
Africa Oil & Gas Report

How will the sustainability agenda
impact development in Africa?



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Capital required, for Africa to fulfil its energy aspirations

Michael McCaw, managing editor, *Petroleum Economist*

As sustainability has moved up the agenda across the globe, politicians, investors, corporates, and multinational funding bodies have taken note.

In the public sector, governments and intergovernmental organisations have drawn out long term plans to decrease the energy sector's carbon footprint. Similarly, financial organisations—from international commercial banks to local investors—have developed principles-based approaches to assess the suitability of their investments, based on a wider range of criteria. Now, the archetype is for a profitable investment, but also one that meets certain environmental—and often social and governance—

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While many investors are still keen to support conventional energy generation across the continent, opportunities are copious in the renewables and sustainable sectors.

standards. That's balanced, with the need to maintain oil and gas outputs in order both to maintain profitability and meet regional energy requirements.

No more so is this true than across Africa. The need to better the continent's energy economy has been apparent for decades, but the changing global appetite for different forms of energy has caused both problems and opportunities. Domestically, many countries require improved energy infrastructure. Internationally, a number of African countries could contribute more, but require funding support to make better use of resources at hand.

And Africa of course has an abundance of natural resources, with which to support the next stage in the



development of its energy production. While many investors are still keen to support conventional energy generation across the continent, opportunities are copious in the renewables and sustainable sectors. Over the past few years, a number of such projects have come onstream, but funding is still required elsewhere to meet increasing regional and global demand.

By attracting financing, many of these projects can take shape—and the responsibility lies not just with regional investment bodies, but with the international finance community.

In this report, Latham & Watkins and Standard Chartered analyse some of the opportunities and challenges facing both producers and financiers, to assess Africa's changing energy economy.

Bridging the gap: Can Africa attract new liquidity sources to its energy projects?

Project financing is crucial to any nation's energy sector. Across Africa, projects live off the funding provided by banks and other financial institutions. And there are many more potential sources of liquidity out there

By Ade Adeola, Ammar AlDiwani, Fathima Hussain, Simon Tysoe and David Ziyambi

The energy sector in Africa has traditionally been one of the largest recipients of project finance in the region, primarily due to the stringent bankability requirements typically associated with limited to non-recourse project financings and the export-oriented nature of the sector. The fall in oil prices in 2014 and its knock-on effects on the energy value chain had a devastating effect on the profitability of the energy sector, as well as the ability of projects to service their debt requirements (particularly where those projects had initially been financed in a \$100 per barrel oil environment). The contemporaneous development of shale gas reserves in the US and elsewhere, as well as what was considered to be the imminent arrival of Iranian oil into global markets, put additional pressure on the demand for African energy exports which were seen as too highly priced, exerting further downward pressure on oil prices. Ultimately, the prevailing circumstances resulted in a decline in lending to the oil and gas sector (which had been the main recipient of project finance) that saw its nadir in 2015, with total Project Finance raised for the year at a low of \$60 million.

However, in the subsequent years, changes in the macroeconomic environment resulted in an improved oil price and outlook for the industry which brought relative stability to the commodity markets. This stability allowed the sponsors of key projects that had experienced challenges in the downturn to reassess the bankability of their projects and to reach financial close. The financing in Angola of the Armada Olombendo floating production storage and offloading (FPSO) and refinancing of Angola LNG in 2016 and, in Mozambique, the financing in 2017 of the Coral LNG project, a \$4.675bn project for the development of offshore natural gas reserves are pertinent examples.

The recovery period for oil prices also coincided with a rise in funding for the development of power projects,

both thermal and renewable. The key African nations to benefit from such funding have been South Africa, Egypt and Nigeria, all of which have aimed to fund large infrastructure development programmes with a focus on power generation, with a mix of both renewable and gas-fuelled power plants. The continent's ambitions to fast-track development and economic expansion to tackle issues relating to industrial output, ongoing power deficits and rising hydrocarbon imports have created significant project finance opportunities and an increase in the demand for liquidity. This upward trend in liquidity demand will only increase as Africa continues to chart its way to industrialisation and commodity prices continue to stabilise, and the significant number of projects in the pipeline may need to look beyond the traditional sources of funding.

The upward trend in liquidity demand will only increase as Africa continues to chart its way to industrialisation.

Commercial bank debt

Traditionally, the principal source of liquidity for African energy projects has been international commercial banks (often with the backing of an export credit agency or a development financial institution). However, these organisations have typically taken more conservative positions regarding African risk, preferring to lend to upstream export-orientated projects which traditionally were in key energy-producing markets in Sub-Saharan Africa such as Nigeria, Angola and Gabon, and developing markets such as Ghana, Chad and the Ivory Coast. The preference for export-based projects enhances their bankability by allowing the

commercial banks to implement financing structures that limit their exposure to local banking systems and currency risk, and to focus instead on credit risk of the offtakers of the relevant exports.

