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Power Finance & Risk

Exclusive Insight on Power M&A and Project Financing

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Energy Storage Roundtable 2020
Developers, lenders and investors discuss one of the fastest emerging asset classes. Sponsored by **Troutman Sanders**. Page 9

ArcLight closes Griffith acquisition financing
ArcLight Capital Partners has closed a $153.9 million deal financing its acquisition of the gas-fired Griffith Energy project. Page 23

Mizuho preps launch of M&A franchise
Mizuho is poaching rival bankers as it prepares to launch a US power and utilities investment banking business. Page 28

No let-up in relentless wind and solar M&A market

PFR editorial staff

There were signs even before the outbreak of the Covid-19 pandemic that the dynamic of the market for renewable energy assets had shifted in favor of buyers, and the recent flurry of sale processes kicking off despite travel restrictions and lockdowns will have done nothing to tip the scales in the other direction.

"Is it a buyer's market again?" wondered an official at a developer at the end of April, inundated with project marketing. "Are you following the craze?" High quality assets will, of course, still draw competitive bids, say deal watchers. But projects that are less of a slam dunk could be easy pickings for enterprising investors.

One thing appears certain: Coronavirus has not dampened the spirits of developers looking to cash in. *Check out our coverage of all the latest auctions on pages 5, 6 and 7.*

Recently launched renewable energy auctions

Seller	Description of asset	Capacity	Adviser
Grasshopper Solar	Solar assets in Ontario and Massachussets	150 MW (DC)	Onpeak Capital
Swift Current	Castle Gap wind farm in Texas	196 MW	Lazard Frères & Co
PNE USA	Chilocco wind farm in Oklahoma	167 MW	Marathon Capital
Ecoplexus	Five solar projects in North Carolina	100 MW	CCA Group
Starwood Energy Group Global	Two operational wind farms in Texas	376 MW	Marathon Capital
Castlelake	Wind repowering project in California	57.5 MW	FTI Capital Advisors

Source: Power Finance & Risk

8minute clinches development credit with club of banks

Shravan Bhat, Richard Metcalf

8minute Solar Energy has secured a $225 million letter of credit from a group of five banks to fund deposits for power purchase agreements and interconnections, an unusually large deal of a kind that developers have historically struggled to find.

The availability of loans to fund development-related securities has expanded in recent years to meet the growing demand from developers that have a large pipeline of projects but lack a large parent company balance sheet or corporate revolving credit facility.

"There is definitely a trend of more developers seeking to get capital based on pre-NTP assets," says a banker away PAGE 8 »

Vivint wraps $545 million in alternative financing

Taryana Odayar

Vivint Solar has raised $545 million of debt across two transactions that it began working on earlier this year after nixing a solar securitization that was "on the cusp of closing" when the Covid-19 pandemic hit the US.

Vivint had been days away from issuing bonds backed by a portfolio of residential solar assets held under its warehouse loan facility, but when the ABS PAGE 21 »

Pacific Hydro pursues corporate refi

Carmen Arroyo

Pacific Hydro, a renewable energy company with assets in Australia, Chile and Brazil, is looking to refinance corporate debt with a roughly $400 million loan.

The independent power producer sent requests for financing proposals to commercial banks in February, say bankers.

Pacific Hydro is headquartered in the Docklands PAGE 25 »

● **POWER UP:** CHECK OUT A SELECTION OF THE WEEK'S POWER AND UTILITY NEWS ON TWITTER @POWERFINRISK

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THE BUZZ

Keeping busy

Eleven weeks after bankers and fund managers left Midtown Manhattan for coronavirus lockdown at home, the pace of activity in power and renewable energy finance in the US seems as hectic as ever. Indeed, disruption to the capital markets has created more work for some borrowers and unique opportunities for lenders.

Consider **Vivint Solar**, which quickly put together a Plan B after ditching what would have been a routine issuance in the ABS market. It turned out to be a rare chance for **Brookfield Asset Management** to earn 8% on a three-year holdco loan. And even though Vivint's favored route was cut off, the company noted that it is still raising debt more cheaply, on the whole, than it was at the beginning of 2018 (see story, page 1).

Meanwhile, the wind and solar asset market is a target-rich environment, with auctions seemingly being launched on a weekly basis. Investment bankers say progress is slower than usual, but several deals have reached financial close during the pandemic, proving that it can be done.

Is there light at the end of the tunnel? It would be a good sign if the leveraged loan market were to return to normal. **Hamilton Holdings** will be an interesting test case (see story, page 23). Price talk is understandably wider than before the lockdown, but still... 500 bp for a single-B credit? That's hardly a credit crunch! ■

Power Finance & Risk

EDITORIAL
Richard Metcalf Editor (212) 224-3259
Shravan Bhat Reporter (212) 224 3260
Taryana Odayar Reporter (212) 224 3258
Carmen Arroyo Reporter (212) 224 3256
Stuart Wise Data Associate
Kieron Black Sketch Artist

PRODUCTION
Sam Medway Manager

PUBLISHING
Adam Scott-Brown Director of Fulfillment
Alyssa Yang Senior Marketing Executive

SUBSCRIPTIONS
Guy Dunkley Senior Sales Manager (212) 224 3443

ADVERTISING/ REPRINTS
Jonathan McReynolds Head of Business Development (212) 224 3026

CORPORATE
Andrew Rashbass Chief Executive Officer
Jeffrey Davis Divisional Director, Financial & Professional Services
Isaac Showman CEO, NextGen Publishing

Directors:
Leslie Van de Walle (Chairman)
Andrew Rashbass (CEO)
Wendy Pallot (CFO)
Jan Babiak
Colin Day
Imogen Joss
Tim Pennington
Lorna Tilbian

Customer Service
PO Box 4009, Chesterfield, MO 63006-4009, USA
Tel: **1-212-224-3043**
Fax: **212-224-3886**
UK: **44 20 7779 8704** Hong Kong: **852 2842 8011**
E-Mail: mailto:customerservice@powerfinancerisk.com

Editorial Offices
1120 Avenue of the Americas, 6th Floor, New York, NY 10036
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Please send all undeliverable Mail and changes of addresses to:
PO Box 4009 Chesterfield, MO 63006-4009 USA

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Do you have questions, comments or criticisms about a story that appeared in *PFR*? Should we be covering more or less of a given area? The staff of *PFR* is committed as ever to evolving with the markets and we welcome your feedback.

Feel free to contact Richard Metcalf, editor, at (212) 224-3259 or richard.metcalf@powerfinancerisk.com

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GENERATION AUCTION & SALE CALENDAR

These are the current live generation asset sales and auctions, according to Power Finance and Risk's database.
A full listing of completed sales for the last 10 years is available at http://www.powerfinancerisk.com/AuctionSalesData.html

Generation Sale DATABASE

Seller	Assets	Location	Adviser	Status/Comment
Beal Financial Corp.	Portfolio (3.5 GW Gas)	US	Cantor Fitzgerald	Indicative bids were in by May (PFR, 5/4).
BlackRock	Fort Detrick (Cogen)	Frederick County, MD		Harrison Street is the buyer (PFR, 6/1).
Castlelake	Summit Wind (57.5 MW Wind)	Alameda County, CA	FTI	Auction launched in May (PFR, 5/18).
Castleton Power	Portfolio (400 MW Gas)	Texas	Cantor Fitzgerald	An equity raise is in the works (PFR, 6/1).
Community Energy	Hunter (100 MW Solar)	Emery County, Utah		DESRI has closed the purchase (see story, page 6).
Ecoplexus	Portfolio (100 MW Solar)	North Carolina	CCA Group	First round bids due June 8 (see story, page 5).
En-Trust	Operating Portfolio (8.6 MW [DC] Solar)	Ohio, Michigan	Fifth Third	CIM distributed in April (PFR, 5/26).
	Pipeline Portfolio (21.9 MW [DC] Solar)	Midwest		
Eolus North America	Wall Wind I (46.5 MW Wind)	Kern County, CA	Paragon	Developer was taking second round bids in April (PFR, 4/20).
Glidepath Power Solutions	Clermont (80 MW Storage)	New York	Guggenheim	Teasers circulated on April 20 (PFR, 4/27).
Grasshopper Solar	Green Light (150 MW [DC] Solar)	Canada, US	Onpeak	Auction launched in May (see story, page 6)
Grenergy	Portfolio (52 MW Solar)	Chile		A sale is planned (PFR, 6/1).
Hanwha QCells	Dodgers (250 MW Solar)	Texas	Paragon	Seller had acquired the assets in February (PFR, 5/4).
HPS Investment Partners	Spruce Finance (Solar)	US	Onpeak	Auction launched in May (PFR, 6/1).
John Laing	Portfolio (243 MW Solar)	North Carolina	CohnReznick	Auction was underway by March (PFR, 3/30).
Longroad Energy Partners	Muscle Shoals (227 MW Solar)	Colbert County, AL	Fifth Third	Sale process was underway in March (PFR, 3/23).
OPDEnergy	Portfolio (144.5 MW [DC] Solar, 80%)	Mexico		Riverstone is the buyer (see story, page 24).
Pattern Energy Group	Broadview (324.3 MW, 49%)	Curry County, NM, Deaf Smith County, TX		PSP Investments is in talks to acquire the stake (PFR, 5/26).
Petrobras	Portfolio (578 MW Oil)	Brazil	Goldman Sachs	Teasers issued by May (PFR, 5/18).
	NTS (Pipeline, 10%)	Brazil	Santander	Teasers issued in May (PFR, 5/26).
PNE USE	Chilocco (167 MW Wind)	Kay County, Oklahoma	Marathon Capital	Auction launched in May (see story, page 6)
ReneSola	Portfolio (10.4 MW Solar)	Minnesota		Nautilus has bought the assets (see story, page 7).
RWE Renewables	Portfolio (861 MW Wind)	US	Marathon Capital	Auction in second round (see story, page 7).
Shell New Energies	Silicon Ranch (Solar)	US	Morgan Stanley	Auction launched in May (PFR, 6/1).
Solarpack	Quinantu (9 MW Solar)	Chile		The sponsor plans to sell the asset (see story, page 24).
Solterra Partners, Leyline Renewable Capital	Wilkes (75 MW Solar)	Wilkes County, NC		Initial bids had come in by May (PFR, 5/11).
Southern Current	Portfolio (40 MW Solar)	Oregon	Fifth Third	US Solar Fund is the buyer (PFR, 6/1).
Sphera Energy	Portfolio (150 MW Chile)	Chile		An equity investor is sought (PFR, 6/1).
Starwood Energy	Stephens Ranch (376 MW Wind)	Texas	Marathon Capital	Auction launched in April (PFR, 5/18).
Sun2o Partners	Trinidad Solar (250 MW)	Douglas and Grant counties, WA		Teasers sent out in May (PFR, 5/26).
	Soda Springs Solar (80 MW)	Caribou County, ID		
Swift Current	Castle Gap (196 MW Wind)	Texas	Lazard	Auction was launched in May (see story, page 5).
U.S. Light Energy	Portfolio (102 MW Solar)	New York		Energy Impact Partners acquired the assets (PFR, 6/1)

New or updated listing

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PROJECT FINANCE

Deal Book is a matrix of energy project finance deals that Power Finance & Risk is tracking in the energy sector.
A full listing of deals for the last several years is available at http://www.powerfinancerisk.com/Data.html

Live Deals: Americas

Sponsor	Project	Location	Lead(s)	Deal Type	Loan Amount	Tenor	Notes
8minute Solar	Pipeline (Solar)	US	CIT	Letter of Credit	$225M		Deal signed May 29 (see story, page 1).
ArcLight Capital Partners	Griffith Energy (570 MW Gas)	Mohave County, Ariz.	Crédit Agricole, ING Bank, CIT Bank, Siemens	Term Loan	$115M	7-yr	Financing has closed (see story, page 7).
				Ancillary Facilities	$38.9M		
Arroyo Energy	El Arrayán (115 MW Wind)	Chile	SMBC, Crédit Agricole	Debt	$140M	7-yr	Closing delayed until August (see story, page 26).
Atlas Renewable Energy	Pimienta (400 MW (DC) Solar)	Campeche, Mexico	DNB, IDB Invest, Bancomext	Private Placement	$200M		Closing is expected by early June (PFR, 5/18).
	Juazeiro (187 MW Solar)	Brazil	IDB Invest	Debt	$90M		Negotiations are underway (PFR, 5/26).
Calpine Corp.	Geysers (725 MW Geothermal)	California	BNP, Crédit Agricole, MUFG	Loan	$1B		Price talk is L+200 (PFR, 5/18).
Capital Dynamics	Ventura (100 MW/400MWh Storage)	California		Debt			Korean investors are working on a deal (PFR, 6/1).
Castleman Power Development	Portfolio (400 MW Gas)	Texas	ING Capital	Term loan	$160M	7-yr	Price talk was said to be 325 bp before the Covid-19 outbreak (PFR, 4/13).
				Ancillary Facilities	$20M		
Clearway Energy	Golden Fields III (192 MW Solar)	California	Morgan Stanley	Tax equity			The offtakers are unrated CCAs (PFR, 5/18).
DESRI	Hunter (100 MW Solar)	Emery County, Utah	CIBC, HSBC	Debt			Construction is underway (see story, page 6).
			Wells Fargo	Tax equity			
EnfraGen	Portfolio (200 MW Distributed Solar)	Chile					The financing is expected to close before the end of the summer (PFR, 4/13).
Engie	Portfolio (Wind, Transmission)	Brazil	BNDES	Debt	$473.1M		The loans were signed electronically (PFR, 6/1).
Engie Energía Chile	Calama (151.2 MW Wind)	Antofagasta, Chile	IDB Invest	Term Loan	$110M	12-yr	The project is expected to be brought online by mid-2021 (PFR, 5/4).
				Ancillary Facilities	$15 M		
Fisterra Energy	Tierra Mojada (875 MW Gas)	Jalisco, Mexico		Bond refinancing			Morgan Stanley is understood to be pursuing the mandate (PFR, 5/4).
Grupo Ibereólica, EDF	Cabo Leones 1 (175 MW Wind)	Chile	DNB	Refinancing		18-yr	The sponsors are nearing financial close (PFR, 5/26).
Grupo Ibereólica, GPG	Cabo Leones 2 (204 MW Wind)	Chile	Crédit Agricole	Construction Debt			Cred Ag has won the mandate (PFR, 5/26).
Innergex	Hillcrest (200 MW Solar)	Brown County, Ohio	CIT, Mizuho, MUFG	Term Loan	$82M	7-yr	The plant is due online by year-end (PFR, 5/18).
				Ancillary Facilities	$25.9M		
			Wells Fargo	Tax equity	$109.8M		
Key Capture Energy	Portfolio (1.5 GW Storage)	US		Capital Raise			The sponsor is in talks with investment banks (PFR, 5/4).
Leclanché	St Kitts Solar (36.5 MW/44.2 MWh)	St Kitts	Unknown	Debt	$47.8M		Financing has closed (see story, page 25).
OPDEnergy	Portfolio (150 MW Wind, Solar)	Chile	SMBC	Debt			Close expected in June (see story, page 26).
ProEnergy Services	Topaz (Gas)	Galveston County, Texas	MUFG	Term Loan	$200M	C+7-yr	The deal has closed (PFR, 6/1).
Recurrent Energy	Pflugerville (144 MW Solar)	Travis County, Texas		Debt, Tax Equity			The deal is in the market (PFR, 6/1).
Sonnedix	Unidentified (Solar)	Chile		Term loan			Sonnedix has been reaching out to commercial banks since last fall (PFR, 4/13.)
	Valleland (60 MW Solar)	Atacama, Chile					
Stonepeak, MPLX, WhiteWater, West Texas Gas	Whistler (Gas Pipeline)	Texas		Private Placement	$800M	10.6-yr	The sponsors launched the placement at the end of April (PFR, 5/11).
Sunenergy1	Portfolio (100 MW Solar)	US	CIT, ING Capital	Construction Debt			Financing close is months away (PFR, 5/26).
Vivint	Portfolio (Resi Solar)	US	Brookfield	Holdco loan	$300M	3-yr	Closed May 27 (see story, page 21).

