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Power Finance & Risk

Exclusive Insight on Power M&A and Project Financing

By the publisher of GlobalCapital

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South Korean Utility Mulls U.S. Biomass Deal
Korea Electric Power Co. is in talks to buy a pair of contracted biomass projects under development in the U.S. Page 6

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Allianz Global Investors is broadening the scope of its infrastructure equities division to encompass U.S. assets. Page 20

● Q3 LEAGUE TABLES

Bond Business Thrives as Loans Lag

Richard Metcalf

Sponsors are increasingly sourcing project debt in the capital markets rather than from banks, according to data from **Dealogic**, which is good news for financial institutions with private placement desks.

Among them is **MUFG**, which tops Dealogic's league tables of both project finance loan arrangers and project bond bookrunners for the first three quarters of the year.

One of the largest U.S. private placements of the year so far was a $1.475 billion transaction as part of a debt package raised by **AES Corp.** for a portfolio of contracted assets in California (PFR, 7/6).

MUFG, **JP Morgan** and **Citigroup** led on the bond-and-bank loan deal, which helped push the volume of project PAGE 18 »

North American Power Project Loan Arrangers, Q1-3, 2017

dealogic

Pos	Mandated Arranger	Amount ($m)	No.	% Share
1	MUFG	1,852	23	13.2
2	ING	756	8	5.4
3	Morgan Stanley	657	3	4.7
4	SMBC	599	13	4.3
5	GE Energy Financial Services	588	9	4.2
6	Goldman Sachs	564	1	4.0
7	BNP Paribas	557	10	4.0
8	CoBank	554	10	4.0
9	Crédit Agricole	523	11	3.7
10	Rabobank	481	6	3.4
10	CIT Group	481	7	3.4
	Total eligible loans	**14,024**	**66**	**100.0**

Note: Data as of Oct. 19

Recurrent Agrees to Sale of Remaining Calif. Solar Assets to Chinese Firm

Fotios Tsarouhis

A Chinese company agreed to acquire a 300 MW portion of **Recurrent Energy**'s operational California solar portfolio on Oct. 11.

Shenzhen Energy Group Co. will purchase one 100 MW project and 49% interests in two others from the **Canadian Solar** subsidiary under a purchase and sale agreement signed on Oct. 11.

Recurrent filed with the U.S. **Federal Energy Regulatory Commission** for permission for the transaction on the same day.

The deal faces a number of other regulatory hurdles in the U.S. and China. Besides needing antitrust approval, the acquisition also requires the blessing of the **Committee** PAGE 6 »

Beal Bank to Offload Arizona Gas-fired Units

Richard Metcalf

Beal Bank has agreed to sell two 550 MW units at the Gila River gas-fired project near Gila Bend, Ariz., after acquiring the assets in a bankruptcy-related sale last year.

Salt River Project will acquire the units for $330 million in a deal slated to close in early 2018, according to a statement issued by the Arizona state-owned utility on Oct. 13. PAGE 17 »

Sponsors Ready Financing for Long-awaited Gas-fired Projects

Olivia Feld

A number of project finance deals backing gas-fired combined-cycle greenfield facilities are likely to be launched in the fourth quarter, following a slowdown in new-build financing in the U.S., financiers tell *PFR*.

Deals expected to launch in the coming months include the **Advanced Power** 1.1 GW South Field Energy proj- PAGE 6 »

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PROJECT FINANCE

True Green to Raise $700M of Solar Tax Equity, Debt

True Green Capital Management aims to acquire and finance a portfolio of commercial and industrial-scale solar projects with about $700 million of tax equity and debt, having closed its third discretionary fund earlier this year.

The private equity shop has already signed deals to acquire projects through the fund, including with **MAP Energy Solutions** and **SunPower**, and is in conversations with several other developers, says **Panos Ninios**, managing partner and founder of the firm in Westport, Conn.

By the time True Green Capital Fund III reached its hard cap of $350 million in August, the firm had already deployed about 30% of the capital in a portfolio of pre-identified projects, according to a statement released at the time.

The firm's business model is to fund the construction of a portfolio of projects itself and then put tax equity and debt in place once the assets are operational, freeing up capital to be invested in other projects.

True Green typically finances its projects with roughly equal parts equity, tax equity and debt, meaning that it should be able to raise about $700 million in tax equity and debt to finance the projects in its third fund.

As an institutional sponsor, True Green is able to ink seven-to-10-year mini-perms with banks at pricing as low as 150 basis points over Libor, Ninios tells *PFR*.

"The bank debt market is wide open," he says. "For large-scale wind projects, pricing is lower than that, but solar is catching up."

True Green has previously signed project finance deals with **KeyBanc Capital Markets** and **Investec**.

Among the assets committed to the firm's latest fund are a 37 MW carport and ground-mounted portfolio in the greater Boston area that it acquired from MAP Energy Solutions in September (PFR, 9/28) and a 50 MW portfolio to be originated by SunPower (PFR, 10/10).

The MAP Energy Solutions portfolio is due to be operational by late 2018, while True Green will acquire the SunPower projects over the course of three years. ■

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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
Apex Clean Energy	Portfolio (12 GW, Wind, Solar)	U.S., Canada	CohnReznick	A sale process for the developer has moved into a second round (PFR, 8/14).
ArcLight Capital Partners	Portfolio (1.6 GW Wind)	U.S.	BAML	ArcLight has put the portfolio, known as Leeward Renewable Energy, up for sale (PFR, 10/9).
Ares-EIF	Portfolio (1,918 MW Coal)	U.S.	Citi	Indications of interest were expected this summer (PFR, 7/3).
Ares-EIF, I Squared Capital	Oregon Clean Energy Center (869 MW Gas)	Lucas County, Ohio	Barclays, Credit Suisse	A sale process for the project is underway (PFR, 5/15).
● Beal Bank	Gila River Units 1 and 2 (1.1 GW Gas)	Maricopa County, Ariz.		Salt River Project will acquire the units for $330 million (see story, page 1).
Dayton Power & Light	Portfolio (973 MW Gas)	Midwestern U.S.		DPL is seeking a buyer for the assets (PFR, 9/11).
● Dynegy	Lee (625 MW Gas)	Lee County, Ill.	Barclays (seller)	Rockland Capital closed its acquisition of the project on Oct. 12 (PFR, page 7/17).
	Milford (149 MW Gas)	Milford, Mass.		Starwood Energy Group Global closed its acquisition of the projects on Sept. 22 (PFR, 7/17).
	Dighton (164 MW Gas)	Dighton, Mass.		
Edison International	SoCore Energy (160 MW DC Distributed Solar)	U.S.	Marathon Capital	Edison International has launched a formal sale process for the subsidiary (PFR, 8/28).
Energy Capital Partners	Wheelabrator Technologies (1.2 GW Biomass)	U.S., U.K.		ECP has put the company up for sale (PFR, 8/21).
● Eversource Energy	Portfolio (1.13 GW Gas, Coal, Oil, Biomass)	New Hampshire	JP Morgan (seller)	Atlas Holdings and Castleton Commodities have agreed to buy the fossil fuel-fired portfolio through a j.v. called Granite Shore (see story, page 16).
	Portfolio (68 MW Hydro)			Hull Street Energy is acquiring the hydro portfolio (see story, page 16).
First Solar	Unknown project (250 MW Solar)	Texas	HSBC	First Solar has put the project, said to have a corporate PPA, up for sale (PFR, 10/9).
GE Energy Financial Services	Fairview (1,050 MW Gas, 25%)	Jackson County, Pa.	Citi	GE EFS is marketing its stake in the project (PFR, 9/5).
● Georgia Renewable Power	Franklin (65 MW Biomass)	Franklin, Ga.		Korean Electric Power Co. is considering a purchase of the assets (see story, page 6).
	Madison (65 MW Biomass)	Colbert, Ga.		
Infinity Renewables	Portfolio (6.6 GW Wind, Solar)	U.S.	CIBC	The company is for sale (PFR, 6/5).
Innovative Solar Systems	Portfolio (460 MW Solar)	Texas		The company is seeking a buyer for the three-project portfolio (PFR, 10/9).
Kenon Holdings	IC Power (3,894 MW Gas, Hydro, Oil, Wind)	Latin America, Caribbean, Israel		Kenon has entered negotiations to sell the subsidiary (PFR, 7/31).
LS Power	Carville (501 MW Gas)	St. Gabriel, La.	RBC Capital Markets	LS Power has hired RBC to sell the merchant facilities (PFR, 8/14).
	Hog Bayou (237 MW Gas)	Mobile, Ala.		
Morgan Stanley	NaturEner USA (399 MW Wind)	Montana	Morgan Stanley	Morgan Stanley is selling NaturEner, which owns development wind assets in Alberta as well as the 399 MW operational wind portfolio in Montana (PFR, 5/15).
Pacific Gas & Electric	DeSabla (26.7 MW Hydro)	Butte Creek and West Branch Feather River, California	Bodington & Co.	Bodington is running an auction for the assets (PFR, 9/25).
	Miocene (2.9 MW Hydro)			
● Recurrent Energy (Canadian Solar)	Astoria, Astoria II, Barren Ridge (235 MW Solar)	Kern County, Calif.	BAML, Scotiabank (seller)	KEPCO and a South Korean private equity fund plan to jointly acquire the three projects (PFR, 10/2).
	Tranquillity (200 MW Solar, 49%)	Fresno County, Calif.		Shenzhen Energy Group Co. has agreed to acquire the projects (see story, page 1).
	Garland (200 MW Solar, 49%)	Kern County, Calif.		
	Mustang (100 MW Solar)	Kings County, Calif.		
● Renova Energia	Portfolio	Latin America		A period of exclusive negotiations with Brookfield Asset Management has expired (see story, page 16).
● TerraForm Power	Portfolio (2.6 GW Solar, Wind, 51%)	U.S.	Morgan Stanley, Centerview Partners (seller)	Brookfield Asset Management has closed its acquisition of SunEdison's stake in the yield company (see story, page 16).

