Power Finance & Risk

Exclusive Insight on Power M&A and Project Financing

By the publisher of GlobalCapital

PROJECT FINANCE

MERGERS & ACQUISITIONS

PEOPLE & FIRMS

Sponsors Explore Refinancing for Chilean Portfolio

Crédit Agricole is helping **EDF Group** and **Andes Mining & Energy** gauge interest in a debt refinancing.

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ECP Finds Buyer for Wheelabrator

Energy Capital Partners has found a buyer for its waste-to-energy portfolio company **Wheelabrator Technologies**. Page

DESRI Fills C-Suite Positions

D.E. Shaw Renewable Investments

has made two c-suite appointments in the past two months.

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Vineyard Wind Appoints Debt Adviser

Shravan Bhat

Offshore wind developer **Vine-yard Wind** has appointed a financial adviser to lead the debt raise for its 800 MW project off the coast of Massachusetts.

Santander was chosen after more than 10 banks had pitched, *PFR* has learned. One deal watcher said the debt could be anywhere between \$1.5 billion and \$2.5 billion, depending on the structuring and size of the tax equity check.

CCA Group is leading the investment tax credit-based tax equity raise for the estimated



It's got Mass. appeal

\$3.5 billion project, *PFR* reported in August (PFR, 8/29).

Vineyard is a joint venture between **Copenhagen Infrastructure Partners** and **Avangrid Renewables** that won a 20-year contract from a group of Massachusetts distribution companies earlier this year (PFR, 5/29)

Spokespeople for Avangrid and CCA in Boston, CIP in Copenhagen and Santander in New York either declined to comment or did not respond to inquiries.

Offshore wind developers are racing against the clock to build and finance these large facilities, since projects have to be fully permitted by August 2019 to qualify for the 2019 ITC (PFR, 8/7).

An even larger Northeast stateled offshore wind solicitation is underway in New Jersey, where 1,100 MW of contracts are up for grabs (PFR, 9/18).

On the West Coast, meanwhile, **Trident Winds** is in early development stages for the Morro Bay project, expected to be between 650 MW and 1,000 MW (PFR, 6/19).

Bond Deal Touted for PJM CCGT

Shravan Bhat

A private equity sponsor is planning to bypass the term loan A market in favor of a private placement to finance a new-build quasi-merchant gas-fired project in **PJM Interconnection**.

Ares-EIF has hired **Morgan Stanley** to assemble the fixed-rate debt financing for its 620 MW

Hill Top Energy Center combinedcycle project in Greene County, Pa., *PFR* has learned.

A bank group comprising **BNP Paribas**, **CIT Bank**, **Crédit Agricole** and **MUFG** had been in talks with the sponsor to provide a traditional mini-perm (PFR, 8/2), but no formal mandates were signed.

Morgan Stanley offered a longerterm and poten- PAGE 7 »

Leeward Rounds Up Tax Equity for Mendota Hills Wind Repowering

Taryana Odayar

Leeward Renewable Energy, the wind-focused business which OMERS Infrastructure Management bought from ArcLight Capital Partners earlier this year, has lined up a lead tax equity investor for the repowering of its Mendota Hills wind project in Lee County, Ill.

The sponsor plans to sell the tax equity stake in the project to **Citi** and PAGE5»

D.E. Shaw Preps Solar Acquisition with Tax Equity on Standby

Shravan Bhat

D. E. Shaw Renewable Investments is close to acquiring **First Solar**'s 100 MW Willow Springs solar project in Kern County, Calif., with tax equity ready to go.

DESRI has "indicated its intent" to acquire the asset in a transaction expected to close in a matter of days, a First Solar spokesperson in Phoenix, Ariz., has confirmed to PER

Wells Fargo is

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LNG

Shell Greenlights \$31 Billion Canada LNG Terminal

Shell Canada Energy is pushing ahead with its C\$40 billion (\$31 billion) LNG Canada export terminal, which is set to be the first of its kind in the country and Canada's largest-ever infrastructure project.

The Royal Dutch Shell affiliate made a final investment decision on Oct. 2, seven years after it first announced the project in 2012. In 2016, the Anglo-Dutch oil company postponed its FID twice owing to the global LNG supply glut's dampening effect on prices.

"LNG prices have moved up since and they're seeing a supply gap opening up mid-2020, which is when this project will come online," says Jennifer Rowland, a senior equity research analyst on the energy team at investment firm Edward **Jones**. "It's been well flagged that they were going to approve [the project], we were just waiting for the official announcement."

Construction is to start immediately and will be funded on balance sheet, which is unusual for a project of its magnitude. The two-train facility will be able to export 14 million tons of LNG annually (mtpa), with the potential to expand to four trains exporting up to 26 mtpa.

The project's owners will provide it with natural gas and will individually offtake and market their own LNG. Shell holds a 40% stake in the project, while Petronas holds 25%, PetroChina Canada and Mitsubishi Corp. have 15% each and Korea Gas Corp. owns 5%.

"In recent history, I can't really think of another big LNG project that would have been given final investment decision without having those [third-party offtake] contracts already in place. so it's certainly unique," says Rowland.

Most LNG export terminals have been project financed on the basis of 20-year take-or-pay offtake agreements.

"In Shell's case, they have the mindset that they can finance it for cheaper on their own balance sheet rather than project financing it," says Rowland. "It's the first time we've seen a big project like this where procuring contracts was not the cause of delay."

Shell is expected to provide most of its share of the natural gas supply either from its Groundbirch project in northeast British Columbia or by acquiring it in the market, depending on which option provides the most value.

The project, touted by Canadian Prime Minister Justin Trudeau as "the single largest private-sector investment project in Canadian history," will also receive \$275 million in federal

Joint venture **JGC-Fluor Corp.** is the project's engineering, procurement and construction contractor

Power Finance & Risk

Richard Metcalf

(212) 224-3259

Shravan Bhat Reporter (212) 224 3260

Taryana Odayar

(212) 224 3258

Stuart Wise Data Associate

Kieron Black

PRODUCTION Sam Medway

Manager **PUBLISHING**

Laura Spencer Senior Marketing Manager

Adam Scott-Brown Director of Fulfillment

Nina Bonny Customer Service Manager (212) 224-3433

Jon Liekocevic Sales Executive (212) 224 3043

ADVERTISING/ REPRINTS

John Weber Commercial Director (203) 458 0725

CORPORATE

Andrew Rashbass Chief Executive Officer

John Orchard

Kevin Beatty,

Colin Day

Managing Director. Banking & Finance Group

David Pritchard (Chairman), Andrew Rashbass (CEO). Andrew Ballingal, Tristan Hillgarth. Imogen Joss, Jan Babiak. Lorna Tilbian. Tim Collier.

Customer Service

PO Box 4009, Chesterfield, MO 63006-4009, USA

Overseas dial: 1-212-224-3451

UK: 44 20 7779 8704 Hong Kong: 852 2842 8011

E-Mail: customerservice@iiintelligence.com

(212) 224-3570 and (1-800) 437-9997 or Hotline@iiintelligence.com

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Please send all undeliverable Mail and changes of addresses to: PO Box 4009 Chesterfield, MO 63006-4009 USA

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TELL US WHAT YOU THINK!