Even though the bulk of transactions may be structured on this conservative basis, an added complication affecting commercial banks is their obligation to comply with internal country exposure limits to avoid over-exposure to one particular jurisdiction or sector. As such, even though the commodity market is stabilising, commercial banks' ability to fund the increasing pipeline of energy projects in Africa is likely to be constrained as most of the more active institutions seek to manage their internal country exposure limits.

Of course, the typically shorter tenors for upstream oil and gas projects (which can be often shortened even further by mandatory prepayment conditions relating to excesses in production or pricing of the relevant commodity or the regular refinancings of typical reserve based lending facilities) provide an opportunity for reinvestments as exposures are amortised over a comparatively short term, easing the pressure on the commercial banks' balance sheets by freeing up capital which can then be redeployed. However, this structural anomaly is unlikely to provide adequate financing for the continent's potential projects; ultimately the only way to fund these projects is for a larger number of commercial banks to begin to participate in the project finance market and/or to take a less conservative view on a wider spectrum of risks and develop the appetite to move away from export-based projects to market-based projects.

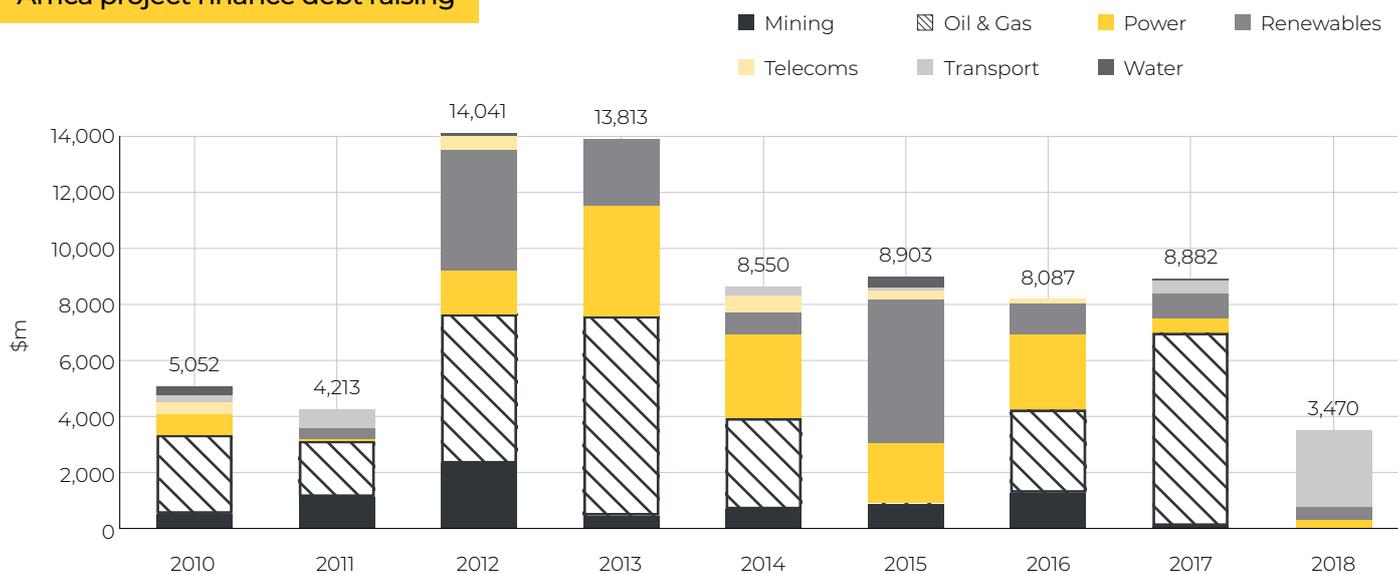
Regional exposure of international commercial banks

Europe: Unfortunately, the participation of commercial banks in Africa has shown signs of decreasing. In recent years, a number of previously active European commercial banks have either reduced their investments in Sub-Saharan Africa, or have pulled out of the region altogether—preferring to refocus their activities on markets nearer to home.

A number of factors weigh on the commercial banks' appetites for different projects. For instance, they may consider a transaction's onshore element (such as mandatory repatriation requirements driven by local laws), or if a project has domestic infrastructure/power characteristics, that do not have an export component. Others cite more nuanced reasons, for example certain French commercial banks may maintain an appetite for investing in francophone African countries in which they or other strong French companies have a ground presence.

United States: Notwithstanding the significant investments of several US companies in Africa, US commercial banks have always had very limited appetite for Africa. As such, western funding has come almost exclusively from European commercial banks—perhaps due to a deeper understanding or association with the continent stretching back to the colonial era. Whatever the reason for the lack of appetite, US

Africa project finance debt raising



Source: IJ Global

China's steady growth over the past decade pushed demand for African resources to unprecedented levels, and the country's commercial banks will continue to play a significant part in developing the continent's infrastructure.

commercial banks present a significant potential source of liquidity that may become available to Africa's energy sector as further industrialisation attracts more US investors and derisks market-based projects. *Asia:* Funding for African projects continues to grow from Asia, albeit on a selective basis. Typically, the projects include an Asian offtake arrangement, and so are supported in conjunction with the relevant countries' energy security strategies. Japanese commercial bank liquidity can be significant but has historically tended to be focused more on export-oriented or strategic projects at a government-to-government level.