● **New or updated listing**

The accuracy of the information, which is derived from many sources, is deemed reliable but cannot be guaranteed.
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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
Advanced Power	South Field (1.1 GW Gas)	Columbiana County, Ohio	GE EFS	Debt	TBA	TBA	GE EFS is left lead on the debt raise. Other joint lead arrangers will be selected later this year (see story, page 1).
Algonquin Power & Utilities	Great Bay Solar I (75 MW Solar)	Somerset County, Md.	RBC	Tax Equity	C$70M ($54M)		RBC Capital Markets closed its tax equity investment in the project on Sept. 18 (PFR, 8/21).
American Power Ventures	Renaissance (1 GW Gas)	Greene County, Pa.	Fieldstone (adviser)	Debt, Equity	$900M		Fieldstone Private Capital Group is raising debt and equity for the project (PFR, 4/17).
Brookfield Renewable	Erie Boulevard (872 MW Hydro)	New York, Pennsylvania, Maryland, West Virginia	Citi, Scotia	Private Placement	$305M	13-yr	Bids from investors are due on Oct. 16 for the deal, which refinances a 12-year note issued in 2005 (PFR, 10/16).
Capital Dynamics	Beacon 2 (45 MW Solar)	Kern County, Calif.	U.S. Bank	Tax Equity	TBA		U.S. Bank is investing tax equity in the projects (see story, page 5).
	Beacon 5 (36 MW Solar)						
Clean Energy Future	Trumbull (940 MW Gas)	Trumbull County, Ohio	BNP Paribas (financial adviser)	Debt	TBA		Deal watchers have tipped the Trumbull project to reach financial close before the end of 2017 (see story, page 1).
				Equity	TBA		
Centrais Eléctricas de Sergipe	Porto de Sergipe (1.5 GW LNG-to-power)	Brazil	IFC	Debt	$200M		The International Finance Corp. is considering financing the project (see story, page 5).
D.E. Shaw, Torch Clean Energy	Gray Hawk Solar (46 MW Solar)	Mohave County, Ariz.	Santander, Siemens	Construction Loan	TBA		The sponsors have closed financing for the portfolio (see story, page 5).
				Tax Equity	TBA		
EIG Global Energy Partners	Cerro Dominador (210 MW Solar)	Antofagasta, Chile	TBA	Debt	$700-800M		The sponsor plans to raise between $700 million and $800 million in bank debt (PFR, 9/18).
Enel Brasil	Volta Grande (380 MW Hydro)	Rio Grande, Brazil	TBA	Bridge loan	~$295M		Enel is seeking a bridge loan to a potential capital markets take-out (PFR, 10/9).
LS Power	Aspen Generating Portfolio (1,483 MW Gas, Hydro)	U.S.	ING, BNP, Citi, Morgan Stanley	Mini-perm	$337.5M	7-yr	LS Power closed acquisition financing for the portfolio on Sept. 29 (PFR, 10/9).
LNG Group Panama, Gunvor, Gu Xin Group	Telfers (656 MW Gas)	Panama	Société Générale (adviser)	Mini-perm	$661M	7-yr	The sponsors of the LNG-to-power project were aiming to close the debt financing by the end of September (PFR, 9/18).
				Letter of Credit Facility	$75M		
New Energy Solar (Walsh & Co.)	Golden Fields I (54 MW Solar)	Kern County, Calif.	KeyBanc Capital Markets	Private Placement	$62.5M	24-yr	The projects are contracted under PPAs expiring in 2036 and 2041, and the notes have an average life of 13.2 years (PFR, 10/16).
	Stanford (54 MW Solar)			Letter of Credit Facility	$21.5M		
NextEra Energy Resources	Portfolio (236 MW Wind)	Indiana, Nebraska, California	JPM, Wells Fargo	Tax Equity	TBA		The two banks are investing tax equity in the projects (PFR, 10/9).
NTE Energy	Reidsville (500 MW Gas)	Rockingham County, N.C.	TBA	Debt	$595M		The sponsor took proposals from banks on Oct. 6 (see story, page 1).
Pattern Development	Henvey Inlet (300 MW Wind)	Ontario	TBA	Debt	TBA		Pattern is seeking debt for the project (PFR, 6/19).
Quantum Utility Generation	Moundsville (643 MW Gas)	Marshall County, W.Va.	TBA	Debt	TBA		Quantum could launch a debt financing for the project this year (PFR, 2/6).
			BNP Paribas	Equity			
Silicon Ranch Corp.	Portfolio (200 MW Solar)	Georgia	TBA	Debt	TBA		The sponsor plans to finance and build the four projects in the portfolio over the next four years (PFR, 9/18).
			TBA	Tax Equity	TBA		
True Green Capital Management	Portfolio (Distributed Solar)	U.S.	TBA	Debt	$700M		True Green plans to raise $700 million of tax equity and debt (see story, page 2).
			TBA	Tax Equity			
TransAlta Renewables	Kent Hills (17.5 MW Wind, expansion)	New Brunswick, Canada	RBC	Private Placement	C$260M	16-yr (9.4yr av. life)	The bonds were priced to yield 4.454% (PFR, 10/9).
X-Elio	Xoxocotla (70 MW Solar), Guanajuato (60 MW Solar)	Xoxocotla and Los Rodriguez, Mexico	TBA	Development Bank Debt	$87.35M	20-yr	X-Elio has requested proposals for debt financings for $128.6 million worth of projects, including Xoxocotla and Guanajuato (see story, page 5).
			TBA	Commercial Debt		16-yr	

New or updated listing

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Arizona Solar Financing Wraps

D.E. Shaw and **Torch Clean Energy** have sealed construction and tax equity financing for an Arizona solar project.

Santander and **Siemens Financial Services** are providing a construction loan for the 46 MW Gray Hawk project, located in Mohave County, and **Citigroup** has committed tax equity.

The sizes of the transactions were not disclosed in a statement announcing the deals on Oct. 12.

The project has a 25-year power purchase agreement with **UNS Electric**, a regulated utility. Construction has begun and the project is expected to be online in the second quarter of 2018.

Longview Solar, a joint venture between **Tuusso Energy** and **Elemental Energy**, originally signed the PPA with UNS Electric in June, 2015, as an offtake arrangement for a project of its own called LS Cliffrose, according to filings with the **Arizona Corporation Commission**.

Longview Solar amended the PPA in July, 2016 and later transferred it to Torch's Gray Hawk project, according to the filings.

Unlike the LS Cliffrose project, Gray Hawk Solar is located outside of UNS Electric's territory, in the service area of **Mohave Electric Cooperative**, necessitating a borderline agreement between the two utility companies to allow UNS Electric to serve the electric needs of the project.

Swinerton Renewable Energy will build the project and a subsidiary of the contractor called **SOLV** will provide operations and maintenance services. ■

X-Elio Eyes Mexico Solar Debt

Private equity-owned solar developer X-Elio has requested proposals for debt financings for $128.6 million of projects in Mexico with maturities of 16 and 20 years.

The Spanish company, which is owned by **KKR**, is looking for $45.35 million of loans from development and commercial banks for the 60 MW Guanajuato Solar project, also known as Mexsolar, in Los Rodriguez, Guanajuato, and $44 million of debt for its 70 MW Xoxocotla Solar project in Xoxocotla, Morelos.

X-Elio has asked development banks to participate in a 20-year debt package for both projects, while commercial banks have been asked to provide a 16-year tranche.

The financing is expected to include loans from the **Inter-American Investment Corp.** and **Inter-American Development Bank** as well as co-loans from the **China Co-Financing Fund for Latin America and the Caribbean**, the **Canadian Climate Fund for the Private Sector** and Spain's **Instituto Credito Oficial**, according to the IDB.

The two X-Elio projects were awarded 15-year capacity and power purchase agreements and 20-year contracts for clean energy certificates by Mexico's **Centro Nacional de Control de Energía** in the country's second power auction in September 2016 (PFR, 10/6).

The Guanajuato Solar project is expected to begin commercial operations in June 2018, while the Xoxocotla Solar facility is scheduled to come online a year later. ■

CapDyn Seals Tax Equity

U.S. Bank has closed a tax equity investment in two **Capital Dynamics** solar projects in California.

The Minneapolis-based lender closed its upsizing of its investment in the 45 MW Beacon 2 and 36 MW Beacon 5 projects in Kern County on Sept. 28, around the same time they were scheduled to begin commercial operations, according to paperwork filed with the U.S. **Federal Energy Regulatory Commission**.

Under the terms of the deal, which took the form of an equity capital contribution agreement, U.S. Bank was expected to make the investment in two installments, according to a filing dated Aug. 8. The timing of the two parts of the transaction was not disclosed.

The size of U.S. Bank's investment and whether any there is any term debt associated with the projects could not immediately be learned.

John Breckenridge, managing director and head of clean energy infrastructure investment in Capital Dynamics' New York office, and a spokesperson for U.S. Bank in St. Louis did not respond to inquiries.

The projects have 25-year power purchase agreements with the **Los Angeles Department of Water and Power**. ■

IFC Mulls LNG-to-Power Loan

The **International Finance Corp.** is considering providing a $200 million-equivalent loan to the 1.5 GW Porto de Sergipe LNG-to-power project in Brazil, as the expected funding deadline for Latin America's largest thermal facility draws closer.

The project is being developed by **Centrais Eléctricas de Sergipe** (Celse), a 50:50 joint venture between Brazilian independent power producer **Ebrasil** and LNG-to-power specialist **Golar Power**.

Golar Power is itself a joint venture between Bermuda-headquartered **Golar LNG** and New York-based fund manager **Stonepeak Infrastructure Partners**.