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

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

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 | | |
|---|--|---|--|---|--|--|--|
| | 174 Power Global | Techren I & II (300 MW Solar) | Clark County, Nev. | | Centaurus Renewable Energy acquired the development-stage projects in August (PFR, 10/1). | | |
| • | 174 Power Global | Sweetwater (80 MW Solar) | Sweetwater County, Wyo. | | Centaurus Renewable Energy has acquired the project, which is contracted with Rocky Mountain Power (see story, page 8). | | |
| • | Abengoa | A3T (220 MW Gas) | Mexico | TBA | Private equity firms are sizing up the project, which is part of Abengoa's insolvency divestments (see story, page 8). | | |
| | BP Wind Energy North America | Portfolio (430 MW Wind) | Texas | BAML | Phoenix Wind Repower is in exclusive talks to buy the merchant projects (PFR, 9/10). | | |
| | Centaurus Renewable Energy | LaFayette (72 MW Solar) | Chambers County, Ala. | | Global Atlantic Financial Group is buying out its equity partner's remaining 50% stake (PFR, 10/1). | | |
| • | Clean Energy Partners (AltaRock Energy) | Blue Mountain (49.5 MW Geothermal) | Humboldt and Pershing counties, Nev. | | Cyrq Energy acquired the project on Sept. 4 (see story, page 8) | | |
| | Cypress Creek Renewables | Brantley Farm (50.2 MW Solar) | Nash County, N.C. | No adviser used | John Laing Group has entered the U.S. solar market with the purchase of the solar project pair (PFR, 9/24). | | |
| | | Fox Creek (57.5 MW Solar) | Franklin County, N.C. | | | | |
| | Dominion Energy | Portfolio (1,900 MW Gas, Hydro) | Pennsylvania, Rhode Island, Louisiana | JP Morgan, Citi | Starwood Energy is buying two CCGTs while an undisclosed buyer is taking 25% of a hydro project (PFR, 10/1). | | |
| • | Duke Energy | Renewables Portfolio (2,907 MW Wind, Solar) | U.S. | Morgan Stanley | Duke is running a sale process to formalize inbound interest it has received (PFR, 10/1). | | |
| | EDF Renewables | Portfolio (40 MW Biomass) | South Carolina | | Atlantic Power is buying the two contracted plants for \$13 million (PFR, 10/1). | | |
| | EDP Renewables | Meadow Lake VI (200 MW Wind) | Benton County, Ind. | CIBC | CIBC launched the sale of the contracted, development-stage assets in June (PFR, 8/27). | | |
| | | Prairie Queen (200 MW Wind) | Allen County, Kan. | 1 | | | |
| | | Sharp Hills (250 MW Wind) | Special Areas 3 & 4, Alberta | 1 | | | |
| | | Nation Rise (100 MW Wind) | North Stormont, Ontario | | | | |
| • | Energy Capital Partners | Wheelabrator Technologies (767 MW waste-to-energy) | U.S., U.K. | | Macquarie Infrastructure Partners has agreed to buy the company (see story, page 10). | | |
| | EnterSolar | EnterSolar Holdco Shares | U.S. | Marathon Capital | EDF Renewables North America is acquiring a 50% stake in the commercial solar developer (PFR, 10/1). | | |
| | Eletrobras | Various Wind Assets (880 MW Net) | Brazil | | An auction is scheduled for Sept. 27 (PFR, 8/27). | | |
| • | First Solar | Willow Springs (100 MW Solar) | Kern County, Calif. | | D.E. Shaw Renewable Investments intends to acquire the project (see story, page 1). | | |
| - | Greengen Holdings, Sts'ailes Energy Development | Bremner Trio (50 MW Hydro) | British Columbia | Headwater Capital Consulting (seller) | Connor, Clark & Lunn Infrastructure is acquiring the construction-stage, run-of-river projects (see sotry, page 8). | | |
| | Kinder Morgan | Canadian business (oil pipelines, storage) | Alberta and British Columbia, Canada | TD Securities | Kinder's sale of its Canadian business could fetch up to \$1.8 billion and marks the company's Canadian exit (PFR, 9/24). | | |
| | Mainstream Renewable Power | Andes Portfolio (1.3 MW Wind, Solar) | Chile | KPMG London | The Irish developer is seeking an equity partner to build and operate its \$1.65 billion renewable portfolio in Chile (PFR, 9/17). | | |
| | North American Power Group | Rio Bravo Fresno (28 MW Biomass, 50%) | Fresno, Calif. | | NAPG is in talks with potential buyers of its 50% stakes in the projects (PFR, 8/27). | | |
| | | Rio Bravo Rocklin (28 MW Biomass, 50%) | Lincoln, Calif. | | | | |
| | Olympus Power | Llano Estacado (80 MW Wind) | Carson County, Texas | | Mitsubishi Heavy Industries America is buying the 17-year old wind farm, which is a candidate for repowering (PFR, 9/24). | | |
| | Rene Sola | Portfolio (13.3 MW Solar) | Minn. | No adviser used | Nautilus Solar has acquired the portfolio, which will be owned by its minority shareholder Virgo Investment Group (PFR, 9/24). | | |
| | Renewable Energy Systems Americas | Hackberry (166 MW Wind) | Shackelford County, Texas | | Skyline Renewables is buying the vintage project, including GE EFS's tax equity holdings (PFR, 10/1). | | |
| | Sempra Energy | Portfolio (980 MW Renewables) | U.S. | Citi, CCA Group (buyer), CS, JP Morgan, Lazard (seller) | Consolidated Edison has agreed to buy the assets for \$1.54 billion (PFR, 10/1). | | |
| | Starwood Energy Global, Ares-EIF | Hudson Transmission Partners | New York | Goldman Sachs, PJ Solomon (sellers) | Combined stakes in the joint venture formed to operate the 660 MW Hudson Transmission Line are being sold to Argo (PFR, 9/24). | | |
| | SunPower Corp. | Boulder III (125 MW Solar) | Clark County, Nev. | | 174 Power Global and KOMIPO America are buying the development-stage project (PFR, 10/1). | | |
| • | York Capital Management | Idaho Solar 1 (40 MW Solar) | Kuana County, Idaho | Whitehall (seller), Barclays (buyer) | sPower made its first operational project acquisition since being acquired by AES and AIMCo (PFR, 10/1). | | |
| | New or updated listing | | | | | | |

New or updated listing

The accuracy of the information, which is derived from many sources, is deemed reliable but cannot be guaranteed.

To report updates or provide additional information on the status of financings, please call Taryana Odayar at (212) 224 3258 or e-mail taryana.odayar@powerfinancerisk.com