Since the Tokyo International Conference of Africa's Development (TICAD) conference in Nairobi in 2016, Japanese commercial bank investment in Kenyan and East African projects has increased significantly. The landmark \$2.7bn Nacala project, which achieved financial completion last year—and which was backed by Japanese export credit agencies (JBIC and NEXI)—is a good example. The project was an integrated infrastructure project supporting growth

along a regional corridor shared by Mozambique and Malawi, consisting of the construction, rehabilitation and operation of a 912km railway from the Moatize mine in western Mozambique to the Nacala port on the eastern coast of the country through Malawi, as well as the construction of a deep sea port and associated terminal infrastructure at Nacala-à-Velha, in each case by Japanese sponsors.

Similarly, Chinese commercial bank liquidity has continued to increase in Africa, particularly in projects in which the sponsor, contractor or offtaker is Chinese, or where it is being carried out on a strategic government-to-government basis. Chinese commercial banks have been active for longer and in more countries in the region than the Japanese, and their presence in Africa was strengthened with ICBC's 60% purchase of Standard Bank, taking advantage of the latter's strong existing presence in several African countries. China's steady growth over the past decade pushed demand for African resources to unprecedented levels, and the country's commercial banks will continue to play a significant role in developing the continent's infrastructure.

Local and regional commercial bank debt

Project finance liquidity is limited among Sub-Saharan commercial banks, with South African market participants the notable exception as the most prominent financiers across the continent.

Apart from that exception, local commercial banks have not historically been able to provide liquidity to fund large dollar tickets in the volume and capacity required in their markets. In Nigeria in particular, local commercial banks are heavily exposed to a highly leveraged oil and gas sector. In many cases, the country's energy companies find themselves exposed to assets purchased from IOC divestments between 2012 and 2014—at \$100/b prices. When added to the bankability issues plaguing Nigeria's power sector, further financing of energy projects by the country's banks continue to be limited.

Development finance institutions

Development finance institutions have always had an instrumental role in attracting international commercial bank liquidity, either as the lead lender in a syndicate, or by providing an element of cover. However, their mandates have changed, thanks to tighter environmental, social and governance (ESG) principles, internal policies and strategic rationales, meaning they've become a lot more selective over which projects they become involved in. Several factors, including the continent's reliance on coal as a thermal power source, may fall foul of these policies, and lead development finance institutions to restrict liquidity.

\$4.675bn

Total financing of the Coral LNG project, Mozambique

Alternative sources of liquidity

The limitations in the commercial bank market—both international and local—call for alternative liquidity sources of financing if Sub-Saharan Africa is to continue to grow and to realise its industrialisation ambitions.

Two alternative liquidity sources are possible.

Firstly, Islamic finance. To date, commercial Islamic project finance structures have largely been concentrated in the MENA region (including the Scatec project in Egypt in 2017). However, key Islamic liquidity sources (concentrated in MENA and South East Asia) have been expanding gradually on a regional basis. In recognition of the continent's significant Muslim population, a number of African countries are preparing legal frameworks for issuing sukuk and other shariah-compliant instruments to attract investment from those jurisdictions.

The growth of sukuk as a financial instrument has predominantly been driven by Muslim countries, such as Malaysia and those that make up the Gulf Cooperation Council. The combination of a large Muslim population and a well-structured shariah banking system based on principles that are generally agreed within the Muslim investment community has enabled these countries to issue almost all of the sukuk to date in a global market that is now in excess of \$100bn a year.

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However, sukuk issuances in Africa remain low, or less than one percent of the global market. Although Gambia has been issuing short-term Islamic papers in its own currency for years, the debut issuances by Senegal and South Africa in 2014 established sukuk as a credible additional market for African governments, many of which have now begun to adopt legal and regulatory modifications to create a framework for Islamic finance or shariah-compliant instruments. The success of the South African issuance (which was oversubscribed by over four times the allotment) and the recent Senegalese issuance (raised specifically to fund developmental projects) gives a strong indication of the depth of the investor pool.