Golar Power pegged the expected capital expenditure for the Porto de Sergipe project at $1.3 billion in October 2016, but the likely cost is now $1.8 billion, according to the IFC, which notes that up to 80% of the financing will be debt.

Financing commitments are expected to be in place by December this year, according to Golar Power, which is providing $165 million of equity. The IFC will give its decision on the loan on Dec. 7.

Meanwhile, the **Inter-American Investment Corp.** is expected to make a decision on a loan of the equivalent of up to $238 million for the project on Oct. 31.

The tenors and other terms of the loans have not been disclosed.

The plant is scheduled to start operations in January 2020 and will deliver generation to 26 distribution companies under 25-year power purchase agreements that were awarded by the Brazilian government in its 2015 power auctions.

General Electric is lined up as the turbine supplier and operations and maintenance contractor for the project, which also incorporates an LNG regasification jetty and a 20-mile transmission line.

Ocean LNG, which is 70% owned by **Qatar Petroleum** and 30% by **ExxonMobil**, executed a long-term LNG supply agreement with the project in November 2016. ■

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MERGERS & ACQUISITIONS

Recurrent Agrees to Sale of Remaining Calif. Solar Assets to Chinese Firm

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on Foreign Investment in the United States, according to the FERC filing.

China's **Ministry of Commerce**, **National Development and Reform Commission** and **State Administration of Foreign Exchange** must also all sign off on the sale.

Recurrent is aiming to close the divestiture in the final quarter of this year or the first three months of 2018, a spokesperson for the company in San Francisco tells *PFR*.

The spokesperson declined to disclose the purchase price or the total amount of debt that will be assumed by the buyer.

Officials at Shenzhen in Shenzhen, China, and an attorney at **Jones Day** in Washington, D.C., who signed FERC paperwork on behalf of the company, could not immediately be reached for comment.

This deal is part of a broader divestiture of Recurrent's California assets, following an auction run by **Bank of America Merrill Lynch** and **Scotiabank** earlier this year.

Korea Electric Power Co. and a subsidiary of a Korean-registered private equity fund are each acquiring 50% interests in the 100 MW Astoria, 75 MW Astoria 2 and 60 MW Barren Ridge projects in Kern County, according to paperwork filed with FERC last month (PFR, 9/27).

The assets Shenzhen Energy is acquiring comprise the 100 MW three-phase Mustang project in Kings County and 49% interests in the 200 MW Tranquility project in Fresno County and the 200 MW Garland facility in Kern County.

Southern Company, which owns the other 51% of Tranquility and Garland, will retain its stakes (PFR, 8/31/15, 12/18/15).

The Mustang project, which comprises two 30 MW phases and one 40 MW portion, is contracted under three 20-year power purchase agreements with **Sonoma Clean Power**.

The Tranquility project sells its output to **Shell Energy North America** under a contract that terminates on Nov. 30, 2019. A 15-year PPA with **Southern California Edison Co.** kicks in the following day.

Garland comprises two phases corresponding to two separate PPAs with Southern California Edison. A 15-year contract covers 20 MW of the project's output, while the remaining 180 MW is committed for 20 years.

NordLB was coordinating lead arranger on a $480 million debt financing backing the Garland projects in 2015, with **CIT Bank**, **Keybank, Rabobank** and **Santander** acting as joint lead arrangers (PFR, 12/18/15). NordLB also arranged a $337 million debt package for Tranquility in 2015, in which **CIBC**, CIT, Keybank, Rabobank and Santander participated (PFR, 9/10/15).

Santander provided $165 million of debt to the Mustang projects in 2015, with **U.S. Bank** investing tax equity (PFR, 9/9/15). ■

PROJECT FINANCE

Sponsors Ready Financing for Long-awaited Gas-fired Projects

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ect in Columbiana County, Ohio, the **Clean Energy Future** 940 MW Trumbull project in Trumbull County, Ohio and the **NTE Energy** 500 MW Reidsville Energy Center in Rockingham County, N.C.

Some arranger mandates have already been allocated, with **GE Energy Financial Services** leading a debt raise for the South Field project and **BNP Paribas** running the Trumbull financing.

Competition for deals is likely to be fierce given the slowdown this year in the number of development assets being financed in the U.S.

Lenders that typically back utility-scale solar and wind projects in the U.S. have also seen a reduction in deal flow, partly due to uncertainty over whether tariffs will be imposed on the import of solar panels and the step-down in the production tax credit.

One CCGT project which has stalled in its financing is the **Panda Power Funds** 990 MW Mattawoman project in in Prince George's County, Md. The construction financing is said to be to attracting South Korean investors and the bank group arranging the debt has changed, with BNP Paribas and **Investec** leading the deal and **ICBC** no longer participating. **Whitehall & Co.** is advising the sponsor on the equity raise (PFR, 9/7). ■

South Korean Firm Weighs Acquisition of U.S. Biomass Projects

A South Korean entity is in talks to acquire two contracted, development-stage biomass facilities in the southeastern U.S., a person familiar with the investor's strategy tells *PFR*.

Korea Electric Power Co. is considering purchasing the wood-burning Franklin and Madison projects, which are located in the towns of Franklin and Colbert, Ga., respectively, from **Georgia Renewable Power**.

The 65 MW projects will each sell 58 MW of their output to **Georgia Power** under long-term power purchase agreements, according to an August filing with the **Georgia Public Service Commission**.

The Franklin project was initially expected to be 79 MW in size, but its capacity was reduced, according to the PSC filing. The Madison project, meanwhile, was planned as a 58 MW project before its size was increased.

Both projects are expected to be online by June 2019.

KEPCO has been increasingly active in investing in U.S. generation assets. The company acquired the 30 MW Alamosa solar project in Mosca, Colo., from **Cogentrix Energy** last year and is in the process of purchasing part of **Recurrent Energy**'s California solar portfolio (PFR, 8/29/16, 9/27).

David Schaffer, ceo of Georgia Renewable Power in Atlanta, declined to comment. Officials at KEPCO in Fort Lee, N.J., could not be reached. ■

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Trends in Solar Finance Roundtable

KeyBanc Capital Markets

The U.S. solar industry was shaken in September when the **International Trade Commission** ruled, in a high profile Section 201 trade case, that imported panels had harmed domestic manufacturers, paving the way for tariffs that threaten to make some projects uneconomic.

As the ITC considers what recommendation to make to President **Donald Trump**, market participants are attempting to parse the implications for solar development and financing. As much as 47 GW of solar installations could be deferred, according to **Moody's Investors Service**.

Even before the trade case ruling, solar financing was evolving.

As the cost of photovoltaic modules came down, solar projects were better positioned to compete for utility company power purchase agreements, but such contracts have become rarer, compelling developers to look at more exotic offtake arrangements such as corporate PPAs and even hedges.

Solar is also considered to be ideally positioned to take advantages of developments in battery storage technology, which is gaining in efficiency and coming down in price at a rate that reminds some of the development of photovoltaics.

Meanwhile, because it is possible to implement solar projects at a much smaller scale than other kinds of generation, it has been at the forefront of the distributed energy revolution that is changing the way electric grids operate and disrupting established business models.

Residential, commercial, industrial scale projects have required novel financing structures to be developed, and community solar has begun to emerge as another sub-category.

Shortly after the September ITC ruling, *PFR* assembled a power and utilities banker, two developers, a project finance attorney and an asset manager who focuses on energy infrastructure debt to discuss the impact of the case and all the latest trends in solar finance.

PARTICIPANTS IN THE ROUNDTABLE WERE:

Andy Redinger, managing director and head of power, utilities and renewables, **KeyBanc Capital Markets**
Jorge Camiña, director of infrastructure debt, **Allianz Global Investors**
Rich Dovere, co-founder and managing member, **C2 Energy Capital**
Christopher Moore, partner and member of the energy and infrastructure group, **Orrick, Herrington & Sutcliffe**
David Vickerman, vice chairman and chief corporate development officer, **Silicon Ranch**

PFR: There has been a lot of speculation in the solar finance industry about the potential impact of the Suniva Section 201 case. It will depend on the actual remedy recommendation and what the president decides to do about it, but I think it's important to discuss what we think the implications of that will be.

David Vickerman, Silicon Ranch: We are a developer and long-term owner of solar assets, and from our perspective, I think it is going to cause some fragmentation and issues for developers in the market. We have already seen the module market adjust, prior to the ruling, in terms of a price increase, and we've also seen developers with projects that do not have a module supply agreement with a manufacturer looking for modules, and potentially looking, at the end, to divest out of those projects. So I think, short-term, we're definitely going to see a decrease in project construction volume, depending on the outcome, as it works through the market. We are fortunate that we have modules for all of our 2018 and 2019 pipeline.

Andy Redinger, KeyBanc Capital Markets: You've locked in the price?

Vickerman, Silicon Ranch: Yes. The DNA of our business model is to have strategic partnerships, whether it's on the financing side, the [engineering, procurement and construction] side, or the PAGE 8 »

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module side, and so we have a module supply agreement, and we had increased that in the last six months. So, quite fortuitous.

PFR: Are there financings that have been signed, that anyone is aware of, where that's not the case, and where deals may have to be cancelled?

Rich Dovere, C2 Energy Capital: We don't necessarily have modules lined up for all of our pipeline. We have it for, I would say, around 60% to 70% at this point. I don't know that anything would need to be cancelled—we have adjusters in our acquisition and our EPC agreements which would provide a reasonable level of cushion, assuming that the tariff comes in within a certain range. But there's no question that bids were put in that were predicated on module prices in the low 30s [cents per watt]. Because we focus on [distributed generation], I think there is a bit more room across EPC, developer and financing rates of return to be a little bit more flexible, to absorb the shock.

