BayWa Gets PPA for Unsubsidized Spanish Solar, Eyes Debt

Solar plants in sunny parts of Europe such as Spain and Italy are starting to be financed subsidy–free, thanks to long–term power purchase agreements that lock in guaranteed returns to lenders and developers.

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April's largest renewable energy deals, including M&As, project finance and venture capital.

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Actis sold Ostro Energy, an India–based renewable energy developer, to ReNew Power Ventures on April 3, after exceeding its target for a portfolio of at least 1 gigawatt of wind and solar power generation.

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ChargePoint seeks to provide a "more comprehensive approach" for electric vehicle charging in Europe as it expands outside its home market of the U.S., the company tells BNEF in this interview.

By Angus McCrone, chief editor, Bloomberg New Energy Finance

Stealthily, and one by one, unsubsidized solar projects have been moving ahead in southern Europe, defying skeptics who thought that developers would not be able to proceed without the protection of securing a tariff via a government auction.

In April, the Don Rodrigo PV project, measuring up at a hefty 170MW and extending over 265 hectares south of Seville in Spain, secured a power purchase agreement, or PPA, from Norwegian energy company Statkraft that will last for 15 years and take all the electricity the plant can produce.

Developer BayWa told BNEF in an interview that it will now move ahead to find long-term finance for the project. Benedikt Ortmann, managing director of BayWa r.e. Solar Projects, said: "We set out to secure a PPA that would make it possible to attract long-term finance for the project. We are now in a process of tendering for bank finance and will, as a German sponsor, benefit from the KfW refinancing facility. Right now we are looking at gearing of just over 50%."

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Editor's Comment

BNEF estimates that Don Rodrigo will cost just over 150 million euros ($180 million) to build, with the generation equipment and grid connection accounting for 125 million euros of that. If so, BayWa will be looking for more than 75 million euros of bank loans.

Statkraft and BayWa r.e. have not disclosed the value of the PPA. However, BNEF's estimate for the levelized cost of electricity for a solar project in southern Spain is 3.9 euro cents (4.7 U.S. cents) per kWh. If Don Rodrigo is selling to Statkraft at somewhere close to that price, including balancing costs, then this would be below the average day-ahead wholesale electricity price in that country over the last years, of 5 euro cents per kWh.

BayWa said in a statement that the sector is "entering a new phase of energy generation: for the first time, renewable energy plants are able to generate cleaner power at the same or even lower price as conventional power plants."

Statkraft is likely to use the PPA with BayWa as a way to supply corporate customers in Spain with renewable electricity associated with a specific, new project.

Simon Kornek, head of continental long-term portfolio at Statkraft, told BNEF by email that his company "notices increased demand in the Spanish industrial and commercial sector for predictable, green long-term power deliveries."

Asked how Statkraft would balance the variable output of Don Rodrigo against the consistent electricity requirements of corporate customers, Kornek added: "As one of Europe's leading electricity trading companies with portfolio of more than 15GW of renewable generation, Statkraft can warehouse certain risks within its pan-European portfolio based on its trading and risk analysis expertise."

Last week, BNEF senior analyst Pietro Radoia published a Research Note looking at Europe's growing number of unsubsidized solar plants, listing 12 such projects totaling 676MW and at various stages from development to commissioning. The note can be read by clients on these links (web | terminal).

Don Rodrigo may turn out to be the first one of large size to be completed in Europe. BayWa said it has "started preliminary work…. and the plant is expected to be commissioned at the end of the year."

Ortmann told BNEF: ""This is a landmark project, and represents a tipping point for the competitiveness of renewable energy in Europe." He added that BayWa is considering opportunities to do the same elsewhere in southern Europe.

"We are currently doing development on other subsidy-free projects in Spain, Portugal, southern Italy and Greece. After that, I would expect to look at southern France, northern Italy and to some extent the Balkans. The price we have agreed with Statkraft [for Don Rodrigo] is not so far from the levels already being agreed in auctions in Germany, so I am quite sure that we will also be doing this there in a few years' time [as well]."

Kornek, at Statkraft, said: "The Spanish example shows that purely merchant PPAs can succeed in market environments where competitive renewable projects can achieve an LCOE that is below the current market value / capture price of the production, and, where the end-customer market shows demand for long-term power deliveries."

BNEF analyst Andreas Gandolfo looked at the outlook for solar in Spain in this week's Power Weekly. See links here (web | terminal).