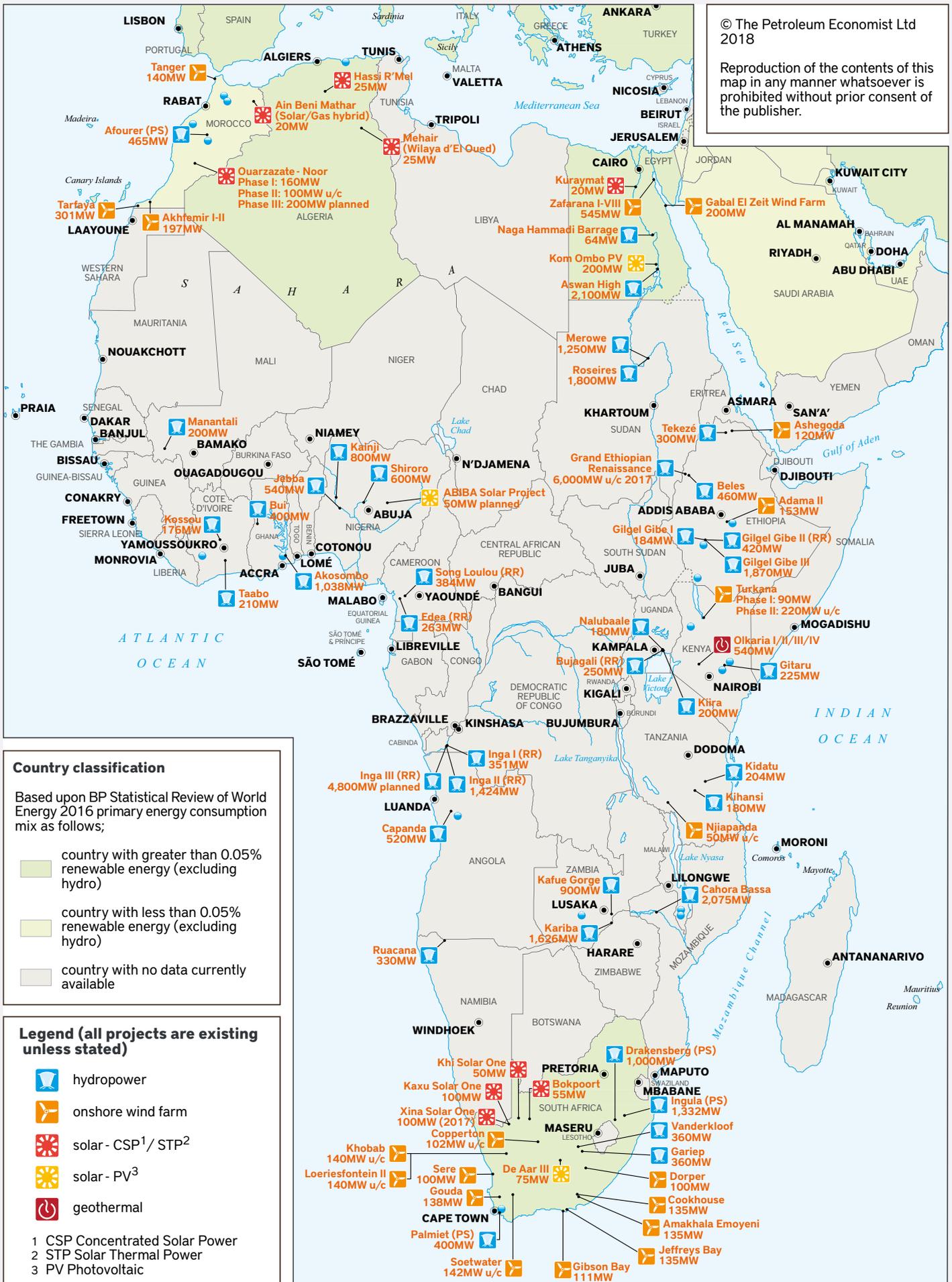
\$2.7bn

Cost of Nacala project on the regional corridor shared by Mozambique and Malawi, backed by Japan's JBIC and NEXI

Sovereign issuances aside, widespread lending from Islamic commercial banks into Africa has yet to occur, although certain MENA project sponsors have been able to attract liquidity from home for projects in African host countries (for example, in the case of the DP World project in Djibouti in 2007). An interesting development in MENA is the Islamic Development Bank's willingness to participate in multi-sourced financings by providing a shariah-compliant tranche as part of a much larger financing package (the \$2.6bn coal-fired independent power project near the port of Safi, Morocco, in 2014). This is significant in that it illustrates the possibility of blending Islamic finance with conventional finance facilities in the context of a multi-sourced project. It is a model that may prove both useful and popular, particularly in countries with a proportionately high Muslim population that have both high demand for Islamic finance and a strong (or developing) Islamic banking system.

The second alternative source is investment funds. With the combination of constraints on traditional liquidity sources, and the future upward trajectory of the African economy, credit funds have a growing role in funding Africa's energy sector. The pricing of the credit extended by such funds is usually higher than commercial bank debt pricing, and reflects a combination of factors, including the increased risk of coming in at a mezzanine/subordinated level in the capital structure; the reality that liquidity is in short supply on the continent and therefore their capital can be provided at a premium; tighter capital reserving requirements on the commercial banks decreases liquidity even more, making such credit funds a viable and necessary alternative source of liquidity; and the general recognition that traditional private equity models have not easily adapted to the African market and exits have been challenging. The net result is that the premium paid for liquidity is likely to result in increased debt pricing overall in the short- to mid-term for Sub-Saharan African projects. Nonetheless, credit funds (and, increasingly, credit funds that are focused solely on Africa) are poised to fill the lacuna left by retreating European commercial banks and incapacitated local African commercial banks.

