Renewables ride wave of success as opportunities in emerging markets soar

Globally, more capacity is now being added annually for renewable energy (renewables) than for coal, natural gas and oil combined. Around 70% of the power capacity that will be added between now and 2030 will come from renewables sources.

Solar Photovoltaic (PV) and Wind are dominating new capacity. The growth in solar and wind and the potential associated with high-growth developing markets such as South Africa is supporting both substantial ongoing investment and mergers and acquisitions (M&A) activity. South Africa, the focus of this report, has emerged as one of the most important renewables markets since the launch of a government-led procurement programme in 2012. It is a model case study for developers, investors and other market participants seeking opportunities in new, high growth markets.

This report also looks at developments in the UK solar market, one of the most progressive in terms of technologies and project financing, although recently rocked by changes in the government subsidy regime.

Key observations

**Bulk of global renewables investments being spent on project financing**

Global investment in renewable energy reached $385 billion in 2014, with roughly 90 percent of these funds spent on project financing for both large-scale and small-scale projects.

**Increasing institutional and corporate investment in UK solar is set to change**

A range of institutional funders, consolidation vehicles and corporate acquirers have invested in the UK. Assets with Renewables Obligation Certificates (RoC) accreditation are highly valued. The government’s proposed changes to the subsidy environment (especially residential) will force capital to be deployed elsewhere.

**South Africa’s renewables market is one of the great African success stories**

Returns of between 15 percent and 25 percent were typical across the country’s three bidding windows (BW), with some early movers being rewarded with figures in excess of the upper end of the range.

**Developers and investors are targeting new markets such as South Africa**

Future renewables growth will come in large part from emerging markets. Despite evolving market dynamics, international project developers and investors continue to be attracted to South Africa and other developing markets. More than 3,500 megawatts (MW) of power have been generated in South Africa in less than three years.
Renewable energy revolution

Concerns about climate change and the security of energy supplies, supportive governmental policies and falling costs are supporting significant investment in capacity. Around 70% of the power capacity the world will add between now and 2030 will come from renewable sources (see Figure 1).

Solar and wind dominating the surge in investment

Global new investments in renewables increased to $385 billion in 2014, dominated by new Solar PV and Wind projects (see Figure 2). Around $150 billion was committed to solar, up 25 percent on 2013, and investment in wind rose 11 percent to a record $37.1 billion. In the US, investment in wind fell by more than a half to $5.9 billion, affected by uncertainty surrounding the Production Tax Credit; solar was up 39 percent to $8.9 billion. In China, both wind ($38.3 billion) and solar ($30.4 billion) investment were up by more than 20%.

In Europe, projects included seven European billion dollar offshore wind projects, including the $3.8 billion, 600MW Gemini array in the Netherlands and the $2.6 billion, 402MW Dudgeon Offshore Windfarm in UK waters. Outside of Europe, the Setouchi Mega PV project in Japan, is being built at $1.1 billion for 250MW and the K2 wind complex in Ontario, Canada, at $728 million for 270MW.

Almost $19 billion of new equity was raised in public markets, up 52% on the year and a seven-year high. In the UK, three funds (Greencoat UK Wind Fund, Bluefield Solar Income Fund and NextEnergy Solar Fund) raised almost $542 million in the fourth quarter.

Emerging markets leading the switch to renewables

New renewables investment by emerging markets including Latin America, the Middle East and Africa has increased in the last ten years to total more than $130 billion in 2014, nearly equal to the amount that is being invested into developed nations.

Figure 1: Global gross power generation capacity additions, 2010-30 (GW)

Source: Bloomberg New Energy Finance
Significant increase in capacity has created a dynamic UK solar power market

Solar PV capacity in the UK has experienced rapid growth over the last 18 months. Overall current UK solar capacity has increased by 240% over the last 18 months to around 7.5GW across 727,453 installations, compared to 2.2GW at the end of 2013. Falling equipment and installation costs have made project returns more attractive, and developers were adding capacity ahead of changes to the Renewables Obligation scheme for large-scale solar PV in March.

Capacity is expected to reach at least 10GW by April 2016 when solar PV plants under 5 MW in size will no longer be eligible for Renewable Obligation Certificates. Whilst there is uncertainty about the impact of the closure of the ROC scheme in March 2017 on future projects, the ability of solar to achieve grid parity should ultimately mitigate the effects of its removal. The government’s planned subsidy changes to residential solar announced in the summer has rocked this part of the market and led to a hugely challenging operating environment in the short term.

Active secondary market

Listed funds such as those managed by Foresight Group, NextEnergy, John Laing Environmental Assets and The Renewables Infrastructure Group have built portfolios by acquiring operational plants where subsidies have been locked in (see Figure 4). These portfolios are yielding around six percent and generating an IR of eight percent.