On the utility-scale side, I don't know how most of those projects get built at this point, except for the fact that in nine years of doing this, I think this is the fifth tragedy that the solar industry has gone through. And every time, it's "catastrophic", and every time it comes back, which I think is a testament to the people in the industry, so I'm optimistic. I think there's the trade case, and I think it's further exacerbated by the module supply market taking advantage of the trade case situation before the injury finding went through. It's an interesting moment in time. I think the market will adapt. There's a substantial excess capacity on these manufacturing lines that could be opened up, and I think it's just a momentary blip.

Chris Moore, Orrick, Herrington & Sutcliffe: That's what we're seeing with our clients, as well. The clients that have modules lined up are actually trying to take advantage of that opening in the market and accelerate their projects. I don't think anybody's quite thought about cancelling their projects yet, but they are slowing them down, or stepping them back a little bit to see what happens, so they can adjust to the market—just as the market adjusted to the potential for a tax law change, which is still out there. There may be some projects that were marginal to begin with that might not make it, but I think any project that was a strong project, that didn't have a lot of hair, is going to continue with some adjustment to deal with the situation.

Jorge Camiña, Allianz Global Investors: We have done three solar deals this year—two of them are greenfield, one is brownfield. The three of them have First Solar technology, so it is worth remembering that their thin film cell technology should not be affected by this discussion—it's affecting the crystalline technology. So this is definitely an opportunity for First Solar.

Rich Dovere mentioned that the solar industry has gone through this many times. In the past solar crisis there has always been the common topic of revisiting how the U.S. treats Chinese solar imports. But there is probably no more difficult time than now in terms of how the administration is going to treat a trade agreement or a tariff on China, which is important right now with the situation with North Korea. This couldn't arise at a more sensitive time.

> **"In nine years of doing this, I think this is the fifth tragedy that the solar industry has gone through"**

Dovere, C2: I don't think there was a question amongst most people in the solar industry that there was going to be a tariff at a certain point. But the interplay between what is going on in North Korea and the absolute need for this administration to garner help from China to resolve this crisis basically means that the best-case scenario for the solar industry is leveraging the North Korean crisis as a way of de-escalating the trade situation. There will be a tariff, obviously, at this point,

Rich Dovere
C2 ENERGY CAPITAL

even if it needs a vote in Congress to make it happen, but I think in the end, the financial shock of it will be manageable, because I think it will be a largely political nod, more than it will be meant to be anything functional.

Vickerman, Silicon Ranch: I think it will be interesting to see how [request for proposal] processes for [power purchase agreements] unfold, because there will be those that don't have modules, and there will be those that can get modules. RFPs for quality PPAs has been a very competitive market, and I think short-term it will be interesting to see how that plays out in terms of pricing.

PFR: They just announced how many bidders they had in the New York state RFP processes that are in the works at the moment. There were hundreds of bids there, presumably a lot of solar projects among them, so could this throw a spanner into the works of some of those bids?

Vickerman, Silicon Ranch: Yes, absolutely. If you've won the project at a price when you thought modules were going to be mid-30 cents, and now they're not, that will affect your economics and could cause a problem for the project even to get built.

Redinger, KeyBanc Capital Markets: We were already seeing panel prices come off their downward trend. The Suniva decision came at a point when this was just occurring. If we waited six months from now, I think you would have

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seen higher panel prices anyway.

We were seeing some developers bid projects based on the lower panel prices, assuming no tariff. I believe, on some of those projects that had bid that way, you might find them up for sale shortly. Tax equity could help absorb the panel price increase, and it's the only source of capital that really hasn't been squeezed yet. Tax equity continues to get outsized returns relative to the risks they're taking. They're still getting 7%, 8%-type yields. They're equity and they've structured these deals to the effect that they're super-senior to the debt, and they're getting 400 basis points more than I am!

Dovere, C2: I think that's happening. I think there have been two factors from our perspective. One is that there have been new entrants into the tax equity market in the last 12 months—regional banks, non-traditional players that are pretty aggressive, chasing projects—and the other is that with this case, there's somewhat of a slowdown in projects. I think you'll see more aggressive pricing, more favorable pricing from the developers' perspective, on the debt side, than we have seen in 2017, where there's very tight tax equity. That would help the industry tremendously.

PFR: That's very interesting, and we will be talking more about tax equity later. I should note that there are no tax equity investors on this panel to defend themselves. But sticking with politics, there are other legislative issues out there at state and federal levels that could have an impact on the solar market, that are perhaps being overshadowed at the moment by this trade case.

Camiña, Allianz GI: A very common topic in the last few years, and I think it's a critical element for solar development, is the renewable portfolio standards at the state level. I feel like it has been very quiet in the last few years, in terms of new developments, with very few exceptions. In the economics of solar, we tend to talk a lot about what I call the "supply-side economics", the tax incentives that help developers to reduce that levelized cost of energy. But the reason why utilities enter into those PPAs, which are critical for developing the industry, is only partly the cost of power coming closer to grid parity. Tariffs on imports are not going to help that case. The true additional incentive is really the states imposing on the utilities either a voluntary or a mandatory obligation to increase their sourcing of renewable energy, the "demand-side economics". The role of tax incentives, the stepping-down of such tax incentives, tends to keep us busy during all these panel discussions, but the reality is that RPS is what is driving the engine of all those PPAs, all those financings. So, more than focusing on, "Oh, is there any new discussion about carbon trading, or a carbon cap?" what has been more quiet is the states coming out with more aggressive and more compulsory RPS, and I think that's hurting the industry. I feel like we need some of those incentives to make sure that the industry keeps growing.

PFR: That's a very important point, because apart from the New York processes that are going on at the moment, what I hear is that the utilities, under the current state RPS, are full, as far as renewables is concerned, and some of them are saying they won't look at procuring more until maybe 2025.

Moore, Orrick: A lot of our clients are coming to us, some new entrances as well as people that have been there for a while, to analyze how the states are moving, and the states aren't necessarily moving consistently with the federal government. A lot of them are increasing their RPSs, like Hawaii, which has a 100% RPS. As people deal with Suniva, and general financing conditions, and everything else, for planning purposes they are looking to where the RPSs are increased, and where they're full-up, as you said, and whether or not the political climate in those particular states is going to lead towards pushing those RPSs up.

Dovere, C2: David, you were saying that you negotiated your module supply agreement six months ago—I think the ITC case emerged five months ago, right?

Vickerman, Silicon Ranch: Well, we originally negotiated it in 2015, but we expanded it in Q1 this year.

Dovere, C2: Think about the momentous shift in something that's only happened in five months, and who knows if Donald Trump will be president in a couple of years? I think American politics has a way

Jorge Camiña
ALLIANZ GLOBAL INVESTORS

of moving towards opposites in certain instances. If you think about the Republican take-back of Congress in 2010, and how quickly the country can move, from a policy standpoint, I think it's a matter of separating out the strong from the weak in terms of sponsors, developers, capital providers, across the spectrum, who will be here to ride through the various cycles of this.

PFR: A third regulatory and policy point is tax reform. How have sponsors and financiers addressed the uncertainties around the timing and scope of tax reform in financings that have closed this year?

Redinger, KeyBanc Capital Markets: There's been a 50/50 sharing of risk between banks and developers. Every deal is a little different, but I think, in general, I would characterize it that way. One reason for that is because there's such a mountain of capital chasing these deals.

Camiña, Allianz GI: I think

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it is worth clarifying that when we talk about how tax reform is going to impact this business, everyone is making one assumption. There was bipartisan agreement for the last extension of the investment tax credit and production tax credit around the new scale, and so everybody is assuming one thing, which is that tax reform is not going to change or repeal these tax credits.

So the discussion is how a lower tax rate is somehow potentially going to hurt the solar business. The ITC itself is a tax credit—it is not affected by the tax rate. So the main impact is on depreciation. Right now the headline is at 20% for corporate tax rate [the Republicans revealed their tax reform framework, including a proposed reduction in the corporate tax rate from 35% to 20%, on Sept. 27]. Let's see where we end up. But there's talk as well about taking full depreciation of capital expenditure on day one. Before, you had accelerated depreciation at the rate of 35%, and now you may have day-one depreciation at the 20% rate. You need to do the exercise of actually modelling this, but there are some offsetting factors moving in opposite directions that could result in a limited impact.

Vickerman, Silicon Ranch: I would add that, in theory, tax reform and reduction of the tax rate reduces the pool of available tax equity in terms of dollar amounts, but I think that's offset by, as we were saying before, new entrants, particularly regional banks and some non-traditional providers. We have really seen an increase in the number of participants looking for tax equity, even for 2017 still, and aggressively for 2018.

PFR: What kind of companies are they? Obviously, they need to have U.S. tax liabilities, that's number one. And it's mostly been financial institutions, which suggests they need a degree of sophistication, and banks, obviously, have been financing renewable projects for a long time, so they know how to do it.

Vickerman, Silicon Ranch: That's right, and some of the banks have invested in tax credits off their own balance sheet, but have also brought in some of their clients, and helped them come up the learning curve, and so they're able to effectively increase the pool of available capital. As opposed to that non-traditional provider of tax equity going direct to the deal, they'll sometimes partner with a financial institution that's got the experience.

Moore, Orrick: On some of our deals, in advance of tax reform, people are assuming in the models the tax rate is the same for this year, but next year and going after, it will be lower. And what that does is affect the size of the tax equity investment. People are planning upfront for lower tax equity investments, and covering in other ways, by additional back-leverage, or we're seeing strong entrants into the market on the cash equity side. There coincidentally happen to be a lot of players that are looking to get into the cash equity side, and there's potentially opportunity there for people to come in and take some of that investment that was previously going to the tax equity because of the reduced tax rate.

"You have to watch for places where there are conflicts of interest between the cash and the tax equity, so that you're not caught in between the two"

Redinger, KeyBanc Capital Markets: Are you seeing any cash equity buyers that bring their own tax equity?