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Sustainability policy in the development of Africa's energy sector

Governmental and investor policy around sustainability is having a huge impact on the continent's energy markets

By Ade Adeola, Ammar AlDiwani, Charlotte Hawkins, Fathima Hussain, Simon Tysoe and JP Sweny

Sustainability has become a key driver in the evolution of the energy policies for all major stakeholders in the African energy sector. A growing sense of public awareness in global and regional climate change issues is informing political and commercial agendas, and so discussions around sustainable energy are becoming more frequent, and more heated.

When considering their energy policies, governments are increasingly focusing on financial cost and the environmental impact, both domestically and on climate change within the global narrative. The 2015 Paris Agreement formalised the international consensus of the unsustainable nature of global energy production and consumption trends. As of May 2018, all 54 African countries had signed the Paris Agreement, with 46 of them having ratified the agreement and made nationally determined contributions (NDCs).

This shift towards policies that take into account carbon commissions features alongside those focusing on sustainability when assessing broader environmental and social impacts.

A number of African countries have been developing energy policies that seek to balance renewable sources with gas to achieve the lowest-cost blended source of reliable fuel (until recently the cost of electricity from coal power plants in South Africa was lower than renewable energy plants). Gas fired power is a viable source to complement renewables by plugging the gaps in the production cycle for wind and solar, which can be modelled accurately now over a reasonable period of time.

Within the past three years, a number of solar energy programmes have been developed across the continent and substantiate its commitments to renewable energy projects. IFC's Scaling Solar schemes in Zambia, Ethiopia, Senegal and Madagascar, the South African REIPP programme and the Moroccan Solar Plan (one of the world's largest solar energy programmes with a target of 2 gigawatts of solar capacity by 2020 and an estimated cost of \$9bn) are just a few of the notable projects attracting headlines.

In addition, hydropower represents around a fifth of current electricity production in Africa with the region adding more than 3GW of new hydropower capacity in 2016 (including the 1,332 megawatts Ingula pumped storage Project in South Africa and the Gilgel Gibe III project in Ethiopia).

Hydropower currently provides around a tenth of its potential, and a number of governments have considered further developments of such projects. However, aside from substantial upfront costs, there can be significant social and environmental impacts associated with hydropower projects. A number of international commercial banks have cited these factors, referencing the *World Commission on Dams (Framework for Decision Making)* and the *International Hydropower Association's Sustainability Assessment Protocol*, as reasons for limiting their investment in hydropower projects.

At the supranational level, the *Transforming our world: 2030 agenda for sustainable development* was adopted by the United Nations General Assembly in September 2015. The agenda forms the global development framework based around 17 sustainable development goals and, in particular, targets Africa providing that it is committed to "facilitate sustainable and resilient infrastructure development...through enhanced financial, technological and technical support to African countries". In addition, the UNDP, AfDB, the African Union Commission and the New Partnership for Africa's Development (NEPAD) have partnered to create the Sustainable Energy for All (SEforALL) Africa Hub, which provides technical assistance across the continent on issues around energy access, renewables, energy efficiency, and promotes policy advocacy and networking.

Investor policy

In addition to their responsibilities for formulating domestic energy policy, African governments have a critical role as investors to energy projects, both in terms of the national budget allocation and the formulation and implementation of subsidies. However, to assess the current and potential impact of sustainable energy policy on African development, it is important to consider the relevant policies of external investors. As described earlier in this report, the financing of energy projects across Africa is increasingly dependent on a wide range of investors, and the applicable lending policies of all such market participants (including energy companies, export credit agencies (ECAs), funds and institutional investors) are therefore important to consider. However, it is of equal importance to consider the sustainability policies at development finance institution investors, commercial banks, and strategic investors.