The significant increase in capacity and supportive equity and debt markets have helped to create an active secondary market in operating projects. For example, Foresight Solar VCT plc acquired both the Wales-based 6.3 MW Saron and 1.9MW New Kaine ground mounted solar PV from developer Anesco.

Funds are reporting strong acquisition pipelines. The NextEnergy Solar Fund has invested over £157 million on nine acquisitions with a combined capacity of 136.8MW in 2015 and has reported a pipeline of opportunities for the next five years.

Overseas investors

The UK market is receiving investment from international investors and trade buyers attracted to high growth rate and regulatory regime, the opportunity to diversify geographically and to generate growth outside existing markets. UK companies are also looking overseas. In October 2014, US renewable energy provider sPower (Sustainable Power

"Increasingly, we are seeing UK solar businesses seek overseas acquisitions as a way to capitalise on the opportunities in underdeveloped markets and to counter the likely slowdown in the UK solar market. We are seeing most interest focused in Africa and South America."

Emma Dowson
Research Manager

Source: Bloomberg New Energy Finance AF = asset finance *Small distributed capacity
Group) and its UK strategic partner solar developer Camborne Capital made their first joint acquisition of a 7MWdc solar PV project from developer RGE Energy UK. This was followed by US-based Magnetar Capital’s acquisition of a 64MW operating PV portfolio from Ingenious Clean Energy. NYSE-listed solar PV developer SunEdison acquired energy efficiency solutions provider Mark Group in July to provide it with a direct sales channel to the UK domestic and commercial market. Mark Group has subsequently entered into administration following the proposed changes to the residential regime.

German’s largest solar park operator Capital Stage entered the UK market in February as part of its strategic partnership with Gothaer Insurance Group. It acquired a portfolio of seven parks in the south-west with a generation capacity of 53.4MWp and long-term PPA with TOTAL Group and British Telecom for £67.7 million. This has been followed by two further acquisitions from F&S solar concept, a German park developer which has a portfolio pipeline of 50MWp in the UK and with which Capital Stage has a close relationship.

“We expect a storm in the next year as the UK residential market comes to terms with the FIT changes. Our strategy is to grow our commercial business, drive towards larger projects and operate a leaner organisation. We expect to see consolidation as companies seek scale.”

Business owner
Leading UK Solar PV installer

Liquidity supporting refinancing

The market for project refinancing in the solar sector is experiencing strong momentum with debt refinancing volumes reaching $126 million in the first quarter of 2015 (see Figure 4). A range of funders and investors are attracted to the long-term predictable cash flows, often supported by historic subsidies, from PV projects. Lightsource Renewable Energy has refinanced over £100 million in projects over the last year with £76 million in debt from Barclays to refinance a portfolio of solar farms managed by Octopus Investments with a total installed capacity of 76.4MW and £27 million in debt with Investec to refinancing four solar farms totalling 44MW of capacity.

Non-bank capital providers are increasing finance options for developers and investors. Capital Stage financed the debt portion of its UK solar park portfolio mentioned above using a £40 million listed solar bond placed with Legal & General Investment Management. Primrose Solar’s inflation-linked refinancings with M&G Investments for five solar parks is the first of its kind for ROC solar farms.

Figure 3: Selected solar transactions

<table>
<thead>
<tr>
<th>Date</th>
<th>Company/project</th>
<th>Country</th>
<th>Description</th>
<th>Acquirer</th>
<th>Country</th>
<th>Deal value (£m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jul-15</td>
<td>Mark Group</td>
<td>UK</td>
<td>Installs energy efficiency solutions</td>
<td>SunEdison</td>
<td>US</td>
<td>n/d</td>
</tr>
<tr>
<td>Jul-15</td>
<td>SoloPower Systems Holdings</td>
<td>US</td>
<td>Manufactures solar PV cells and modules</td>
<td>Opera Investments Plc</td>
<td>US</td>
<td>141.0</td>
</tr>
<tr>
<td>Mar-15</td>
<td>Renewable Energy Systems Ltd</td>
<td>UK</td>
<td>Four Burrows Solar Park</td>
<td>The Renewables Infrastructure Group</td>
<td>UK</td>
<td>8.6</td>
</tr>
<tr>
<td>Feb-15</td>
<td>Portfolio of seven solar parks</td>
<td>UK</td>
<td>Seven solar parks</td>
<td>Capital Stage AG</td>
<td>Germany</td>
<td>67.7</td>
</tr>
<tr>
<td>Jan-15</td>
<td>Higher Tregarne Solar Farm</td>
<td>UK</td>
<td>Operates a 5MW solar farm in Cornwall</td>
<td>sPower</td>
<td>US</td>
<td>n/d</td>
</tr>
<tr>
<td>Dec-14</td>
<td>Uwylwydu Solar Power Plant</td>
<td>UK</td>
<td>Operates a 8.0 MWp solar power plant</td>
<td>NextEnergy Solar Fund Ltd</td>
<td>UK</td>
<td>9.4</td>
</tr>
<tr>
<td>Dec-14</td>
<td>Good Energy Homeland Solar Park</td>
<td>UK</td>
<td>Electricity producer</td>
<td>Foresight Group</td>
<td>UK</td>
<td>n/d</td>
</tr>
<tr>
<td>Dec-14</td>
<td>Chisdon Solar Farm</td>
<td>UK</td>
<td>Operates a 12 MW photovoltaic project</td>
<td>Lightsource Renewable Energy Ltd</td>
<td>UK</td>
<td>n/d</td>
</tr>
<tr>
<td>Dec-14</td>
<td>Bulls Head Solar Limited</td>
<td>UK</td>
<td>Electricity producer</td>
<td>Foresight Group</td>
<td>UK</td>
<td>n/d</td>
</tr>
<tr>
<td>Jul-14</td>
<td>Welbeck Solar</td>
<td>UK</td>
<td>Electricity producer</td>
<td>Foresight Group</td>
<td>UK</td>
<td>n/d</td>
</tr>
</tbody>
</table>