New or updated listing

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Ecoplexus launches latest solar asset sale

Ecoplexus has launched the sale of a 100 MW portfolio of solar projects in North Carolina, as the developer's auction of distributed generation assets in California draws to a close.

The freshly launched sale process is for five projects that have busbar power purchase agreements with utilities **Duke Energy** and **Dominion Energy**.

The projects range in size from 20 MW (DC) to 112.5 MW (DC) and the largest of them also includes a battery storage system.

Ecoplexus' financial adviser on the auction, **CCA Group**, has circulated teasers to potential buyers, but the projects are said not to have been named at this stage. **PSEG Solar Source** is a previous buyer of Ecoplexus projects in North Carolina (PFR, 11/4/16).

First round bids for the five projects are due on June 8.

Ecoplexus has been a strong performer in recent requests for proposals in the Tar Heel State.

In July 2019, Duke selected two Ecoplexus solar plus storage projects in North Carolina for power purchase agreements:

- Oakboro PV1 – a 40 MW project in Oakboro
- Westminster PV1 – a 75 MW project in Rutherfordton

Exoplexus says the projects will require a combined investment of $215 million.

The developer also recently secured a 20-year PPA with Duke for the 35 MW Olin Creek solar project in Iredell County, North Carolina, which it is developing jointly with **Carolina Solar Energy** (PFR, 5/19).

Duke is purchasing the generation from Olin Creek on behalf of the city of Charlotte, which selected the project through the utility's Green Source Advantage program.

BACK-TO-BACK AUCTIONS

The North Carolina auction comes as Ecoplexus looks to wrap up the sale of structured equity interests in a 50 MW portfolio of distributed generation assets in California.

The developer is said to have identified a buyer for the assets following a two-stage auction run by **CohnReznick Capital**. The auctioneer is understood to have taken binding bids from five strategic and financial investors last summer (PFR, 9/6).

The California projects have power purchase agreements between 20 and 25 years in length (PFR, 3/20/19).

US Bank provided tax equity for most of the projects in the portfolio, and will be making a further investment which is also soon to be finalized.

AND THAT'S NOT ALL

As if it didn't have enough on its plate, Ecoplexus is also working on a large build-transfer project in Florida.

The developer started construction on the 60 MW Durrance Solar Center in Polk County in March 2020. **Tampa Electric** will own the project when it is operational.

Ecoplexus expects the Durrance project to cost $90 million and it is expected to be online in 2021. ■

Swift Current launches sale of Texas wind project

Boston-based renewables developer **Swift Current Energy** has launched an auction for a wind project in central Texas.

The company has hired **Lazard Frères & Co** to identify potential buyers for the 196 MW Castle Gap wind project, which is located partly in Mills County and and partly in Lampasas County.

The project is expected to receive notice to proceed by the fourth quarter of 2020 and to be online by the fourth quarter of 2021.

Lazard is aiming to conclude its auction process, codenamed Project Edinburgh, at the end of June or in early July.

About 80% of the project's revenue streams are contracted under two separate power purchase agreements with "favorable" pricing and congestion mitigation provisions, while the remaining 20% provides scope to capture merchant upside, according to marketing materials circulated by Lazard.

One of the PPAs, covering 16 MW of the project for 10 years, is priced at $17.04/MWh, while the other, covering roughly 139 MW for 13.5 years, is priced at $16.02/MWh.

The larger of the two contracts includes a clause allowing the project to post-settle out hours down to certain availability levels when congestion is greater than the PPA price and North Hub pricing is lower than $80 MWh.

Swift Current has qualified the project for the full production tax credit through the purchase of a main power transformer, and has received proposals for turbines in the 4 MW to 5 MW class.

Founded in 2016, Swift Current has developed, financed, constructed and operated solar and wind projects totaling more than 8 GW and has a portfolio of operating and development assets in excess of 3 GW.

PROJECT BERING

Earlier this year, Swift Current hired **KeyBanc Capital Markets** to market two other assets, namely a wind and solar project, in a process codenamed Project Bering.

That portfolio comprises the 202.5 MW Glacier Sands wind project in Mason County, Ill., and the 195 MW Tres Bahias solar project in Calhoun County, Texas, both of which are expected online in 2021.

Glacier Sands has 15-year renewable energy certificate contracts with **Commonwealth Edison Co**, **Ameren** and **MidAmerican Energy**. The remainder of its RECs are to be sold to a financial institution for 15 years on a unit-contingent basis.

The Tres Bahias solar project has a 12-year unit-contingent PPA for 100 MW of its output, settled at the Ercot-Houston hub, with the option of adding a further 95 MW. ■

FAST FACT

$16.02/MWh

PPA price for the 13.5-year contract covering 139 MW (71%) of the 196 MW Castle Gap wind farm's output.

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NORTH AMERICA MERGERS & ACQUISITIONS

Cross-border DG solar portfolio auction launched

Ontario-based **Grasshopper Solar** is marketing a nearly 150 MW (DC) distributed solar portfolio spread across Canada and the US.

The developer has retained **Onpeak Capital** as financial adviser on the sale process and marketing materials were distributed last month.

The portfolio is split between a 78 MW (DC) operating portfolio in Ontario and a similarly sized portfolio of projects that are in development or under construction across the US.

Around 130 of the operating assets, with a combined capacity of 49 MW (DC), have commercial and industrial customers. The remaining 19 MW (DC) is made up of more than 3,000 residential solar systems. All of them are fully contacted under Ontario's feed-in tariff program with a weighted average remaining contract life of 17 years.

Some of these assets were financed with an aggregation-to-term loan provided by **Deutsche Bank** in 2018 (PFR, 4/26/18). Investors would have the option to pay off this debt on acquiring the portfolio.

Grasshopper developed and operates the Canadian assets and is open to retaining a minority equity stake and staying as on operations and maintenance provider.

The US assets are all located in Massachusetts and were developed under 20-year offtake agreements through the Solar Massachusetts Renewable Target (SMART) program.

Construction is underway on five of the projects, with a combined capacity of 24 MW (DC), while work is expected to commence on a further 42 MW (DC) in the first quarter of 2021.

Earlier this year, Grasshopper acquired a 278 MW portfolio of 12 utility-scale solar projects in PJM Interconnection from **Glidepath Ventures** (PFR, 3/2). ■

DESRI acquires, finances solar farm

DE Shaw Renewable Investments has announced the acquisition and financial close of the 100 MW Hunter solar project in Emery County, Utah.

The seller, **Community Energy**, originated the project and secured a 25-year power purchase agreement for it with **PacifiCorp**. The project's renewable energy certificates will be allocated to **Facebook** data centers.

HSBC served as coordinating lead arranger, with **CIBC** acting as joint lead.

Wells Fargo is providing the tax equity commitment.

"DESRI is very pleased to close its fifth transaction with Community Energy," said **Bryan Martin**, executive chairman of DESRI, in a statement on June 2.

Construction is underway with **Swinerton Renewable Energy** as EPC and O&M contractor.

DESRI also tapped HSBC and CIBC to finance its 180 MW Cove Mountain solar facility in Iron County, Utah, which also sells its output to PacifiCorp under a 25-year PPA (PFR, 11/5/19). ■

European developer markets US wind project

The US subsidiary of a European developer has launched a sale process for a development-stage wind farm in the Southwest Power Pool.

PNE USA, the subsidiary of German renewables developer **PNE**, is soliciting offers for the sale of its 167 MW Chilocco Wind Farm in Kay County, Oklahoma.

The wind farm is due to receive notice to proceed in the third quarter of 2020 and come online in late 2021, within the window available to qualify for the 80% production tax credit.

Marathon Capital is running an accelerated two-stage auction, codenamed Project Top Gun, on behalf of PNE USA, with the aim of closing a deal by July 31.

The project has fully secured site control, federal, state and local permits, and balance of plant construction proposals from multiple contractors, including **Fagen** and **Wanzek**, according to marketing materials seen by *PFR*.

PNE has also received a term sheet from a "Tier I" tax equity investor, the documents state.

Several offtake options are said to be available, including hedge and proxy revenue swap structures with investment grade counterparties.

The project is expected to be fitted with **General Electric** turbines.

TRIBAL LAND LEASE

The Chilocco project is sited on land belonging to three Native American tribes. The project's long-term leases with the tribes run for 20 years, beginning when the wind farm achieves commercial operations, with a further 20-year renewal right.

This location on tribal land offers "a unique marketing message" according to the teaser, which adds: "PNE understands that Federal law exempts the Project from any state or local property taxes or payments in lieu of taxes."

Since 2017, PNE has developed and sold its 80 MW Vivaldi/Stillwater wind project in Montana to **Pattern Development** (PFR, 7/13/17), its roughly 200 MW Burleigh wind project in North Dakota to **NextEra Energy Resources** (PFR, 4/17/19), and the 50 MW Waikoloa solar project in Hawaii. ■

"This is what I call a target-rich environment."

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RWE Texas wind sale advances to phase two

RWE Renewables is whittling down a short list of bidders to take into the second round of its sale of ownership interests in a portfolio of wind assets in Texas.

The developer, formerly known as **E.On Climate & Renewables North America**, is preparing to take second-round bids for the 861 MW portfolio in four to six weeks, says a person close to the process. "It's looking like there's more strategic interest than financial," says the source.

The projects on the block are:

- Stella – a 201 MW project in Kenedy County
- Big Raymond – a 440 MW project in Willacy and Cameron counties
- Cranell – a 220 MW project in Refugio County

The Stella project has been online since December 2018, while Big Raymond and Cranell are under construction. RWE expects Cranell to be online in July 2020, while Big Raymond is expected to follow in two phases in September and December, according to Ercot interconnection queue data.

The projects are located in the **Ercot South** zone, which benefits from coastal winds which tend to blow at peak demand hours (PFR, 5/7/18). Big Raymond has a 12-year PPA with **Austin Energy**.

RWE hired **Marathon Capital** to oversee the sale process earlier this year, as previously reported (PFR, 4/20). ■

Nautilus Solar snaps up community solar portfolio

Nautilus Solar Energy has bought a community solar portfolio in Minnesota from **ReneSola Energy**.

The 10.4 MW portfolio comprises eight so-called 'solar gardens' in counties across the southern half of Minnesota.

The sites are expected to be fitted with single-axis tracker solar systems and operational by the first quarter of 2021.

The projects will benefit from **Xcel Energy**'s Solar Rewards Community Program and Minnesota's VOS community solar program.

Nautilus will manage the portfolio and provide long-term asset, subscriber management and maintenance services, while ReneSola will be responsible for signing up the subscribers.

> **"Commuity solar remains an attractive market for us in the US"**

"Despite ongoing macro uncertainties, both Nautilus and ReneSola teams successfully completed the transaction," said **Yumin Liu**, CEO of ReneSola Power. "Community solar remains an attractive market for us in the US, and we look forward to collaborating with Nautilus on other solar opportunities in the near future." ■

CenterPoint sells energy services biz

CenterPoint Energy has closed the sale of its energy services business to **Energy Capital Partners** (ECP), which has rebranded it **Symmetry Energy Solutions** and brought in the former CFO of **Wheelabrator Technologies** to be its chief executive.

CenterPoint says the roughly $400 million sale will allow it to streamline its operations and allow for increased focus on its core electric and natural gas utility businesses, while the net proceeds will be used to repay a portion of its outstanding debt. The deal was signed in February (PFR, 2/26).

The new CEO of Symmetry, **Alan Dunlea**, has previously held a string of CFO roles at ECP portfolio companies, most recently waste-to-energy business Wheelabrator, which ECP sold to **Macquarie Infrastructure and Real Assets** last year (PFR, 10/2/18).

