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THE UK SOLAR GOLD RUSH

Navigating the end of the RO regime and preparing for CfDs



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Orrick and Clean Energy Pipeline have launched a series of reports dedicated to exploring investment opportunities and challenges in the global renewable energy sector. In the first issue, we analysed the exciting investment opportunities arising from the US Department of Defense's (DoD) major renewable energy procurement initiatives.

In this issue, we explore the evolving dynamics of the UK solar market as the industry moves towards the end of the Renewables Obligation (RO) subsidy regime for utility scale projects (>5 MW) in April 2015. It also explores the investment viability of the contract-for-difference (CfD) subsidy mechanism, which will replace the RO from April 2015.

The UK solar PV market today

The UK solar market is shifting gears. In the first six months of 2014, some 1.47 GW of solar PV capacity was installed – more than the 1.45 GW installed during the entirety of 2013. Over 1 GW was installed in 1Q14 alone due to the rush to bring projects online before the subsidy reduction from 1.6 ROCs per MWh to 1.4 ROCs per MWh on 1 April, 2014. These figures are impressive given that the UK is home to only 5 GW of solar capacity in total as of August 2014.

“According to data tracked by Clean Energy Pipeline, 267 MW of development-stage solar projects were acquired in the three months since the May 2014 announcement that the ROC regime will end next year, a significant amount given that only 433 MW was transacted throughout 2013”

Following this subsidy reduction, the UK solar industry looked forward to three more years of the RO subsidy regime until 1 April 2017, albeit at a lower rate, at which point new solar projects would have to be subsidised under the new and untested CfD feed-in-tariff (FiT) mechanism.

However, on 13 May, 2014, the government shocked the industry by announcing its intentions to end the RO subsidy for utility scale (>5 MW) solar projects from 1 April, 2015, two years earlier than the original RO end date. From April next year, utility-scale solar projects will instead have to compete for CfD FiTs with other renewable energy technologies. Importantly, the early closure of the RO subsidy only applies to utility-scale solar. All other energy technologies will be able to choose between the existing RO and the new CfD mechanism until the end of March 2017.

The government claimed it was taking action to control the cost of subsidies because the planned degeneration of ROC levels through to 2017 was not sufficient to reduce appetite for utility-scale solar investment. Under UK Department of Energy and Climate Change (DECC) estimates, 1 GW of large-scale solar per year would have been deployed under the RO between April 2015 and 2017, which would have boosted large-scale solar capacity installed in the UK to more than 5 GW by the time it was due to expire. That figure is well beyond the 2.4 GW - 4 GW range DECC had budgeted in the Levy Control Framework for large-scale solar under both the RO and the CfD through to 2020.

Subsidy deadline triggers surge in construction activity

Due to the significant uncertainty about how the CfD mechanism will work, developers and investors are rushing to ensure projects are online by the end of March 2015 in order to secure ROCs. As Robert Goss, Managing Director of Conergy explains, this deadline means projects must commence construction in January at the very latest.

“Investors are closing earlier so we have a strong pipeline of projects all the way through to the end March deadline. The latest we can start construction depends on the project but between the start of December and end of January is a good guide,” he said.

The removal of the RO after March 2015 has not only created a building frenzy, but also a dash to acquire shovel-ready projects that can be built and connected before the deadline. According to data tracked by Clean Energy Pipeline, 267 MW of development-stage solar projects were acquired in the three months since the May 2014 announcement that the ROC regime will end next year, a significant amount given that only 433 MW was transacted throughout 2013. Notable acquisitions of development-stage assets are outlined on the following page.