Source: Catalyst Corporate Finance

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Risk and return in South Africa

Catalyst’s partner in South Africa has expertise in the renewables energy sector and has a track record of advising on project structuring and capital raising for energy projects.

South Africa is now one of the most important renewables markets globally with $5.5 billion invested in 2014.

South Africa adopted a ‘reverse auction process’ to drive its renewables procurement programme. This was established just as Solar and Wind generation was starting to achieve grid parity in many parts of the world; grid parity will remove the need for long-term and costly tariff subsidisation, enabling the majority of future South African renewables projects to be based on commercial economics alone.

The South African scheme, known as the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), was launched in April 2012 as a ten year programme to obtain approximately 12 gigawatts (GW) of grid connected renewables power capacity at around 1GW per year. Some 85 percent of this capacity is expected to come from Solar PV and Onshore Wind.

South Africa’s government, through the National Treasury, supported the programme under a 20 year Power Purchase Agreement (PPA) with the national electricity generator, ESKOM. Various legal agreements underpinning the REIPPPP were clearly set out and no negotiation or changes were permitted. Local and international investors and debt providers accepted these agreements, resulting in the rapid implementation of projects without the need for individualised contracts.

Bidding process and results

Over 3,500MW of capacity were procured in the first three bid windows (BW) raising some $7 billion in capital. Early movers in the first BW achieved equity returns that exceeded 25% internal rate of return (IRR) for the 20-year duration of their PPAs. Typical project finance approaches were adopted with 75% senior debt and 25% equity. Senior lending was aggressively competitive between local and international banks. Approximately one-third of bidders were successful.

The second BW resulted in equity IRRs falling to 18% to 22% as competition for winning bids ramped up. The third BW saw equity IRRs reduce further to 16% to 18% as only one-in-eight bidders were successful. Each winning bid had between three and seven shareholders and three to five senior lenders in a syndicate.

Three trends emerged from the first three bidding rounds when over 3,500MW of capacity was procured:

- **Economies of scale:** developers with a pipeline of 20-30 projects can spread the costs and skills associated with investigation, due diligence, permitting and bidding across multiple projects.

- **Economies of the resource:** resources that are not in the top 15% to 20% of efficiency/capacity factors are unlikely to have the leeway to bid a low enough tariff to win.

- **Efficiency of capital and credit:** existing multinational utilities used their balance sheets and access to efficient debt capital to drive down bid rates.

**Figure 4:** UK Solar refinancing Q4 2013 - Q1 2015

Source: IJGlobal
Professional developers of infrastructure projects and investors willing to finance the construction and operation of these projects continue to play a crucial role in delivering renewables capacity.

Mainstream, which started operations in South Africa in 2009, was successful in the bidding rounds and is now the leading renewables developer in South Africa.

**Entering developing markets**
Developing markets such as South Africa that offer strong institutional and legal frameworks, as well as an experienced finance industry capable of funding private infrastructure projects, are attractive destinations for developers like Mainstream.

Given the diversity in global electricity markets, significant time and effort is dedicated to navigating and understanding policy uncertainty, contractual mechanisms and enforcement in PPAs, local content requirements, counterparty risk off-takers and currency liquidity before development commences.

When entering any developing market, it is crucial renewables developers consider the technical and environmental feasibility of a project whilst also interrogating the ability to arrange financing from the onset, particularly in countries that are introducing independent power producers (IPPs) for the first time.

Investor rights within a country’s legal framework, payment discipline and the availability of a government guarantee for the PPA are often critical factors that underpin a developer’s decision to enter a new market, particularly in the Middle East and Africa.

