. Richard Norris Article – Will net zero undermine the rise of Africa?

1. Source: The Washington Post, How China used more cement in 3 years than the U.S. did in the entire 20th Century.
2. Source: UN data quoted by JHU.
3. Source: Vaclav Smil How the World Really Works: A Scientist's Guide to Our Past, Present and Future Penguin, 2022, p.325.
4. Source: Scientific American, Wealthy Countries Have Blown Through Their Carbon Budgets, April 5, 2023.
5. Source: IPCC.
6. Source: House of Commons Library, UK Parliament.
7. Source: The Guardian, Two-thirds of UK families could be in fuel poverty by January, research finds, 18 August 2022.
8. The Overton window is an approach to identifying the ideas that define the spectrum of acceptability of governmental policies. It says politicians can act only within the acceptable range. Shifting the Overton window involves proponents of policies outside the window persuading the public to expand the window.