

# Rising Powers, Lowering Emissions?

The importance of ensuring that African countries can meet their rising energy needs in a low-carbon way that also benefits the poor, is widely accepted. The so-called ‘rising powers’, such as China, Brazil and India are already investing in energy infrastructure in Africa, and these countries could support transitions to low-carbon development since they are currently some of the world’s largest investors in solar, wind, hydropower and biofuels. Yet, critically, the energy needs of poorer groups are not currently shaping policy and investment decisions and so energy access considerations are not being adequately addressed where low-carbon energy transitions are emerging. Northern donors have a role to play both as knowledge and financial brokers between rising powers and African countries, and in targeting investment towards small-scale and community-managed renewable energy systems, which would directly help the poor majority that are off-grid.

## A clean energy revolution for Africa?

A new clean energy revolution for Africa was the promise being held out by donors, governments and investors at the critical Paris climate change summit in December 2015, amid claims of billions of dollars of investment being mobilised for renewable energy on the continent. The Africa Renewable Energy Initiative (AREI), for example, aims to build at least 100GW of new and additional renewable energy generation capacity by 2020, and 300GW by 2030.

Currently, access to energy services in sub-Saharan Africa is the lowest of any world region. Large swathes of the population across Africa do not have access to electricity, which has significant implications for reaching the Sustainable Development Goal to ‘Ensure access to affordable, reliable, sustainable and modern energy for all’. Furthermore, with the population expected to both grow and urbanise over the coming century, energy demand is set to grow by around 80 per cent by 2040, much of which will be met by expanded use of fossil fuels unless incentives

are put in place to pursue alternative pathways. In a context of vast inequalities and widespread unemployment, the prospects of a transition to a lower-carbon economy will be heavily determined by whether ‘just transitions’ are possible – ones which protect and enhance the livelihoods and opportunities available to socially excluded groups from a dramatic shift in the provision of energy.

## The role of ‘rising powers’ in low-carbon transitions in Africa

So far the role of rising powers such as China, Brazil and India has been discussed principally in terms of the exploitative acquisition of natural resources such as coal, oil and gas. Their growing presence in Africa is often represented as a kind of neo-colonial resource ‘plunder and grab’ reminiscent of the darkest days of empire. But recently completed research on these issues, supported by the ESRC, suggests that Brazil, India and China are playing a key but mixed role in sub-Saharan Africa when it comes to energy: they are both investing in renewables, supporting technology development and engaging with policy initiatives and

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also investing in high-carbon fossil fuel energy pathways. This results in an incoherence to the energy transitions underway, driven by contradictions resulting from the exploitation of coal and gas at the same time as investing in solar photovoltaics (PV), biofuels and other renewable energy technologies. Critically, the energy needs of poorer groups are not shaping policy and investment decisions and so energy access considerations are not being adequately addressed where low-carbon energy transitions are emerging.

Based on an extensive database of public and private investments in low-carbon forms of energy in South Africa and Mozambique as well as interviews with government officials, donors, corporate and NGO actors, the research found a more complex and differentiated story of rising power engagement in sub-Saharan Africa. It explored the power relationships at play in decision-making, policy structures and investment patterns in renewable energy development in Mozambique and South Africa involving the rising powers.

The research looked at:

- Who governs energy transitions in these contexts, how and to what purpose?
- Who sets the terms of transition?
- Who participates in decision-making on energy policy and whose interests are served?
- What are the implications for accessibility and sustainability for energy services in the region?

## Comparing contexts and energy pathways in Mozambique and South Africa

The rising powers are increasingly incorporating renewable energy projects into their aid and loan portfolios in Africa, driven by diverse economic and political goals. China, India, Brazil and South Africa are all in the top ten global rankings for clean energy investment. In 2015, China was again by far the largest investor in clean energy, increasing its dominance with a 17 per cent increase to US\$110.5bn ahead of the US and Europe. And while Brazil's clean energy investment slipped 10 per cent to

US\$7.5bn in 2015, India's gained 23 per cent to US\$10.9bn, the highest since 2011, while South Africa's investment rose to US\$4.5bn, up 329 per cent according to Bloomberg New Energy Finance.

Yet there is no single energy trajectory in each country. Instead, multiple energy transitions are unfolding with low-carbon transitions being pursued and enacted in different ways across these regimes with multiple state agencies and types of business invested in different energy pathways. There is a widespread exploitation of coal and gas alongside investments in solar PV, biofuels and other renewable energy technologies.

## Multiple energy transitions in sub-Saharan Africa

### High carbon

- Continued coal-based electrification in South Africa
- New investment in fossil fuel extraction by corporate and government actors from Europe, South Africa, China and India (coal and gas)

### Meso-scale renewables

- Independent power producers in South Africa include public and private foreign investors
- Private sector foreign investment in Eastern Africa (e.g. Google)
- Hydro and geothermal (Kenya)

### Small-scale renewables

- Donor finance predominately in rural areas
- Some municipal-scale programmes in urban South Africa
- Private investment from businesses and households

Overall, rising powers are not the determining or dominant actors in any low-carbon development sector in either country. Where there are renewable energy investments from rising power economies, they are not predominantly driven by state-led South-South Cooperation objectives. Often renewable energy does not form a major part of bilateral cooperation agendas between the rising powers and Mozambique and South Africa. Rather there is a wide range of state, non-state and private actors within each rising power and no singular, coherent

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state-led push for overseas renewable energy investment from any of the rising powers. It is also the case that other economies, such as South Korea, are becoming increasingly significant in the transitions of each country alongside the continuing importance of established actors such as European bilateral donors and renewable energy technology companies.