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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 | |
|----------------------------------|---|--|--|---|--|--|---|--|
| | Torreón-HQ 100 (101 MW Solar) | Coahuila, Mexico | Bancomext, KDB | Debt | \$74M | 16-yr | The Bancomext tranche is 20 years long while KDB's debt has a 16-year tenor (PFR, 9/24). | |
| Solutions, | Electrodes (50 MW Battery Storage) | California | Macquarie Capital | Debt | \$75- 100M | 10-yr | Sponsors are putting together financing for the second tranche of the 50 MW portfolio (PFR, 9/24) | |
| Ares-EIF | Hill Top Energy Center (620 MW Gas) | Greene County, Pa. | Morgan Stanley | Private Placement | ТВА | ТВА | Ares has foregone a bank mini-perm for a bond to match the tenor of a gas netback under negotiations (see story, page 1). | |
| Ares-EIF, Novi Energy | C4GT (1,060 MW Gas) | Charles City County, Va. | ТВА | Debt, Equity | TBA | ТВА | The shovel-ready project is in talks for debt and equity (PFR, 9/17). | |
| Copenhagen | Vineyard (800 MW Offshore Wind) | Massachusetts | CCA Group (adviser), Santander (adviser) | Debt, Tax Equity | \$3.5B | ТВА | The capital structure for the estimated \$3.5 billion, two-phase project remains to be finalized (see story, page 1). | |
| Balico | Chickahominy (1,650 MW Gas) | Charles City County, Va. | TBA | Debt, Equity | ТВА | ТВА | A development team, formerly at Cogentrix, has hired a financial advisor to begin the equity raise (PFR, 8/20). | |
| Bloom Energy | Portfolio (10 MW - 15 MW Fuel Cell) | U.S. | KeyBank | Debt | \$100M | ТВА | Key Equipment Finance will fund C&I scale fuel cell deployment (PFR, 10/1). | |
| Consolidated Edison | Portfolio (180 MW Wind) | Montana, South Dakota | MUFG, Keybank | Bond | \$140M | 10-yr | The bond refinancing closed with a 4.41% coupon (PFR, 10/1). | |
| Infrastructure | Gopher Creek (158 MW Wind) | Scurry County, Texas | CCA Group (adviser) NordLB | Tax Equity Construction Debt | ТВА | | CIP provided \$65 million in mezzanine financing for its second joint venture with the Greek developer (see story, page 1). | |
| | Misae (240 MW Solar) | Childress County, Texas | CCA Group (adviser) | Tax Equity | ТВА | | Sage has a 20-year PPA with Rocky Mountain Power while Mis has a hedge from a financial institution (PFR, 9/4). | |
| Coventa Francis | _ | | Citizens Crédit | Term Loan | \$400M | 5-vr | The refinancing package extended the facilities' maturities and | |
| covanta Energy | Corporate | 0.3. | Agricole, JP Morgan, BAML, MUFG, SMBC | Revolving | \$900M | 5-yr | was priced at 200 bp over Libor (PFR, 9/10). | |
| Dominion Energy | Cove Point (LNG Terminal) | Lusby, Md. | Mizuho, MUFG | Debt | \$3B | 3-yr | Pricing is said to be tight, at 137.5 bp over Libor (PFR, 9/17). | |
| EVM Energia, General Electric | Energia del Valle de Mexico II (626 MW Gas) | Mexico State, Mexico | BNP Paribas, Citi, SMBC | Term Loan | \$575M | 9.3-yr | The hybrid financing for the \$753 million CCGT project was | |
| | | | | U.S. Private Placement | | 22.7-yr | expected to close in September (PFR, 8/27). | |
| Fengate | Heartland (102 MW Gas) | Alberta | MUFG | Debt | \$771M | 5-yr | Six banks arranged acquisition financing for Fengate's purchase of the co-gen from Inter Pipeline (PFR, 10/1). | |
| FGE Power | Goodnight (500 MW Wind) | Armstong County, Texas | Karbone | Tax Equity | ТВА | | The sponsor has already secured a cash equity commitment for the project from Fortistar (PFR, 5/29). | |
| GE EFS | Shady Hills (573 MW Gas) | Pasco County, Fla. | ТВА | ТВА | ТВА | ТВА | GE EFS is aiming to have all the permits in place and reach financial close in December (PFR, 5/21). | |
| GridLiance | High Plains (Transmission) | U.S. | ТВА | Revolving Credit Facility | ТВА | ТВА | The Blackstone-backed company owns 430 miles of transmission lines with 55 miles more in the works (see story, page 6). | |
| Invenergy | St Clair (584 MW Gas) | Ontario | BayernLB, MUFG, Natixis, SMBC | Debt | \$211M | 7-yr | The deal, which closed in June, extended the loan maturity by three years (PFR, 9/24) | |
| | Mendota Hills (76 MW Wind) | Lee County, III. | Citi | Tax Equity | ТВА | | Leeward is in the process of repowering Illinois' first utility scale wind project, which came online in 2003 (see story, page 5). | |
| Longview Power | Longview (700 MW Coal) | Maidsville, W.Va. | Houlihan Lokey (adviser) | | | | Longview Power has hired Houlihan Lokey for a potential refinancing (PFR, 4/9). | |
| Middle River Power III | Portfolio (523 MW Gas) | San Joaquin Valley, Calif. | MUFG | Debt | ТВА | 6-yr | The Avenue Capital Partners subsidiary is raising financing to fund its acquisition of three projects from AltaGas (PFR, 9/24) | |
| | Bayonne Energy Center (644 MW Gas) | Bayonne, N.J. | Crédit Agricole, ICBC, Investec, KEB Hana, Nomura | Mini-perm | \$500M | 7-yr | The deal to finance MS Infrastructure's acquisition of the plant launched last week (PFR, 9/17). | |
| NTE Energy | Reidsville (500 MW Gas) | North Carolina | Whitehall | Debt, Equity | \$650M | ТВА | The City of Camden, S.C., signed a 20-year PPA with Reidsville, becoming its twelfth customer (PFR, 10/1). | |
| | Portfolio (1.6 GW Wind) | Texas, Oklahoma, Maine | ТВА | Tax Equity | -\$1B | | The sponsor aims to raise tax equity on the portfolio by the end of the year (PFR, 6/4). | |
| SunEnergy1 | Holloman (80 MW Solar) | Hertford County, N.C. | U.S. Bank, Progressive Insurance | Tax Equity | \$87M | | The \$200 million project has a virtual PPA with Fifth Third Bancorp (PFR, 10/1). | |
| | | 1 | | D-L4 | \$36M | TBA | The project has a 20-year PPA for 14.65 MW with PSEG Long | |
| Sybac Solar | Middle Island (19.6 MW Solar) | Suffolk County, N.Y. | East West Bank | Debt | ψ30ΙΨΙ | 100 | Island (PFR, 10/1). | |
| | Try Power Global (Hanwha Q Cells) Advanced Microgrid Solutions, Macquarie Capital Ares-EIF Ares-EIF, Novi Energy Avangrid Renewables, Copenhagen Infrastructure Partners Balico Bloom Energy Consolidated Edison Copenhagen Infrastructure Partners, Terna Energy Copenhagen Infrastructure Partners, Terna Energy Copenhagen Infrastructure Partners Covanta Energy Dominion Energy EVM Energia, General | Torreón-HQ 100 (Hanwha Q Cells) Advanced Microgrid Solutions, Macquarie Capital Ares-EIF Ares-EIF, Novi Energy Avangrid Renewables, Copenhagen Infrastructure Partners Infrastructure Partners Infrastructure Partners Infrastructure Partners Copenhagen Infrastructure Partners Infrastructure Partners Copenhagen Infrastructure Partners, Terna Energy Copenhagen Infrastructure Partners Gopher Creek (158 MW Wind) Covanta Energy Cove Point (LNG Terminal) EVM Energia, General Electric Energia del Valle de Mexico II (626 MW Gas) Fengate Heartland (102 MW Gas) FGE Power Goodnight (500 MW Wind) GE EFS GridLiance High Plains (Transmission) Invenergy St Clair (584 MW Gas) Leeward Renewable Energy Topic MW Wind) Longview Power Longview (700 MW Coal) Middle River Power III Portfolio (523 MW Gas) Bayonne Energy Center (644 MW Gas) NTE Energy Reidsville (500 MW Gas) | 174 Power Global (Hamwha Q Cells) Advanced Microgrid Solutions, Macquarie Capital Ares-EIF Ares-EIF, Novi Energy C4GT (1,060 MW Gas) Ares-EIF, Novi Energy C50 MW Gas) Avangrid Renewables, Copenhagen Infrastructure Partners C50 MW Gas) C50 MW Gas) C50 MW Gas) C50 MW Gas) C60 MW Gas) C70 MW Gas) C80 MW Gas) C90 MW Gas) | Torein-HQ 100 Coahuila, Mexico Bancomext, KDB | 174 Power Global (Hamwha Q Cells) Advanced Microgrid (Soft Codes (SO MW Battery Storage) Macquarie Capital Solutions, Macquarie Capital Solutions, Macquarie Capital Solutions, Macquarie Capital Solutions, Macquarie Capital Macquarie Capital Macquarie Capital Solutions, Macquarie Capital Macquarie Capital Macquarie Capital Macquarie Capital Private Placement (SO MW Gas) Avangrid Renewables, Copenhagen (BOO MW Offshore Wind) Infrastructure Partners Balico Chickahominy (1,650 MW Gas) Bloom Energy Portfolio (100 MW -15 MW Fuel Cell) Consolidated Edison Portfolio (180 MW Wind) Copenhagen (175 MW Fuel Cell) Copenhagen Good Modes (175 MW Gas) Missachusetts (175 MW Gas | Project Coahulla, Mexico Coahulla, Mexico California Califor | Application Project Cocation Canalita Macquarie Capital Control Communication Communication | |