Dunlea was also previously CFO of ECP's independent power producers **Equipower Resources Holdings** and **FirstLight Power**.

ECP holds its newest portfolio company in its fourth fund.

Advisers and lenders included:

- **Goldman Sachs** – financial adviser to CenterPoint
- **Akin Gump** – legal counsel to CenterPoint
- **Latham & Watkins** – legal adviser to ECP
- **BNP Paribas** – committed borrowing base lender to ECP

CenterPoint Energy Services has meanwhile entered into a structured long-term preferred supply agreement through which **Shell Energy North America** will provide gas supply and collateral support while receiving equity warrants. ■

Excelsior inks C&I solar tie-up

Fund manager **Excelsior Energy Capital** has entered into a joint venture with commercial and industrial-scale solar developer **Unico Solar Investors** for finance a 250 MW portfolio in North America.

Unico Solar is a subsidiary of **Unico Properties**, a real estate firm based in Seattle, Washington.

Excelsior will acquire majority stakes in the projects at completion through its North American Renewable Energy Fund, is in the process of raising tax equity, construction and permanent debt. Unico will oversee construction and asset management while retaining a minority position.

Akin Gump served as legal counsel to Excelsior on the JV. ■

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NORTH AMERICA PROJECT FINANCE

8minute clinches development credit with club of banks

« FROM PAGE 1

from the 8minute deal. "It's a disjointed market though. Each developer gets a unique set of terms."

And as renewable energy developers turn to alternative offtake structures such as financial hedges with banks or energy trading firms, the need for this kind of credit grows, because financial counterparties typically require developers to post more collateral.

"As you get more into the realm of bank hedges, or as you begin to play the commodity markets, you need more credit," says a developer. "Credit for power marketing has become more important."

Other sponsors that have recently secured loans for this purpose include **Recurrent Energy**, **Urban Grid**, **Apex Clean Energy**, and **OYA Solar** (PFR, 4/2/19, 9/5/19, 4/8). None of them was near the size of 8minute's new loan, however.

The providers of such facilities range from banks like **Natixis**, **Helaba** and **Deutsche Bank** to non-bank lenders like **MMA Capital**, **Global Atlantic** and **Ares Management**.

CIT Bank was sole coordinating lead arranger on 8minute's $225 million facility, with **HSBC**, **KeyBank, Nomura** and **Rabobank** rounding out the club.

The loan replaces a $21 million LC facility which Rabobank provided for 8minute in 2016.

8minute will use the funds to post development-related securities for its pipeline of solar and storage assets across California, Texas and the Southwestern US.

It is the third deal that 8minute has closed with CIT in the past 12 months.

"With this transaction, CIT has now led financings on behalf of 8minute Solar totaling nearly $570 million for solar projects capable of generating 267 MW of renewable power," said **Mike Lorusso**, managing director and head of CIT's power and energy group.

Legal advisers were:

- **Latham & Watkins** – borrower's counsel
- **Norton Rose Fulbright** – lenders' counsel ■

PPA PULSE

Hawaiian Electric RFP Winners

Hawaiian Electric has published the full list of the solar-plus-storage and standalone storage projects it selected in its 2019 request for proposals.

The winning sponsors that were not previously disclosed are **AES Distributed Energy**, **EDF Renewables**, **174 Power Global**, **Bright Canyon**, **Onyx Renewable Partners** and **Nexamp**.

Negotiations are underway for power purchase agreements, subject to **Hawaii Public Utilities Commission** approval (PFR, 5/12).

For a round-up of the rest of last week's PPA news, see page 21. ■

Hawaiian Electric RFP Winners

Name	Location	Sponsor (Parent)	Type	Size	COD*
Kapolei Energy Storage	Oahu (Barbers Pt Harbor)	Plus Power	Standalone storage	185 MW/565 MWh	2022
Kaukonahua Solar	Oahu (Waialua)	Melink, Nexamp Capital	Solar-plus-storage	6 MW/25.4 MWh	2022
Keahole Battery Energy Storage	Hawaii Island (Kailua-Kona)	Hawaiian Electric	Standalone storage	12 MW/12 MWh	2022
Kupehau Solar	Oahu (Kunia)	174 Power Global (Hanwha Group)	Solar-plus-storage	60 MW/240 MWh	2022
Kupono Solar	Oahu (Ewa Beach)	Bright Canyon Energy (Pinnacle West Corp)	Solar-plus-storage	42 MW/168 MWh	2022
Mehana Solar	Oahu (Kalaeloa)	Onyx Renewable Partners	Solar-plus-storage	6.6 MW/26.4 MWh	2022
Barbers Point Solar	Oahu (Kapolei)	Innergex Renewable Energy	Solar-plus-storage	15 MW/60 MWh	2023
Kahana Solar	Maui (Napili – Honokowai)	Innergex Renewable Energy	Solar-plus-storage	20 MW/80 MWh	2023
Kamaole Solar	Maui (Kihei)	SB Energy	Solar-plus-storage	40 MW/160 MWh	2023
Mahi Solar	Oahu (Kunia)	Longroad Energy	Solar-plus-storage	120 MW/480 MWh	2023
Mountain View Solar	Oahu (Waianae)	AES Distributed Energy (AES Corp)	Solar-plus-storage	7 MW/35 MWh	2023
Puako Solar PV + Battery Storage	Hawaii Island (Puako, South Kohala)	Engie	Solar-plus-storage	60 MW/240 MWh	2023
Pulehu Solar	Maui (Pulehu)	Longroad Energy	Solar-plus-storage	40 MW/160 MWh	2023
Waena BESS	Maui (Kahului)	Hawaiian Electric	Standalone storage	40 MW/160 MWh	2023
Waiawa Phase 2 Solar	Oahu (Waiawa)	AES Distributed Energy (AES Corp)	Solar-plus-storage	30 MW/240 MWh	2023
Waikoloa Village Solar + Storage	Hawaii Island (Waikoloa)	EDF Renewables	Solar-plus-storage	60 MW/240 MWh	2023

**expected, Source: Hawaiian Electric*

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PFR Energy Storage Roundtable 2020

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PFR ENERGY STORAGE ROUNDTABLE 2020

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EDITOR'S NOTE

Energy storage remains one of the hottest topics in the infrastructure investing and project finance world. Long hailed as the panacea for all of the intermittency issues associated with adding wind and solar to the grid, battery storage seems set to demolish California's dreaded duck curve and finally render baseload and peaking thermal power redundant, if you listen to its advocates. As costs for lithium ion and other technologies gradually come down, the silver bullet of energy storage appears tantalizingly within reach.

An important driver pushing forward the development of the asset class in the past 12 months has been systematic procurement activity by utilities, most prominently in California. While electric distributors have long been asking for storage options as part of their renewable energy procurement efforts, only recently have companies like ***Southern California Edison*** *and* ***Pacific Gas & Electric*** *begun to hand out revenue contracts on the scale required for a regular project finance market to materialize.*

But there is still plenty of work to do, and a lot to figure out. For instance, what ownership structures will emerge as financial investors get involved?

Some developers, such as ***Advanced Microgrid Solutions*** *and* ***Engie Storage****, appear to have pivoted away from owning their own projects toward providing software, asset management and energy marketing services. By relinquishing ownership but taking market risk, Engie has opened up a comfortable space for financial and tax equity investors to get involved. Another developer,* ***Strata Solar****, toyed with the idea of owning and financing its Ventura project in California before recently deciding to sell it to fund manager* ***Capital Dynamics*** *instead. As small pilot projects give way to fully-fledged, investable assets, nimble start-ups are being displaced in requests for proposals by big hitters – better known for their gas burning assets – like* ***LS Power*** *and* ***Vistra Energy****.*

While project finance bankers will undoubtedly be reassured to see bigger balance sheets on the other end of their deals, there are still plenty of risks for them to get their heads around. How much long-term performance data is available? Who is providing technology warranties, and for how long? What are all these revenue streams for, exactly, and what happens if something goes wrong?

To address these questions and more, Power Finance & Risk recently brought together a leading energy and infrastructure attorney, two senior project finance bankers, a private equity official and top executives from two energy storage project developers for a virtual roundtable discussion. If you are interested in the future of financing energy storage – and who isn't? – you will not want to miss it.

Richard Metcalf
Editor

For information on future sponsorship opportunities, please contact:

Alexander Siegel
T: +1 212 224 3465
M: +1 646 593 0985
alexander.siegel@powerfinancerisk.com

Richard Metcalf (Editor)
T: +1 212 224 3259
richard.metcalf@powerfinancerisk.com

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For more information, contact: **Guy Dunkley**
T: +1 212 224 3443
guy.dunkley@ijglobal.com

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PARTICIPANTS

John Leonti, Partner, Head of Capital Projects and Infrastructure, Troutman Sanders

Krish Koomar, CFO, esVolta

Javier Cavada, President and CEO, Highview Power

Mike Lorusso, Managing Director, Group Head of Power and Energy, CIT Group

Claus Hertel, Managing Director, Rabobank

Santosh Raikar, Managing Partner, Head of Renewables, Silverpeak

Taryana Odayar, Reporter, Power Finance & Risk (moderator)

PFR: For the last few years, a tidal wave of standalone battery storage deals has been predicted. But, with the exception of a few high-profile deals, so far it's been more talk than action. Why might this be?

Mike Lorusso, CIT Bank There's a few parts to this answer. The first is that the initial hype might have gotten ahead of the actual opportunities that were available to come to market. That's why there was a lot of interest in financing these transactions, but there didn't seem to be many coming to fruition.

Another part is that there's also a lot of activity taking place behind the scenes by developers that haven't come to the market yet. There are a lot of responses to RFPs, and a lot of development activity that just hasn't come to be for now.

Finally, the opportunities that have come to fruition so far have been smaller and done on balance sheet rather than coming to the market for financing.

Those essentially are the three reasons why we haven't seen as much financed so far as perhaps the expectations were two years ago.

Krish Koomar, esVolta Where we are today in battery storage is where we were in solar 15 years ago, although it's becoming more mainstream as we speak. Mike's right – there's a lot of work being done behind the scenes that hasn't come to the forefront yet.

But looking at **Southern California Edison**'s announcement of 700 MW plus of awards to solar-plus-storage, **Hawaiian Electric**'s announcement of 16 proposals in PPA procurement and Nevada putting out huge amounts of energy storage bids, we're starting to see real action coming into the limelight. The next two years will be very interesting.

Santosh Raikar, Silverpeak I have a different perspective on that. Unlike solar or wind, a battery is a unique, multidimensional device. But what is lacking is two things.

First, there is no particular guidance from the higher-up entities – e.g. ISOs, RTOs, etc. – who are responsible for transmission grid operation. If a developer or any sponsor wants to put up a battery, they don't know where to go. There has to be a systemic approach towards providing market signals so that market participants can identify the opportunities and go after them. There was a FERC order that came out recently, which will potentially make life easier, but overall this is still lacking.

Second, developers will need to find business models. With solar or wind projects, people will just fly by or drive by, and they will identify a site next to a substation. Then, if they think that it's windy enough or sunny enough, they will put up a project. That business model is going to be harder for batteries because, as I said, it's a multidimensional device with multiple uses.

So we need to come up with business models that can create value both for ourselves as sponsors as well as society in general.

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Javier Cavada, Highview Power The coming two or three years are going to be fascinating. There is a lot of noise about batteries, a lot of headlines, a lot of effort. Things are happening, but still today 99% of megawatt-hours of battery storage in the States are coming from hydro and other larger-scale storage. But there is also compressed air, liquid air energy storage, and a suite of other technologies entering this market. These newer technologies, which can cover existing technology limitations, are not yet being massively deployed.

"The coming two or three years are going to be fascinating. There is a lot of noise about batteries, a lot of headlines, a lot of effort."

PFR: Would anyone say that the limiting factor is the availability of capital? Or, as Javier alluded to, is it that there aren't enough projects with a combination of attractive cash-flow profiles and scale to attract that capital?

Claus Hertel, Rabobank Capital is plentiful. If you look through March, there was tons of capital on senior, mezzanine and equity. It's plentiful and available.

After the crisis, for the first six weeks, as liquidity premiums and wholesale funding markets collapsed, that was not the case. But it's coming back. Deals are getting done, and for the right project there will be capital available throughout the balance of the year.

Having said that, it's going to be available for the really good projects that use lithium-ion and not some of the newer technologies, because lenders are not willing to take technology risk, or new types of sector risk, at this point. They're willing to take risk around proven technologies, around structures that are viable and vetted and where the cash flows are not merchanty in nature. Those are the deals that will get done and have strong sponsor support.

Lorusso, CIT I agree that the capital is there. It's just that the viable projects have not been as plentiful as expected. There's also been hesitation by the developers and sponsors to bring deals to market that they felt had too much of a merchant element to it or were too small to do right now.

So, there's a bit more of a focus on doing the deals on balance sheet until there's more critical mass, or more of a receptivity in the marketplace for what is being developed. But the capital is certainly there once the projects come to market.

John Leonti, Troutman Sanders Storage developers need the policies of various states and FERC to catch up with their products. Solar and wind have the ITC and PTC, while standalone storage has been competing largely on a market-driven basis.

Now that states are stepping up through various integrated resource plans, through renewable portfolio standards, over the next two or three years you're going to see some really interesting transactions in the solar-plus-storage space.

Koomar, esVolta From a developer's perspective, specifically speaking about esVolta, we have two operating assets, two construction assets and eight to-be-constructed assets in the next two years. We have demonstrated that there is capital for the right projects.

We also recently announced an equity transaction at the project level with a strategic, and Mike's team did our debt financing. So we see both debt and equity available for the right set of projects. It's up to the sponsor how it's packaged, how to manage development risks, and to make sure that the project is viable for capital. But the capital is there, is the short answer.

PFR: What were the lessons learned from the financing that Mike's team at CIT led for esVolta? As I recall, it was a $140 million financing for a 136 MW/480 MWh portfolio earlier this year. Quite a unique deal, in that all eight of the projects were relatively large in size and had PPAs with a range of utility and non-utility offtakers.

