Cambridge Cleantech

THE SCOTT PARTNERSHIP

Cleantech en-vision

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DECC tables "back-stop" PPA for independent generators

An amendment to the *Energy Bill* has been adopted that will help independent renewable generators gain entry to the electricity market.

DECC confirmed, on 19 July, that it tabled an amendment to the *Energy Bill*, designed to help bolster the Power Purchase Agreement (PPA) market for independent generators. It aims to provide a back-stop solution that will obligate suppliers to purchase electricity from renewable generators under specific conditions should the parties be unable to agree a commercial contract.

But the government maintains that the back-stop solution will be "used as a last resort, to strengthen routes to market and stimulate competition". It would provide a guaranteed route-to-market for each eligible generator at a price set at a fixed (£/MWh) discount to the market reference price in a generator's contract for difference (CfD).

The amendment, in addition to a number of others concerning routes to market for independent green generators, was discussed in detail during the Bill's eighth day in grand committee on 25 July.

During the debate Liberal Democrat peer Lord Roper noted many independent generators feel that the *Energy Bill* puts at risk their ability to raise the funds to invest. He brought forward a competing amendment to introduce a back-stop PPA, whereby every eligible generator party to a CfD could require the Authority to secure within one month that an electricity supplier enter into a PPA on terms set out in regulations. Lord Roper had also tabled a separate amendment—introduction of a Green Power Auction Market (GPAM).

Cross-bench peer Lord Cameron felt that of the two options (a back-stop PPA or GPAM) "GPAM is the better one". He called on the government to keep an amendment "up its sleeve in case their back-stop PPA does not do the trick for the investors".

DECC junior minister Baroness Verma said the government recognised that in recent years it has become harder for independent renewable generators to secure PPAs on bankable terms. But she maintained that several of the factors currently constraining the market will be resolved by the introduction of CfDs.

The minister explained that the amendment explicitly states that every generator eligible for a CfD should also be eligible for a back-stop PPA. She noted that this would include large nuclear power plants, renewables and carbon capture and storage generators, for whom this may not be appropriate.

But Verma said GPAM would effectively turn the CfD into a fixed feed-in tariff, which would isolate generators from normal market incentives. The minister also claimed lenders have indicated that GPAM would also require an offtaker of last resort mechanism to protect against the possibility of a generator's power not selling at auction, or the auction not taking place.

Lord Roper's amendment on the back-stop PPA was withdrawn, and the specific amendment relating to GPAM (55AC) was not moved, though the amendment come return at the bill's report stage. But the government's amendment to create an offtaker of last resort in the PPA market was agreed. Detailed proposals for the offtaker mechanism will be developed and consulted on later this year.

Government

10MW-50MW green generation projects risk slipping through the net

Projects of between 10MW-50MW could be disadvantaged by the move from the Renewables Obligation to the contracts for difference regime, MPs have warned.

The energy and climate change select committee issued its report on *Local Energy* on 5 August. It highlighted concerns among stakeholders that the new framework would be inappropriate for medium-sized developments for a number of reasons. The committee noted:

- contracts for difference (CfDs) would require a level of energy market and trading expertise that only the large utilities were likely to possess; and
- CfDs would introduce even greater uncertainty into the level of returns that might be expected, thereby increasing the cost of financing.

The report commended DECC for extending the feed-in tariff (FiT) threshold to enable community projects of up to 10MW in size to access the support mechanism. But it noted developments between 10MW-50MW would neither be served by FiTs nor likely be able to access CfDs, which are geared towards larger-scale developments. The committee therefore advised the government to develop alternative proposals to support projects within this range.

Concerns were further expressed regarding the impact the CfD regime would have on the market for PPAs. The report claimed that the CfD top-up payment would advantage larger generators as they would be more likely to secure better market prices in their PPAs than independent generators. Large generators would consequently receive a higher return per unit of power than independent schemes. In addition the committee said the removal of the obligation to purchase the electricity that exists under the Renewables Obligation (RO) would take away an important incentive on suppliers to enter into contracts with independent generators, leading to worse terms for PPAs.