New or updated listing

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To report updates or provide additional information on the status of financings, please call Shravan Bhat at (212) 224-3260 or e-mail shravan.bhat@powerfinancerisk.com

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PROJECT FINANCE

Sponsors Explore Refinancing for Large Chilean Portfolio

The sponsors behind a portfolio of thermal and renewables projects in Chile have hired a financial adviser to gauge interest in a debt refinancing.

EDF Group and **Andes Mining & Energy** have asked **Crédit Agricole** to sound out market appetite for a refinancing of a portfolio that includes 750 MW of operational gas-fired assets as well as a development-stage solar project.

Deal watchers put the size of the potential offering, either in the bank or bond market, at almost \$1 billion.

Jayaprada Viswanadha, who heads up the Crédit Agri-

cole's Americas advisory group, is said to be leading efforts, and teasers were distributed this week, a deal watcher tells *PFR*.

EDF and AME paid \$300 million for four **AES Gener** gas-fired projects earlier this year (PFR, 5/14). They are:

- the 379 MW Nueva Renca combined-cycle plant in the Santiago region, commissioned in 1977.
- the 132 MW Los Vientos peaker in Llay Llay, which came online in 2007
- the 139 MW Santa Lidia peaker which began operations in Cabrero in 2009, and

■ Renca, a 100 MW peaking facility in Comuna de Renca, Santiago, which was commissioned in 1962.

The joint venture financed the acquisition with \$225 million of debt from **BNP Paribas**, Crédit Agricole, **MUFG**, **Scotiabank** and **Sumitomo Mitsui Banking Corp.**, which were advised by law firm **Milbank**.

The plan now, sources that have seen the teaser tell *PFR*, is to marry the fixed capacity revenues from the peakers with the construction risk of a new solar project in order to upsize the debt, possibly by issuing a high yield bond.

The identity of the solar project and the exact weighted average remaining life of the portfolio's power purchase agreements could not immediately be learned.

EDF spokespeople in Paris and Crédit Agricole representatives in New York did not respond to inquiries.



Potential size of the portfolio refinancing

Leeward Rounds Up Tax Equity for Mendota Hills Wind Repowering

≪ FROM PAGE 1

"potentially one or

more unidentified investors," according to a U.S. **Federal Energy Regulatory Commission** filing dated Sept. 25.

Representatives of Citi in New York and Leeward in Houston did not respond to inquiries by press time.

Leeward is in the process of repowering the Mendota Hills project, having decommissioned its existing turbines in June. The repowering is due to be completed in December.

The facility was the first utility-scale wind project in Illinois when it came online in 2003. Its 15-year-old turbines are to be replaced with 29 **Siemens Gamesa** turbines, boosting its capacity from 50.4 MW to 76.125 MW, although its output will be capped at about 70 MW until the third quarter of next year.

Leeward signed a long-term power purchase agreement with **Digital Realty** for the project's full output last year (PFR, 12/6/17) before setting out to obtain financing in March (PFR, 3/7).

Developers are seizing on wind repowerings as an opportunity to reset production tax credits on older facilities before the incentive is completely phased out in 2020. Projects that entered construction in 2016 will qualifed for 100% of the PTC, while those that started construction in 2017 qualify for 80%, those that

start in 2018 are entitled to 60% and those that begin in 2019 earn 40%.

"I would suspect that there is a cost advantage, particularly if you get to reset the ten year PTC period and don't have to pay for some of the site work," says **David Burton**, a partner at **Mayer Brown** and the head of the firm's renewable energy group in New York.

Internal Revenue Service guidance stipu-

"How do you calculate the fair market value for something that is now a subset of another project and could not operate as a stand-alone subset?"

lates that wind projects can requalify for PTCs if the fair market value of their used equipment does not exceed 20% of the project's total value, a condition referred to in the industry as the "80/20 test."

Determining the fair market value of aging site equipment for projects that are candidates for repowering is tricky, however.

"How do you calculate the fair market value for something that is now a subset of another project and could not operate as a stand-alone subset?" says Burton. "The appraisal community has developed methodology to do that but the IRS guidance doesn't tell you how to."

"PTC is measured by the meter, so it's not a question of some of the components not qualifying but really a question of how you do the valuation to apply the 80/20 test," the attorney explains. "That issue is handled by working with an experienced appraiser and by having the parties to the transaction carefully reviewing and thinking about the appraisal methodology."

At the start of the year, Leeward replaced 80% of the turbines at its Sweetwater I and II projects in Nolan County, Texas, using \$160 million of tax equity financing from **GE Energy Financial Services** (PFR, 1/11). However, other sponsors don't seem to be taking to full repowerings with the same vigor.

"I don't know if we're seeing as many repowerings as people expected initially," says **Richard Cogen**, a New York-based partner at **Nixon Peabody** and co-leader on the firm's energy and infrastructure projects team. "The costs of wind generation do keep coming down. The issue is where are they on the cost curve relative to the power prices of renewables in the market place?"

PROJECT FINANCE

Blackstone's GridLiance Lines Up Revolver

GridLiance, the transmission company backed by Blackstone, is preparing to sign a \$65 million revolving credit facility, its second senior secured debt financing, as it accumulates assets in line with its strategy to partner with cooperative and municipally-owned utilities on grid improvements.

The revolver, which is expected to have a tenor of no more than seven years and a margin of 200 basis points or less over the prime rate, will finance operating subsidiary **GridLiance High Plains**.

GridLiance works with smaller, non-investor-owned utilities to help manage grid improvement projects by purchasing individual transmission assets, either in part or in whole, and providing capital and regulatory assistance.

GridLiance High Plains already owns more than 430 miles of transmission lines acquired from **Tri-County Electric Cooperative** and the City of Nixa, Missouri. An additional transaction with the **People's Electric Cooperative**, signed earlier this year, is expected to add a further 55 miles in Oklahoma.

The revolving credit facility will allow GridLiance to draw as much debt as it needs to bring the operating company's leverage in line with its target.

"As a start-up, we're very privileged to have Blackstone providing support," **Alison Zimlich**, GridLiance's cfo, tells *PFR*. "Blackstone's investment will always be part of our plan but like every regulated utility we're financing ourselves through a combination of both debt and equity, and in the case of our regulated utilities we're aiming for 40% debt and 60% equity."

The lender or lenders under the

revolving credit facility could not immediately be identified.

"The lenders we have been speaking to finance other regulated utilities and are familiar with the regulated landscape," says Zimlich.

GridLiance requested the approval of the U.S. **Federal Energy Regulatory Commision** for the revolver on Aug. 16.

Last year, the company tapped **National Cooperative Services Corp.**, which is itself a memberowned cooperative, for its first asset-based financing.

The deal refinanced outstanding long-term debt associated with a 165-mile transmission system in southwest Nevada that GridLiance acquired from **Valley Electric Association** for \$197.8 million in September 2017.