Koomar, esVolta It's actually commendable that CIT was able to dig into our portfolio projects, parse through the risks and come up with a structure that's palatable to the lender group.

Lorusso, CIT In doing battery storage, certainly at this stage, you need to be flexible with the structure. You can't take a standard model and try to hammer a project into it. You need to take the project with all its commercial nuances and structure around that.

You can't do anything with too much merchant risk, but there's really nothing right now that's fully contracted. If there were, it would be plain vanilla and many lenders would jump in on that. There are a lot of different revenue streams in these projects, so you need to focus on the primary ones and structure your transaction around those.

Obviously, flexibility goes both on the sponsor side as well as the lender side.

Hertel, Rabobank And your timing was impeccable as well!

PFR: Speaking of timing, lets address the elephant in the room, which is the COVID-19 pandemic. What has been the impact of the pandemic on the battery storage market so far, and what are we likely to see play out in the short- and long-term?

"In doing battery storage, certainly at this stage, you need to be flexible with the structure. You can't take a standard model and try to hammer a project into it."

Koomar, esVolta I can speak to that, as we have two projects under construction. We're seeing some delays because of disruptions in the supply chain, with the components and the equipment needed for the projects. But I don't think in the long-term the projects will be impacted as much as people worry about.

There's going to be noise, but it's really up to the sponsor and the financials to manage those risks actively. So, in my opinion, they're workable disruptions.

Cavada, Highview The larger-scale projects with many people working on them have been demobilized. We cannot ignore the fact that there is a bigger risk, a bigger cost, and that projects have been delayed. They've not been postponed for very long or cancelled, but the economics are adding pressure.

Raikar, Silverpeak In the short term, there has been an impact on construction, but com-

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pared to other sectors, we have been somewhat spared from most of the aggravation. In the long run, energy storage has a much better, bullish story. Every recession brings out the winners and losers because you have to come up with new business models and new technologies. I don't think this will happen overnight, but in the long run, you will see significant improvements.

This is because people are realizing that when economic activity is low globally, there is a positive climate change impact in terms of cleaner air, sunnier days, and less smog. This is going to drive interest towards electric cars, and if we look into how many batteries are being used in the power sector, it's miniscule compared to the batteries being used in the automotive sector. We're going to ride the tails of the car industry, in terms of efficiency and costs, and therefore in the long run we will see more and more opportunities to deploy batteries.

"We're going to ride the tails of the car industry, in terms of efficiency and costs, and therefore in the long run we will see more and more opportunities to deploy batteries."

The other factor is telecommuting, or working from home. Because people are not travelling as much and working from home instead, they need reliable electricity supply. Even in the US, where there is a significant amount of transmission and distribution network support, we have observed outages and things of that nature due to fire risks, for example in Northern California. So there will be higher demand from residential applications for the continuity of electric supply, and these drivers will help batteries in the long run.

PFR: In terms of nearer-term impacts, will there be a flight of capital to support existing clients? And if so, what happens to smaller developers and new market entrants?

Hertel, Rabobank Post-crisis, there definitely will be a flight to quality and a flight to existing clients. A lot of clients, at least from our side – and especially on the food and agribusiness side, as we're a large food and agribusiness bank – drew on their liquidity facilities and made committed capital calls, which we honored. That's where our focus is, in managing balance sheets. Part of that was a flight to existing clients – how we can service their needs and their deals in the pipeline?

Going forward, the capital has been extended, and there's not too many liquidity issues anymore. So there's still a large focus on existing clients, but there will be newer developers, or developers that have limited capital or that don't have strong backing either on the private equity side or the sponsor side, who will have some difficulty attracting debt capital. That's just going to be the case for the balance of the year.

Sponsors that have some experience putting projects together, like Krish's team, will continue to attract debt capital, but it's going to be a tough ride for some of the smaller names out there.

Lorusso, CIT Development capital is going to be stressed in the near term as that's the riskier end of the investment profile. Smaller, undercapitalized, early-stage developers are going to be challenged. Once those deals are ready to come to market, then debt capital and equity should be there for those better structured transactions with stronger equity support.

PFR: Would any of the developers like to pitch in on that?

Koomar, esVolta Yes, the development part's hard, so whether you spend your development dollars on the right projects is the trick when it comes to smaller developers like us, because it's the most expensive capital. It's the 'dry-hole risk' as they call it in the oil and gas industry – you try ten projects, figure out how many of those are going to succeed, and how much dead deal costs you have to deal with.

It's a very dynamic, daily decision making process, which can get smaller developers into trouble pretty quickly if not managed actively, and even larger developers too. Then your development expense write-off becomes a big overhang of the overall business.

Leonti, Troutman Battery storage is a little different than solar and wind because there may not necessarily be a long-term RPS or something like that they're bidding into. Developers may not want to keep their interconnection queue out there for an extended period of time, and once that opportunity passes, it really does hit your development capital.

The smaller developers have to pick their projects correctly more often than not, or else they will see a significant drain on their capital. The smaller developers are going to struggle a bit in the near-term.

PFR: That's a good segue into the next question, which is what will 2020 look like in terms of deal volume for standalone storage and renewables-plus-storage financings, as well as asset sales?

Koomar, esVolta From the developer's side, after we closed the portfolio financing in February, we announced a new project, the Black Walnut project, that we entered into with a CCA in California. So we are continuing to see growth. Again, we have to measure it in terms of how we pick projects and which ones we go after. But even with the Covid-19 situation, we still signed the PPA with the CCA in April. So I don't think there's any shortage of opportunities. It's really about picking the right ones.

Cavada, Highview 2020 is not going to be a year of the same erratic news, despite the situation in which we are right now. Before the pandemic, Highview Power closed out a $46 million financing round from **Sumitomo Heavy Industries**, and that's really making 2020 for us.

"Development capital is going to be stressed in the near term as that's the riskier end of the investment profile. Smaller, undercapitalized, early-stage developers are going to be challenged."

With that deal, we are building two large projects, one in the US and one in the UK, and both will be the largest long-duration battery storage projects, in terms of megawatt-hours, globally. We're talking about several hundred megawatt-

Source: esVolta

hours and starting construction at the end of summer. That's why I was talking about mobilization before, because I'm pretty worried about getting people on the ground in July.

As for all this advice that the market is receiving today, we see it very much as a catalyst, as a booster for renewables-plus-storage as the new normal. We see, frankly, gas peakers as our competitor, more than any other dynamic storage project.

Let's not forget, everybody has targets for the year-end, and the year is going to be short. So we'll start chasing them after we're able to leave the house.

Lorusso, CIT You're going to see a few opportunities come out in the second half of 2020 as we all get back to whatever our "new normal" work environment is going to be. But it's going to be driven by a few factors.

One is seeing a transaction like esVolta get financed commercially. It's giving all the developers a little more confidence to come out with their deals. And those are going to be deals that have been done primarily on balance sheet to date, combined perhaps with some new assets in construction. You also will have a couple of small operating projects with some other in-construction assets, and we will see more of those opportunities this year and next year as a result of where we are in the development cycle.

Hertel, Rabobank I agree with that, Mike. What stage of the development cycle you're at and what capital you have committed is important, because you're not going to get financed until you've hit FNTP, or if you're at that stage where you're starting construction. It takes a long time – a couple of months, five, six months – to get a deal over the finish line. So at best, we get maybe one, two, three more deals done this year. Otherwise, they flip into next year.

PFR: Which states have the best incentives for storage in terms of helping deals cross the finish line, and which states are catching up?

Cavada, Highview Definitely for larger-scale or really long-duration storage, we look at the states where wind and more solar resources have already been deployed, and where there is instability and a need for grid services. Mainly California, but also in Arizona where I consider smaller batteries, the electrochemical batteries, classified as having a bit of fire-risk.

Very cold places like Vermont are also pretty good. I would say Vermont is in the top four, along with Texas, Arizona and California, for the type of storage that is really large, and is looking for round-the-clock renewable power.

Hertel, Rabobank The New York program is relatively attractive for a developer, and we've seen developers go in there and develop projects either to hold them or to sell them at FNTP. You also have the value stacking VDER program, where you have fairly diverse revenue sources, some contracted, some merchant, and some state incentives. As a lender, that's definitely something we can work with.

PFR: In terms of asset ownership, there also seems to be a shift among some market participants, like Advanced Microgrid Solutions and Engie Storage, away from project ownership and development towards providing services, like software for asset management and energy marketing. Is this a real trend, and if so, what is driving it?

Lorusso, CIT We're going to see an evolution of ownership in storage, the same as we've seen in pretty much every other renewable power sector. Initially, it's going to be the pure-play focused developers that are going to develop, own and operate the assets.

Once there's a proof of concept by them, you'll see the more traditional renewable players, especially in solar, coming in with other private equity investors. When there is an operational history established, you'll see the longer-term owner, such as infrastructure funds, come in, and utilities will dabble in it as well. They prefer not to own, but I'm sure they see the value and importance in storage and will own that as well.

Raikar, Silverpeak There is a significant opportunity here with regard to providing ancillary services, because a battery is really capturing temporal or spatial differences in prices in the context of transmission networks. Building around it is really a software or a mathematician's dream, because there's a significant amount of opportunity for optimization. That value-add will be differentiated too, because you can earn incremental sources of revenues. So there is an opportunity here for newer start-ups who can build around such services.

The second thing I would look at is the recently developed Engie business model, whereby Engie goes to solar developers and says: 'Let me put a battery on your project and I will optimize it and cut you a check,' for $10 million or whatever it is.

That sort of thing to me is very interesting, because if you think about it, they're basically buying an option on the project, and they're paying an upfront premium. The developer is happy because they get money for the battery, and by adding on the ITC that is available, you can make the math work.

That is what is required. I don't think the typical developer model whereby someone looks at a project and installs it and then skips away and cuts the check is going to work. You need a lot more sophistication from an engineering perspective and a mathematics perspective.

PFR: Speaking of cutting the check, are there any creative strategies that developers are using to make banks more comfortable with financing their projects? And

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likewise, have there been any recent innovations on the lending side?

Hertel, Rabobank The last deal that was done with CIT and Krish was actually very interesting in terms of innovation, because it was a portfolio and there were some merchant aspects to it. But I don't see anything else coming down the pipe really that's going to innovate the lending sector.

Unlike traditional renewables, the deals are more or less amortizing and have a payout due to the maintenance requirements of a battery system after seven to ten years, whereas capital expenditures need to be put in for it to continue its lifetime.

Leonti, Troutman On a portfolio basis, it's mixing and matching assets like storage and gas assets that have been financed together, as well as solar-plus-storage, and under-construction and operational assets. Really just bringing a portfolio approach to the storage asset, so that you have some contracted revenues to mitigate the merchant side. That's something we've been seeing in the market that has helped bring financing to the table.

Koomar, esVolta Energy storage projects generally do have a merchant component, which investors have to accept coming in. Our transaction got acceptance by a group of experienced lenders, as well as independent engineers, and that was a big leap in the industry in itself, in terms of accepting the merchant risk and structuring around it, and understanding the cash flows from the projects.

Lorusso, CIT Yes, it was more than just innovation, although we deserve credit for that! But it was more about a constructive approach as we would be sitting around a table with Krish, rubbing our foreheads, and saying to him, 'Oof, you want us to give you *how much* credit for *that* revenue stream?'

Koomar, esVolta (Chuckles) Yes!

PFR: Another large deal that's underway is the $400 million to $600 million capital raise for Key Capture Energy, which is being touted as "the biggest storage deal of the year." What are the prospects of that deal and other large-scale deals getting done this year?

Hertel, Rabobank They've mandated one or two institutions to raise the equity to get those projects off the ground. From a lender's point of view, identifying who the equity is, is paramount in moving the debt financing forward.

We've been speaking with Key Capture and they do have some existing projects which they can allocate to a portfolio financing. That can actually provide some revenue stability in the early years of any potential transaction.

PFR: We've covered a couple of the larger transactions, but what are the lessons learned from smaller deals? Such as those that large European banks and specialized project finance lenders have worked on, say, in the $30 million to $50 million range?

Hertel, Rabobank I can speak from past experience, from my pre-Rabobank days. Having the right sponsorship in place is important in having the appropriate capital behind you. That's one aspect of it.

Ensuring there's a commitment to the business is another. You mentioned AMS before. AMS switched from being an asset owner to a software provider, and I know we're in that financing along with CIT. I'm not sure what kind of an effect that's going to have. It's been negligible to date, but it's ensuring there's a commitment to the business.

Also, choosing the right IEs and also, if there is a type of dispatch risk, choosing the appropriate software and market consultant and dispatch adviser to help you navigate what that risk is, are important aspects.

Lastly, is technology. Lithium-ion is the standard technology. Whether it is **LG Chem**, **Samsung**, or **Powin**, you need to have a good idea of how that particular lithium-ion technology fits the uses of the battery, and how that can change over time as the battery usage may change with respect to merchant usage. And what effect that will have on the battery in terms of module replacement, upgrades, capex and so forth.

Those are all things that need to be very closely looked at, especially if there are different uses of the battery, for which you now have value stacking. There could be six or seven different uses, and you don't really know five to 10 years out what the exact uses will be.

PFR: Will lenders be comfortable with the existing technology guarantees 10 years from now?

Lorusso, CIT Well, right now, that's what we're getting. We try to limit the term of exposure in transactions to mitigate technology and performance issues and exposure to the guarantees, because you're taking a corporate entity risk. So it's unlike a PPA with a utility offtaker that's providing an essential service, where you can go out 15, 20 years. For warranty purposes, you're now looking at the credit of a corporate entity. So how far out do you want to go? I think that's one of the gating issues on the terms of financing that we've seen so far.

As Claus mentioned, new technologies are something that banks are averse to until they've been commercially proven. Right now, lithium-ion is obviously the primary technology that we've seen through car batteries in electric vehicles and such. It has had more time for proof-of-concept and proof-of-performance .