### Who will benefit from the new energy transitions?

New revenue streams promise to expand South-South Cooperation and investments in power generation and rural electrification aiming to deliver 'clean energy revolution' in Africa. However, there are concerns across the region as to who will benefit from the new investment based on experience so far.

In South Africa there are worries about who will benefit from the procurement process for renewable energy. This is partly shaped by wider preoccupations with labour and Black Economic Empowerment (BEE). National priorities of localisation and strong trade unions are highly influential over infrastructural and industrial processes and there is mistrust of cheap Chinese imports in all sectors. This is being addressed by a heavily regulated renewable energy policy environment. But despite the fact that the Renewable Energy Independent Power Producer Procurement Programme (RE-IPPPP) has been celebrated globally as a leading model for independent power procurement, as well as for its progressive socioeconomic development and community ownership requirements, ensuring universal energy access is not the main objective of commercial energy developers whose business models are determined by a desire for high returns over short time frames. Indeed many investors are interested in generating electricity in Africa precisely because electricity costs are so high, enabling quick and high returns to be made.

In Mozambique, meanwhile, the National Energy Fund (Fundo de Energia – FUNAE), which is responsible for expanding energy access for rural people through off-grid decentralised power generation, maintains a centralised, top-down and techno-managerial approach and there has been little evidence

of local consultation and popular participation. Questions remain about how much FUNAE's projects have increased the percentage of population with electricity access. Whilst Mozambique's electricity grid is clearly expanding, much of the grid extension has been focused on connecting urban and semi-urban spaces. The state has also typically prioritised the needs of large-scale industrial consumers and energy-intensive mega-projects and is attracted by the lucrative commercial possibilities presented by the export of electricity to neighbouring countries. Often this has led to a heavy focus on large-scale hydropower projects (in some cases involving companies from China, India and Brazil), but many of the proposed schemes involve the displacement of rural people, the disruption of their livelihoods and the deterioration of local ecosystems and have been contested by local civil society and environmental groups.

In both South Africa and Mozambique, therefore, there is a prioritisation of commercial providers of energy in ways which have little to do with the expansion of energy access or increasing its affordability. As a result, the socioeconomic benefits of the development of energy infrastructure are not being diffused or experienced evenly across the energy landscape, reinforcing the key question of whose energy needs are represented and acted upon in policy. In sum, whether or not the growing ambitions of the international community to lend political and financial support to a low-carbon transition in Africa are realistic and achievable will depend on the active engagement of a wide range of actors in building a low-carbon pathway.

Rising powers have a potentially pivotal role to play in how this scenario unfolds. But based on current trends they may be just as likely to capitalise on investment opportunities in new fossil fuel frontiers in Africa as in the much hyped clean energy revolution. To ensure that the low-carbon transition is socially just and developmentally beneficial, proper attention will need to be paid to developing policy processes and institutions that ensure the interests of poorer groups are adequately represented. Only then will there be sustainable energy for all.

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## Policy recommendations

### 1. The need for a rounded view of technology development and diffusion

The research suggests the need to shift away from a narrow focus on the transfer of technology hardware from Northern to Southern countries towards a more rounded view of technology development and diffusion if access, capacity and innovation are to be more meaningfully nurtured. This means learning lessons from transitions in practice and the role of a multiplicity of actors and ecosystems of finance in bringing them about. Assumptions about the role of the state, technology transfer, finance and the potential of market mechanisms often fail to take into account local realities and need to be revisited.

### 2. Combine renewable energy investment with a strategic, inclusive approach for off-grid populations

There is clearly much to do in ensuring that inclusive priority-setting processes help to respond to the energy and technology needs of the vast swathes of the population that are currently off-grid. Donors can add substantial value by targeting those social groups, regions, projects and technologies that governments and the private sector are not interested in. For example, the UK could focus investment on small-scale and community-managed renewable energy systems that would directly help the poor majority that are off-grid in places like Mozambique to achieve a degree of energy access and security. This would ensure that investments, jobs and training stay in those communities and that technologies and projects are appropriate to local needs and settings. Mobilising investment for renewable energy is a worthy goal, but it needs to be combined with a strategic approach to meeting the energy needs of all groups in society.

### 3. Northern donors have a vital role as knowledge and financial brokers between African countries and rising powers

Given shifting geo-politics, while Northern donors are often not the primary actors, they can also seek to play a role as knowledge and financial brokers between rising powers such as China and African countries, seeking to steer aid and investment towards lower-carbon and more pro-poor interventions, and through the conditions they attach to the money they provide to multilateral institutions they can indirectly shape energy trajectories towards just transitions in the global South.

## Further reading

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## Credits

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