The debt comprises two tranches of senior secured long-term

notes—a \$32.1 million series issued through operating company **GridLiance West** and a \$48 million series issued at the level of holding company **GridLiance Western Holdings**. The debt matures in several tranches beginning in 2022 with the final tranche due in 2048 and bears interest at rates between 4.65% and 7.4%.

Law firm **Eversheds Sutherland** advised GridLiance on the deal.

While GridLiance has so far worked with balance sheet lenders such as NCSC, the company could tap the capital markets as its portfolio of assets expands.

"We're not currently pursuing capital markets transactions, but like any utility we're out there looking to optimize our capital structure," says Zimlich. "I would not preclude a capital market transaction in the future."

BRDE Gets EIB Loan for Brazilian Renewables

Brazil's Regional Development Bank of the Far South (BRDE) has signed an €80 million (\$92 million) financing agreement with the European Investment Bank for renewables projects as the bank looks to diversify its funding sources.

BRDE will use the funds to finance renewables, among other types of social projects, in Paraná, Santa Catarina and Rio Grande do Sul, the government of Rio Grande do Sul said.

"BRDE advances its strategic objective of fund diversification," said the development bank's ceo **Orlando Pessuti**, "expanding the alternatives to the BNDES system."

The National Bank for Economic and Social Development (BNDES) has been a major source of financing for BRDE to on-lend, acting as an accredited institution for BNDES credit operations.

From January to November last year, BRDE had disbursed more than R\$2 billion (\$518 million) of BNDES funds, making it the biggest on-lender of the federal development bank's 41 accredited institutions.

But times are changing. As well as the EIB loan, BDRE raised €50 million in March this year from the French development agency, Agence Française de Développement.

CIP Funds Greek Shop's Texas Wind Farm

Copenhagen Infrastructure Partners provided mezzanine
financing for **Terna Energy**'s
Gopher Creek wind project in
Texas last week.

The Danish investor wrote a \$65 million check for the 158 MW under-construction facility in Scurry County, according to a Sept. 28 press release. **Nor-dLB** provided construction financing, a deal watcher tells *PFR*.

CIP's financial adviser, **CCA Group**, has found a tax equity investor for the project—previously known as Fluvanna II—which is expected to commence commercial operations in the third quarter of 2019.

The project's offtake structure

could not be learned by press time. Officials at CIP in Copenhagen declined to comment while representatives at CCA in Boston, NordLB in New York and Terna in Athens did not respond to inquiries

The deal marks CIP's second mezzanine investment with Terna—a subsidiary of Athensbased conglomerate **GEK Terna Group**—after the duo financed the adjacent 155.4 MW Fluvanna I facility two years ago (PFR, 11/29/16).

HSBC, NordLB, **Morgan Stanley** and **Rabobank** provided the construction financing for Fluvanna I, which bridged to a \$150 million tax equity investment from **Goldman Sachs**. ■

PROJECT FINANCE •

Expect Bond Deals for New Build Gas-fired Projects, Says MUFG's Pesce

As interest rates creep up, privately placed, fixed-rate debt has a role to play in the financing of gas-fired projects, with at least one such deal for a greenfield, new-build project likely to come to the market in the next year, says **Louise Pesce**, managing director at **MUFG**.

"There's now a wealth of experience of building the CCGTs," she said at a press briefing in New York on Monday. "There's less concern about construction risk."

Bringing institutional investors like **Prudential Capital Group** and **Metlife** into debt financings allows project sponsors to obtain longer tenors than they might muster in the bank market, while refinancing existing bank loans in the capital markets frees up lenders' balance sheets for more construction deals.

It also allows borrowers to lock in a low coupon, without the need for an interest rate swap, amid expectations that rates are on the rise.

Financing new-build gas-fired

projects with institutional debt is not a completely novel formula.

NETBACK

At the end of 2016, for example, **Invenergy** and **First Reserve**'s \$1 billion debt financing for their 1.5 GW Lackawanna Energy Center project near Scranton, Pa., included about \$200 million of fixed-rate institutional debt with Prudential acting as institutional placement advisor (PFR, 1/6/17).

However, institutional investors will pick projects with care and are averse to taking any merchant risk, said Pesce. "Everyone's cautious," she noted. "Location is of prime importance."

Given that most of the recent combined-cycle gas-fired projects in the Northeast have been financed on the basis of financial hedges rather than long-term power purchase agreements, putting a long enough contract in place will be a key challenge.

"Private placement investors are only going to be looking out as long as your contract, and hedges tend to be five years," said Pesce. "We've seen 10-year gas

netbacks. Those could provide a long enough tenor."

Indeed, the Lackawanna project that Invenergy financed partly with a private placement in 2016 had a 10-year power netback agreement with **Cabot Oil and Gas Corp.** The debt is understood to have a 7.5-year tenor.

Moxie Energy and Caithness Energy's 1,050 MW Freedom gas-fired project in Luzerne County, Pa., also has a netback hedge but was financed in 2015 in the bank market (PFR, 11/10/15).

The number of investors that are active in the private place-

ment will be a limiting factor, however, and the subset of those investors that are in a position to crunch the numbers on a quasimerchant project in **PJM Interconnection** is even smaller.

For these reasons, a project of Lackawanna's size is unlikely to be debt financed entirely in the private placement market. "You're not going to talk about a 900 MW project going into the private placement market," said Pesce.

Pesce is based in Los Angeles but was in New York for **AWEA**'s Wind Energy Finance & Investment Conference – East, at which she on Oct. 2.

Bond Deal Touted for PJM CCGT

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tiall

a lower-priced debt product, on the condition that Ares extend the tenor of its six-and-a-half year gas netback agreement.

To date, only two such projects have been financed on the basis of a netback hedge—**Moxie Energy** and **Caithness Energy**'s 1,050 MW Freedom project in Luzerne County, Pa. (PFR, 11/10/15), and **Invenergy**'s 1.5 GW Lackawanna facility in Scranton, Pa. The latter has a 10-year netback with **Cabot Oil and Gas Corp.** and was financed, in part, with a private placement (PFR, 1/6/17).

Negotiations are underway to extend Hill Top's netback to between eight and ten years. The identity of the hedge counterparty could not immediately be learned.

Officials at Ares, Morgan Stanley and the bank lending group in New York either did not respond to inquiry by press time or chose not to comment.

MUFG managing director **Louise Pesce** hinted at the emergence of fixed-rate private placements notes as a trend in CCGT financing in a press briefing last week (see story, above).

Bank debt for new-build PJM CCGTs has generally been priced at 325 basis points over Libor but a combination of rising interest rates and increasing institutional investor comfort with construction risk could mean that banks lose out on term loan business.

At least one bank, however, is still pitching Ares-EIF to provide ancillary services such as letter of credit and revolving credit facilities, a deal watcher points out.

Hill Top has been the talk of the town since it was the only greenfield CCGT to clear this year's higher-than-expected PJM capacity auction (PFR, 5/24).

Alberta Government Floats Solar RFP

The **Government of Alberta** has issued a request for proposals for large-scale solar energy providers to meet over half of its annual electricity needs.

The provincial government aims to meet about 55% of its yearly electricity needs through the RFP, via the purchase of renewable energy certificates equivalent to 135,000 MWh of solar-generated electricity annually for the next 20 years.

The new solar project contracts will replace existing 'green energy' contracts in the western Canadian province and are expected to be in place before spring 2019.

"Alberta has the best solar resources in Canada and it is time to take advantage of this incredible opportunity right in our backyard," said **Shannon Phillips**, Minister of Environment and Parks, in a statement.