Suggested solutions to this problem included:

- introducing a "purchaser of first option", which would provide a guaranteed market for community energy schemes;
- introducing a Green Power Auction Market, which would allow generators to auction their output in a six-monthly block on a rolling basis;
- and ensuring "private wire" PPA arrangements—where energy is directly linked to the consumer from the generator—continue to be accessible once the RO has been phased out.

The committee said it was disappointed that, having raised issues related to PPAs in its report on the draft *Energy Bill*, the government had not produced an "adequate solution" to the problem. "If government is serious about increasing competition in electricity generation, it must come forward with a credible solution urgently", the report argued.

Further barriers to the development of medium-sized energy projects included access to grid connections. The committee recommended that Ofgem require DNOs to publish maps detailing where connection capacity was available. But it also suggested that, once the scale of the issue was clear, government should assess the options for facilitating grid connections for small and medium-sized renewable developments, in order to ensure that local energy renewables had "priority access" to the grid wherever possible.

Committee

Green Investment Bank makes "great strides" in first year

The institution, which the government believes will play a pivotal role in the transition to a low-carbon economy, published its first annual report on 25 June.

The report confirmed that during its first year the Green Investment Bank (GIB) made £635.4mn of commitments to 11 projects, and that this contributed to the successful closing of financing totalling £2.3bn. This made the Bank's "mobilisation ratio" (defined as total value of third-party capital to total value of GIB commitments made) 3:1.

In offshore wind, the Bank invested in-line with its published strategy, which initially is to encourage the development of liquidity "in a functional, secondary market for already constructed assets". The report said that at this stage in the sector's development, financial investor appetite was largely limited to such "brownfield" investment.

Two investment commitments were made during the year: in the Walney development, where the GIB participated in a bank financing of the minority equity stake in the project sold by DONG Energy; and the direct purchase from RWE AG of a 24.95% stake in Rhyl Flats windfarm.

In waste recycling and energy-from-waste, the Bank made two debt commitments—a pre-treatment facility in Wakefield and an energy-from-waste facility in Gloucester. But the Bank said the financing for long-term projects of this nature had been badly hit by the impact of the global financial crisis—in particular there remained "very sharply reduced appetite" from banks for the long-term financing of such assets, as a consequence of the change in their own long-term funding costs and the regulatory environment regarding the way in which they manage risk on their own balance sheets.

The Bank made commitments to three funds to deploy funding into the non-domestic energy efficiency (NDEE) sector: a £50mn commitment to work alongside institutional investors through the Aviva Investors REaLM Energy Centres Fund; and two mandates, awarded by GIB shareholder BIS, in two mandates of £50mn each to Equitix Investment Management and Sustainable Development Capital LLP. The Bank also supported the Green Deal by signing a £125mn debt commitment to The Green Deal Finance Company. In bioenergy, the Bank committed £100mn of long-term debt funding to Drax's £990mn project to convert three of its six generation units from coal to biomass firing. On 28 March the commitment was reduced to £50mn when Drax refinanced half of GIB's commitment by raising further private sector funds.

While 80% of the Bank's funding will be focused in these priority areas, a further 20% will be used to fund projects in other permitted sectors, including carbon capture and storage, marine energy and renewable heat.

The report said that, in 2012-13, GIB's operational assets provided a greenhouse gas emissions saving of 22,498t CO_2e, while the lifetime savings of the Bank's investment portfolio at the end of its first year was 43mt CO_2e. The Bank anticipated that in 2020 its portfolio would contribute around 12TWh of electricity per year––equivalent to approximately 9.5% of the UK's projected renewable electricity production in that year.

Chief executive Shaun Kingsbury said the Bank had in its first year made "great strides" in putting in place the foundations upon which an enduring institution would be built.