Moore, Orrick: I would say, generally, no.

Redinger, KeyBanc Capital Markets: Because we are. We've seen three entrants come into the market, both cash and tax. It's a powerful combination, because those players, there's no friction cost, they don't have to separate the tax equity out and sell it. If they wanted to, they could dominate, because if you come in with an attractive source of cash equity, and you've got tax, it's a powerful combination. It's actually presented some weird structuring issues for us. It's almost easier to separate it, because sometimes the tax and cash guy have different incentives. You put them together and there are some weird structuring things that you need to think through, because they're almost at odds with each other at some point, even though they're the same investor. They could decide to take pain here to get their tax benefits over there.

Christopher Moore
ORRICK HERRINGTON & SUTCLIFFE

Moore, Orrick: If you're representing sponsors, you've got to look at the situation where your cash equity investor may interfere with your ability to do something with the tax equity investor, with the idea of squeezing you out, in a sense. You have to watch for places where there are conflicts of interest between the cash and the tax equity, so that you're not caught in between the two.

Redinger, KeyBanc Capital Markets: But combining them, the ones we've seen, the way they're looking at the market is they get all their money back in the first three years, and so they're able to be more aggressive on bidding for projects.

PFR: Very interesting. Does anyone have anything else to add on tax equity?

Redinger, KeyBanc Capital Markets: Looking forward to it going away in two and a half years.

Dovere, C2: It's never going away. A 10% ITC is still not nothing.

Redinger, KeyBanc Capital

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Markets: That's a good point.

PFR: So, it's maybe not going away. Moving more onto the debt side, what is driving the recent increase in institutional debt entering the utility-scale solar construction and term debt space? Jorge, those are your clients, right?

Camiña, Allianz GI: Yes, and actually I have to give credit to Andy on this one, because the first two deals that we have done, in terms of back-levered institutional debt, were actually in partnership with KeyBanc. We did a wind deal called Balko Wind and we did a solar deal called Moapa, and both are back-leverage, where KeyBanc was supporting those executions with us. We have now four back-leverage institutional deals, and I think we're truly happy, and I want to say this in a humble way, but it's the reality, somehow to have pioneered this space, because institutional investors typically have not been involved in back-leveraged debt. And I think it's the result of a few things.

First, the industry is more mature now, in the sense that 10 years ago, when you talked about solar, people would look at you, saying, "Is that bankable?" And now it's considered one of the safest asset classes an investor can put their money in the U.S. It's what I call the "bondification" of the equity space for institutional investors. Even though my product is debt, it helps a lot when you have an equity investor that sees solar as a de-risked asset, and they're willing to be very aggressive, with their equity returns somewhere between the return of a bond and the return of private equity. Those types of investors have been putting very low cost capital in. And one thing that they like to avoid is refinancing risk. When you are locking in a very competitive cost of equity, you don't want the moving part of interest rates, you don't want to have to refinance in year 10 and find out that the return on your 25-year PPA is massively affected by the debt.

And the other thing is that we have done the work. There are a few serious investors out there, and we have done the work of going through, understanding the issues of the back-leveraged transaction, working with the sponsors and convincing them that this is real, and we can deliver that solution. It's a great time to lock in interest rates—people have been saying for a while that this is the last chance to get a great coupon. The reality is that we have very strong appetite from more people who are seeing this as a real option. That wasn't the case one year ago. One year ago, in sponsors' minds, there was only one option, which was go to the bank market and get your back-leverage loan there.

Redinger, KeyBanc Capital Markets: Yes, so you have this massive U.S. renewable market that's been financed mostly by banks, and the institutional guys have just been slower to get up to speed. Allianz got there because Jorge actually worked in our industry. He was in the renewables side [at Santander] and he went to Allianz and basically said, "Guys, you're missing the boat. The U.S. renewable market is a really attractive asset class on a risk-adjusted basis, that we should look at putting our capital towards". What's lagging is the rating agencies, I still think, are still a little behind in understanding this asset class, and I think they haircut the bank financing models too heavily. However, I think they're under tremendous pressure to figure out how to reduce those haircuts, because if they can't get up to speed faster, they're going to lose out on a large refinancing wave that's coming in the next couple of years.

PFR: And the institutional debt market, is that always going to require an investment grade rating?

Camiña, Allianz GI: Yes, I think overall, the type of capital that makes sense for these deals is investment grade capital, because otherwise it wouldn't be accretive for the returns of the equity investors.

PFR: So, no merchant solar projects?

Camiña, Allianz GI: No, but it is interesting, because now that you mention merchant, I feel like the rating agencies are still much more comfortable with merchant risk than back-leverage, and to me that's something I don't really understand.

PFR: That is interesting.

Vickerman, Silicon Ranch: What kind of tenor are you seeing on the institutional debt side?

Redinger, KeyBanc Capital Markets: In some cases, all the way out to the end of the PPA. And then, to Jorge's point, Fitch Ratings has just changed their rating methodology, and they actually will now consider a couple of years merchant past the PPA. We actually got a deal rated recently, with a merchant piece, investment grade, from Fitch. So, it's strange they are more comfortable with merchant than back-leverage. But they are catching up. They're starting to change their methodology. Typically we think contracted wind and solar projects are low investment grade. The rating agencies also think contracted wind and solar projects are investment grade but only after applying haircuts to the bank financing model. The result is a project with a low investment grade rating will have a lower debt amount allowed than in the bank market. The pricing is pretty much on top of each other, so it's not a pricing issue in the institutional market, it's a sizing issue.

PFR: In terms of the universe of investors, are these kinds of transactions limited to the traditional private placement investors that have been involved in that market for a long time now? I believe there have also been quite a few foreign institutions getting involved in solar finance in the U.S. as well.

Redinger, KeyBanc Capital Markets: I think it's all of the above. There's just so much capital out there, it's a mix. Everybody from foreign investors to your traditional private placement guys.

PFR: David, have you placed any debt with institutional investors for utility-scale project finance?

Vickerman, Silicon Ranch: Yes.

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PFR: And what has your experience been?

Vickerman, Silicon Ranch: We try and diversify by structure and by financial provider, so we've done deals in the bank market and we've done deals in the institutional debt market as well, and those investors are doing term out to just short of the PPA term.

PFR: So you appreciate having a diverse investor base, *per se*?

Vickerman, Silicon Ranch: Yes, absolutely.

PFR: We've talked about tax equity already, but we haven't tackled whether solar projects that are hitting their flip dates under existing tax equity deals are an opportunity for refinancing. People are talking about maybe even inserting mezzanine tranches in projects that still have a useful life, but have run out of tax credits.

Redinger, KeyBanc Capital Markets: I think it's a big opportunity. I think the bank market might be challenged to keep those loans on their books, because those are the exact type of opportunities that the institutional market can be really aggressive with. It's the exact type of opportunity that the institutional guys would prefer, versus getting involved with the tax equity early on. I think it's part of the reason the institutional market is turning on. They see this big wave of seasoned projects, after the flip date, coming online, and that's right in their power alley.

Camiña, Allianz GI: Stepping into the shoes of the institutional investors, if you want to look at the opportunities to get exposure to the energy market in the U.S., you have to bear in mind that, for example, in the oil and gas space, midstream is very attractive, but a lot of that paper is going to the listed MLPs [master limited partnerships]. And when you look at power, it's very difficult to find contracted gas power generation. Most of it is merchant, so it's non-investment grade. Everybody would love to find transmission deals, but there are very few transmission deals—most of that is done on the balance sheets of utilities. When you look at what is left that has long-term contracts, renewables is the natural space. There was a record level of activity from the mid-2000s through 2015 or '16. There's a massive portfolio of construction loans that converted to term debt that is on the balance sheets of the banks. So all of that is going to be refinanced, and that's a massive opportunity for Andy to place some of that in the institutional market, and for institutional lenders to find exposure to the sector.

PFR: So you're saying that banks, if they're able to do this, should be tooling up to be placement agents?

Camiña, Allianz GI: Yes, because they have the experience, they have the assets in their portfolios, they know the assets, they know the sponsors, so it makes a lot of sense.

Redinger, KeyBanc Capital Markets: The only speed bump I see in this wave coming is the back-end hedges that were put in place five years ago. They're probably out of the money, so you just have to deal with that sometimes, depending on the deal.

PFR: What hedges are those?

Redinger, KeyBanc Capital Markets: So, when banks make these loans originally, we required the developer to hedge the front end, which is the six-to-seven-year bank deal, but we also required them put execute a forward starting swap to hedge the interest rate for the back end, because banks weren't willing to take that interest rate risk. So there's a back-end hedge on all of these bank deals that has to be settled when they come up for renewal. And rates were higher back in those days, and our rates now are lower, so a lot of times these hedges are going to be out of the money. You could refinance the amount you need to settle the hedge in the new deal, but the hedges will have to be settled. And that does present maybe just a speed bump. The sponsor might say: "Let's just roll it in the bank market. I don't want to deal with the $2 million out-of-the-money check I need to write to the bank to get to the institutional market." It's solvable. It's just some noise that you may have to deal with.

Andy Redinger
KEYBANC CAPITAL MARKETS

PFR: Since you mentioned interest rate hedges, moving on to hedge products, I have been hearing about sponsors looking to finance solar projects, primarily in Texas, on the basis of power hedges instead of PPAs. We've already talked about how, with the states' RPSs full, and the utilities full up of renewables, there are fewer PPAs out there. Have any of you been involved in talks about hedged solar projects, or do you have any thoughts on whether this would be a viable model?

Redinger, KeyBanc Capital Markets: If you look at the wind deals that were done with power hedges, the vast majority of them don't have bank debt on them, because usually there's some basis risk in those deals, and it's a risk the bank market has had a hard time getting their heads around. Potentially we're in these deals for 18, 20 years, so when you begin to think about basis risk, the crystal ball gets real cloudy.