Cavada, Highview They're not really comfortable with the guarantees and the performance guarantees. Even with lithium-ion being so well-known, we all have it in our phones, in our cars, and being the standard technology, the traction is tiny.

Still, the potential is enormous. The technology guarantees are developing together with the users of the technology. The level of comfort is really small, and while there is enormous potential for making it better, there's still the notion that this is new technology, and even if it's not new, that this is a new application for an old technology.

Hertel, Rabobank With respect to the warranties, if you have a panel or a turbine and it doesn't work, you're going to claim the warranties. But in a battery, there's all these different variables that are written in these documents which make it very ambiguous: 'We're not going to pay if the heat or humidity was above a certain level,' and that could be due to software not correctly monitoring the battery usage or the heater humidity level, and the battery blows up. 'We're not going to pay you, and you're stuck.' Those are the things that I worry about when I look at these transactions.

Raikar, Silverpeak Has anyone seen any

insurance products around this, in the way we thought of insurance in the solar market, albeit more for the credit quality than the product itself?

Koomar, esVolta We have been approached by a couple of very famous underwriters willing to underwrite the performance risk, but it's not fully baked yet, and cost-wise rather expensive at this point.

"We have been approached by a couple of very famous underwriters willing to underwrite the performance risk, but it's not fully baked yet, and cost-wise rather expensive at this point."

PFR: The recent fires at various electrical facilities, like last April's fire at Arizona Public Service's McMicken storage unit, have raised questions over safety, operational risk and also insurance products. What have been some of the key takeaways?

Lorusso, CIT For us, it's been more technical in nature, making sure that the battery assembly and fire protection are adequate to prevent such incidents. The focus has been more on prevention versus insurance. You want to get as much and as good insurance as you can get, but we want to be confident that the event won't happen, in addition to what we would do if it happens.

Cavada, Highview Definitely, that fire was not the first time. Arizona has been making big headlines, and also big statements, about how they're not really willing to take on lithium-ion batteries, at least until all these fires are sorted. But South Korea was claiming 50 cases last year, and it's the place where most of the battery packs are being manufactured. So, still it's a product where you really need to invest not only in the cells, but also in the full protection of your asset.

Koomar, esVolta esVolta has two operating assets, and our assets are approaching close to three years of operating history. Safety is something our president takes very seriously. We have safety chats, whether they're at the office level or the plant level. We are also careful about choosing our technology. We've chosen a lithium-ion chemistry that's less prone to fire risks than others.

Remember, these projects are not going to be in remote areas where the wind projects are. They're actually closer to the load pockets compared to wind or solar projects. So it's even more important that developers take extra precautions to make sure they're safe.

PFR: John Leonti, is there anything from the legal side that you'd like to add with regards to the fires?

Leonti, Troutman From the lender perspective, we certainly see heightened diligence on understanding the protocols and the technical details surrounding front-end fire prevention and fire mitigation. As the industry evolves, you're going to see due diligence teams on the lender side dig in with independent engineers on the pure technical design and development of the projects.

PFR: How are banks pricing construction risk versus operating risk for standalone battery storage these days?

Lorusso, CIT We can't give that up!

PFR: I had to ask...

Lorusso, CIT I would again draw an analogy to solar. There is generally a premium for battery storage just because of the newness of it. But otherwise, we look at it similarly to solar construction, in that it's essentially assembly, versus a combined-cycle power plant, which is true construction. So there's nothing different to it compared to the approach of solar except somewhat of a premium given the uniqueness of batteries at the moment.

Hertel, Rabobank Yes, there's definitely a premium attached, and as you get into the operating phase, you're definitely 50 bp above where solar is priced right now. Given the current environment, probably add another 25 bp to it, given the liquidity concerns, although, as mentioned before, they're somewhat easing.

PFR: To what extent have non-bank lenders played a role in the development of the project finance market for standalone battery storage assets?

Lorusso, CIT There hasn't been enough of a sample set, as there's only been a few deals done. At the moment I would say there's no need, there's just not enough activity to have demonstrated that.

Koomar, esVolta If you're looking for development capital, which banks don't really play in, there are non-bank development capital providers available, but that's expensive, and they can act more like equity owners. You've got to weigh your risks and rewards in accepting those financings.

PFR: Javier, is there a significant role that non-bank lenders play in the liquid air energy storage market?

Cavada, Highview Definitely. Our technology uses all material components coming from the oil and gas industry to recreate a compressor energy storage system by cooling, by liquefaction. So in that sense, we don't bring any new technology. We're bringing a new application for established, familiar technology. We're giving it a new life.

We see investors that are not banks coming into our projects, quite the contrary to lithium-ion. We don't see banks coming into our projects. Our projects are more geared towards infrastructure funds with ambitions for big assets that are going to last 20, 30, 40 years.

In that sense, we are more similar to an open-cycle gas turbine kind of business. Banks don't have the risk appetite to think that there is anything else other than lithium-ion batteries, even in places like Arizona where there are fires happening.

We're getting the traditional, large US and Canadian infrastructure funds who really want to own an asset that is hundreds of megawatts in size. Any system with our technology is larger than any lithium-ion system – our smaller projects that are in development are 400 MWh.

But first, the banks will want to see several projects already built and running.

PFR: How long do you think it will take for banks to come round to financing battery

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storage technologies other than lithium-ion?

Cavada, Highview It's a matter of getting projects running. We estimate that banks will be able to enter after one year of operations, because we're talking about long-term contracts, 10-year contracts. But you cannot renew them after the first 10 years.

It's a good return on investment because we're talking about larger projects with good economies of scale, and a fairly local supply chain. Everything is done in the country with the labor that you have there.

"When we're presented with new technologies on the lending side, we'll look at both the how and the why. How is this technology being used, what's the application?"

There are a lot of tailwinds, so today will be lithium-ion's day. But lithium-ion is one-hour duration; you could say technically up to four hours, but the average installed basis is 1.1 hour duration. Our systems are normally 10 hours, 12 hours, so it will be easy to catch up in a couple of years.

PFR: Anyone from the lending side who'd like to add to that? Any other storage technologies that can compete with lithium-ion, and if so, how long it might take for them to become serious contenders?

Hertel, Rabobank I've looked at some in the past. I think the first step for these new technologies is to become commercial and to have manufacturing and to have warranties behind them. If you look at Powin five years ago, they were a very unknown entity, and now they're being installed in a lot of projects, but again that's lithium-ion.

In terms of some of the newer technologies, they need to be commercially viable, and then you need to have some history, some track record. I would say at least three years.

Cavada, Highview With technologies like ours, the component manufacturers are big companies like **Baker Hughes**, **MAN** and **Siemens**, where they are providing the guarantees. So, it's not only the bank's appetite, it's also the market need for long-duration storage. In that sense, lithium-ion is flying, but it's flying very low.

Lorusso, CIT When we're presented with new technologies on the lending side, we'll look at both the how and the why. How is this technology being used, what's the application? Often, we see it's a new application for an existing technology.

There's not only the performance of the technology, but is it a proper application, and why is it better than what we've seen in this application previously?

Raikar, Silverpeak In the longer run, we need to look for alternatives to lithium-ion, partly because it's a very sophisticated product that is being used for a dumb application, which is the power grid. Dumb in the sense that you have no restrictions around space and you don't need a fast charging/discharging time.

But my fear is, in the same way we strangulated thin film technologies in the solar space, I think we are going to strangulate some of these newer battery technologies, because the lenders want a track record. But until you have some deployments, you're not going to get a track record. So it's a chicken-and-egg story.

PFR: Across the various technologies, is there a role for mezzanine finance or royalty investments given the higher risk profile?

Raikar, Silverpeak It's an emerging asset class with a decent amount of technology risk. So you would expect that some of the non-traditional lenders should be involved in the space, but they haven't been, partly because the business models have focused on contracted cash flows or semi-contracted cash flows, for which the banks are the cheapest source of capital. There has been a fair amount of liquidity in the bank market. If you look into the pricing for solar and wind projects, which are cookie-cutter, the pricing is so attractive that banks are thinking that by taking some incremental risk they can earn maybe 100 bp more. So it's hard to see how the non-banks could potentially participate.

As newer technologies come in, there will be a market for the non-traditional lenders, like mezzanine financing, to provide financing by taking that increment of risk, so that these newer technologies can see the light of the day.

Developers are the ones who need to step out of their comfort zone and take on challenging projects, challenging because of the newer technology or challenging because of the newer business model.

Lorusso, CIT Historically, we haven't seen much need for mezzanine financing in the power industry. The reason is that the revenue stream, the upside potential, is in a narrow range. Even with merchant risk, it tends to be a reasonably narrow range – as opposed to, for example, leveraged finance where there's a huge involvement of mezzanine financing.

That's because in leveraged finance you're looking at multiples of Ebitda growth, and in order to leverage that up, you need to get higher-priced, riskier debt involved there. For example, if you're buying something at 10x Ebitda, and you may get senior debt at 1.5x, and you get mezzanine debt at another 2x, and that's your capital stack. In the power sector, we're already giving 60% to 80% leverage on these deals, and the upside potential beyond that for the equity is not that huge. It's good, but it's not going to be multiples as it could be in a leveraged finance deal with the expected growth. Because of that, the need has been a lot less, traditionally, for mezzanine financing here.

Banks tend to get comfortable, as far as the technology risk and merchant risk goes, to give enough leverage to fill what the sponsors need. The only place we've seen participation in mezzanine finance may be behind the equity to leverage up the equity itself, rather than at the project level. I don't see much of an opportunity for it in batteries.

PFR: Let's talk a bit about counterparty negotiations. Generally speaking, have revenue contracts become more complex, more tailored in structure? And what does a financeable standalone battery storage PPA look like?

Koomar, esVolta The basic ingredients of a PPA are still the same. Do you have the stability of the cash flows? What does the stability of the cash flows mean from a PPA standpoint?

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What's the blend between the capacity payment and energy payment and the O&M payment?

But in energy storage, and mostly in California, there are two sets of contracts. One is the capacity-only contract, and then the rest is merchant because all you're selling is the capacity to the utility.

The other model is the tolling contract. esVolta actually has done both types of PPAs. The tolling contract is fully wrapped and fully contracted with the utility, and you cannot sell any attributes of the project to anybody else, and is similar to wind and solar tolls.

And then, it really comes down to the specifics within the project itself in terms of availability, efficiency ratio, warranty terms. It's really all the same things that you have seen and heard in solar and wind, but you just have to make sure that you get the technical parameters right, when it comes to energy storage.

Lorusso, CIT The PPAs themselves are not that much more complex than we've seen in other technologies. It's more the interaction of that PPA with all the various revenue streams on a merchant basis that you have to consider as well.

That interaction with the ancillary services, dispatching, trying to optimize the operations of the storage facility together with your requirements under the PPA tends to be where the complexity arises. That's where logistics and technology, as well as the actual performance band of the storage facility itself comes into play.

Raikar, Silverpeak Do you guys have any experience with solar-plus-storage, or renewable energy-plus-storage type of PPAs or offtakes? We are financing a wind project with a co-located solar project and what we are hearing from hedge providers is that they would be willing to pay slightly more for the PPA if we do both of the segments, not necessarily together, but with the same counterparty. I'm wondering how would it work if I were to throw a battery into that?

Leonti, Troutman We've seen transactions like that with solar-plus-storage. Sponsors place a hedge on the deal mainly to redefine the shape, so that you can deliver it in the morning or in the evening. Different hedge providers have a different view on whether or not that's actually adding value to the transaction.

That said, we have seen some cases, particularly in California, where the sponsor was able to get a better price because of the delivery times, particularly in the morning and evening hours. So we've certainly seen that modification of the shape to improve the pricing.

The one thing I would add, on the two types of contracts that Krish described, the tolling agreement and capacity agreement, is that a lot of solar developers who are playing in the busbar PPA market are very used to the tolling agreement. Basically, you build it, you operate it, but the utilities really are taking the power and instructing you.

When you're talking about a capacity contract, where the utility is only taking the resource adequacy, it requires the sponsor/developer to otherwise monetize and optimize all the other revenue streams. That's an added complication that internally they need to build the systems to be able to actually trade those other attributes that are associated. You can't just give it all to the utility. So we've been seeing some education on that side as well.

Koomar, esVolta Well said. That's an area where developers really need to get up to speed. To understand that there's one side, the technical part, and on the other side, the market risks. It's bit of a long learning curve.

PFR: Are hedge providers showing more interest in standalone battery storage projects?

Koomar, esVolta They are. Actually, one of our projects is a fully hedged project. I don't think we have disclosed the counterparty publicly, so I'd like to keep it confidential, but we are seeing it, yes.

Leonti, Troutman Are you doing that on a forward basis, or did you structure it as a put?

Koomar, esVolta We've signed an NDA, so I can't say.

Leonti, Troutman Fair enough. We're seeing hedge providers kick around the idea of structuring a put for these transactions, particularly in Ercot. The fixed volume plus the reg-up and the reg-down revenue that you would expect over a calculation period. And if your revenue fell short of that, you could exercise the put. So for project financing purposes, it's really nice because you pay the upfront premium, which theoretically you can finance through the debt, and then the debt doesn't have to worry about competing collateral, whether it's a first lien, or something along those lines. So it'd be interesting to see if that type of product is able to roll out here.

Koomar, esVolta That's interesting. You said that's in Ercot markets?

Leonti, Troutman That's where we've seen it discussed. That's one of the more active markets right now for storage.

PFR: John, anything else that's happening on the hedge side in terms of what we might see for the rest of the year or going forward?

Leonti, Troutman That's what we're seeing that's new. We've certainly seen short-term forward contracts for reg-up and reg-down, anywhere between one and three years. But in terms of something long-term that would support a project financing, we haven't seen much yet in the hedge space.