Green Investment Bank

New Cleantech Incubator for Cambridge

Cambridge Cleantech will soon be moving into the first purpose built incubaotr for the cleantech sector in Cambridge. The new centre, owned by Future Business, will be the essential hub for social and environmental enterprises in the Cambridge region. Cambridge Cleantech will be at the heart of the centre, amongst the community of cleantech start ups, providing a range of innovative business support services.

Join us at an open evening on the10th October to celebrate this world class facility and hear about our exciting plans to support cleantech companies and stimulate the grown of Europe's leading cleantech cluster in Cambridge.

Future Business workspace is not a new idea; since 2006 Future Business has managed a number of temporary workspaces supporting over 100 social and environmental start-ups. In partnership with Cambridge Cleantech, the Future Business Centre will bring together the most exciting Cleantech start-ups to facilitate interaction and accelerate growth.

Future Business and Cambridge Cleantech are now looking for potential tenants who would like to be based at the Centre and receive business support. Alongside start-ups and early-stage businesses, there is also space for commercial companies that can provide a service to tenants.

Join us at the Future Business Centre and become part of one of the fastest growing innovative hubs in Europe. For more information, please visit our website.

Future Business Centre

Free Pitching for investment training for Cleantech SMEs!

NIAB Innovation Farm has European Regional Development Fund funding to provide a series of free workshops to SMEs based in the East of England to support business growth. One of the core sessions offered is pitching for investment training to help start-ups grow.

SMEs must be based in one of the six Eastern counties (Norfolk, Suffolk, Cambridgeshire, Essex, Hertfordshire, Bedfordshire), be a registered sole trader, partnership or limited company, have fewer than 250 employees & have a turnover less than €50 million.

Other courses offered include: business planning, marketing, social media, networking, sources of finance and growth management. Booking details are available online

Please contact David Broach for all other master-classes, and Adelina for pitching training only. Please note that the pitching training has proved very popular and we are attempting to add additional course days.

NIAB Innovation Farm

Cornwall Energy offers Cambridge Cleantech members special price for Electricity Market Reform event

Get a full view of the impact the implementation of Electricity Market Reform (EMR) will have on the energy markets and your business at our one-day event, Electricity Market Reform: Moving towards the end game.

The event, being staged in association with Trilemma UK on 1 October in London, will also examine the risks associated with the capacity market detailed design proposals, and whether they will conflict with decisions to be made on CfD FiTs. Speakers currently confirmed include DECC's director of EMR Jonathan Mills, and Committee on Climate Change CEO David Kennedy. They will join representatives from new market entrants, established players, consumer bodies, and investors to discuss EMR from their perspective, offering a unique and rounded view on the government's initiative to make sure the UK remains a leading destination for investment in low-carbon electricity. For further information and the agenda, click here.

And we are offering Cambridge Cleantech members the chance to book their place at the specially discounted rate of £300 per delegate, instead of the standard price of £400 (£350 for Cornwall Energy customers). However, we urge members to book quickly as the offer is only open until Monday 23rd September.

To book your place contact Georgie Graver on 01603 604422.

Cornwall Energy

Exciting times ahead for Japan's energy industry

Japan has had to re-think its energy mix following the events of 2011 and analysts expect its capacity of renewable energy to almost double by 2030. This provides potential opportunities for British expertise. There has already been an explosion of activity, bolstered by extremely generous feed-in tariffs introduced in July 2012, obligating the utilities to buy electricity generated by renewables at predetermined prices. Lots of Japanese and foreign companies are investing on a grand scale and there are also two interesting projects underway, using fuel cell and vanadium redox flow technology. These reflect Japan's hopes that collecting biogas from landfill and solar and wind energy storage can be viable additions to its energy mix.