When I think about solar, it's the same. Sure, it could work. Why wouldn't it? I think the hedge providers would prefer to hedge solar versus wind, so it makes a lot of sense. Why wouldn't you hedge solar? It's more predictable, and I think easier to hedge, I just think we'll have the same PAGE 13 »

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issues though, there's that basis risk.

PFR: If it's easier to hedge, does that mean—I think most of the wind power hedges have been 13-year hedges—would they be able to go longer with solar?

Camiña, Allianz GI: I don't think so, because the way the providers of these hedges look at them is not so much based on the technology of the project, it's more based on how they hedge that commodity risk, and how they offload it. And they do that using the gas derivative market as a proxy. They have liquid references in the five-to-seven-year window and then they take a view longer, and that typically means ten to 12 years. Beyond that, it's very difficult, because they have to take a very directional bet that they cannot offload in the market.

The challenge really with solar and hedging is the following: In wind, the main reason people do hedges is to raise tax equity, because essentially the equity is taking a merchant return on those deals. They typically hedge to P99 or similar cash flow, and their return is based on merchant between P99 and P50, or the actual case. So, for solar, with the typically higher levelized cost of energy, it is difficult to make those hedges deliver an acceptable equity return in a 10-12 year period, making your return completely merchant and reliant on the tail of the useful life of the asset. So I see that as a challenge.

Dovere, C2: When we've had these conversations, it was really around two smaller, five-ish, ten-ish megawatt deals. When we would go out and quote the hedges, they're so low that we're not seeing how it's even economic to do it in the first place.

Vickerman, Silicon Ranch: Having looked at some of the opportunities in Texas, we've seen some of the hedge pricing down there. I don't know that it works economically for the sponsor. It's great we're talking about hedges for solar, but the price they're offering them at, I just stop there. I don't know how you make that work unless you get very low cost of equity.

Moore, Orrick: I've seen a lot of sponsors looking for it, and they just haven't been able to find something that works economically.

PFR: Let's move on to different kinds of project, and different scales of project, different kinds of offtake, and different technologies, such as battery storage. How has the financial model behind residential solar evolved?

Redinger, KeyBanc Capital Markets: We're involved in the residential space. Quite frankly, when we look at where the opportunities are, we think residential solar provides the biggest bang for the buck on a risk-adjusted basis. There are fewer banks pursuing it, there's less competition in pricing, and returns are good relative to the risk. It's attracted fewer players, and the players that are in it, I think, are reaping the rewards. Recently, we have seen an increase in the number of banks looking at the sector, but it hasn't been this massive wave we've seen in the other areas of solar.

> **"The big challenge is dealing with non-rated offtakers, the residential component if any, and the rate at which the price escalates in subscription agreements"**

Dovere, C2: Are you seeing a slowdown as people move towards direct ownership? Are you seeing fewer PPAs?

Redinger, KeyBanc Capital Markets: We're definitely seeing the model move, depending who you talk to. I've heard some people say it's all moving that way, to ownership. We've definitely seen some movement there, but the vast majority is PPAs and leases. But the loan piece is definitely gaining market share.

PFR: What sort of growth are we seeing in community solar, and what are the implications of those kinds of projects for project finance?

Redinger, KeyBanc Capital Markets: That is definitely one of the more active areas. Several states have put out new programs, New York in particular. There also have been several community solar projects that have been financed. I think the big challenge is dealing with non-rated offtakers, the residential component if any, and the rate at which the price escalates in subscription agreements. Structuring around that can be challenging before it really begins to affect pricing and structure.

Moore, Orrick: We also have been seeing a tremendous amount of activity in that area. Not so much the financing yet, but structuring the PPAs to try and address it, so that they will be financeable. Particularly in California, there are rules encouraging community aggregation. We've seen one project get financed, but it was part of a portfolio of assets, so it wasn't really a true community aggregation project.

Redinger, KeyBanc Capital Markets: The key for us, and I think for a lot of people, is getting comfortable with the non-rated subscription agreements, residential component if any and most importantly the price escalation built into the subscription agreements. If you're escalating at 4% a year, and the utility rate doesn't move, you're going to be very quickly...

Dovere, C2: ...out of the money.

Redinger, KeyBanc Capital Markets: Yes, out of the money. So, we are very sensitive to that escalator, and I really think once you get into it and you understand it, that is the primary risk. Because, yes, people sign contracts, but if one day your price ends up being higher than the utility rate and they leave you, are you really going to go and pursue them? Some of them are schools. Probably not.

Vickerman, Silicon Ranch: So you prefer flat, fixed, for the term?

Redinger, KeyBanc Capital Markets: Sure. I think we'd consider something sub-2%, but anything north of that, for us, anyway, it's hard.

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David Vickerman
SILICON RANCH

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Dovere, C2: We own about 10 MW of community solar in Massachusetts that's operating, and we're in the process on about 30 MW additional, and that ranges from Colorado to Minnesota and New York. And the way that we are really viewing the world is that this is going to be like your cell phone plan soon. You're going to have T-Mobile-like offers to buy out long-term contracts in community solar, and I think it's just a matter of years, a couple of years, before that happens. In Minnesota, for example, with the Xcel Energy program, which has its own quirks, we are very sensitive to what other projects are permitted, or in the program in the area, and what are the constraints to be able to originate. Because even if a flat PPA is out of the money, you never want a PPA that's underwater, no matter what. And getting it financed has been a conversation on fundamental principles, saying it's not feasible that power rates would drop below a certain amount, and then really being able to show the regulatory construct of being able to bring new customers in, in the event that a customer drops off, and so on.

But we also see it as the end of residential solar, to the extent that you could not have panels on your house anymore, but still get cheaper solar electricity. Why would you want somebody drilling holes on your roof? Obviously, early adopters have been helpful on the residential solar side. But with community solar, you're getting the benefit of a utility-scale build, and the pricing associated with it. I think it has the possibility to be highly disruptive to residential solar models.

PFR: This will be the final topic, but an important one of course: the integration of battery storage into solar projects, and how that's shaping the market. Maybe if we start with the developers first, and whether you're seeking to do that, and how you found that?

Vickerman, Silicon Ranch: We're evaluating three separate projects, two of which are with existing clients on facilities that we're about to build, where they are looking at storage as a way to shift load to peak time. Obviously, if you combine it with a new solar facility, you can take advantage of the ITC, and so I think where we'll get to is how does this impact the financing? But we're literally right in that analysis now.

> **"They are looking at storage as a way to shift load to peak time"**

Dovere, C2: Because most of our projects that have had conversations around storage are on the commercial scale, I'd say our biggest challenge is the customer not knowing why they want storage. Is it time-of-use adjusting or is it reliability, or something in between? We're actually, at our own cost, going to be adding storage to probably around 5 MW of our C&I deals, so we can see how it performs. For the scale of projects and the types of customers we're going after, we find it to be a much more difficult sales conversation than solar already is. We definitely see it as an opportunity, but we are waiting for the client market to dictate what they want that opportunity to be.

PFR: Lenders are at different stages in the process of getting comfortable with financing storage. Some of the higher-return credit fund managers have already done deals. Where is KeyBanc?

Redinger, KeyBanc Capital Markets: There are a handful of banks, like anything new, that are open to financing storage. We're wide open. It's just that the numbers have to work. We're comfortable with the technology, we just haven't seen a deal where the math works. The storage costs X and the revenue produced from the project doesn't support paying for the storage.

Vickerman, Silicon Ranch: Storage is not just one thing. There are different technologies, and I don't think that has necessarily been solved. Lithium is leading the way, for sure, but in some applications, lithium is not the best answer. And that's an evolving story. There has not necessarily been a definitive answer on what technology to deploy, as it is application dependent.

Camiña, Allianz GI: There are also different models to compensate for storage. We definitely are very interested in a model that has more capacity payments and less arbitrage between off-peak and on-peak hours. We would like to see more RFPs that pay for that storage through capacity payments. We are seeing developers, for now on a smaller scale, exploring this, thinking: "Is this the tool that is going to give me the edge to get the next PPA? Can I squeeze the economics a little bit, so I can be more aggressive on the PPA bid?" So I think, right now, it's unclear how this is going to play out, but again large developers, active players are definitely exploring this as a source of winning deals.

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Coordinating Lead Arranger & Administrative Agent

Entergy
Entergy Louisiana
$450 Million
Collateral Trust Bonds due 2027
Joint Bookrunner

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$800 Million
Collateral Trust Bonds due 2022 & 2027
Joint Bookrunner

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MERGERS & ACQUISITIONS

Granite State Fleet to Be Split in Two

Eversource's 1.2 GW New Hampshire generation portfolio is set to be sold in two portions following an auction process that was launched at the beginning of the year.

The buyers of the projects are a newly-created joint venture between asset manager Atlas Holdings and commodities trader **Castleton Commodities International**, called **Granite Shore Power**, and private equity firm **Hull Street Energy**.

Granite Shore, which is 50% owned by each of the joint venture partners, is set to acquire all five fossil fuel-fired plants in the portfolio, representing about 1,130 MW of capacity, for $175 million, while Hull Street is paying $83 million for the 68 MW hydro portfolio.

The nine hydro projects that Hull Street is acquiring have all been online since the first half of the 20th century.

Eversource filed for approval of the sale with the **New Hampshire Public Utilities Commission** on Oct. 12 and the deals are expected to close by early 2018.

Under the purchase agreements signed by the buyers, they are obligated to keep the projects operational for at least 18 months.

The buyers' financing plans and whether they worked with financial advisers on the acquisitions could not immediately be learned.