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PROJECT FINANCE

U.S. Bank Hits Tax Equity Milestone

The latest tax equity deals syndicated by **U.S. Bancorp.** have pushed the total amount of renewable energy tax equity it has placed with third-party investors to over \$1 billion, though assets may remain scarce for the rest of 2019.

The bank's St. Louis-based syndicate desk has brought corporations like **Starbucks** (PFR, 5/25/17), **Progressive Casualty Insurance Co.** (PFR, 9/21) and **Publix Super Markets** (PFR, 9/21) into the tax equity market in recent times.

"There are more and more entrants into the space, which is providing a counterbalance to the reduced capacity from established investors [due to tax reform]," says **Chris Roetheli**, head of the bank's renewables tax equity syndication business. "There will continue to be high competition for a finite pool of assets in 2019, whereas 2020 will be a big year as the market catches back up."

His team has closed over 30 transactions with 15 investors and 16 sponsors since first offering the product four years ago (PFR, 9/24/15), though some of these investors are tight-lipped about their involvement.

Tax equity yields are said to have fallen this year to around 6.25% on an internal rate of return

basis for projects with utility power purchase agreements and 7.5% for assets financed on the basis on hedges.

"Yields have hit the bottom of

"We like the resi solar space and we're trying to bring more third-party investors into it"

the barrel," a financial adviser with tax equity expertise tells *PFR*. "There's nowhere left for them to go."

Roetheli will be hoping that tax

equity yields improve, particularly for hedged projects, as utility-scale solar developers recover after being hit with uncertainty around U.S. tariffs on components and steel.

In the meantime, his team is looking for opportunities in residential and community solar as well as in states with government-backed solar initiatives like Massachusetts and Illinois.

"We like the resi solar space and we're trying to bring more third-party investors into it," he says. "Sure, there's more due diligence than utility-scale but the fundamentals and ticket sizes are the same."

MERGERS & ACQUISITIONS

Buyers Circle Mexico Cogen

Private equity firms are believed to be eyeing **Abengoa**'s soon-to-be-completed A3T cogeneration project in the Mexican state of Tabasco.

The deal could resemble Abengoa's sale of its majority stake the 907 MW Norte III gas-fired project to **Macquarie Capital** and **Techint Engineering and Construction** last September (PFR, 9/12/17), say deal watchers.

The 220 MW A3T facility was excluded from Abengoa's Mexican insolvency proceeding in January 2017 after the Spanish conglomerate defaulted on local short term bonds in November 2015.

A3T—short for Abent 3T—is located in the town of Centro, Villahermosa, with commercial operations expected in December.

Abengoa almost went bank-

rupt in 2015 and has been remodeling its capital structure ever since. As part of the most recent agreement with its investors, announced on Sept. 30, the company intends to shift some of its debt to A3T by issuing a €95 million (\$112 million) convertible bond paying 9% payment-in-kind interest and 0.25% cash interest.

For more details on Abengoa's latest debt restructuring, see the Oct. 1 report in *PFR*'s capital markets sister publication, *Global Capital* (GC, 10/1).

Information surrounding A3T's original construction financing could not be learned, but Abengoa told investors in a March 2018 presentation that \$91 million from escrow was funded in April with the remainder to be released after the sale of the company's remaining 16.5% stake in **Atlantica**

Yield to Algonquin Power & Utilities Corp. (PFR, 4/24).

Abengoa spokespeople in Seville declined to comment on either the financing or sale process, adding only that "A3T is one of the divestment assets considered in the company's viability plan".

The company says that 75% of the project's capacity has been contracted under power purchase agreements, with final negotiations underway to bring the proportion of contracted capacity up to 90%.

One of the offtakers, Mexican poultry company **Industrias Bachoco**, signed up for 63.3 MW over 10 years in December 2017.

In the past few months, a telecommunications company and food company, both unnamed, signed 20 MW contracts lasting nine and 10 years respectively.

Whitehall Advised York on Solar Sale

Whitehall & Co. advised York Capital Management Global Advisors on its recent sale of an Idaho solar project to sPower.

The boutique investment bank was tapped to market the 40 MW Idaho Solar 1 project in Kuana County as long ago as March of last year, *PFR* reported at the time (PFR, 3/28/17).

The project has been online since 2016 and sells its output to **Idaho Power Co.** under a 20-year power purchase agreement. ■

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MERGERS & ACQUISITIONS •

Nevada Geothermal Project Finds Newest Owner

Clean Energy Partners has sold an operational 49.5 MW geothermal project in Nevada to a developer.

Salt Lake City, Utah-based **Cyrq Energy** bought the Blue Mountain facility—formerly known as Faulkner I-on Sept. 4, according to a Sept. 27 filing with the U.S. Federal Energy Regulatory Commission.

Originally brought online by Nevada Geothermal Power in Humboldt and Pershing counties in 2009, with a loan guarantee from the **Department** of Energy, the Blue Mountain project sells its full output to Nevada Power under a 20-year power purchase agreement (PFR, 5/9/08).

The project underperformed in its first years of operation, however, and was foreclosed on by mezzanine lender EIG Global Energy Partners in 2013 (PFR, 4/2/13).

The site was delivering only

70% of its expected output, according to a report in Fortune, and AltaRock Energy was brought in to improve the project's capacity factor in 2014 (Fortune, 5/20/15).

Clean Energy Partners, which at the time was known as Baseload Clean Energy Partners and a wholly-owned subsidiary of AltaRock Energy, bought the asset from EIG in 2015 (PFR, 3/9/15).

AltaRock is a portfolio compa-

ny of Khosla Ventures, Vinod Khosla's venture capital firm.

The purchase price paid by Cyrq could not be learned. Cyrq Energy cfo John Perry in Salt Lake City and spokespeople for AltaRock in Seattle did not immediately respond to inquiries.

Cyrq's 25 MW Soda Lake 3 geothermal project provides power to the University of Utah through a 25-year Rocky Mountain Power green tariff (PFR, 11/16/17).

Hedge Fund Acquires Rare Wyoming Solar Project

Centaurus Renewable Energy has picked up another 174 Power Global solar project, this time the 80 MW Sweetwater facility in Wyoming, which is set to increase the state's installed solar capacity by a factor of more than 30.

The acquisition of the under-construction project, located in Sweetwater County, follows Centaurus' purchase of 174 Power's Techren facilities in Nevada in late August (PFR, 9/21).

U.S. Bank is lined up to provide tax equity for the facility, which is expected to commence operations Dec. 28, according to an Oct. 1 filing with the U.S. **Federal Energy Regulatory** Commission

The Sweetwater solar project has a 20-year power purchase agreement with Rocky Mountain Power.

Coal-producing Wyoming has the secondlowest installed solar capacity of any U.S. state,

with just 2.46 MW, according to the Solar Energy Industries Association.

Officials at Centaurus in Houston, 174 Power in Irvine, Calif., and U.S. Bank in St. Louis, Mo., did not immediately respond to inquiries.

Canadian Firm to Buy Stake in Hydro Duo

Connor, Clark & Lunn Infrastructure is buying a majority stake in a pair of hydropower plants located in British Columbia, totaling approximately 50 MW.

The Toronto-based firm has entered into an agreement with Greengen Holdings and Sts'ailes Energy Development Limited Partnership to acquire a majority stake in Bremner Trio Hydro Corp., which owns the two construction-stage, run-of-river projects.

Canadian law firm McCarthy Tétrault counselled CC&L on the transaction, CC&L declined to disclose details pertaining to the use of financial advisers.

Headwater Capital Consulting was financial adviser to Sts'ailes. Bennett Jones and Miller Titerle & Co. provided legal counsel to Greengen and Sts'ailes, respectively.