Notable acquisitions of development-stage assets in the UK since May 2014

Target	Acquirer	Seller	Deal value	Date announced
49.9 MW solar PV project - Norfolk	Trina Solar	Good Energy Group	£3.4-£6.8 million	12-Aug-14
20 MW Sycamore solar PV project - Kent	Lightsource Renewable Energy	BNRG Renewables	Undisclosed	09-Aug-14
14.5 MW portfolio of solar PV projects - Devon & Somerset	Bluefield Solar Income Fund	Undisclosed	£15 million*	28-Jul-14
166 MW portfolio of solar PV projects	Wirsol Solar UK (subsidiary of Conergy)	Lumicity	Undisclosed	07-Jul-14
12.5 MW Bilsham solar PV project - Sussex	NextEnergy Solar Fund	Undisclosed	£15 million*	03-Jul-14
9.4 MW Gover solar PV project - Cornwall	NextEnergy Solar Fund	Undisclosed	£10.5 million*	23-Jun-14
14 MW Brynteg solar PV project	SunEdison	Elgar Byrne Capital	Undisclosed	20-Jun-14
17.5 MW solar PV project - Hertfordshire	Bluefield Solar Income Fund	Undisclosed	£19 million*	18-Jun-14
16 MW portfolio of solar PV projects	Belltown Alpha Renewables	Solarcentury	Undisclosed	28-May-14

*The deal value for these transactions is abnormally high because the acquisitions will be completed when the projects commence commercial operations.

Source: Clean Energy Pipeline

The rush to acquire shovel-ready projects is undoubtedly pushing up valuations. Anecdotal evidence suggests shovel-ready projects larger than 5 MW have been trading in the region of £180,000 per MW, and in rare cases over £200,000 per MW, since the May 2014 announcement. Before the announcement, shovel-ready projects were trading at around £130,000 per MW. It should be noted that prices vary significantly because of the costs of grid connection.

Prices have risen so significantly because the UK is seen by many Chinese and European EPCs as a gateway to the lucrative African and US markets. "Project development rights are very expensive at the moment and we hope this will change soon," confirmed Eva Belletti, Project Manager EMEA, at Talesun Solar. "Developers are now asking for prices in the range of £150,000 or more per MW and many EPCs are prepared to pay this. Last year prices were £100,000-£140,000 per

MW. Because our production facilities are based in China, we also have to comply with the minimum price regulation as agreed between China and Europe. Hence large ground-mounted projects in the UK are not that profitable if the prices for project rights don't change. But the UK market is strategically important for us because it is well connected with Africa and America so acts as a gateway. For this reason many Chinese and European EPCs are looking at the UK market right now."

However, given the time needed to arrange financing and complete construction, this buying spree will cease towards the latter part of 2014. Shovel ready projects in the 8-15 MW range will likely experience the most significant decrease in valuations. Projects of this size are too large to be downsized to under 5 MW and hence qualify for the existing feed-in-tariff regime and will likely be at a cost disadvantage to larger projects when bidding for CfDs due to economies of scale.



Financing innovation is crucial

As the deadline to commence construction nears, it will be vital for developers to consider alternative forms of financing that are quicker to arrange than conventional sponsor equity and bank debt. Given that banks typically require two months to undertake due diligence and secure internal approvals, developers must have realistically engaged with banks by the end of July 2014 to secure financing in time to start construction shortly after the summer.

Potential alternatives to bank debt include bridge financing from panel manufacturers and, in some cases, capital from institutional investors that will end up being the long term owners of projects when operating.

“Historically, institutional investors that would end up owning the asset once it is operating would not take construction risk,” explained Ric Hallikeri, Director of UK Solar Assets. “But they are now prepared to do this as they are comfortable with the technology and are prepared to take some construction risk in order to

“The infrequency of allocation rounds creates significant uncertainty for investors in solar PV projects, simply because unsuccessful bidders will have to wait for an entire year until they can bid again.”

secure long term investment opportunities.”

As Christian Linder, Executive Director at Athos Solar explains, private equity funding might be another option for EPCs. “Banks will be out of the game very shortly because of the lead times of constructing solar projects,” he said. “From October I think developers might have to rely on private equity financing facilities.”

While panel manufacturers and institutional investors may be slightly quicker than banks to arrange bridge financing, they too will be concerned about the risk of missing the April 2015 deadline. Realistically, developers that require third party capital must already be engaging with these investors in order to secure financing.

In addition to direct investments, investment funds that will likely end up being the long term owners of projects are providing certain cost saving and facilitation support to developers to hasten the financing process.

“Investment funds focused on operational solar PV projects have a vested interest in the continued development and construction of projects and are partnering with developers and sharing advisory and other costs to ensure that there is a continued pipeline of assets for them to acquire,” explained Anthony Riley, Partner at Orrick.