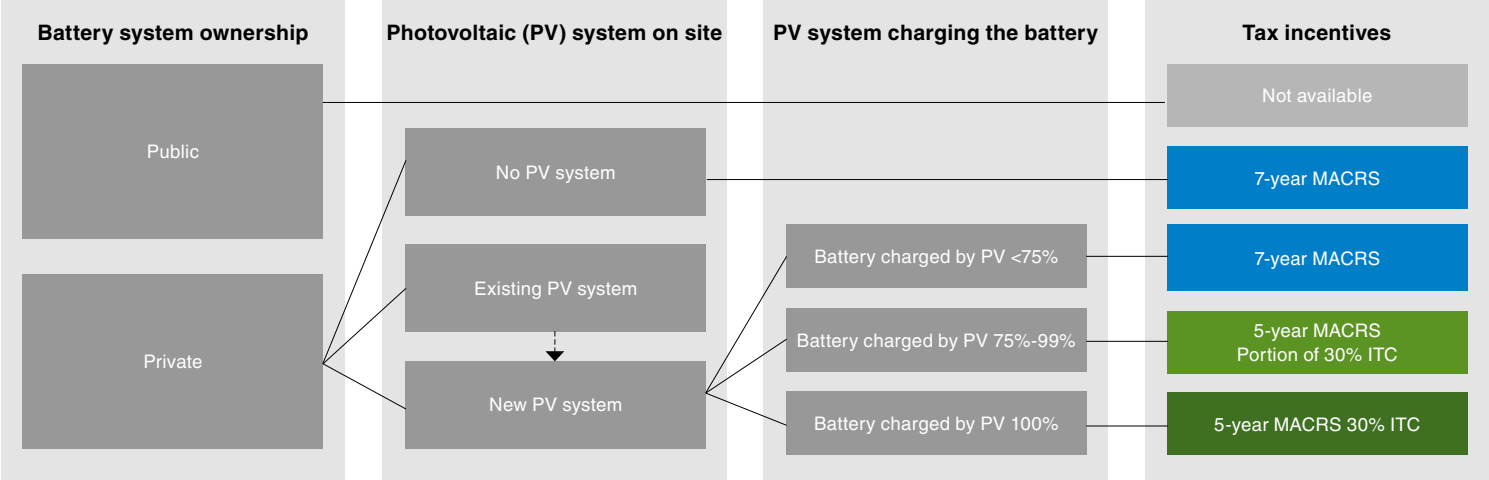
PFR: I also wanted to touch on the role that tax equity plays. We have an ITC for solar-plus-storage, but what about standalone storage and wind-plus-storage?

> **"We're seeing hedge providers kick around the idea of structuring a put for these transactions, particularly in Ercot."**

Leonti, Troutman Certainly in California you're seeing all types of integration of batteries with solar projects, either new projects being built as solar-plus-storage, or as an add-on of the battery, and in both those cases I'm sure the parties will look to monetize the ITC.

The wind side is more undefined, and the industry is really looking for guidance on how that would work, particularly in the PTC market. If the wind project had taken the ITC, there

Federal Tax Incentives for Energy Storage Systems



Source: NREL

would be more certainty on what that would look like.

Raikar, Silverpeak I am of the opinion, and this is my personal opinion, not my firm's opinion, that you could potentially qualify for the ITC. There is an IRS private letter from 2012, which addresses this particular concern.

The problem is, there have been more standalone financing projects than renewable energy-plus-storage projects. But there is a case to be made that you could potentially qualify for the ITC.

Leonti, Troutman The industry would really welcome some guidance on a few things, like the PTC point, the co-location of the battery with the facility. That would really help push forward the ability to monetize the ITC in connection with batteries.

PFR: If you had a wish list for what you'd like to see in the battery storage market over the coming years, in terms of financing, policies at the state level or RTO/ISO level, what would be on your list?

Raikar, Silverpeak If I start, it'll probably take a lot of time! The first thing I would like to see is some sort of ITC mechanism from the federal government. It is a very important piece of equipment from the transmission perspective, and the ITC would go a long way in terms of helping the stragglers in renewable energy and the penetration for the renewables.

The second thing is I would like to see is technological leap frogging and some more risk-taking from the financing parties, and that includes us as private equity.

The third thing is some sort of a capacity market in Ercot, not a full-fledged capacity market that we see in PJM, for example, but some sort of semblance that provides certain revenues for a period of time.

Hertel, Rabobank More simplicity around revenue schemes, revenue contracts, and aside from the frequency regulation market, which is 100% merchant and which exists in PJM, there's no real clarity around revenue schemes in the balance of the 45 states. We really haven't seen projects or deals come to fruition aside from solar-plus-storage, but standalone, utility-scale storage, that's something that I'd like to see in the rest of the region.

Koomar, esVolta Santosh, I agree that ITC would be nice, but we're sort of indifferent from a developer perspective whether there's ITC for standalone battery storage or not because we currently play only in the standalone space.

But one thing I would say is, if there is a tax incentive, it needs to be in the form of refundable credits so that it doesn't differentiate small sponsors versus large. That difference disrupted a lot of renewable growth initially because it wasn't a level playing field for those who can access the tax benefits versus those who can't. And one way or the other, it would be good to eliminate the uneven playing field between solar-plus-storage, and standalone storage.

Leonti, Troutman Clarity at the state level in terms of policy, particularly around pricing, would be great. There's a lot of markets where batteries make a lot of sense, and just getting the clarity from the state commissions on how they want to move these products forward would be very helpful for financing.

Cavada, Highview I'm a supporter of the ITC, of course, and I was tempted to say carbon tax, but that depends on the technology diversity that we were talking about. Apart from that, revenue transparency, being able to contract the revenues, and long-term contracts. We know that the biggest hurdle to get financiers ignited is the risk and the lack of long-term contracts.

Lorusso, CIT Evolving technology so that there are broader applications for batteries would be one, as well as acceptance by more states to allow continued integration into the grid.

The complexity of offtake arrangements is a good thing. We're okay with that because it keeps it a more sophisticated players' game, which we excel in.

That's probably it, the growth of the technology, broader applications as a result, and then the expanding acceptance of it by other grid systems in the country. ■

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NORTH AMERICA PROJECT FINANCE

Vivint wraps $545 million in alternative financing

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market largely slammed shut to new issuance, the company pivoted to an alternative financing structure with the aim of closing in the second quarter (PFR, 5/13).

The company has now closed two separate transactions to add $545 million of new debt capacity.

The first transaction to close, on May 27, was a completely new $300 million holding company loan from **Brookfield Asset Management**'s Infrastructure Debt Fund, the first $200 million of which was funded on May 29.

The three-year loan bears interest at 8% and allows for additional borrowings on future contracted cash flows of up to $100 million.

"Through providing a flexible holdco solution, we are delighted to finance Vivint Solar's portfolio of essential and diversified solar infrastructure backed by long-term customer agreements," said **Hadley Peer Marshall**, Brookfield's managing director and head of infrastructure credit for the Americas.

BofA Securities acted as sole structurer and arranger for the holdco loan.

Vivint also expanded its existing multi-lender revolving warehouse facility by $245 million, bringing the total commitments under this line of credit to $570 million. The amendment was signed on May 29.

The four-year loan was originally signed in 2019 (PFR, 8/6/19). With the additional flexibility comes an increase in costs. The margin on the revolver has risen to 3.1%. The maturity date, advance rate and other commercial terms remain as before.

Despite having been forced to resort to alternative sources of liquidity, Vivint noted that the two deals implied an all-in interest rate of about 4.4% on new assets originated, which is still about 70 basis points inside what it paid on its first securitization of 2018.

"These transactions raise a significant amount of liquidity against our existing assets, provide for future debt capacity, and demonstrate our ability to access the capital markets for financing at a competitive cost of capital as we navigate the impacts of Covid-19 to our business," said **Thomas Plagemann**, chief commercial officer and head of capital markets for Vivint Solar.

"Given the continued uncertainty in the capital markets, we feel the approach we have taken provides an excellent combination of all-in cost of capital and advance rate, with flexibility to access the securitization markets as they fully recover." ■

Ares, IGS close third residential solar fund

Ares Management Corp and **IGS Solar** have raised debt and tax equity for their latest residential solar financing vehicle, IGS Resi Solar III.

ING Capital, which led on the debt financing for the previous two funds, reprised its role as coordinating lead arranger for a $146 million seven-year back-levered debt package. The facility comprised:

- $140 million term loan
- $6 million letter of credit facility

Silicon Valley Bank served as joint lead arranger and Florida-based **BankUnited** also participated as a lender.

The borrower under the loan is **IGS Resi OpCo II**, the operating company for the whole solar platform.

Meanwhile, **US Bank** led on the $50 million tax equity raise for the third project financing vehicle.

The funds support some 4,000 residential solar systems totaling around 35 MW, with 25-year power purchase agreements or leases across multiple states.

"Ares has been a longstanding client of ING, and we are excited to continue to support them and IGS as they build out their residential solar platform," said **Scott Hancock**, director at ING, in a June 2 announcement.

THIRD TIME'S THE CHARM

US Bank also led on the tax equity for IGS's second residential solar fund in 2019, which backed 4,000 projects totaling 32 MW (DC) and was structured similarly to the first fund, which holds a 35 MW (DC) fleet across the northeastern US (PFR, 11/19/18).

Both the first and second deals were supported by a solar revenue put from **kWh Analytics** and **Swiss Re**.

Ares is providing cash equity for all three funds through a forward flow agreement that was originally signed in July 2018 (PFR, 7/12/18).

The IGS residential solar platform has now raised $450 million in total capital commitments across its three funds, with $150 million allocated to the third fund. The developer expects to build a portfolio of about 11,000 residential solar projects across nine states totaling some 100 MW. ■

PPA PULSE

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STEEL DEAL

Hanwha Group affiliate **174 Power Global has** hammered out a 20-year power purchase agreement for a behind-the-meter solar project that will power a steel mill in Texas.

Gerdau Long Steel North America will purchase the output of the 80 MW Gerdau Solar plant, which will be located adjacent to Gerdau's Midlothian Steel Mill in Ellis County.

Construction is expected to commence by year-end with commercial operations pegged for the end of 2021.

The developers of the solar facility plan to use solar beam pilings produced by Gerdau, according to a June 2 announcement.

KENTUCKY BARGAIN

Renewables developer **Community Energy** has signed 20-year power purchase agreements for two solar projects in western Kentucky totaling 100 MW.

Big Rivers Electric Corporation will purchase the output of the projects under the terms of the contracts.

The unnamed projects are located in McCracken and Meade counties and scheduled to come online in 2023. ■

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CASE STUDY

Case Study: District Energy Networks/Vicinity Energy

Antin Infrastructure Partners made good on its commitment to grow its US presence at the end of last year with the $1.25 billion acquisition of **Veolia**'s **District Energy Networks** business in December. The French firm funded the purchase with a $770 million debt package that innovatively combined elements of corporate and project financing.

Antin had only opened its 15-strong US office in New York in March 2019. Former **Morgan Stanley** banker **Kevin Genieser** – who had joined Antin in 2017 in London – had taken the reins of the outpost in Midtown Manhattan (PFR, 8/1/19).

"They had some long-term contracts but their customers also had a good re-contracting history and a low churn rate"

"This is exactly the sort of transaction that we had in mind when we decided to expand our footprint to the US," he said in July 2019, when the acquisition of District Energy Networks was announced to the public. "Having identified this opportunity over a year ago, we have already built a strong relationship with the management team and we look forward to partnering with them to capture the multiple organic and inorganic growth opportunities that exist for the company as a standalone business."

It wasn't Antin's first US deal. The firm had acquired **FirstLight Fiber**, a fiber-optic network provider based in Albany, New York, in 2018, before its New York office had even opened. It was also not the firm's first foray into district energy. That was French district heating company **Idex**, another 2018 acquisition.

But it built on both of those investments with a transaction that Antin CEO and managing partner **Alain Rauscher** said would be "recognized as a classic Antin deal by our investors."

"HEFTY MULTIPLE"

The opportunity arose when Veolia – another French company – hired **Bank of America Merrill Lynch** to market its US district energy business in March 2019 (PFR, 4/10/19). **Mike Dunne**, a managing director at BAML, led the sale process.

Based out of Boston, the district energy business operates steam, hot and chilled water and power generation facilities – including cogeneration facilities totaling 413 MW – spread across 13 networks in 10 cities. Of the $400 million revenue it generated in 2019, around 80% came from its networks in Boston, Philadelphia, and Baltimore.

One of the assets – the 256 MW Kendall Cogeneration Station in Cambridge, Massachusetts – had previously been co-owned by **I Squared Capital**, but Veolia bought out the 49% minority stake shortly before putting the business on the market (PFR, 5/7/19).

The district energy business was forecast to produce $90 million of annual Ebidta and could be expected to trade at 12 times that, said a deal watcher shortly after the sale was launched. BAML was set to take final offers on July 19, with a host of utilities and infrastructure funds said to be interested (PFR, 5/30). Of the 20 or so first round bidders, five are said to have made it to the final round.

"Everyone is expecting **Brookfield** or **Engie** but I'm not sure if they're happy with the merchant exposure," said a source at the time, adding that Canadian district energy company **EnWave Corp** would perhaps make more sense.

But it was Antin that won in the end. The firm announced its successful $1.25 billion bid on July 31.

Antin's advisers on the acquisition were:

- **RBC Capital Markets** – financial
- **Messier Maris & Associés** – financial
- **PH Villin Conseil** – financial
- **White & Case** – legal

"They clearly saw a lot of growth potential because they paid a hefty multiple," says a person familiar with the deal. Antin's aspirational attitude would go on to be reflected in the financing structure.

FRENCH CONNECTION

Having won the auction, Antin set out to arrange acquisition financing, tapping **BNP Paribas** – another French name – for the mandate in July, after a beauty pageant. BNP had also been among the underwriters for Antin's Idex acquisition financing.