Perhaps the most exciting opportunity is off-shore wind – almost half of Japan's future energy is expected to come from this source and the government are planning to set up a special rate tariff for it by next year. There are currently two high profile off- shore wind projects and a floating wind turbine arrived off the coast of Fukushima last month. Indeed, with plans to deregulate the electricity industry by splitting generation and distribution already in motion, there seems to be no better time for potential suppliers/investors to enter the exciting Japanese energy market.

For more information on this article, please contact Sarah Parsons

Japan in Perspective

EcoMachines Incubator investing in Cleantech start-ups

Cambridge Cleantech will be holding a joint event with the EcoMachines Incubator on 15 October. Book here to meet the EcoMachines team.

EcoMachines Incubator is the first UK incubator specifically investing in start-ups in the high value and advanced engineering sectors, and with a focus on the energy, cleantech, transportation and industrial high-tech. According to the company's CEO Ilian Iliev, "We are addressing the well-known gap in early stage VC funding for UK hardware engineering companies. Our unique mixture of equity funding, a structured Accelerator program, and hands on support will help the start-ups we back to get access the larger funding they need to grow in this space, as well as to build the industry partnerships they need to get to market faster"

EcoMachines Incubator is now taking applications for its Accelerator program. The key criteria are that the technology is beyond proof of concept, that there is a committed team behind the technology, and well defined market applications of the technology.

Start-ups accepted for the Accelerator program will benefit from:

- Up to £100k in Seed Funding
- Working space located in the heart of Tech City, London
- Access to specialised testing facilities with its industry partners
- R&D grant application support
- Tailored mentoring by industry experts
- Support to get Beta-testing sites with industry partners
- Exposure to investors' feedback throughout the Programme
- Investor day at the end of the program

Successful graduates of the 9 month Accelerator program will be eligible for up to £500k in follow on funding from EcoMachines Incubator, in order to support the raising of a larger Series A-type funding round.

The application process is simple - simply fill out the application form on the company's website here. To find out more and how to apply, visit EcoMachines Incubator.

EcoMachines Incubator

POLEKO, International Trade Fair in Poland

UKTI is organising a trade mission to the POLEKO environmental Trade Fair, on 7-9th October, in Poland.

Waclaw Slezak, director of Advantage Europe Ltd, is participating in this trade mission with the specific aim of working with and supporting interested Cambridge Cleantech members.

Many Cleantech members will be unable to go but if interested could commission Advantage Europe to seek contacts, market information and sales opportunities for their products and technologies. Those going could seek individual specialised pre and post event support from Waclaw Slezak. Please contact me to discuss details of your needs, expectations and scope of the assignment support.

This is an ideal starting point.
Contact- w.slezak@advantage-europe.co.uk

Advantage Europe Ltd

David Ball presents at international conference

David Ball, Chairman of David Ball Group PLC is presenting a paper at the 'Our World in Concrete & Structures' Conference in Singapore this summer. The prestigious event is now in its 38th year and attracts industry professionals from private and public sectors.

David will be speaking about the discovery and development of a replacement for conventional OPC based concrete. This new patented discovery, Cemfree, from David Ball Group PLC, confronts the challenges of climate change, the rising demand for energy and carbon legacy of the world's most widely used construction material.

David Ball Group PLC is a research-led construction material manufacturer at the forefront of the quest for sustainable construction. This innovative technology designed to utilise existing practices, techniques and infrastructure gives the potential for impacting and accelerating sustainable construction strategies.

David Ball Group PLC

New United Kingdom Green Investment Guide 2013

The United Kingdom Green Investment Guide 2013 is the definitive reference source for companies, investors and advisors conducting business in the clean energy sector. It includes an extensive directory of project developers, investors and advisors active in the UK clean energy sector in 2012 as well as detailed league tables that rank the most active investment funds, banks, law firms and project sponsors during the same period.

This data is supplemented by a white paper from Squire Sanders that highlights some of the dynamics emerging from the proposed reform in the UK and an analysis of investment and M&A trends in the UK's clean energy sector. The United Kingdom Green Investment Guide 2013 is published by Clean Energy Pipeline, a division of VB/Research Ltd - Centaur Media plc.