Announced M&A

April '18 deals

Organisation	Acquirer	Sector	Country	Date	Disclosed Value ($m)	Transaction Type
TronderEnergi Marked AS	Fjordkraft Holding ASA	Large Hydro	Norway	2018-04-30	Undisclosed	Equity

Completed M&A

April '18 deals

Acquirer	Organisation	Country	Date Completed	Sector	Disclosed	Equity ($m)
Ormat Technologies Inc.	U.S. Geothermal Inc.	U.S.	2018-04-24	Geothermal	198.8	105.1
Suntory Holdings Ltd.	Anellotech Inc.	U.S.	2018-04-03	Biofuels	15	15
Zhonghuan New Energy Biomass Power Generation Co.	Penglai Changqing Biomass Energy Co.	China	2018-04-27	Biomass & waste	0.4	0.4
Unirac Inc.	SolarHooks LLC	U.S.	2018-04-26	Solar		
Power Factors LLC	Arista Renewable Energies Inc.	Canada	2018-04-23	Wind		
Amarjothi Spinning Mills Ltd.	Jaichander Wind Farms Pvt	India	2018-04-11	Wind		
Greensolver U.K. Ltd.	Entap Ltd.	U.K.	2018-04-09	Wind		
Porsche Digital GmbH	Anagog Ltd.	Israel	2018-04-04	Emerging tech		
Engie SA	Fenix International Inc.	U.S.	2018-04-03	Solar		
NVR Infrastructure & Services Pvt Ltd.	Celestial Solar Solutions Pvt	India	2018-04-02	Solar		
ReNew Power Ventures Pvt Ltd.	**Ostro Energy Pvt**	**India**	**2018-04-03**	**Wind**		

On the sale of Ostro Energy to ReNew Power Ventures, by Sanjiv Aggarwal, partner in the energy team at Actis (previous owner of Ostro Energy)

"When Actis created Ostro Energy in 2014, our business plan was for 1 gigawatt of renewable energy across both wind and solar power, with a commitment of $280 million of equity capital. When we sold Ostro earlier this year, it had 1.1 gigawatts of capacity – of which 850 megawatts was operational and another 250 megawatts was in advanced stages of construction. We chose to exit when our business plan was achieved, and we had exceeded our 1 gigawatt target. The market for renewables in India is pretty robust right now, and we feel that by exiting at this time we have been able to get a good value. India power demand is growing at a healthy 5-6 percent per year and it is heavily coal-dominated, but renewable energy being at grid parity in the country is a very strong driver for the sector."

Announced VCPE

April '18 deals

Organisation	Sector	Abstract	Date	Lead Investor	Country	Transaction Type
Conti SPE LLC	Solar	Renewable energy developer	2018-04-17	Ares Manage-ment LP	U.S.	PE – Buy–out / corp spinoff

Completed VCPE

April '18 deals

Organisation	Sector	Date	Value ($m)	Lead Investor	Transaction
Wunder Co./The	Solar	2018-04-18	112	Cyrus Capital Part-ners LP	VC - Series B / Sec-ond round
Wunder Co./The	Solar	2018-04-18	112	Cyrus Capital Part-ners LP	VC - Series B / Sec-ond round
Origami Energy Ltd.	Energy management	2018-04-05	26	Aggreko Plc	VC - Series B / Sec-ond round
Ohmconnect Inc.	Software	2018-04-17	15	Private Investor	VC - Series B / Sec-ond round
Africa's Talking Ltd.	Services & Support (Clean Energy)	2018-04-26	8.6	International Finance Corp.	VC - Series A / First round
Growing Energy Labs Inc.	Energy Storage	2018-04-12	5.5		VC - Series B / Sec-ond round
Irresistible Materials Ltd.	Efficiency: Built Environment	2018-04-13	0.27	Mercia Fund Man-agement Ltd.	VC - Seed / angel
Conti Solar LLC	Solar	2018-04-23	0	Ares Management LP	PE - Buy-out / corp spinoff
Ionic Materials Inc.	Energy Storage	2018-04-18	0	Total SA	VC - Series D / Fourth round
Autarq GmbH	Solar	2018-04-06	0	Econnext GmbH	PE - Buy-out / corp spinoff