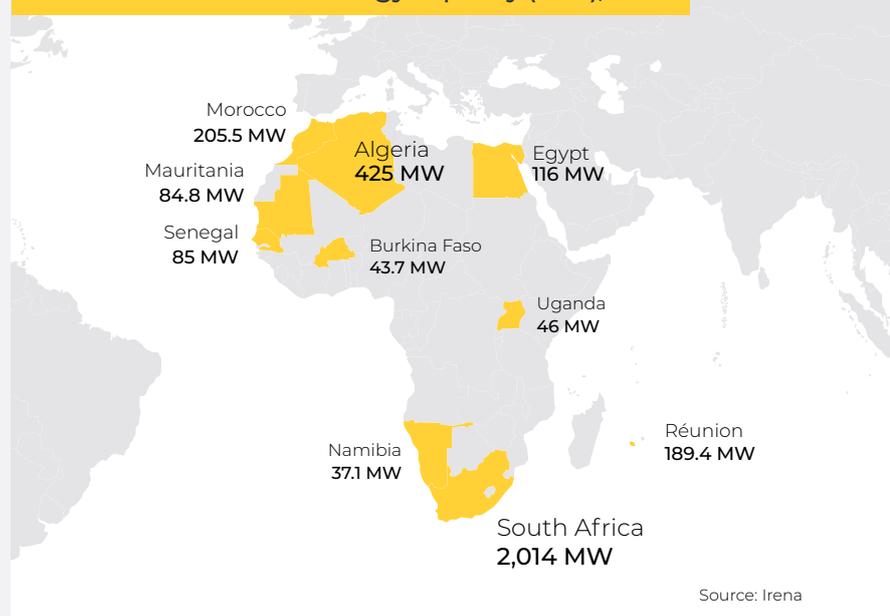
In December last year, the World Bank announced – to the surprise of many, but in accordance with a wider trend—that from 2019 it would no longer finance upstream oil and gas projects. At the time, the organisation explained that “in exceptional circumstances, consideration will be given to financing upstream gas in the poorest countries where there is a clear benefit in terms of energy access for the poor and the project fits within the countries’ Paris Agreement commitments”. In this context, the World Bank has noted that for those countries with oil and gas resources, commercial financing is often readily available for exploration and production.

The organisation will continue to finance midstream and downstream natural gas investments targeting the transportation and distribution of natural gas to customers and for power generation. Supporting the role of natural gas, which has the lowest CO2 emissions of any fossil fuel and serves as a flexible energy source, can assist countries with their transition to renewables and displace coal in the energy mix.

The World Bank will also continue to provide development policy financing in the form of loans, credits or grants to support government-implemented sustainable growth policy programmes. At the end of last year, the organisation approved a \$1.15bn loan to the government of Egypt aimed at creating the environment for low carbon energy development.

Separately, International Finance Corporation (IFC) outlines its agenda and performance standards

Africa's installed solar energy capacity (MW), 2017



on investment policies relating to environmental and social impact, in its 2012 *Policy on Environmental and Social Sustainability*. Here, the organisation states that “working with the private sector and other parties to address climate change is a strategic priority for IFC”.

This tightening of lending standards could still have a significant impact on African countries where plants employing super critical or CCS technology may not be feasible, and where renewable projects are still in their nascency.

In its *Strategy and Business Outlook FY18-FY20*, IFC states that it “remains committed to the goal that climate change-related investments will comprise 28% of own-account long-term financing commitments by FY20”, and that it is pursuing green finance (including green construction finance and development of the green bond market) and clean energy initiatives as a matter of strategic priority. As well as the Scaling Solar schemes, IFC has financed a number of renewable energy initiatives including the second round of Egypt’s solar feed-in tariff programme. In addition, Sub-Saharan African regions are projected to increase their share of IFC’s portfolio in the FY16-FY20 period.

\$65bn-\$90bn

Annual investment required in Africa's energy sector, 2016-2025.

Source: AfDB

IFC's 2012 standards have in fact informed the equivalent policies of a host of other organisations – from commercial banks to other development finance institutions. This in turn has had a knock-on impact on investment decisions relating to energy projects across the continent, including those where IFC is not involved.

The African Development Bank (AfDB)'s *Energy Sector Policy*, published in 2012, stated twin objectives, of:

- » Supporting African countries in their efforts to provide all of their populations and productive sectors with access to modern, affordable and reliable energy services; and
- » Helping those countries develop their energy sector in a socially, economically and environmentally sustainable manner.

In promoting a transition towards clean energy, AfDB's financing for energy generation has clearly shifted from fossil-fuel based projects to clean energy projects. This has been evidenced through the successful launch of a number of renewable energy and clean technology funds, and an expansion in the use of risk mitigation instruments to support private sector investment

in renewable energy projects. A case in point is the partial risk guarantee relating to the construction of the transmission line required for the Lake Turkana Wind Power Project in Kenya.

Commercial banks

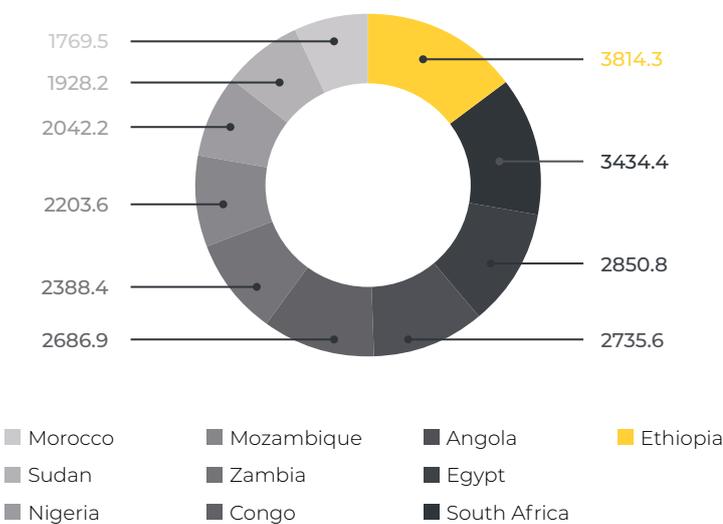
Since the beginning of the year, many of the leading international commercial banks that are active in the African energy sector—including Standard Chartered Bank—have published new or updated investment policies that are focused on a shift away from carbon-intensive projects.