"Together, we look forward to working with all stakeholders in the coming months to complete the proposed transaction and execute a smooth transition"

"We have each successfully owned and operated power generation facilities and our focus will be on serving as a safe, reliable and cost-efficient source of power," said a spokesperson for Atlas in Greenwich, Conn., on behalf of the joint venture partners, in a statement. "Together, we look forward to working with all stakeholders in the coming months to complete the proposed transaction and execute a smooth transition."

Representatives of Eversource in Boston, and Hull Street in Bethesda, Md., did not immediately respond to inquiries.

As Eversouce's financial adviser, **JP Morgan** kicked off the eagerly-awaited auction of the assets in February, following a delay caused by an appeal and rehearing of a 2015 settlement between the utility company and the **State of New Hampshire**. **Neil Davids** and **Peter Kelly** led the deal for JP Morgan (PFR, 2/28).

The New Hampshire PUC had granted Eversource permission to sell its 3.14% stake in the 620 MW Wyman 4 Station oil-fired plant in Yarmouth, Maine, separately from the rest of the portfolio, and it did so in June, to **NextEra Energy Resources**, which already owned a majority stake in the facility (PFR, 6/26). ■

TerraForm Gets Three-notch S&P Upgrade on Brookfield Acquisition

S&P Global Ratings has raised its rating of **TerraForm Power**'s bonds by three notches following the replacement of **SunEdison** by **Brookfield Asset Management** as the yield company's sponsor.

The rating agency lifted the senior unsecured rating from B- to BB- on Oct. 17, the same day that Brookfield closed on its acquisition of a controlling stake in the yieldco.

The rating covers about $1.2 billion of senior unsecured debt issued by the company in 2015. Its $800 million debut offering—which it expanded by $150 million in a tap transaction later the same year—matures in 2023, while a $300 million offering is due in 2025.

The S&P rating has a stable outlook, which "reflects an expectation of more limited growth in portfolio size in coming years, as well as effective operations at the asset level," write **Michael Ferguson** and **Aneesh Prabhu**, analysts at the rating agency.

S&P could lower the rating if TerraForm Power seeks to grow through debt-funded acquisitions that push its leverage to more than 6.5 times Ebitda, the analysts note.

The yieldco owns more than 2.6 GW of contracted solar and wind projects in developed markets, mainly the U.S.

Besides senior unsecured notes at the corporate level, its debt includes a revolving credit facility and project-level debt. There was $497 million outstanding under the revolver and about $2 billion of non-recourse long-term debt on the company's balance sheet as of June 30, according to its second quarter report.

TerraForm Power's B3 rating from **Moody's Investors Service** has been on review for upgrade since Sept. 11. ■

Brookfield Talks to Buy Renova No Longer Exclusive

Brazilian renewable energy company **Renova Energia** said on Oct. 17 that a period of exclusive talks with **Brookfield Asset Management** around a potential sale of the company had expired with no agreement reached.

Renova entered an exclusivity period with the Canadian investor on July 19.

The exclusivity period was initially for 60 days, but was extended by a further 30 days in September. Renova said on Oct. 9 that Brookfield had not made an improved offer.

Renova is still in talks with Brookfield over a potential buyout, according to the Brazilian company.

Most of the controlling shares of Renova, which went public in 2010, are held by **Cemig**, **Light** and the developer's founding partners **Renato Amaral** and **Ricardo Delneri** of Brazil's **RR Investments**. ■

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MERGERS & ACQUISITIONS

Beal Bank to Offload Arizona Gas-fired Units

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"This purchase represents an attractive economic opportunity for SRP as it is a fraction of the cost to build a new generating facility," said **Mike Hummel**, deputy general manager at Salt River Project, in the statement.

For Beal Bank, meanwhile, the fact that the utility was willing to acquire both units in one transaction probably boosted the attractiveness of the deal, says a banker.

"It's probably enough for them to recover what they were owed and maybe a hair more," he says of the purchase price.

Beal Bank agreed to take the two units from **Sundevil Power Holdings**, a portfolio company of **Wayzata Investment Partners**, in exchange for the forgiveness of debt in August 2016, after Sundevil filed for bankruptcy protection (PFR, 8/12/16).

The bank recently moved to take control of another distressed gas-fired facility, the 965 MW La Paloma plant in McKittrick, Calif., on behalf of the project's creditor group (PFR, 10/12).

A spokesperson for Beal Bank in Dallas declined to comment.

POWER PURCHASE AGREEMENT

Tucson Electric Power has signed a 20-year tolling power purchase agreement with Salt River Project for the output of one of the units it is buying, Power Block 2.

Under the PPA, Tucson Electric will pay Salt River Project a monthly demand charge including a fixed capacity charge of about $1 million per month for the first three years and about $1.5 million per month for the remainder of the life of the contract, and an operating fee, according to paperwork filed by the utility company with the U.S. **Securities and Exchange Commission**.

Tucson Electric, which already co-owns Power Block 3 of the facility with **UNS Electric**, also has an option to buy Power Block 2 that it can exercise up to three years after the acquisition by Salt River Project. The purchase price is expected to be about $165 million, subject to closing adjustments, according to Tucson Electric's SEC filing.

Salt River Project also owns Power Block 4 of the 2.2 GW four-unit Gila River project, having agreed to acquire it from **Entegra Power** for $100 million in September 2016.

Power Blocks 1 and 2 were in better condition than Block 4, which helps to explain the $65 million-per-unit difference between the two acquisitions in terms of valuation, notes the banker. ■

STRATEGIES

Mosaic Prices Solar ABS at Tight Spreads

Mosaic sold a solar loan securitization at tight spreads on Oct. 18, as investors report that the market for solar and Property Assessed Clean Energy (PACE) is turning into a food fight amid heavy demand and low supply.

The Oakland, Calif.-based company sold the $307.5 million Mosaic Solar Loans 2017-2 deal in four tranches. The senior class 'A' notes were sold at 185 basis points over interpolated swaps to yield 3.854%, 15 bps tighter than the low end of price guidance. The most junior class 'D' bonds were sold at a discount to yield 9.75%, tighter than the 11% to 12% range issued at guidance.

Deutsche Bank, **Guggenheim Partners**, **BNP Paribas** and **DZ Bank** arranged the deal.

The transaction is backed by 10,188 residential rooftop solar loans made to mostly prime borrowers, with an average balance of $26,994, according to a presale report from **Kroll Bond Rating Agency**.

As well as selling all classes tighter than guidance, Mosaic priced the deal tighter than its last transaction in February, which was priced at 4.45% for the single tranche. It is also tighter than an offering from **Dividend Solar** that was priced on Sept. 29 to yield 4.084% for the senior bonds.

Issuance of renewable-related ABS has come in fits and starts in 2017. Though the five solar asset deals issued this year have surpassed deal flow seen in 2016, there has been less issuance than market observers predicted at the beginning of the year. Similarly, issuance of PACE ABS has been slower than expected.

As a result, deals that have hit the market have been heavily subscribed. A PACE ABS offering from **Renew Financial** was four times oversubscribed two weeks ago, says an investor, and solar ABS issuers have been successful in pre-placing most or all classes in this year's deals.

Dividend's deal was entirely pre-placed, according to a source familiar with the transaction. Meanwhile, **Greenworks Lending**, which sold the first ever commercial PACE ABS deal in September, placed the whole offering with **TIAA Investments**.

Low supply and the trend of pre-placing bonds have sparked some complaints from investors, who say they are eager to get a crack at a burgeoning asset class but have been crowded out by competition and discouraged by declining yields on recent deals.

"We're spending a lot of time raising capital for direct investment in the subordinate bonds in this asset class, but triple-Bs at 5.75%, on an absolute yield basis is tough for us," the investor said, referring to the latest Mosaic transaction.

He added that his firm and other smaller investment shops are thinking more about how to invest directly in the loans, rather than wading into a fight for the ABS deals crowded with bigger buyers. He added that insurance companies have been frequent investors in the senior tranches of 2017 solar ABS deals.

"From an investor's standpoint, there just isn't enough of this stuff. We want to figure out how to get more liquidity in this."

Editors Note: A version of this article first appeared in Global Capital. ■

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Q3 LEAGUE TABLES

Bond Business Thrives as Loans Lag

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bonds issued in the power sector in North America to $5.968 billion across 15 transactions in the first nine months of the year, according to Dealogic.

That represents a huge uplift versus the same period last year, when only $1.717 billion of power project bonds were issued.

The loan business, on the other hand, is on a downward trajectory, with $14.522 billion signed this year up to the end of September for power projects, compared with $19.936 billion in the same period last year. ■

North American Power Project Bond Bookrunners, Q1-3, 2017 dealogic

Pos	Bookrunner	Amount ($m)	No.	% Share
1	MUFG	1,265	8	22.1
2	Goldman Sachs	460	1	8.0
3	BNP Paribas	437	3	7.6
4	Morgan Stanley	427	2	7.4
5	Citi	410	3	7.2
6	Mizuho	293	1	5.1
7	HSBC	246	1	4.3
7	ING	246	1	4.3
7	JP Morgan	246	1	4.3
10	Scotia Capital	238	1	4.1
10	SMBC	238	1	4.1
	Total eligible bonds	**5,735**	**14**	**100.0**

Note: Data as of Oct. 19

Q&A: MATT ODETTE AND FREDERICK ECHEVERRIA, MUFG — PART I

Q&A: Matt Odette and Frederick Echeverria, MUFG — Part I

Matt Odette, director in project finance, and **Frederick Echeverria**, executive director on the private placement desk, discussed the trend toward financing projects in the bond market with **Richard Metcalf**, editor of *PFR*, in this exclusive interview.

PFR: The AES Southland offering was one of the biggest deals in the private placement market this year, and highlights a trend of private placement investors looking for yield in the power sector. How has the private placement market evolved in the last few years with respect to power, and what is driving those deals?