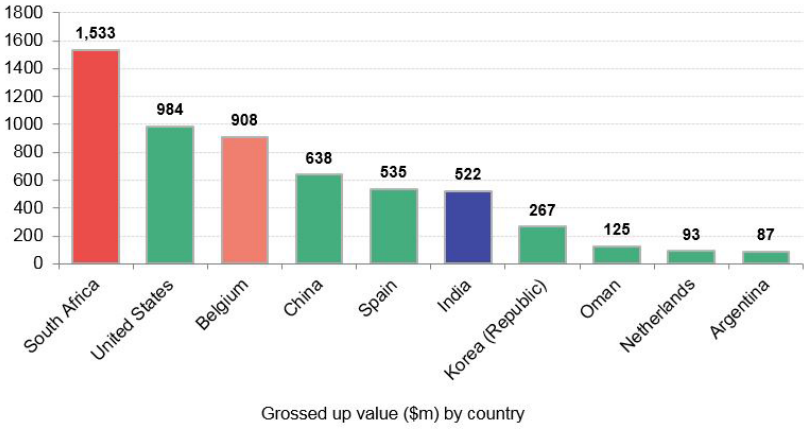
Public Market Listings

April '18 deals

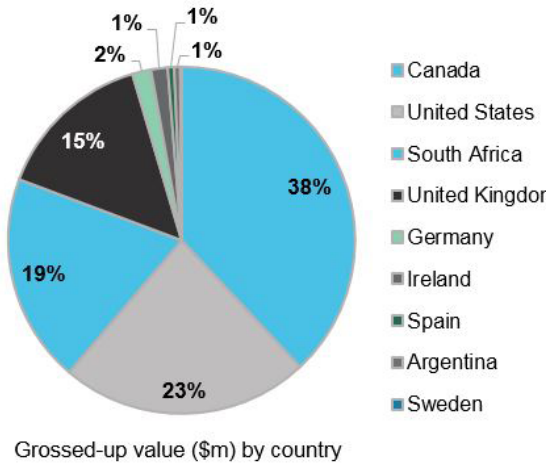
Organization	Date Completed	Sector	Country	New Equity ($m)	Total Offering ($m)	Transaction
Daqo New Energy Corp.	2018-04-12	Solar	China	110	110	Secondary
Leechem Co.	2018-04-30	Energy Storage	Korea (Republic)	10.5	10.5	Private Investment in Public Equity (PIPE)
Legend Power Systems Inc.	2018-04-06	Efficiency: Industry	Canada	8.3	8.3	Secondary
Redt Energy Plc	2018-04-19	Carbon Markets	Jersey	5.5	5.5	Secondary
Petratherm Ltd.	2018-04-17	Geothermal	Australia	3.7	3.7	Secondary
PowerHouse Energy Group Plc	2018-04-25	Biomass & Waste	United Kingdom	0.8	1.3	Secondary

Project Finance

New build project finance in clean energy by country, April 2018



Project finance acquisitions by country, April 2018



Largest project acquisition by value: Canada Pension Plan's acquisition of the 356MW NextEra Ontario wind portfolio for $516 million on April 2.

Largest project to be financed on balance sheet by value: The 224MW Northwester II wind farm for $896 million on April 25 in Belgium. Equity provided by Colruyt, Incontrol, Parkwind and TTR Energy.

Largest project to be financed with debt: The 75MW Scatec Solar Sirius Solar Upington PV phase I for $395 million ($305 million debt) on April 10. Equity provided by Scatec Solar.

Upcoming Events

Date	Upcoming Events	Location
May 14–15	Energy Storage World Forum	Berlin
May 15-16	Taiwan Offshore Wind Energy Summit 2018	Taiwan
June 4-5	Eurelectric Power Summit	Ljublijana
June 5	Solar Power Parity	Milan
June 7–8	U.S. Offshore Wind Conference	Boston
June 19-21	Electrify Europe	Vienna
June 28	Global Infrastructure Dialogue	Frankfurt

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Bloomberg New Energy Finance Chief Editor
Angus McCrone
amccrone1@bloomberg.net

New Energy Deals Editors
Bryony Collins
bcollins32@@bloomberg.net

Ben Vickers
bvickers@bloomberg.net

Advertising and Partnerships
Daniel Elphinston
delphinston@bloomberg.net

BNEF Data team:
Dean Hope Robertson
dhoperoberts@bloomberg.net

Bothwell Nyaruwa
bnyaruwa@bloomberg.net

Chargepoint Takes Aim at Workplaces, Demand Response: BNEF Q&A

By Bryony Collins, Bloomberg New Energy Finance

Electric vehicle charging in Europe is a "fragmented market" with lots of opportunity to improve existing business models and provide a "more comprehensive approach for customers", according to Mark Kerstens, vice-president of strategic accounts at ChargePoint Inc., in an interview with BNEF.

The U.S.-based EV charging network has supplied more than 50,000 charging stations globally at workplaces, retail outlets and homes, and is expanding its European business after raising $125 million in venture capital last year specifically for the purpose.

The market for EV charging at workplaces is more developed in the U.S. than it is in Europe, and Kerstens wants to "spend a lot of energy" building that up. ChargePoint currently generates revenue from selling EV charging hardware, maintaining that hardware, and providing software services to station owners. It does not sell electricity directly, and wouldn't want to compete with its own customers in the future by starting to provide these services, Kerstens told BNEF.

ChargePoint is "in dialogue" with automakers and oil companies about integrating its driver experience software application within the navigation system of a car, or inside a pre-existing mobility app. The software helps drivers locate and pay for charging points, as well as use wait-listing features for when a charging point becomes available. Daimler AG and BMW's i-Ventures have both provided equity investment for the company.