Interrogating the financial feasibility of projects in new markets often provides developers with an invaluable skillset which allows them to retain a large equity shareholding once financing is secured.

**Mainstream’s development plans in the region**
Mainstream is collaborating with Actis, the global pan-emerging market private equity firm, to form a pan-African joint venture, Lekela Power. This will fund between 700MW and 900MW of Solar and Wind power across Africa by 2018. Lekela also has a pipeline of other projects across Africa, including the 225MW Ayitepa Wind project in Ghana and additional Solar and Wind projects in South Africa and Egypt where Mainstream has recently prequalified for the first round of the new feed in tariff programme.

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**Figure 5: Estimates of Energy and Power Potential in SSA (TWh)**

<table>
<thead>
<tr>
<th>Region</th>
<th>CSP*</th>
<th>PV</th>
<th>Wind</th>
<th>Hydro</th>
<th>Biomass</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Africa</td>
<td>300</td>
<td>600</td>
<td>120</td>
<td>1,000</td>
<td>1,500</td>
<td>3,520</td>
</tr>
<tr>
<td>East Africa</td>
<td>1,758</td>
<td>2,195</td>
<td>1,433</td>
<td>570</td>
<td>640</td>
<td>6,596</td>
</tr>
<tr>
<td>West Africa</td>
<td>227</td>
<td>1,038</td>
<td>394</td>
<td>105</td>
<td>64</td>
<td>1,828</td>
</tr>
<tr>
<td>Southern Africa (excluding South Africa)</td>
<td>1,300</td>
<td>1,300</td>
<td>350</td>
<td>26</td>
<td>96</td>
<td>3,072</td>
</tr>
<tr>
<td>Total (TWh)</td>
<td>3,585</td>
<td>5,133</td>
<td>2,297</td>
<td>1,701</td>
<td>2,300</td>
<td>15,016</td>
</tr>
<tr>
<td>Power capacity (MW)</td>
<td>81,849</td>
<td>325,533</td>
<td>109,256</td>
<td>25,890</td>
<td>47,738</td>
<td>590,266</td>
</tr>
</tbody>
</table>

**Source:** Catalyst Corporate Finance  *Concentrated solar power*
Investor’s perspective

South Africa’s REIPPPP programme has drawn substantial investor interest since its inception. The government’s plan to roughly double the market to 14GW has increased developers’ and investors’ confidence.

A buyer’s or seller’s market?
The greatest challenge for both buyers (investors) and sellers (developers) is competition. For developers, the economics no longer support a super premium due to the level of competition and low tariffs. Although there is still money in the development business, it is no longer at massive multiples of amounts invested. The big winners are ESKOM and its customers who are getting cheaper power.

Companies that are vertically integrated and enjoy substantial economies of scale are most likely to succeed in the current climate. Vertical integration can be a benefit in two dimensions: for companies that invest, operate and carry out engineering, procurement and construction (EPC) services and for companies that develop greenfield projects and follow much of their equity. This enables these companies to look at their returns across the chain rather than trying to squeeze out as much profit as possible in its primary stage of involvement. Finally, large companies which procure thousands of MWs in multiple regions benefit from having frame agreements and buying power.

Lower tariffs have forced developers and investors to accept reduced premiums and returns, respectively. Whilst this may be interpreted as a challenging market for both buyers and sellers, this is not necessarily the case - vertical integration is key to a winning formula. This market is all about fit. Players must find targets that are complementary to help complete the vertical integration chain. Additionally, the cost of capital has dropped to the level of a mature investment programme more quickly than expected.

“The need to achieve scale and to integrate vertically will drive consolidation of the renewables market. There is some debate about whether PV and Wind projects will consolidate into the same platforms or whether they consolidate into separate sectors? This will depend upon which factor is most important to individual companies - scale (which favours a platform approach) or vertical integration.”

Jonathan Hoffman
Senior Business, Development Director, Globeleq
Selected Renewables sector deals

- **MYRIAD CEG Solar PV**
  - Sale to

- **THEBE**
  - Arranged and advised Thebe on the structure and fundraising across various projects

- **Inovasol**
  - Funded by

- **COGIPower**
  - Sale to

- **Ballast Phoenix**
  - Acquisition and capex finance

- **Avondale**
  - Debt refinancing including capex facilities

- **Lloyd’s Banking Group**
  - Acquisition and capex finance

- **HSBC**
  - Sale to

- **LRS**
  - Sale to

- **inutec**
  - Sale to

- **TRADEBE**

Smart advice

Catalyst advises business owners and management teams on:

- Company sales
- Management buy-outs and buy-ins
- Company acquisitions
- Raising private equity capital
- Raising and refinancing debt capital

Global reach

Our international partnership is present in 50 cities worldwide and provides:

- Access to overseas buyers
- Identification of overseas targets and acquisition execution
- International M&A research
- Local insight into M&A culture and likely tactics