Antin and BNP then whittled down the list of arrangers to seven – five coordinating lead arrangers (including BNP as left lead) and two joint leads:

- **Crédit Agricole** – CLA
- **Bank of Montréal** – CLA
- **MUFG** – CLA
- **Natixis** – CLA
- **Société Générale** – JLA
- **SMBC** – JLA

The seven-year debt package comprised:

- $625 million term loan A
- $80 million capex facility
- $65 million revolver

The loan was priced at 175 bp over Libor with step-ups and lenders earning a 50 bp fee.

Unlike a traditional non-recourse project financing, this deal, codenamed Project Franklin, included a capex loan to provide liquidity for Antin to grow the business and invest in capital improvements, within certain parameters. The term loan's cash flow sweep features were also back-ended to give Vicinity flexibility to grow, rather than focus on deleveraging.

"It had elements of a corporate-style deal, with financial covenants and the flexibility of the capex facility," says **Aashish Mohan**, co-head of North America power, infrastructure and project finance at BNP in New York. "But it also had PF market-like elements such as the seven-year revolver and approach to leverage for example."

"This is exactly the sort of transaction that we had in mind when we decided to expand our footprint to the US"

Project finance bankers had pointed out the relatively conservative leverage ratio when the deal was in syndication. But the deal was not rated and the bookrunners had to find lenders and institutional investors that were comfortable with this.

CONTINUED PAGE 23 »

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ArcLight closes Griffith acquisition financing

ArcLight Capital Partners has closed a $153.9 million debt package with a quartet of lenders to finance its acquisition of the 570 MW Griffith Energy gas-fired project in Mohave County, Arizona.

Lead arranger **Crédit Agricole** was joined by **ING Bank**, **CIT Bank** and **Siemens Financial Services** in providing the $153.9 million loan package, which was reduced in size from the $156 million being touted in early May (PFR, 5/5).

The financing comprises:

- $115 million seven-year term loan
- $31.2 million revolving credit facility
- $7.7 million in debt service reserve letters of credit

The loan is priced at 300 bp over Libor with 25 bp step-ups every three years.

ArcLight had reached out to lenders for the deal in the first quarter of this year, but the onset of the Covid-19 pandemic and the oil-price war between Saudi Arabia and Russia made it difficult to predict what the final structure would be (PFR, 3/26).

"Every bank's cost of capital has gone up," says a banker close to the process. "A lot of executions being done today are on a club basis because no banks want to underwrite. So there is no syndication, and borrowers are grabbing three, four, five banks and clubbing up the deal."

The acquisition of the plant from **Star West Generation**, a portfolio company of funds managed by **Oaktree Capital Partners**, closed on May 1. ArcLight won the asset in a competitive auction run by **Barclays** (PFR, 2/27, PFR, 1/14).

The Griffith plant serves the Desert Southwest power market, bidding into merchant energy markets throughout the year, but has a tolling agreement coming into force this year with **Arizona Public Service Electric**.

Full lender allocations available online at www.powerfinancerisk.com. ■

Hamilton launched into recovering TLB market

The Carlyle Group has launched its long-awaited $1.015 billion Hamilton Holdings acquisition financing into a recovering leveraged loan market. Light supply and an uncertain deal pipeline mean the loan has a good chance of attracting investor attention, say market watchers.

The transaction – which will finance Carlyle and **EIG Global Energy Partners**' joint acquisition of two combined-cycle gas-fired plants in Pennsylvania from **Panda Power Funds** – has been waiting in the wings since pandemic lockdowns brought high yield and leveraged loan activity screeching to a halt in March.

The bookrunner on the deal, **Morgan Stanley**, had been whispering pricing of between 400 bp and 450 bp over Libor back then (PFR, 3/9) but on June 2 relaunched the deal at a new, wider starting point of 500 bp, and with a generous original issue discount of 96 to 97.

The term loan B market has been slower to reopen than the high yield bond market, but the lack of activity in loans could work in Hamilton's favor, says a deal watcher. "Visible term loan B supply is light and, in a way, it benefits Hamilton since people know there aren't really other deals coming."

The Hamilton deal comprises a $900 million seven-year term loan B and $115 million five-year revolving credit facility. Commitments are due by June 11. **Moody's Investors Service** assigned the loan a rating of B1 on June 4.

Carlyle and EIG will use the proceeds along with roughly $671 million of equity to fund the acquisition of the Patriot and Liberty projects and repay existing senior debt (PFR, 1/15).

A portion of the equity check will be covered by the conversion of existing mezzanine capital that is held by EIG.

The two quasi-merchant plants are each 829 MW in size and both located in the MAAC zone of PJM Interconnection, which has recently enjoyed premium capacity pricing relative to the rest of the RTO. ■

Case Study: District Energy Networks/Vicinity Energy

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A mitigating factor was the fact that the business's revenues come from a customer base of schools, hospitals, municipalities, and commercial clients – a majority of which are investment grade. For instance, the company operates a steam and chilled water facility for the **University of Pennsylvania** under a public-private partnership. Many of its key customer relationships pre-date 1960.

"They had some long-term contracts but their customers also had a good re-contracting history and a low churn rate," says Mohan. "We liked that they have monopolistic positions in markets with hard-to-replicate infrastructure, especially in urban areas; imagine having to dig up the streets of cities such as Boston or Philadelphia to provide these services!"

The final lender list included:

- **Barings**
- **National Bank Australia**
- **National Bank of Canada**
- **Siemens Financial Services**
- **Vantage Bank**
- **Scotia Capital**
- **ING Capital**
- **Crédit Industriel et Commercial**
- **Webster Bank**

Advisers included:

- **Latham & Watkins** – lenders' counsel
- **White & Case** – borrower's counsel
- **PA Consulting** – market consultant
- **Advisian** – independent engineer

The deal closed on December 30, 2019. The personnel logistics of closing such a large transaction at year-end were a challenge – one that had to be planned for well in advance.

With the hard work out of the way, Antin triumphantly revealed its new name for the 400-person company – **Vicinity Energy** – in January (PFR, 2/25). ■

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LATIN AMERICA MERGERS & ACQUISITIONS

OPDE sells stake in solar assets in Mexico

Spain's **OPDEnergy** has agreed to sell a majority stake in two solar parks in Mexico to **Riverstone Holdings** and is also planning to launch a joint venture with the asset management firm.

OPDE is selling an 80% interest in the 38 MW (DC) Aguascalientes Sur I solar project, in the state of Aguascalientes, and the 106.5 MW (DC) Andalucia II solar asset, in Coahuila de Zaragoza.

The sale will close later this month, says an OPDE spokesperson in Madrid.

The units were brought online in January to fulfill 15-year power purchase agreements, awarded during the 2016 renewable auction. The facilities also won 20-year contracts for clean energy certificates.

The assets were financed with an $86 million loan from **Sumitomo Mitsui Banking Corp**, which closed in August of last year (PFR, 9/26/19).

80:20 RULE

OPDE and Riverstone have now agreed to form a JV called **Vera Renovables**, which will develop, acquire, and build renewables assets in Mexico, including OPDE's solar pipeline in the country. Riverstone will hold an 80% interest in the JV, while OPDE will own the rest.

Legal advisers on the transaction included:

- **Baker Botts**
- **Jones Day**
- **Mijares Angoitia Cortes y Fuentes** – local ■

Solarpack eyes sale of PMGD solar project in Chile

Spain's **Solarpack** is planning to sell a 9 MW solar project that is under construction in the Chilean region of Maule.

The construction of the Quinantu project began earlier this year, after the developer secured environmental permits in the fall of 2019, according to the company's first quarter results.

The $12 million asset qualifies under Chile's PMGD (*Pequeños Medios de Generación Distribuida*) distributed generation scheme, which is limited to projects up to 9 MW in size and confers benefits including stabilized prices and avoidance of trunk transmission tolls (PFR, 1/26/18).

Solarpack is one of several sponsors looking to sell their PMGD assets once they are built. Another, **Grenergy Renovables**, plans to market a 52 MW portfolio of five projects, while developer **Sphera Energy** is aiming to sell an 85% stake in a 150 MW PMGD portfolio (PFR, 5/22). ■

ONE YEAR AGO

I Squared Capital Advisors divested its 49% interest in the 264.9 MW Kendall Cogeneration Station in New England to the co-owner of the plant, **Veolia North America** subsidiary **District Energy Networks** (PFR, 5/13/19).
[Veolia went on to sell its entire district energy business to **Antin Infrastructure Partners**. See case study, page 22.]

EDF cleared to buy 600 MW of wind in Brazil

EDF has received the green light to acquire up to 600 MW of wind projects in Brazil from developer **PEC Energy**, a subsidiary of **Grupo Engeform**.

Under EDF's agreement with Engeform, it will be able to buy projects from the development pipeline that obtain power purchase agreements through local subsidiary **EDF EN do Brasil**.

Brazil's antitrust body, Cade, has given its approval to the deal.

The projects are located in the state of Paraiba, in the municipalities of Junco do Serido, Santa Luzia, Sao Mamede, Salgadinho and Assuncao.

EDF recently raised financing for the construction of a 33 MW expansion of the 114 MW Folha Larga wind project in Brazil (PFR, 4/22). **BNP Paribas** was coordinating lead arranger on the R$140 million ($23.73 million) 18-month debenture offering, which was priced with a coupon of 0.52% and issued on April 16. ■

FAST FACT

$23.73 million

The volume of 18-month debentures EDF issued in April to finance construction of a 33 MW expansion of the 114 MW Folha Larga wind project in Brazil.

PROJECT FINANCE

Genneia signs PPA with Grupo Bimbo

Grupo Bimbo has signed 15-year power purchase agreements with Argentinian developer **Genneia** to buy generation from three of its wind farms.

The power will come from the 3.5 MW Villalonga II project in Buenos Aires, the 11.7 MW Pomona II project in Rio Negro, and the 26.28 MW Chubut Norte II project in Chubut.

The contract is for 32 GWh per year, says a Genneia spokesperson in Buenos Aires.

The PPA stems from a tender launched by Bimbo in 2018, in which ten companies bid. Bimbo's operations in Argentina will run exclusively on renewable power as a result of the deal.

"We are proud to provide clean energy to cover 100% of the operations of a company like Bimbo with our parks," said Genneia's director of corporate affairs **Gustavo Castagnino** in a statement on May 26.

The Pomona II project already sells generation to three other industrial consumers – leather company **Arlei**, petrochemical firm **Meranol**, and plastic producer **Amcor** – through Argentina's renewable energy market for large industrial consumers, known as MATER.

Genneia financed the construction of Pomona II and Chubut Norte II with a $31 million four-year corporate loan from **KfW-IPEX**, guaranteed by German export credit agency **Euler Hermes** (PFR, 5/28). ■

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Funding secured for St Kitts solar

Battery storage company **Leclanché** has secured construction financing for a 36.5 MW solar-plus-storage unit on the Caribbean island of St Kitts.

A New York-based infrastructure fund will provide the Sfr46 million ($47.83 million) debt package to build the St Kitts solar project and its 44.2 MWh battery storage facility in the island's Basseterre Valley.

The fund's name has not been disclosed. Leclanché representatives in Yverdon-Les-Bains, Switzerland, did not respond to an inquiry by press time.

The sponsor will build, operate, and own the project, which will sell its output to state-owned **St. Kitts Electric Company** (SKELEC) under a 20-year power purchase agreement.

The project will provide between 25% and 30% of the country's power needs, replacing diesel-based sources of energy, as noted in a company statement on August 8, 2019.

Leclanché expects construction on the project to begin once travel restrictions related to Covid-19 are withdrawn.

On May 29, St Kitts and Nevis' Prime Minister **Timothy Harris** reiterated that the borders would remain closed, although the Caribbean island's 15 Covid-19 patients have already recovered, with no related deaths reported.

Meanwhile, the Swiss company has inked a partnership agreement with **Eneris Group** to create two joint ventures – one in Germany for the production of battery cells, the other in Poland and Switzerland for the assembly of battery modules. The JVs will be majority-owned by Eneris.

Under the agreement, Eneris will also provide an up-to Sfr42 million ($43.65 million) loan for Leclanché's working capital needs. ■

Pacific Hydro pursues corporate refi

« FROM PAGE 1

area of Melbourne, Australia and owned by China's **State Power Investment Corp** (SPIC). Existing lenders to the company include:

- **China Construction Bank**
- **Industrial and Commercial Bank of China**
- **Commonwealth Bank of Australia**
- **National Australia Bank**
- **DNB**

These five lenders provided a $494.5 million loan to the company in May 2017, split into two tranches with tenors of six months and three years.

At the time, the company said it would use the proceeds to refinance hydro projects in Chile and expand its wind portfolio there and in Australia, among other things.

The company is looking for what one banker described as "aggressive" pricing on its new loan.

SPIC acquired Pacific Hydro from Australian fund manager **IFM Investors** for $2.2 billion in January 2016.

The company's portfolio in Chile includes:

- Punta Sierra – a 77 MW wind farm in Coquimbo
- Coya and Pangal – two hydro plants totaling 76 MW in O'Higgins
- Chacayes – a 111 MW hydro project in Cachapoal Valley

The developer also co-owns **Tinguiririca Energia** with Norway's **Statkraft**. The 50:50 joint venture operates the 155 MW La Higuera and the 163 MW La Confluencia hydro projects in O'Higgins. ■

Elawan to develop wind asset in Brazil

Spain's **Elawan Energy** has inked an agreement with Brazil's **Secretariat of Economic Development** (SDE) to develop a 16 MW wind farm in the Brazilian state of Bahia.

Elawan, previously known as **Gestamp Energy**, will develop the project through its subsidiary **Pedra do Reino V**.

The unnamed asset, located in the municipality of Sobradinho, is expected to require an investment of R$76 million ($14.9 million). Construction is expected to start within a year.

"This new investment in the renewable energy sector shows that the industry keeps expanding and Bahia, the national hub, is still appealing," said Bahia's vice governor and secretary of economic development, **João Leão**.