Kerstens said he sees more immediate benefit in using EVs to provide demand-response services to the electricity grid, than entering the nascent market for vehicle-to-grid technology. ChargePoint has already implemented demand-response with some utilities, whereby EV charging is curtailed during periods of peak power demand and customers are remunerated accordingly. The company does not yet provide technology for car batteries to provide capacity back to the grid at times of low power generation.

Mark Kerstens

Q: What is Chargepoint's strategy for expanding in Europe?

A: We raised $125 million in the first half of 2017 with the objective of installing charge points in Europe. We see a lot of focus on DC fast-charging networks on major motorways and we are a significant player in that space. Our largest contract in Europe is with InstaVolt in the U.K., who will be deploying up to 600 fast chargers delivered by Chargepoint. The goal is to have 500 of those in the ground by the end of 2018.

The European market is less developed in workplace charging than the U.S. In America, about 80 percent of charging happens either at home or in the workplace, and we see that's really an undeveloped area in Europe, so we want to spend a lot of energy in that space.

In Europe, a lot of grant funding [has gone into funding public charging points] at municipal, national and even Europe-wide level, [but] not every one of these chargers has been deployed the way it should have been, and certain business models are challenged. It has led to a very fragmented market, with lots of relatively small players supported by grants offering charging services.

It's not uncommon for drivers to have a dozen different memberships to a dozen different charging networks. There's an opportunity to create a much more comprehensive approach for customers.

Q: Will you target revenue from selling energy, not just hardware, as you expand into fast-charging?

A: We do not own and operate charging stations. Our revenue model is three revenue streams – one is the hardware; two is recurring revenue from software services – to help the station hosts operate and manage their charging stations; and third is our maintenance and management program, which is proactive monitoring and repair of the stations if needed. Those are our three revenue sources, not the sale of electricity.

Q: Would the EV charging market work best if there were segmentation between suppliers of charge points and sellers of electricity?

A: We see our role in the market to encourage others to establish a charging infrastructure, whether on a motorway with DC fast chargers, or as a retailer offering their customer charging for free as an amenity or service. Or whether it's an employer who sees EV charging as a tool to attract and retain talent.

We enable our customers by providing both hardware and software, we are not in the business ourselves of selling electricity.

For more than half of our chargers, electricity is offered to the drivers for free. But that's not a decision we make, we enable that and our software allows very sophisticated pricing policies, access controls and wait-listing features.

Q: So you don't want to sell electricity?

A: No, we don't want to compete with our customers – we have a clear role in the value chain. We are unique in the industry in offering hardware solutions for home, workplace and DC fast charging.

We have a driver experience network (DEN), where we communicate with drivers through our app.

Q: What does DEN allow drivers to do?

A: The app allows people to find charging stations -- they can start and stop a session and pay for charging. A lot of our customers use waitlist features, so they are notified when a charger becomes available, at work for example.

We are also in dialogue with car companies about integrating the functionality within in-car navigation systems. Bringing that same experience you can have on your smartphone into the dashboard of your car brings another level of convenience.

Other companies in the mobility ecosystem are also interested in integrating the charging experience in their overall mobility app. For example, an oil company that has an app where you can find petrol stations, car wash stations, and you may have promotional offers – having EV charging in that mobility experience is of real value to them.

Q: Do you see potential in vehicle-to-grid technology?

A: We have already implemented a number of demand-response programs with utilities [often at work places where customers leave their cars for a long period of time]. When customers opt in, charging rates can be curtailed during periods of peak power demand so that overall peak demand is brought down, and people are typically remunerated for this.

It reduces the need for utilities to provide peak capacity, which is a significant expense.

Taking it further, and using the car battery to feed back into the grid, we are not ourselves developing that technology but we are in close contact with companies that are. When the time is right to introduce that, we certainly will be involved.

We see more immediate benefit in the demand response, cloud-connected smart charging network.

Q: How many residential charge points have you installed?

A: We have a home product that people can put in their own garage, both in Europe and the U.S., and a significant market presence in apartment buildings or flats. Those are typically AC chargers for overnight and we are starting to see people maybe add DC chargers as well.

We have sold over 13,000 home chargers to date – on top of the 48,000 chargers we have installed in public places, workplaces and at retail centers.

Q: Do you see new business models arising from shared car ownership or on-demand taxis?

A: Car ownership is already going down, so we see enormous potential as more car fleets go electric. Some of that is driven by municipalities that are banning diesel, and ultimately petroleum as well, due to air pollution being a significant concern. That will drive a lot of electrification. We see the emergence of charging hubs typically used by multiple different fleets. It could even be fleets complementary to each other, such as taxis or delivery vehicles. These can all be using the same hubs because their utilization patterns are a bit different.