Preparing for CfDs

The current structure of the CfD regime presents many risks for investors in utility-scale solar. The two most important are outlined below:

Timing of allocation rounds

CfDs will be allocated to projects through a series of competitive auction rounds in which projects will bid against each other for contracts. Utility-scale solar will compete with a number of other technologies categorised as ‘established’ by DECC. ‘Less established’ technologies will compete for CfDs in separate auctions. The technologies categorised as ‘established’ and ‘less established’ are outlined below.

Established technologies	Less established technologies
Onshore wind (>5 MW)	Offshore wind
Solar PV (>5 MW)	Wave
Energy from waste with CHP	Tidal stream
Hydro (>5 MW and <50 MW)	Advanced conversion technologies
Landfill gas	Anaerobic digestion
Sewage gas	Dedicated biomass with CHP
	Geothermal
	Scottish island onshore wind

The first allocation round will take place in October 2014 and then annually thereafter. The infrequency of allocation rounds creates significant uncertainty for investors in solar PV projects, simply because unsuccessful bidders will have to wait for an entire year until they can bid again. This will likely not be a major issue for investors with large balance sheets that might be bidding for several CfDs in each round, but for the smaller developers likely to be bidding for solar projects, a year-long delay could be extremely costly.

“It may be a question of survival if an SME doesn’t win an auction as they will have to wait an entire year for another one,” explained Leonie Greene, Head of External Affairs, UK Solar Trade Association. “They really need to be more frequent.



First round budget

In July 2014 DECC revealed that its indicative budget for the first allocation round of CfD contracts will be £205 million per year. The annual budget for 'established' technologies, which include utility-scale solar PV, is only £50 million. The UK Solar Trade Association (STA) estimates this budget could support around 1 GW of utility-scale solar PV per year if all £50 million was allocated to solar PV. While this would represent a reduction on installed capacity in previous years, it would still create an attractive market size for developers and investors to bid into.

However, the budget for established technologies certainly won't be entirely allocated to solar. At present it is impossible to tell how much of the budget will be allocated to solar because it depends on the volume and quality of bids by other technologies. Promisingly for solar, all other technologies able to bid in this allocation round have the option to continue with the existing RO subsidy regime through the end of March 2017. It would seem natural that most developers of onshore wind, energy from waste, hydro and landfill and sewage gas projects would opt to proceed with the familiar RO subsidy than enter the alternative, untested CfD bidding round.

However, as Leonie Greene, Head of External Affairs at the UK Solar Trade Association, explains, this is certainly not guaranteed. "The £50 million is for all established technologies and there could potentially be a lot of landfill and sewage gas, potentially up to 1 GW," she said. "These will come forward, as they were deprived of progress under the RO through the quarter ROC banding, which was insufficient to bring forward projects. Onshore wind projects will likely choose to be subsidised through the RO but given that you can bid for projects that come online beyond the closure of the RO, I don't think anyone can make assumptions that solar won't be competing with wind in this first allocation round."

Whatever level of competition solar projects face in the first CfD allocation, they will almost certainly experience greater competition, particularly from onshore wind projects, in the next allocation round scheduled for 2015. The closer proximity of next year's allocation round to the RO expiry

date may prompt onshore wind projects with a construction commencement date post March 2017 to bid. Furthermore, the plans of the Conservative Party to end subsidies for new onshore wind farms should they win the next general election in May 2015 might trigger a surge in CfD bids from onshore wind projects to lock in subsidies for future projects.

"I have no idea where we will be in the 2015 auction," confirmed Paul McCartie, Head of Structured Finance, at Lightsource Renewable Energy. "Wind may start to opt into the CfDs for safety rather than relying on ROCs. Indeed the Conservative party have said they will cancel subsidies for wind after the election if they win. There are a lot of moving parts which is making it very uncertain as to what the level of allocation to solar will be."

Aside from timing and budget issues, many companies in the solar industry are concerned that the CfD subsidy regime naturally disadvantages smaller developers and EPCs. This is of particular concern to the solar industry because solar developers tend to have smaller balance sheets than their wind counterparts. For example, projects must have fulfilled a number of onerous and expensive qualification criteria relating to grid connection and planning ahead of bidding. This expenditure would represent a sunk cost should the project not be successful in securing a CfD. The risk of incurring sunk costs would naturally be more concerning for smaller companies.