The state of Bahia has 170 operational wind farms, making up 37.3% of all wind power in the country, according to an SDE announcement on June 2. ■

Mexico launches geothermal tender

Mexico's state-owned **Comisión Federal de Electricidad** (CFE) has launched a tender for a 25 MW geothermal project.

The Los Humeros III Phase B plant, located in the state of Puebla, is expected to start commercial operations by May of 2023.

Bids are due by September 30 and CFE will announce the winner on October 21. Construction is expected to start by November 5.

The government will award a three-year concession contract to design, build and finance the project under the *Obras Públicas Financiadas* (OPF) framework. CFE will take ownership of the project and pay the developer at the start of operations.

The 25 MW first phase of the Los Humeros III project started operations in November 2017 after an investment of $47 million.

Alstom built Phase A under a turnkey engineering, procurement, and construction contract.

As part of Mexico's energy industry reforms, the country enacted a Geothermal Energy Law in August 2014 to allow private companies to invest in geothermal projects. **Grupo Dragón** is so far the only private company to have made use of the new framework. It developed and owns the 25 MW Domo de San Pedro project in Nayarit state. ■

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LATIN AMERICA PROJECT FINANCE

Syndication of Arroyo Chile refi delayed

The refinancing of a pair of **Arroyo Energy** renewable energy projects in Chile that was supposed to close in early April has still not been launched into syndication as due diligence continues.

Sumitomo Mitsui Banking Corp and **Crédit Agricole** are arranging the $140 million seven-year mini-perm, which will refinance the 115 MW El Arrayán wind park in Coquimbo and the 104 MW Conejo solar park in the Atacama desert (PFR, 1/30).

The expected financial close date was pushed back until mid-May after the coronavirus pandemic struck, but has now been delayed until August, says a source close to the deal. The arrangers have not yet started reaching out to prospective lenders to syndicate the deal, he adds.

Astris Finance is working as Arroyo's financial adviser on the transaction.

Arroyo acquired the two projects from **Pattern Energy** in September 2018, after Pattern decided to end its Chile operations (PFR, 5/24/18).

Pattern's stake in the El Arrayán wind project was 70.5%, but Arroyo acquired the remaining 29.5% interest from co-investor **Antofagasta Minerals** at the same time. Pattern received a cash consideration of $70.5 million for its 81 MW, and Antofagasta was paid $29 million.

The projects sell 70% of their output to mining company **Minera Los Pelambres**, which is owned by Antofagasta Minerals, under 22-year power purchase agreements.

Pattern originally financed El Arrayán in 2012 with a $220 million, 15-year loan arranged by **MUFG**, Crédit Agricole, and SMBC (PFR, 4/30/12), while Crédit Agricole, SMBC and **Société Générale** arranged the $184 million 18-year term loan financing for Conejo in 2015 (PFR, 8/13/15). ■

OPDE nears close on Chile financing

Spain's **OPDEnergy** is nearing financial close on a pair of renewable energy assets in Chile, a process that began in November 2019.

The deal will finance OPDE's 100 MW Sol de Los Andes solar park in the commune of Diego Almagro, Atacama, and the 50 MW Estrella wind farm in La Estrella, O'Higgins.

Sumitomo Mitsui Banking Corp won the mandate to structure the $130 million seven-year loan in the fall, outbidding Norway's **DNB** and other financial institutions (PFR, 1/8, 2/26).

The deal is expected to reach financial close over the next two weeks, says a deal watcher.

Although the sponsor had initially been pushing for a January close, bankers thought late February or March would be more realistic. The closing date was then pushed back to mid-May when Covid-19 began spreading around the world (PFR, 4/27).

The sponsor will bring the assets online by January 2021.

OHL, also a Spanish company, is the engineering, procurement, and construction contractor for La Estrella, with a €10 million ($10.88 million) contract. The same contractor will also be in charge of balance of plant. **Siemens Gamesa** is supplying the turbines.

Construction is expected to start by the end of the third quarter of this year (PFR, 10/17/19).

Meanwhile, a subsidiary of OPDE will build the Sol de Los Andes facility.

They both have 20-year dollar-denominated power purchase agreements with Chile's **National Energy Commission**, awarded during the 2016 auction. ■

Acciona plans seventh project in Chile

Acciona's projects in Chile

Project	Type	Size	Location	Offtaker
Tolpán	Wind	84 MW	Antofagasta	TBD
Usya	Solar	64 MW	La Araucanía	TBD
San Gabriel	Wind	183 MW	La Araucanía	2016 government PPA
Punta Palmeras	Wind	45 MW	Coquimbo	Colbún
Romero Solar	Solar	196 MW	Atacama	Google
Almeyda	Solar	54 MW	Antofagasta	National Mining Company
El Alba	Wind	43 MW	La Araucanía	TBD

Source: Power Finance & Risk, regulatory filings (Environmental Evaluation Service)

Spain's **Acciona** is developing a 43.2 MW wind farm in the Chilean region of La Araucanía – its seventh project in the country.

Located in the Reinaco commune, the El Alba unit will be fitted with nine 4.8 MW wind turbines and will inject its output into the grid through a 33 kV transmission line connected to the Tolpán Sur substation.

Construction will start in June of next year, according to filings with Chile's **Environmental Evaluation Service**.

The El Alba facility is the seventh project the company has added to its development pipeline in Chile.

Acciona has signed a string of power purchase agreements with corporate offtakers in the past two years, the latest being with the Chilean subsidiary of German salt producer **K+S** (PFR, 2/27).

Its other customers include retailer **Falabella**, water utility **Aguas Cañar** (PFR, 2/20/2018), **LATAM Airlines Group**, and **Empresa Concesionaria de Servicios Sanitarios**, a company in charge of providing drinking water in nine Chilean regions (PFR, 10/31/19). ■

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PEOPLE & FIRMS

Fortistar hires head of alternatives from private banking firm

Power project owner Fortistar has hired **Chuck Bryceland** – a former **Bank of America** managing director who more recently worked at wealth management firm **Bessemer Trust** – to identify new investments, technologies and partners.

"For over 25 years, Fortistar has successfully invested in opportunities others viewed as too complex or uncertain," says Bryceland, who joins Fortistar as an MD. "In this unprecedented time of change, I am excited to join one of the most seasoned teams powering America's transition towards a lower-carbon future."

Bryceland's background is in handling alternative and hedge fund investments for wealthy individuals and families. He joins from Bessemer Trust, where he was head of alternative investments. He had been with the private banking firm since 2010.

Bryceland started his career in 1991 at **JP Morgan** before moving to **Montgomery Securities** in 1998. Montgomery was acquired by BofA predecessor **NationsBank Corp** around the same time, and Bryceland ended up rising to the rank of MD at **Banc of America Securities**, as the broker-dealer subsidiary of BofA was known at the time.

In 2003, Bryceland went into independent consulting before joining private wealth manager **Fieldpoint Private** as a senior managing director in 2008. ■

CoBank adds to infra market intelligence team

CoBank has boosted its research and market intelligence capabilities with the hire of **Teri Viswanath** as lead economist for power, energy and water.

Viswanath will advise on the North American electricity sector for CoBank customers and work closely alongside the project finance team. Her start date is June 15.

She will report to CoBank's vice president of research, **Dan Kowalski**, who leads a 10-member group of analysts.

The previous occupant of her position, **Tom Binet**, has joined CoBank's project finance division at the rank of credit officer.

Viswanath was previously a director at **First Solar**, where she oversaw the company's market intelligence function. She had been with the developer and panel manufacturer for one year.

She is in the process of moving from Arizona to CoBank's offices in Colorado.

A regular on the conference circuit, she has previously held commodity market research positions at **PIRA Energy Group, BNP Paribas, Credit Suisse** and **Deutsche Bank** (PFR, 1/16/15). ■

POWER TWEETS

PFR Power Finance & Risk

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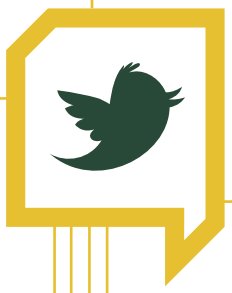
EIA @EIAgov May 31
#ICYMI: U.S. #renewable #energy consumption surpasses #coal for the first time in over 130 years. https://go.usa.gov/xwYHR

PJM Interconnection @pjminterconnect Jun 2
PJM Submits Second MOPR Compliance Filing https://insidelines.pjm.com/pjm-submits-second-mopr-compliance-filing/

CalCCA @cal_cca June 4
Eleven CCAs have issued a joint Request for Information for long-duration storage. The info collected will inform forthcoming storage RFOs, and help the CCAs in their long-term resource planning efforts. A variety of storage technologies are eligible. https://mcecleanenergy.org/wp-content/uploads/2020/06/MCE-2020-Joint-CCAs-Long-Duration-Storage-RFI_060320.pdf



GE Energy Fin Svcs @GEEnergyFinServ Jun 2
GE EFS has closed tax equity financing for Scout Clean Energy's 180 MW Heart of Texas Wind Farm in McCulloch County, #Texas, which is now operational with 64 @GErenewables 2 MW #windturbines. Learn more: https://bit.ly/HTXWindFarm #windpower #renewableenergy #financing

CDPQ @LaCDPQ Jun 1
@LaCDPQ invests an additional $44 million in @WSPCanada. https://bit.ly/2ZYHkHq

Duke Energy @DukeEnergy May 29
Duke Energy Florida announces 3 new #solar power plants to complete 700-megawatt commitment. Learn more: http://spr.ly/6014GEjh0.

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PEOPLE & FIRMS

Mizuho prepares to launch M&A franchise

Mizuho is preparing to launch a US power and utilities investment banking business, having poached several bankers from rival firms.

The Japanese bank has tapped **David Whitcher** to lead the team as managing director, sources tell *PFR*. He is understood to be serving out his gardening leave at **UBS Investment Bank**, where he previously held the same title.

Whitcher spent six years at UBS, prior to which he held positions at **Morgan Stanley**, **Credit Suisse** and **PricewaterhouseCoopers**.

He will be joined by two vice presidents:

- **Rutuja Jagtap** – who joins from **Lazard** and has previously worked at **Marathon Capital** and **General Electric**
- **Robert Luthringer** – who joins from **Citi** and has also worked at **TD Bank**. ■

New addition at Broad Reach

Broad Reach Power, an independent power producer with a focus on energy storage, has added a new recruit with expertise in M&A and tax equity.

The new hire, **Justin Amirault**, joined the company last month as vice president of corporate development.

He was previously a partner at tax equity advisory firm **Glasswing Capital Management** – a company he co-founded alongside **Jonathan Cheng** in 2017.

Prior to that, Amirault spent three years at **Renewable Energy Trust Capital** – an owner and operator of utility-scale solar and wind projects – as vice president of acquisitions. He helped build a portfolio totaling more than 400 MW.

His previous power sector experience includes spells with **Kyocera**-backed mezzanine investment fund **CleanPath Ventures**, solar developer **SunPower Corp** and boutique investment bank **Merriman Curhan Ford**.

Amirault is the latest in a string of hires at Broad Reach, a Houston-based portfolio company of **EnCap Investments** and **Yorktown Partners** (PFR, 4/29). ■

LatAm exec exits EDF Mexico

An executive at **EDF Renewables** in Mexico has exited the company to be the executive director at a think tank in New York.

Laurie Fitzmaurice

Laurie Fitzmaurice joined **Columbia University**'s **Center on Global Energy Policy** last month after four years at EDF's office in Mexico City as the vice president for business development.

During her time at EDF, the sponsor secured power purchase agreements for a wind and solar duo during the second renewable auction in 2016 (PFR, 10/6/16). The company was then able to close a $67 million financing from Spain's **Sabadell** in March of last year for the solar asset – the 90 MW Bluemex Power plant in Sonora (PFR, 4/24/19).

Fitzmaurice moved to EDF after a two-year stint as the managing director of **Cielo Wind Power** in Chile, and a three-year spell at private equity firm **CE2 Capital**.

The seasoned Latin America-focused executive has also worked for San Diego-based **Sempra Energy**, where she stayed for almost seven years, and **Pan American Energy** in Buenos Aires, Argentina. ■

ALTERNATING CURRENT

An ocean of energy?

It has been credited with producing Western Europe's mild climate, blamed for intensifying Atlantic cyclones, and used for centuries by sailors to speed their passage across the ocean, but could the Gulf Stream soon become a source of plentiful renewable energy? A recent demonstration project has brought the idea a step closer.

The Gulf Stream, one of the fastest and most persistent currents in the Atlantic Ocean, has attracted the interest of energy innovators for more than a hundred years. **Thomas Edison** first suggested that it could be harnessed to generate electricity in 1901, and the federal government studied the concept during the oil crisis of the 1970s.

In 2013, researchers at the **Georgia Institute of Technology** put the maximum energy dissipation by turbines at about 44 GW "although electrical power output will be significantly reduced due to various engineering and technological constraints."

The current is at its swiftest off the coast of Florida, which is where developer **OceanBased Perpetual Energy** recently tested the first demonstration project of its kind to produce energy for a continuous 24-hour period.

The demo, a collaborative effort with **Florida Atlantic University**'s Southeast National Marine Renewable Energy Center, ran from May 25 through May 28, after being postponed for a month by the Covid-19 pandemic.

The team tested three types of ocean current energy converter (OCEC), submerging them about 20 miles offshore in waters that typically flow at between 3.5 mph and 5.5. mph, or three to five knots.

"This historic demonstration shows the world that the Gulf Stream can produce clean, renewable perpetual power on a 24-hour-a-day basis using a variety of turbine concepts," said OceanBased's chairman and CEO, **Nasser Alshemaimry**. "It is the starting point for commercializing ocean current energy in the Gulf Stream, thus reducing fossil fuel dependency and benefiting our climate and the planet for generations to come."

The next challenge will be to transmit the energy from the turbines to land. OceanBased's engineers have mapped out a plan involving a relay substation on the seabed connected by a cable to another substation on the shore. ■

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