FIELDSTONE AFRICA RENEWABLES INDEX

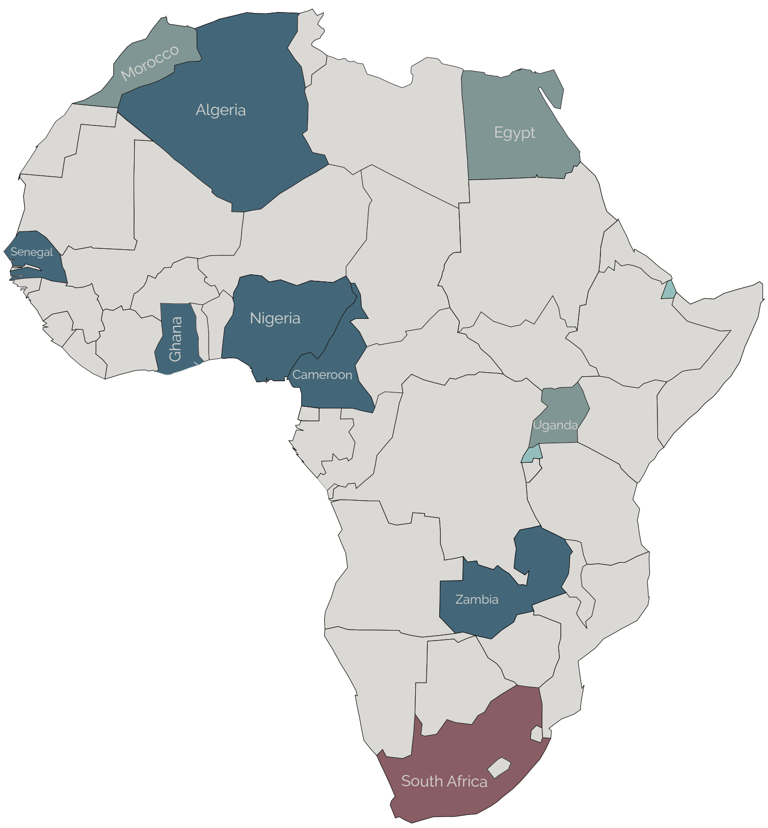
Second Edition, October 2016 – Full Report

It has been a slower year for utility-scale renewable programmes on the African continent than many had anticipated. However, despite economic difficulties, several countries have pushed forward with legal and regulatory groundwork that is likely to improve the prospects for 2017 and beyond. Unlike most thermal-generation projects, renewables can be executed comparatively quickly if the framework and political will are in place. It should serve as a reminder to policymakers who often prefer to think big and unachievable thoughts.

FARI ranks national markets in terms of current suitability to invest (time and capital) to achieve successful renewable projects. As in the previous edition, the FARI rankings include:

- **The Big Five** – markets in which a renewable investment is currently most compelling (if there are too few, we hold spots open)
- **Honourable Mention** – markets in which evidence points to significant progress towards investable opportunities
- **Little Gems** - smaller markets that may not host large-scale opportunity, but where conditions are conducive for project development
- Due to market developments, we have added a special category, **Sleeping Giant.**

The rankings indicate the previous status of the listed country in brackets and the categories of evaluation remain the same as in that index (see FARI, June 2016).



The Big 5		
	Oct '16	June '16
1	**Morocco**	South Africa
2	**Uganda**	Morocco
3	**Egypt**	Uganda
4	**n/a**	Egypt
5	**n/a**	n/a

Sleeping Giant	
Oct '16	June '16
South Africa	n/a

Honourable mention (listed alphabetically)	
Oct '16	June '16
Algeria	Algeria
Cameroon (new)	Ethiopia
Ghana	Ghana
Nigeria	Ivory Coast
Senegal (new)	Kenya
Zambia	Mali
	Nigeria
	Zambia

Little Gems (listed alphabetically)	
Oct '16	June '16
Djibouti	Djibouti
Rwanda	Guinea
	Rwanda

The Big 5

The Big Five included only four countries in June's FARI as it was impossible to find five that made the grade. That number is now reduced to three. We hope that by the next FARI (February 2017), aspiring candidates result in a full slate.

1. (2.) Morocco – score: 12.15

- Enormous ambition (42% renewable generation by 2020, projects upwards of US$6 billion in the pipeline), coupled with a demonstrated record of closing projects, put Morocco at the top of the FARI list.
- The Moroccan agency for solar power will become the one-stop shop for renewable energy development and take responsibility of all projects including planning, carrying out feasibility studies development and construction.

2. (3.) Uganda – score: 11.98

- With an emphasis on electrification and recognition of superior solar and hydro resource, combined with smart interplay of an enabling regulatory environment, development finance institution structuring has resulted in great progress for large and small generation projects in the country.
- Considerable scope for further electrification, with the government now also focusing on upgrading transmission and distribution infrastructure, suggests that this pattern can continue for quite some time.
- The first solar plant has come on line, providing 10MW to the grid, and is likely to be followed closely by other developments.
- Uganda must resist damaging its record of success by being tempted to focus on large hydro projects, which are expensive, long term and hard for the system to digest financially, especially in light of current transmission constraints.

3. (4.) Egypt – score: 11.65

- Problems with the arbitration clause (local versus international) threatened to stop Egypt's ambitious renewable plans by blocking financeability.
- Willingness to reconsider and compensate for some of the negative investor sentiment shows a deep government commitment to the programme.
- Investors should return to take part in further rounds, as confidence has been restored.