Click here for more information

Clean Energy Pipeline

Solar developers make best practice commitments

The Solar Trade Association (STA) has issued "10 Commitments" it wants its membership to comply with in the construction and management of solar farms.

Published on 20 August, the commitments were developed over the past three months by leading developers in the solar farm sector of the industry. The STA said it acknowledged the need for solar farms to be developed by listening to the concerns of the local communities, showing sensitivity to the landscape, and protecting the ecological value of the land.

Chief executive Paul Barwell said when solar farms were "done well" they could be a "force for good in the local countryside, as well as building national energy security and protecting the global climate".

STA

Heat pump performance takes "positive step forward"

Heat pumps' performance and efficiency have both shown signs of improvement following recommendations to design, installation and operation, a new report by the Energy Saving Trust (EST) has claimed.

The organisation said on 7 August that technical data, from 44 heat pump sites across the UK, had shown that well-insulated and operated heat pumps performed "to a very high standard in UK homes". It claimed homes best suited to the technology could see savings and income of around £1,500 a year on air source heat pumps and around £3,000 a year on ground source heat pumps. 80% of users said they were satisfied with their heat pump's performance, and over three quarters (77%) confirmed they would recommend a heat pump to a friend.

Climate change minister Greg Barker said the study was a "positive step forward".

EST

"Rocky road ahead" for renewables: Deloitte

Global renewables investment is set to continue its decline in the short term from the 11% fall seen in 2012 according to a report by Deloitte Touche Tohmatsu Limited (DTTL).

The report, *Alternative Thinking 2013: Renewable Energy under the Microscope*, identified the important trends and opportunities in renewable energy for developers, investors and policy-makers and highlighted barriers to progress while suggesting strategies to deal with them. Despite the decline in investment recently, the report said renewables are becoming less alternative and more mainstream, with 118 countries now having renewable energy targets in place. Jane Allen, global leader at DTTL said in the short term global renewables investment is "likely to remain subdued", but in the long term it will be "more attractive".

Deloitte

World's largest windfarm gets planning consent

DECC has awarded planning consent for RWE's 1.2GW Triton Knoll offshore windfarm off the Lincolnshire and Norfolk coasts.

Energy and climate change secretary Ed Davey said on 11 July that the 288-turbine development—which would be the world's large offshore windfarm—should attract around £3.6bn of investment and create 1,130 jobs. He noted that the government had provided certainty early to onshore and offshore wind investors through the publication of draft strike prices in June, and now saw significant investment decisions being made that would benefit the UK economy for years to come.

A proposal to construct a substation at Bicker Fen will be submitted to the local authority in 2014. It is hoped that the project could begin generating power in 2016.

DECC

New "Renewables Club" co-founded by UK

The UK has established a new "Renewables Club" along with 10 other countries, representing over 40% of total world investment in renewable energy,

Initiated by the German federal environment minister, Peter Altmaier, and launched on 1 June, the new Club promises to "lead by example" in scaling up the deployment of renewable energy worldwide. The other founding members include China, Denmark, France, Germany, India, Morocco, South Africa, Tonga and the United Arab Emirates.

The Club will lend additional support to the work of the International Renewable Energy Agency (IRENA), and send a "strong political message of support for renewable energy's business case". It will also support the implementation of "robust policies […] for a greater use of renewable investments, thereby shaping new investments and unleashing new business opportunities".

Renewables Club

Public backs renewables as part of diverse energy mix

The majority of the public are in favour of financial support for low-carbon energy, according to a new poll commissioned by The Sunday Times.

The study showed that 65% of respondents think the government is correct to subsidise wind energy technology, with 76% backing incentives for tidal power. 78% were favourable to subsidies for solar power, while 49% supported measures to stimulate shale gas exploitation. 57% backed incentives for clean coal.