The projects are situated near Harrison Lake

in southwestern B.C. and comprise the 23 MW Bremner Creek and 27 MW Trio Creek units.

British Columbia Hydro & Power Authority has a 40-year power purchase agreement for the full output of the facilities, through the BCH Clean Power Call; a 2008 request for proposals aimed at ensuring that at least 90% of all electricity generated in the province comes from renewable generation.

"The transaction arose outside of an auction process when the developer sought a capital partner," said a CC&L spokesperson based in Toronto. Both projects will require approximately \$200 million worth of capital, according to CC&L.

Construction on Trio Creek is underway, while the Bremner Creek project is expected to commence construction in early 2019.

D.E. Shaw Lines Up Solar Acquisition with Tax Equity on Standby

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the prospective tax equity investor, according to a Sept. 28 filing with the U.S. Federal Energy Regulatory Commission.

The proposed sale price could not immediately be learned. Officials at DESRI in New York did not respond to an inquiry by press

The project is due to be online on Oct. 15. at which point it will begin selling its output into CAISO at market prices for about a year. A 15-year power purchase agreement with Southern California Edison does not kick in until Oct. 1, 2019.

Wells Fargo invested \$190 million in Sempra Renewables' 200 MW Great Valley solar portfolio in Fresno, Calif., earlier this summer (PFR, 8/9).

A Wells Fargo spokesperson in New York did not immediately respond to an inquiry about the size of the check for Willow Springs.

MERGERS & ACQUISITIONS

ECP Finds Buyer for Wheelabrator

Energy Capital Partners has found a buyer for its waste-to-energy portfolio company **Wheelabrator Technologies** after weighing exit strategies including an initial public offering.

Macquarie Infrastructure Partners, which is part of Macquarie Infrastructure and Real Assets, has agreed to buy the company.

Credit Suisse and UBS advised Wheelabrator on the sale, with Latham & Watkins as legal counsel. Greentech Capital Advisors, RBC Capital Markets and law firm Kirkland & Ellis advised MIP.

The purchase price was not disclosed.

ECP's search for a buyer began last August (PFR, 8/15/17), three years on from the firm's acquisition of the business from Houstonheadquartered **Waste Management** for

\$1.94 billion (PFR, 7/30/14).

In July, ECP filed a confidential S-1 form with the **U.S. Securities and Exchange Commission** to float 49% of Wheelabrator's shares on either the **New York Stock Exchange** or **Nasdaq** (PFR, 8/3).

Wheelabrator is the second largest U.S. waste-to-energy business, according to ECP's website. It has a 767 MW portfolio of contracted and operational projects in the U.S. and the U.K.

Of Wheelabrator's 26 projects, 19 are waste-to-energy facilities in the U.S. and U.K., three are waste fuel facilities and four are ash monofills.

Representatives at **Macquarie Group** in New York, ECP in Short Hills, N.J., and Wheelabrator in Portsmouth, N.H., did not immediately respond to inquiries.

STRATEGIES

Clearway Raises \$75M with Equity Offering

Yield company **Clearway Energy** priced a capital raise at \$19.15 per share two weeks ago, raising about \$75 million toward its acquisition of the Carlsbad gas-fired project in California from **NRG Energy**.

The offering, underwritten by **UBS**, closed on Sept. 27.

The offer price represented a roughly 4.25% discount to the closing price on Sept. 23, the day before the capital raise was announced, but the stock subsequently dipped and was trading between \$19.19 and \$19.35 on Oct. 1.

The proceeds of the equity issuance will go toward Clearway's \$365 million acquisition of the 527 MW contracted Carlsbad gas-fired project in San Diego County (PFR, 9/26).

The acquisition is expected to close in December. \blacksquare

PEOPLE & FIRMS

Murray Quits Apollo

Infrastructure credit doyen **Thomas Murray** resigned from **Apollo Global Management** in September, *PFR* has learned.

The former global head of energy and project finance at **WestLB** disagreed with Apollo's management over its infrastructure lending strategy, say market watchers.

Competition among non-bank lenders has intensified in recent years as big names have entered the space, and Murray is said to be in discussions with several institutions about setting up a new platform.

Murray declined to comment when contacted by *PFR* and an official at Apollo in New York would neither confirm nor deny that he had quit.

An industry veteran with some 25 years of experience, Murray is particularly well known for his 10 years at German *Landesbank* **WestLB**, between 2002 and 2012, where he was global head of energy and project

finance in New York.

Before that, he was already considered a strong syndicator when he ran loan syndication at **Credit Suisse First Boston**. "He knows his stuff," said a loans official in 2002 when Murray moved to WestLB (PFR, 11/18/02).

Murray left WestLB in 2012, along with **Michael Pantelogianis** and **Ralph Cho**, as the German bank wound up its project finance business as a condition of receiving government aid (PFR, 8/21/12).

While Pantelogianis and Cho set up shop at South Africa-based lender **Investec**, Murray instead joined Apollo in 2014 as the firm sought to expand its power and infrastructure credit business (PFR, 9/18/14).

Murray cut his teeth in successive project finance roles at **NatWest Markets**, **Banque Paribas** and **GE Capital** in the nineties, according to his profile on professional networking site LinkedIn.

DESRI Fills C-suite Positions

D.E. Shaw Renewable Investments, the wind and solar private equity arm of **D.E. Shaw & Co.**, has made two c-suite appointments in the past two months.

Stan Krutonogiy joined the firm as cfo in September, after almost 20 years with **Citi**, shortly behind private investment firm founder **Chris Clevenger**, who came aboard as chief operating officer in August.

DESRI's previous cfo of three-and-a-half years was **UBS** stalwart **John Dalby**.

Krutonogiy's last position at Citi was director and co-head of the bank's utility-scale alternative energy finance business. Back in 2005, he was part of a **Citigroup Global Markets** team that filed for a **World Intellectual Property Organization** patent for a "system for structured finance using deferrable preferred securities."

Clevenger, meanwhile, was previously managing member of **Owl Creek Partners**, the Colorado-based private investment firm he co-founded in 2007.

Clevenger was also previously chief executive of Owl Creek-backed agriculture equipment manufacturer **Kifco** and director at **Republic Financial Corp.**

DESRI is in the process of acquiring the 100 MW Willow Springs solar project in Kern County, Calif., from **First Solar** (see story, page 1).

Spokespeople for Citi and D.E. Shaw in New York declined to comment.

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PEOPLE & FIRMS

Ex-W.H. Official Named Chairman of Energy Storage Co.

A former U.S. government official has been named U.S. chairman of U.K. energy storage company **Highview Power**.

David Sandalow, a former under secretary of energy (acting) and assistant secretary for policy and international affairs, is taking over as chairman of the company's U.S. subsidiary.

Sandalow had already served as an adviser to Highview Power, which develops and deploys utility-scale, long-duration liquid air energy storage (LAES) systems for utilities and distributed power systems.

Highview is predominantly owned by some 100 private investors, including **Colin Roy**, the company's executive chairman since December and the co-founder of New York-based investment bank **Greenhill & Co.**

Its new U.S. chairman, Sandalow, advised U.S. presidents on environmental and energy policy at the U.S. **Department of Energy** between 2009 and 2013 and oversaw the department's annual budget of over \$3.5 billion.

Other positions held by Sandalow include assistant secretary of state for oceans, environment and science; senior director on the **National Security Council**; and various roles at academic institutions and industry associations.

"Liquid air energy storage provides longduration energy storage which is already in demand and is going to be in increasing demand in the years and decades ahead," Sandalow tells *PFR*. "The integration of renewables into the grid is just one reason that long duration energy storage can make a big difference."