Furthermore, there is still some uncertainty about the pre-qualification criteria. All legislation states that projects must have a grid connection 'agreement' in order to bid. However, DECC has separately stated that projects need only have a grid connection 'offer', which requires less than half the expenditure than an agreement. This requires further clarification from DECC.

Smaller companies will also find it more challenging to sell their power into the market than the larger vertically integrated power companies likely to be bidding for onshore wind projects. DECC is introducing an initiative that will guarantee a route to market, known as the 'Offtaker of Last Result'. However, this will not be introduced until 2016, which will be too late for solar projects bidding in the first allocation round.

Evolving industry dynamics redefine investment strategies

The closure of the RO regime two years earlier than anticipated coupled with concerns about the CfD subsidy regime has resulted in developers, EPCs and institutional investors significantly adapting their investment strategies.

Developers

For traditional developers that undertake pre-construction work before selling project rights to EPCs capable of funding construction, the ending of the RO regime has triggered a wave of sales of shovel-ready projects to capitalise on the high prices on offer. However, it is this type of developer that will likely struggle most once the CfD regime comes into effect. Because there is a significant risk that projects will not be able to secure a CfD, EPCs are unlikely to pay high prices for shovel-ready projects, therefore reducing the returns available for developers. Furthermore, there is consensus throughout the industry that the best projects with high irradiation and easy grid access have already been constructed, further reducing the returns available for developers.

“For larger developers and EPCs, not securing a CfD will not be a major issue because they will likely be bidding for many projects in each round. But for smaller developers that might only be bidding on a few projects in each round, not securing a CfD could be critical to survival.”

With this in mind, some developers have formed strategic partnerships with EPCs and financial investors to create a group of companies capable of bringing projects to fruition. UK developer UK Solar Assets has done exactly this. “We have now partnered with a German EPC and a Danish EPC, which is actually more of an investor, and a finance company in Hamburg,” explained Ric Hallikeri, Director of UK Solar Assets. “We now have a vertically integrated collaboration of four companies that can do everything end-to-end. We now exit at the sale of the asset once operational to investors such as pension funds rather than selling at an earlier stage to the EPC.”

“I think it will be extremely difficult for developers next year if they are just trying to sell project rights,” continued Hallikeri. “Investors in shovel-ready projects increasingly want projects with high irradiation, low grid costs and reasonable land rents. These types of projects are

becoming few and far between in the UK and lots of the projects now have certain issues. We weren’t sure that EPCs would be prepared to spend over £100,000 per MW on acquiring shovel ready projects up front when there is a risk on that money.”

In addition, many developers with projects still on their hands are evaluating whether projects can be downsized to under 5 MW in order to be able to qualify for ROCs after the end of March 2015. “Sub-5 MW facilities will play a big role in the next 24 months as they can still qualify for ROCs next year,” explained Patrick Lemcke-Braselmann, Head of Acquisitions & Financing, Voigt & Collegen. “Lots of developers started considering downsizing projects to just under 5 MW at the beginning of the second half of the year when planning consents did not come in as expected. You can’t do this for a 15 MW project but you can for 7 MW projects as long as the connection costs are not prohibitive. At the moment this is a fallback option because everyone is rushing to connect their projects under the 1.4 ROC regime. But you can be certain that projects that cannot qualify for ROCs will be checked to see if they can be downsized.”

Larger developers and EPCs

For EPCs and larger developers with a strategy of owning projects through construction before selling to institutional investors, the experience of the past three months differs significantly by company size. Developers that have large balance sheets and debt financing arrangements in place have been in the enviable position of being able to expand their project pipeline and start construction on as many projects as possible that can qualify for the RO. Smaller developers and EPCs that require third-party construction finance have been dashing to secure construction finance.

Smaller developers will almost certainly be disadvantaged under the CfD mechanism. For larger developers and EPCs, not securing a CfD will not be a major issue because they will likely be bidding for many projects in each round. But for smaller developers that might only be bidding on a few projects in each round, not securing a CfD could be critical to survival.