Sleeping Giant

(1.) South Africa

- The lights have stayed on in South Africa over the last year, in no small part because of economic contraction (-4000MW from mining and industrial demand) and additional renewable generation (+6000MW).
- Just as load shedding served to spur the continent's most advanced renewables programme, the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), uninterrupted provision of power now provides a pretext to derail further renewable development.
- As cited as a danger in June's FARI, Eskom has now taken a firm line against renewables based on its contention that they are too expensive and sporadic.
- Eskom is now refusing to sign further power purchase agreements (PPAs) for renewables, inspite of the Department of Energy and Treasury demand that it does so.
- There is an unstated desire to keep the Eskom balance sheet unencumbered in order to be prepared for one particular nuclear initiative, the success of which appears to be close to the hearts of certain elements of government. Treasury, a transparency advocate (and even credible nuclear alternatives) are less enthusiastic about this particular (pre-) selection.
- The current round of bids related to renewables is now uncertain, leaving international bidders a little less enthusiastic about expending more development resources in South Africa in all energy matters.
- With bid bonds, for the current round of REIPPPP bids involuntarily extended to March, it is unclear whether a true assessment of what can and should be done to bring certainty back to the system will be carried out, or if a more narrow agenda to thwart independent development and choose winners will be the new way forward.
- In the meantime, current and would-be market participants are left to assess their options and ongoing costs.

Honourable mention (listed alphabetically)

Algeria

- The stated goal of 4500MW of renewables by 2020, the opening of the process to private companies and the longer-term commitment to harness the renewable potential of the country put Algeria in the forefront of the Middle East and North Africa region. The use of oil and gas revenues to fund the expansion seems to have given way (in the face of difficult pricing) to more mixed public-private models.

Cameroon NEW

- Government has cited a commitment to extend its demonstrated independent power producer model to renewables and it seems probable that PPAs will be offered to selected photovoltaic (PV) projects in the coming months.

Ghana

- A conducive system of renewable licensing and regulation and episodic evidence of government interest in developing smaller plants that might be affordable in light of debt constraints give reason to hope that Ghana may yet approach its 10% target of renewable generation. A low oil price seems to have interrupted more aggressive efforts.

Nigeria

- Notwithstanding the economic challenges it faces, the government has pushed forward with 14 projects (about 1150MW) into the security bond phase in a carefully designed PV programme.
- The recognition that renewables can meet immediate need, be spread to the points where the generation is needed and offset reliance on diesel has driven the effort.
- Once these projects clear the next step, Nigeria could be in a position to be the largest and most dynamic source of renewable investment on the continent. Investor interest is very high, notwithstanding the macro-economic context.
- Significant investment interest has been noted, with many developers and investors observing on the sidelines and hoping for the success of this first round.
- The challenge will be to structure a sustainable financing method for these and subsequent projects.

Senegal NEW

- Senegal seems to finally progress toward the realisation of its Renewable Energy Act of 2010 in the steps toward financing of a pair of solar projects.
- The actual realisation of this plant in the country could set off a substantial round of development as the governmental strategy calls for up to 400MW of renewable generation to be put in place.

Zambia

- Drought has led to load shedding. Renewables could have mitigated this, but have not moved fast enough, despite wide (if sometimes uncoordinated) support from development finance institutions and donors.
- The bounce-back of mining will unleash further demand and the real need to go beyond dependence on geographically concentrated hydro in the south of the country to make further generation a priority.
- Better coordination between the donors will result in better results for the country.

Little Gems (listed alphabetically)

Djibouti

- Blessed with excellent solar and geothermal resources, Djibouti has a 100% renewable-generation goal to replace its current reliance on imported fossil fuel.
- It is hard to assess the actual outcome, but developer and funding interest is high and there is enough in the works that large-scale projects should be realised.

Rwanda

- A competent, accessible bureaucracy and clear rules and goals reflecting government commitment keep Rwanda in the upper echelon of FARI. Added to that framework is an unusually diverse set of renewable sources, including capturing methane release from Lake Kivu.

(Removed from the list: The apparent push to realise renewable generation in Guinea has been complicated by re-pricing and general uncertainty about terms. We hope to be able to report progress and include Guinea again in the future.).

Markets included in June FARI Honourable Mention list, but not retained on the current list

Ethiopia

- Has an ambitious programme, real need and engaged personnel in government that continue to stress the role of independent power producers. The offsetting factors are the security situation (which has caused some investors to retrench) and a lingering doubt about the government releasing sufficient control to reach a "market" standard, so as to make the project financeable. Perhaps structured deals instead of auction will work. If so, Ethiopia can emerge as a FARI leader.

Kenya

- Has confirmed the doubts expressed in the last FARI, even as the elections loom. The lack of transparency and complexity of the system and the perceived resistance of the incumbent utilities (even claiming that the country has "too much" generation), have led to much of nothing happening despite admirable laws on paper. Further changes that will add an auction system to the mix promise more delay and uncertainty. Developments in geothermal are discounted for our purposes, because only government projects seem able to compete effectively and only donor money gets spent. The relationship between the money given and result of all this exploration will remain a perpetual riddle.

Ivory Coast

- Continues to be an impressive economic performer on the continent, but has not made significant progress on renewables. We await a signal that the potential is real.

Mali

- Has potential but has not followed through with its concession programme and understated its transmission infrastructure requirements. Coupled with lingering security issues, these factors have slowed progress.