The company's LAES technology is based on the principle of air liquefaction, in which air is cooled to -320°F and stored cryogenically. A 700-fold expansion in volume from liquid back to gas releases the stored energy, which can be used to drive turbines to generate electricity.

"Liquid air energy storage provides long duration energy storage which is already in demand"

The technology can deliver between 10 MW and 200 MW and store between 40 MWh and 1.2 GWh of energy. The company claims it has an economic useful life of over 30 years and is half the cost of lithium-ion batteries.

Highview has so far completed two projects, both in the U.K., the latest being the 5 MW/15 MWh Pilsworth LAES plant, located at a landfill in Bury, Greater Manchester.

Supported by £8 million (about \$10.4 million) of British government funding and

brought online in April, the Pilsworth project is the first grid-scale application of Highview's LAES technology.

The first project, the 350 kW/2.5 MWh LAES Pilot Plant in London, has now been relocated to the **University of Birming-ham**'s Centre for Cryogenic Energy Storage to support academic research.

"I'd like to see the company grow in a number of different geographies including in North America and Europe and Asia," says Sandalow. "I think this company has enormous potential to contribute to the transformation of the grid."

In February, the company announced a collaboration with **SNC-Lavalin** to develop and execute LAES projects in the U.S. and Canada that satisfy long-duration energy storage requirements for utilities, independent power producers and other energy companies.

"(Sandalow's) counsel will be very valuable as we work with our partners, utilities, grid operators, and government officials to deploy LAES onto the grid and enable wind and solar to penetrate our baseload power generation mix at increasing levels," said **Javier Cavada**, president and ceo of Highview Power, in a statement. Cavada, the former president of engineering company **Wärtsilä**'s energy solutions division, joined Highview last month.

Wells Fargo Adds to Tax Equity Team

A former finance official at a renewables developer has joined **Wells Fargo**'s renewable energy and environmental finance team in San Francisco.

Kevin Ku started at the bank Oct. 2 as an asset manager, overseeing the firm's portfolio of tax equity investments, primarily in wind and solar projects.

Ku was previously at **Light-source BP**, where he was director of structured finance until July, according to his LinkedIn

profile. His departure from the development shop happened around the same time as that of **Wesley Allred**, who had been director of finance and strategy (PFR, 9/19).

Ku had spent just over a year at Lightsource, helping establish the company's network of capital providers in the U.S. for tax equity, debt and cash equity. He also sourced and performed diligence on over 60 solar project and platform acquisition oppor-

tunities and structured and negotiated term sheet and purchase agreements on 400 MW of solar assets.

He began his career with Nevada utility **NV Energy**, where he was a financial analyst for renewables for nearly two and a half years, before moving to **EDP Renewables**, where he was a finance manager, in 2008.

At EDP, he closed tax equity financings totaling \$850 million, across 10 tax equity partnerships

holding over 3 GW of wind projects with eight different financial institutions, before moving to solar asset manager **Spruce Finance** in 2013.

As director of capital markets at Spruce, Ku raised \$350 million in project capital across three transactions for residential solar systems arranged in six tax equity funds.

Ku declined to comment on his most recent move to Wells Fargo. ■

PEOPLE & FIRMS

Nordholm Exits Starwood

Brad Nordholm is leaving **Starwood Energy Group Global**, the private equity business he used to run as ceo, to take up the position of chief executive at the **Federal Agricultural Mortgage Corp.**, also known as Farmer Mac.

Nordholm had been with Starwood Energy since 2006, when he joined as ceo and managing director from **Tyr Energy**, which he co-founded with a former **Aquila** colleague and where he was also chief executive (PFR,

8/11/06)

After 10 years running Starwood Energy, Nordholm began to withdraw from the leadership role in 2016. He was co-head of the group alongside **Himanshu Saxena** from 2016 to 2017 and became vice chairman and senior managing director in 2017 with a focus on investor relations.

"Throughout his tenure at Starwood Energy, Brad provided strong leadership to the firm," said **Barry Sternlicht**, chairman and ceo of **Starwood Capital**, in a statement. "He is universally respected by investors, colleagues, and across the energy industry. We are proud of him and wish him well in his new role at Farmer Mac."

He will take over officially from Farmer Mac's acting president and ceo, **Lowell Junkins**, on Oct. 15.

Established by federal charter in 1988, Farmer Mac created a secondary market for qualified farm real estate loans. It was listed on the **New York Stock Exchange** in 1999.

J.P. Morgan Investment Banker Moves Shop

An executive director in J.P. Morgan's energy investment banking group has moved to a European bank.

Neil Davids joined **BNP Paribas** as managing director, head of power and renewables sponsor coverage in late August.

"The bank is making a global push towards renewables," a market watcher says, also highlighting the importance of professionals with acquisition finance experience at traditional project finance houses.

Davids joined J.P. Morgan in 2008 as an associate and eventually led the power generation and renewable energy segment of the practice.

He ran the sale process for **Ever-source**'s 1.2 GW New Hampshire generation portfolio last year, along with **Peter Kelly** (PFR, 2/28).

In 2017 he worked on the sale of **LS Power**'s Decatur Energy Center to **Capital Power** (PFR, 4/13/17), **Brookfield Asset Management**'s acquisition of **Terraform Power** and **Terraform Global** (PFR, 1/23/17) and **TransCanada**'s sale of its generation assets to **ArcLight Capital Partners** and LS Power (PFR, 11/1/16).

He began his financial services career with **Capstar Partners** in 2002. BNP Paribas spokespeople in New York did not immediately respond to an inquiry about his new role.

Jefferies Investment Banking Team Takes Shape

Several former **Morgan Stanley** power and utilities bankers have completed their move to Jefferies.

Co-heading the revitalized Americas power, utilities and infrastructure group at **Jefferies** are managing directors **Christopher Yonan** and **Scott Beicke**.

Yonan is known especially for working on leveraged finance deals in the power and midstream gas sectors at Morgan Stanley, where he was a managing director and senior originator, while Beicke's focus was on mergers and acquisitions.

Among the deals Beicke has worked

on in recent years is the divestiture by **Engie** of its 10 GW U.S. generation portfolio, which was announced in early 2016 (PFR, 2/25/16).

Another arrival at Jefferies is project finance specialist **Andre LaBrie**. An executive director at Morgan Stanley, his rank at Jefferies is senior vice president. All three started in their new roles in September.

The moves come after **Ivan Oliveros**, a former project finance banker at **Sumitomo Mitsui Banking Corp.**, joined Jefferies in July, bolstering its Latin American presence (PFR, 6/11).

Solar Sponsor Finance Official Heads to Tesla

Tesla has hired a capital markets professional who previously worked in project finance at a solar developer in California.

John Lin, who had worked at **Coronal Energy** in Los Angeles since 2017, joined the electric vehicle, battery and solar company this year, according to his LinkedIn profile.

He was previously an investment banking associate at **MUFG** in New York and Los Angeles and before that an analyst at **Crédit Agricole**.

Citi and **Credit Suisse** were the bookrunners on the most recent securitization from Tesla's **Solar-City** subsidiary, a \$130.91 million dual-tranche offering that was priced in December of last year (PFR, 12/11/17).

It was not immediately clear who would take on Lin's responsibilities at Coronal following his departure. A spokesperson for the developer in Charlottesville, Va., did not immediately respond to an inquiry.

• QUOTE OF THE WEEK

"There will continue to be high competition for a finite pool of assets in 2019, whereas 2020 will be a big year as the market catches back up."

Chris Roetheli, head of **U.S. Bank**'s renewables tax equity syndication business, which recently hit a milestone (see story, page 8).

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