These policies tend to be formulated along similar lines, with general statements of principle—which often reference sustainability—relating to the monitoring or reporting of investments with reference to environmental and social criteria, heightened sustainability due diligence standards, and in many cases definitive investment policies that seek either to curb or eliminate altogether investments in certain sectors. Few of these commercial bank policies reference Africa specifically, but their potential impact on future investment in energy projects on the continent is important to understand.

Consistent across almost all such policies, although varying significantly in degree, is a shift away from the financing of new coal mining and coal-fired power projects, and a running down of existing credit portfolios in the coal sector. However, there are certain exceptions, dependent on the technology used and the importance of the project in developing a country's energy market. In the African context, it is notable that a number of these policies still permit investment in new coal-fired power projects in 'developing' countries, which may broadly be defined as those countries that are not – according to the World Bank—high income OECD countries. Nonetheless, this tightening of lending standards could still have a significant impact on African countries where plants employing super critical or carbon capture and storage (CCS) technology may not be feasible, and where renewable projects are still in their nascency.

It is fair to say however that these policies—while often including commitments to shift away from greenhouse gas emitting technologies and favouring renewable developments—reflect a common

Africa's installed wind energy capacity (MW), 2017



Source: Irena

understanding among the commercial banks: oil and gas projects will remain an important part of the overall global energy mix for the foreseeable future, even if more rigorous due diligence requirements for such projects are in place. In particular, gas is mentioned in many of the policies, as an important fuel source for power generation as part of a cleaner energy mix. An exception to this is Morgan Stanley's oil and gas policy statement, which provides that the bank recognises that "liquefied natural gas export activities can have impacts on natural resources, the environment, including biodiversity, and on local communities" and therefore enhanced due diligence is applied when considering such transactions.

Strategic investors

The impact of sustainability policies on the decisions of strategic investors may be more nuanced. For so long as such policies focus more on the needs of their domestic jurisdictions, and less on the direct sustainability impact of the energy projects that they are funding, it seems likely that such investors will continue to play an increasingly critical role in the financing of those energy projects that fall foul of the sustainability policies of other investors, as described above.

For example, coal-fired projects continue to be developed in Africa with financing being provided by Asian governments, notwithstanding domestic policies of those same governments often signalling a shift away from coal-fired power. However, strategic investors will also play a critical role in financing renewable energy projects across Africa, and the exponential increase in gas demand in the People's Republic of China has caught many market observers by surprise in plugging a widely predicted demand-supply gap for global LNG. The phenomenon is apparently driving a rebound in the sector, which could have profoundly positive implications for the development of LNG export projects in a number of countries on the continent, and help drive a more sustainable energy mix across a number of African regions.

Capital markets

As noted earlier in this report, debt capital markets are set to play an increasingly important role in the financing of African energy projects, so it is important to consider how sustainability policies impact institutional investors' decision-making processes. In addition, the indirect influence of the sustainability policies of such investors is having a demonstrable impact through the equity capital markets and in the behaviour of energy companies, which in turn influences investment decisions on the continent. For example, international energy companies that may traditionally have focused on carbon-intensive

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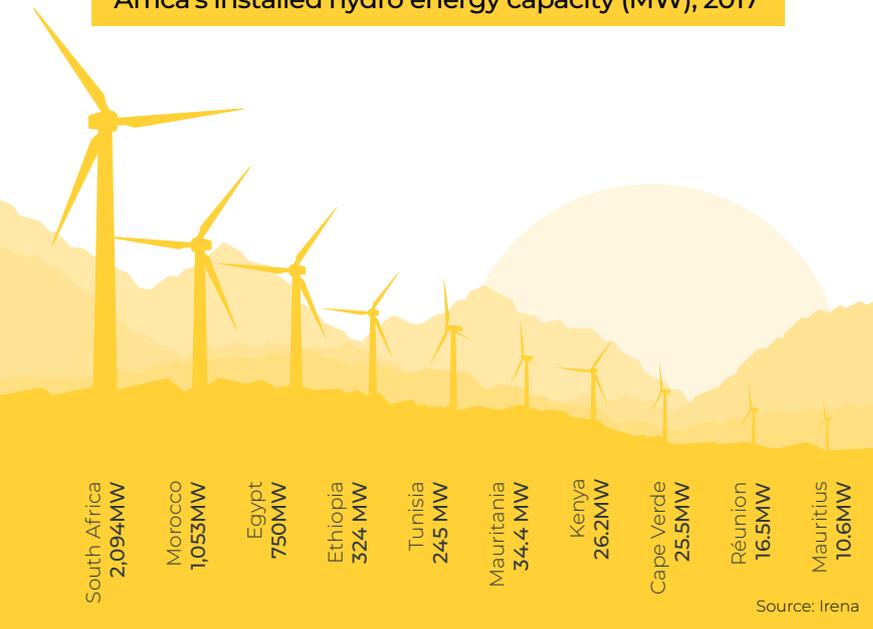
energy production techniques are increasingly vocal in addressing their own shareholder concerns relating to the sustainability of their investments. Their promotion of the comparative sustainability of gas-fired power projects is consistent with the stated policy approach of a number of commercial banks and development finance institutions, as described above.