“There are people like us that are fully funded and don’t require debt that can build projects without too much concern of the cliff-edge risk of not getting your project completed at the end of March 2015,” confirmed Paul McCartie, Head of Structured Finance at Lightsource Renewable Energy. “But there are only a few of us out there. At the other end of the spectrum you have a large number of smaller developers that do require third

party funding to build out their projects. Banks can't very easily take a view on the cliff-edge risk as it is a very binary outcome. I think the market is going to slow down after a certain point, which was likely August, at which point in time people won't be able to get funding from banks so will have to sell projects to the likes of ourselves or hope they can get a CfD contract in due course."

The situation is slightly different for the many Chinese developers and EPCs that are active in the UK. For these investors, project investments represent a sales channel for their modules. It is therefore likely that many of the Chinese EPCs, even the smaller ones, will continue to invest throughout the CfD regime, even if the risks are greater and the returns are smaller.

"As a manufacturer we need to figure out ways to expand our sales. Investing in projects is simply a channel to sell our modules," explained David Cao, Legal Director - Overseas Project Investment & Financing, at Hareon Solar Technology. "We need to constantly find ways of doing this due to the competitive nature of the module supply industry. So we will continue to invest in UK solar during the CfD regime but we will need to adapt certainly."

Institutional investors

As mentioned earlier, many institutional investors with a strategy of acquiring solar PV assets once operating have started funding assets through construction in order to guarantee access to the stable cash flows the assets provide when operating. Most notably, some of the listed UK YieldCo vehicles such as Bluefield Solar Income Fund

and NextEnergy Solar Fund have announced acquisitions in the past two months of shovel ready projects.

"Much of the dedicated listed solar fund peer group appear to readily fund construction," confirmed Ricardo Pineiro, Director, Head of UK Solar, at Foresight Group. "The dynamics of the industry are changing and there are now more investors in the market that are willing to provide construction funding. Two years ago there was a clear separation between construction funding and long-term holding but this dynamic has shifted."

From April 2015 institutional investors will have a broad range of operating solar PV assets available to acquire. Firstly, sub-5 MW projects that can still qualify for the RO through March 2017 will continue to come online at a steady rate. Secondly, CfD contracts allocated in the first bidding round are set to be awarded in early 2015, meaning CfD-subsidised projects will start to come online in the second half of 2015. Thirdly, it is likely that a secondary market for operating solar PV projects will begin to materialise in 2015 due to the sheer number of operating assets.

"We have now reached 5 GW of installed capacity in the UK," explained Pineiro. "Based on projects currently in the pipeline there will likely be another 1 GW installed by the end of March 2015, concluding a large installed base of ROC assets which could be acquired. Onshore wind has an active secondary market and there is around 7.7 GW currently installed in the UK. The initial wave of UK solar PV projects were predominantly funded by retail funds such as VCT and EIS funds. These types of funds are typically planned exit funds and will need to sell projects in the short to medium term. This will add further to those assets available in the secondary market."

The UK solar industry is used to change. Following FiTs and ROCs, the CfD regime is the third subsidy mechanism investors have had to come to terms with. While CfDs provide many exciting opportunities, they also create many risks that developers, EPCs and investors all need to give careful consideration. If you would like to discuss how any of the issues discussed in this report affect your business, please don't hesitate to get in touch.



About the research

This report was written by Orrick and Clean Energy Pipeline. All transaction data in this report has been extracted directly from Clean Energy Pipeline's transaction databases. To supplement the research, interviews were conducted with the following individuals:

- **Christian Linder**, Executive Director, Athos Solar
- **Robert Goss**, Managing Director, Conergy
- **Ricardo Piñeiro**, Director, Head of UK Solar, Foresight Group
- **David Cao**, Legal Director - Overseas Project Investment & Financing, Hareon Solar Technology
- **Paul McCartie**, Head of Structured Finance, Lightsource Renewable Energy
- **Anthony Riley**, Partner, Orrick, Herrington and Sutcliffe
- **Eva Belletti**, Senior Project Manager EMEA, Talesun Solar
- **Ric Hallikeri**, Director, UK Solar Assets
- **Leonie Greene**, Head of External Affairs, UK Solar Trade Association
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Key contacts

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