ECHEVERRIA: Project bonds have been around for quite a while, so I don't think it's necessarily anything new, but in the power space, over the last 18 months to two years, what you have seen is a pullback in banks willing to lend on a long-term basis, which was a pretty competitive capital source to the project bond. As you've seen less willingness for banks to offer long-term financing, it brings the project bond more to the fore as a financing tool. You've got that duration that the investors can provide—it's a natural fit—as well as, you noted that the Southland transaction was rather large, so even with banks' willingness to lend long-term, there's a maybe $500 million to $800 million pool of capital that was competing at the top of that demand.

> **"When we lay out the numbers and the pricing, in terms of what we think is achievable in the market, the bond is becoming more and more competitive"**

ODETTE: We've seen this unfold in real time. As you know, we're very active in the bank space as well, so when we pitch projects, we show a menu of options from a mini-perm to a long-term bank loan, to a bond, and we have seen in the last 18 months, when we lay out the numbers and the pricing, in terms of what we think is achievable in the market, the bond is becoming more and more competitive. Once you get to north of $2 billion of raise, it makes sense to look at both, which is similar to what AES did here on Southland, where there was both a bank and a bond tranche but they were optimized in terms of the duration preferences of these two different investor classes, where the bank was shorter and the bond was longer.

PFR: You mentioned banks pulling back from long-term lending. Is that a regulatory-driven thing primarily, or what is driving that?

ODETTE: There are obviously different, overlapping regulatory regimes that affect different banks. One thing PAGE 19 »

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we hear a lot about here in the U.S. is the liquidity premium, which does make longer-term financing more expensive. It's a combination of overall cost of capital and then some regulatory developments that have made long-term capital a little bit more expensive than perhaps it used to be.

"People got involved because it was a way to pick up incremental yield"

PFR: You mentioned the bond financing becoming more competitive on pricing as well. Are you able to give any ballpark figures on how much it has come in?

ECHEVERRIA: It's evolved. Coming out of 2009, '10, '11, anything in the project bond space was priced on a coupon basis. That changed in probably late 2013 where we started to see bonds price again on a spread-to-Treasury basis. So, when we got back to spread-based pricing, you'd see a deal such as Southland, with a similar credit profile, probably with a credit spread of 225 to 250 basis points. Where that's come now over the last two to three years is south of 200 bps, and we've seen deals price as tight as 160 bps over. So that's—and each deal's unique, each deal's specific, so this is just generally what we've observed in the market—anywhere from 75 bps to 100 bps of tightening on the spread, coupled with historically low Treasury rates over the same time period. So we're seeing financings which used to be in the 6% to 8% are in the low 4% area and in some financings below 4% on an all-in yield basis to the issuer.

PFR: How does that compare to the bank market? In the renewables space, we saw contracted projects getting bank loans last year at 175 bps over Libor or around that area.

ECHEVERRIA: On the bank side we have seen, for long-term contracted assets, down to Libor plus 162.5 bps. Matt touched on some of the pressures—return on capital, liquidity premium—so it's maybe 175 bps to 187.5 bps now depending on the size of the project. The project bond investor is a different investor base than the banks, and I think they're looking at a different relative value dataset than the banks as they look to ascribe value. I think there are more and more investors that are comfortable in infrastructure broadly and power projects in particular than there were two to three years ago. I think people got involved because it was a way to pick up incremental yield, but as you bring in more demand with the same limited supply it tends to bring down the price, so it's really a function of too many dollars chasing too few deals. Even with such a large bond component as we had on Southland, nearly $1.5 billion, there was over two times demand for the amount of paper that was on offer.

"Banks are probably still a little more efficient and competitive in terms of providing construction financing and unfunded commitments, but that gap has narrowed"

Matt Odette

Frederick Echeverria

ODETTE: One other trend we've seen around the same time frame is relevant to construction projects: Traditionally, investors in the bond market weren't particularly excited about putting out unfunded commitments. They wanted all the dollars to be in day one, which, if you take that approach, that can be pretty inefficient for construction projects, where your money is sitting there earning low interest from day one when you haven't spent it. But what we've seen a little more recently is a willingness among private placement investors to do delayed draws, and the price of that has come down a lot over the last two or three years, to the point where, apples to apples, banks are probably still a little more efficient and competitive in terms of providing construction financing and unfunded commitments, but that gap has narrowed a lot, which has made the bond market a lot more interesting for construction projects like Southland.

PFR: Are you able to say anything about the premiums for delayed draws now? Can you get an 18-month delayed draw for 50 bps?

ECHEVERRIA: In general terms, in the current market environment—and this would be under the 4(a)(2) private placement format, where you can get the delayed funding—the market will generally provide the first three months free—no incremental cost for a three-month delay. After that, it's 2bps to 4bps per month, so an 18 month delayed draw, to your example, that's 30 bps to 60bps. That would be for the 18 month draw—each draw has its own price, and you can put that in a spread sheet, do the math and come in with the weighted average cost. It's a little more nuanced than that, as each project will have its own funding and draw schedule, so depending on the timing and amount of those draws, the percentage of the funding which is delayed can play into what those premiums are.

PFR: So it's like an amortization schedule in reverse?

ECHEVERRIA: Absolutely.

Check back next week for the second part of the interview. ■

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PEOPLE & FIRMS

Allianz GI Turns to U.S. Infra Equities

Allianz Global Investors' chief investment officer for infrastructure equity is relocating from Frankfurt to New York as the firm prepares to launch its third fund for the asset class.

The asset manager's first two funds, AREF I and AREF II, were focused on investments in Europe, but the firm is broadening its scope to the U.S., "given the importance of that market for the development of renewables," says a person familiar with the move.

Armin Sandhoevel

Armin Sandhoevel has been Allianz GI's chief investment officer for infrastructure equity since October 2012, having spent the previous six years at **Allianz Climate Solutions**, where he was ceo.

Based in Frankfurt, he oversaw the launch of the asset manager's first two renewables-focused funds, which closed in 2013 and 2016, respectively. The 18-strong infrastructure equities team manages about $1.3 billion of assets.

Last month, the firm began to boost its infrastructure equities team in New York with the appointment of **Catherine Helleux**, who had previously worked in the energy structured finance group at **Société Générale** (PFR, 9/11).

"While it is premature to give launch dates or target sizes for a third fund, it is fair to say that another is under contemplation and will encompass U.S. investments as well," said a spokesperson for Allianz GI in New York, who confirmed that Sandhoevel plans to move to the city before the end of the year.

Allianz GI has already established an infrastructure debt platform in the U.S. and stepped up investments backing solar projects this year after hiring **Jorge Camiña** from **Santander** as director of infrastructure debt in 2016 (PFR, 5/24/16, PFR, 6/5). ■

STRATEGIES

AEP Issues RFP for Ohio Solar

AEP Ohio has issued a request for proposals for up to 400 MW of solar generation in the state.

The **American Electric Power** subsidiary will consider applications for projects that are at least 50 MW in size, according to the RFP, which was announced on Oct. 18.

Mirroring an RFP issued late last year, which was for both wind and solar assets, the tender process aims to contract projects under long-term power purchase agreements that may include an option for AEP Ohio to acquire 50% of the project in the future (PFR, 12/16).

The utility committed to adding 400 MW of in-state solar generation and 500 MW of in-state wind generation in an agreement with the **Public Utilities Commission of Ohio** last year.

Projects must have an estimated operation date of no later than Dec. 31, 2021 to qualify under the RFP.

As with last year's tender, preference will be given to sites located in Appalachia.

Navigant is managing the process and the deadline for proposals is Dec. 18.

In other RFP news, **Dominion Energy Virginia**, *is seeking 300 MW of renewables in the state (see story, online).* ■

ALTERNATING CURRENT

Juniors in Energy Finance Reveals Inaugural "30 Under 30" Class

Some of the power finance world's fresher faces gathered at **CohnReznick Capital**'s offices in New York's Credit Lyonnais Building on Oct. 12 for **Juniors in Energy Finance**'s inaugural "30 Under 30" event.

JiEF, a 500-strong non-profit networking organization founded by **John Richardson** of CohnReznick, recognized 30 outstanding mid-career energy finance professionals chosen by the group's selection committee.

Industry luminary and **U.S. Army** veteran **John Cavalier**, senior advisor in the global power and renewables group at **Credit Suisse**, who retired as co-managing partner of **Hudson Clean Energy** earlier this year, delivered keynote remarks, dispensed career advice and fielded questions between cocktail receptions at the event.

A full list of the event's honorees follows:

- **Adrian Ruiz-Grossman, CohnReznick Capital**
- **Alexa Chu, Capital One**
- **Andrew Ehrlickman, Brookfield Asset Management**
- **Bari Wien, Wells Fargo**
- **Bethany Gorham, S&P Global Market Intelligence**
- **Dan Abbott, NRG Energy**
- **David Lynch, Ares Management**
- **Douglas Baker, U.S. Bank**
- **Evan Turner, StormHarbour Securities**
- **Gina Spilatro, Bank of America Merrill Lynch**
- **Hamish Weerasinghe**, U.S. Bank
- **Jerry Li, Citigroup**
- **Kamal Daghistani**, Capital One
- **Kedar Reddy, Boston Consulting Group**
- **Kris Holz, Yale School of Management**
- **Kyle Harrison, Bloomberg New Energy Finance**
- **Lucas Bifera**, S&P Global Market Intelligence
- **Michael Baker, Cypress Creek Renewables**
- **Michael Johnson**, Cypress Creek Renewables
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- **Nathan Serota**, Bloomberg New Energy Finance
- **Roshni Mali, Karbone**
- **Steven Campbell, Sustainable Capital Finance**
- **Thomas Boeje**, Siemens Financial Services
- **Thomas Lee, New Island Capital**
- **Tom Thunell, Stem**
- **Vishvesh Jhaveri, Advanced Microgrid Solutions**
- **William Vijverberg, Morgan Stanley** ■

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