Green bonds are a further financing option available to private firms and public entities. Multilateral development banks were the sole issuers of green bonds until 2012 when the first corporate green bonds were issued. Since then, issuers include sovereign and municipal governments, banks and utility companies. In December last year, China General Nuclear Power Corporation issued €500m for renewable projects in Africa and Europe and in March this year, IFC and Amundi announced the launch of the Green Cornerstone Bond Fund, the world's largest targeted green bond fund aimed at unlocking private funding for climate-related projects in emerging markets. The fund will buy green bonds issued in certain developing regions including Africa.

In the African market, since 2010, the AfDB has been active in the green bond market and has increased its issuance in the last few years with programmes including the Ouarzazate Solar Complex in Morocco, and the Eskom Sere wind farm and Xina Solar One Project in South Africa. However, generally, few issuances have occurred within the continent.

Although green bonds have been a step in the right direction and issuances have been large in size, they still lack volume in number with investors still using them as more of a 'novelty' factor. However, the World Bank has stated that IFC will work to standardise green bonds by producing a global standard, which should help to facilitate market development.

Africa's installed hydro energy capacity (MW), 2017



Financing challenges

A key challenge for renewable energy projects is capital costs. As the AfDB has noted, while the economics of renewable energy generation have improved significantly in recent years, the capital costs of the technologies can still exceed conventional power plants, particularly in countries with limited experience.

A number of African countries cannot afford to use domestic public finance to support the establishment of large-scale renewable energy projects and also lack the appropriate environment to promote private participation in renewable energy infrastructure. Private participation in infrastructure requires a certain level of market regulation, standardisation of documentation, and predictable and economically feasible tariff regimes which many countries have yet to address (although in June 2016 the International Renewable Energy Agency together with the Terrawatt Initiative launched the Global Solar Energy Standardisation Initiative, which aims to standardise documentation for the development and financing of solar PV projects, including across Africa). In addition, creditworthiness of state utilities and sovereign credit risk may deter investors.

However, development finance institutions (which have a certain level of flexibility and a great level of expertise in infrastructure projects) could attract co-financing from bilateral and multilateral partners as well as dedicated private investors.

Issues can also arise from a policy perspective. For example, in South Africa, the Renewable Energy Independent Power Producer (REIPP) projects were in limbo for more than two years, with the state utility refusing to sign the power purchase

agreements (PPAs) because of cost concerns, and court applications by other entities to block signing on the basis that a switch to renewable energy (from coal-fired power) would lead to job losses.

Fulfilling demand

Opportunities in the African energy sector are immense. AfDB's *Strategy for the new deal on energy for Africa 2016–2025* put the potential required investment needs in the sector between \$65bn and \$90bn annually, depending on the energy mix (with a greener power mix at the higher end of the range, but the optimised cost solution still yielding significant projected reductions as compared to maintaining the current power mix).

Energy projects across the continent are becoming increasingly reliant on a diverse range of investors, to meet a burgeoning funding demand. Alongside energy companies funding on balance sheet, domestic and international commercial banks, export credit agencies and development finance institutions, strategic investors continue to play a key role in plugging liquidity gaps, and alternate investors and capital markets are playing an increasingly important part. To understand fully the impact of sustainability policies on the African energy sector, it is therefore important to look beyond host government policies and assess the investment policies of all investor groups. As noted above, the sustainability policies of institutional investors may have an equally profound indirect impact on the African energy sector over the coming years, alongside the direct impact of policies upheld by development finance institutions and commercial banks.

The World Bank has stated that IFC will work to standardise green bonds by producing a global standard, which should help to facilitate market development

The belief amongst many African governments that harnessing renewable energy can help boost continental development is consistent with international investors' recognition of their role in helping drive the transition to a more sustainable energy sector. That is the case both in terms of supporting regional commitments to the Paris Agreement and meeting domestic demand while generating host country revenue through exports. As noted by Akinwumi Adesina, president of the AfDB: "The move towards a greener and more sustainable development pathway can be a springboard for economic transformation."

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