

## PROJECT FINANCE

# NewsWire

June 2018

## Big Changes in How New Power Projects Connect to the Grid

by Caileen Kateri Gamache, in Washington

A Federal Energy Regulatory Commission order in mid-April made significant changes in how power plants of more than 20 megawatts in size can connect in the future to the utility grid.

The FERC order is Order No. 845.

Most utilities and grid operators that own or operate parts of the US transmission grid will have to revise their interconnection procedures and amend the form of large generator interconnection agreement or “LGIA” they use.

This includes grid operators like regional transmission organizations — called “RTOs” — and independent system operators — called “ISOs” — as well as individual utilities outside RTO or ISO footprints. There are limited exceptions for state and other government entities. Grid owners or operators that are not subject to FERC regulation because they are not engaged in interstate commerce, but that want reciprocity with the regulated parts of the grid, will also need to comply.

The current process for connecting large power plants to the grid can be slow, unpredictable and costly, and it can ultimately sink a project when material contracts and financing opportunities are contingent on blown development deadlines.

The process is also a challenge at the back end of construction of renewable energy projects, since most such projects in the United States face deadlines to be / *continued page 2*

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### IN OTHER NEWS

**COAL AND NUCLEAR POWER PLANT** retirements may be halted for two years under an order that the US Department of Energy appears to be moving closer to issuing.

A 40-page memo that the department sent the National Security Council on May 31 ahead of a meeting leaked immediately, despite a header warning that that memo was “privileged and confidential,” subject to “attorney-client privilege” and “not for further distribution.” The National Security Council is a committee of cabinet secretaries and other top administration officials involved in defense and foreign policy issues that is supported by a White House staff. The group meets at the White House.

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## Interconnection

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in service to qualify for federal tax credits, and they cannot be in service before they are interconnected and in a position to get their electricity to market.

Order No. 845 was largely driven by developer complaints about lack of transparency and control over the interconnection process, including “systemic inefficiencies and discriminatory practices” reported by the American Wind Energy Association.

The order will affect the interconnection process for developers in eight key ways.

### Option to Build

Under current procedures, project developers generally have the option to build interconnection facilities and network upgrades — and convey them to the grid — only if the grid operator or owner determines it cannot complete construction by the in-service, initial synchronization, and commercial operation dates requested by the developer. The grid operator or owner is required to use “reasonable efforts” to stay on schedule, which is a difficult standard to judge and enforce. With limited exceptions, there is generally scant recourse for costly delays.

## New interconnection rules will make it easier to add large batteries to existing power plants.

Moreover, the project developer is required to pay all actual construction costs the grid incurs, even if they exceed cost estimates. There is little incentive for the grid operator or owner to find least-cost construction options.

Order No. 845 allows a project developer to take over design and construction of the intertie and any stand-alone network upgrades for a project irrespective of the grid operator or owner’s capabilities, provided there are no conflicting state or local

prohibitions. This will allow developers to have more control over the timing and costs of interconnection.

Certain elements remain in the grid operator’s court. Network upgrades that are required for multiple projects, rather than those that “stand alone” for the use of a specific project, must be constructed by the grid owner. The grid owner (and, where different, operator) will also retain oversight over the design, procurement and construction activities of any project developer that chooses the option to build.

### Surplus Interconnection Service

A new power project is studied and interconnected as if it will operate at full capacity at all times.

The process ignores the reality that most solar facilities do not operate at night, a peaker unit may operate only on certain days at various times of the year, and wind facilities rarely have output equivalent to the aggregate capacity of each wind turbine.

This means the grid can often handle significantly higher levels of capacity than actually used. Order No. 845 frees this trapped resource by requiring grid operators and owners to permit a new project to use the “surplus interconnection service” for itself, an affiliate or for sale to a third party of its choice at the same interconnection point.

The surplus service will be tied to the original project’s LGIA, and the original project may dictate the amount, time and duration, and other details of use of surplus capacity. If the original project’s LGIA is terminated for any reason, then the surplus service will terminate.

If the original power plant is retired from service, then the associated surplus service will expire, with one limited exception to account for unexpected early retirements (in which case the surplus service still must terminate within a year).

This will make financing projects that rely on surplus service tricky, since they will be exposed to risk that the original project will default on obligations under its interconnection agreement or be retired from service.

An obvious opportunity for existing project owners is the addition of energy storage to use excess interconnection service.

Tweeting on the heels of the order, Jason Burwen, vice president for policy at the Energy Storage Association, said the co-location of storage with existing power plants could accelerate soon after grid operators and owners adopt these revisions later this year.

Although the total generating capacity at the point of interconnection may increase, the total combined output at the point of interconnection cannot exceed the maximum level allowed under the interconnection agreement for the original project. Grid owners and operators must develop an “expedited process” for transferring surplus interconnection service. This may include, for example, reliability-related studies to confirm that the combination of the original and surplus interconnection does not require new network upgrades. The process must be separate from the interconnection queue. An agreement among the original project, the surplus customer and the grid will be necessary.

### Interconnection Below Capacity

As a complement to the ability of projects to use surplus interconnection service, Order No. 845 also allows new projects to request interconnection service at levels below total project capacity.

This will help projects reduce interconnection costs previously incurred for unneeded service.

AWEA commented that this will be especially helpful to large wind projects because collector system losses often result in a situation where the maximum real power output from a project is materially lower than the aggregate capacity of individual turbines.

Another big winner is energy storage, as it may be combined with a variable resource — like a wind or solar project — to extend production time without increasing total capacity. A 40-megawatt solar plus 20-megawatt storage project may be studied at 40 megawatts rather than 60 megawatts, which could streamline studies and reduce overall interconnection time and costs.

Any project that takes advantage of the option to request less-than-full capacity service will be required to develop controls to ensure the project does not export to the grid more output than its service level permits. Grid operators and owners are authorized to adopt enforcement mechanisms, including penalties, for projects that violate these limits. The risk of such penalties will have to be added to diligence checklists.

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According to the memo, the Department of Energy is considering ordering US grid operators to buy electricity or capacity from a list of designated coal, nuclear and some oil-fired power plants for the next 24 months at high enough prices to dissuade the owners of the power plants from retiring them.

The memo calls these “fuel-secure” power plants.

It says the step is needed because the shift to more gas-fired power generation makes the United States “increasingly dependent on natural gas pipelines, which represent a major point of vulnerability . . . due to the limits of protection available to thousands of miles of pipeline networks.”

The memo suggests that owners of coal and nuclear plants outside organized markets would be ordered to continue operating “according to their existing or recent contractual arrangements” with utilities. It also suggests the Department of Energy is setting up a “strategic electric generation reserve,” but provides no details about what it is or how it would work.

The memo has the feel of an effort to justify a result that the US President promised to coal miners during the 2016 election campaign rather than an honest effort to deal with the problem of security of the power grid.

The basic flaw in the argument is that if gas-fired power plants are vulnerable and coal and nuclear are secure because they can store large amounts of fuel, then why are not wind and solar even more secure because wind and sunlight do not need to be stored and cannot be blocked. If vulnerability of fuel or electricity supply were truly the issue, then should the government not also be considering adding storage, creating redundancy through micro-grids and promoting distributed generation? There is no suggestion in the memo that these topics were even considered.

US agencies are already in the process of making an inventory of */ continued page 5*

## Interconnection

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### Provisional Interconnection

A project may be able to interconnect under the new rules before the full interconnection process has been completed for the project.

Grid operators and owners will be required to maintain and periodically — at their discretion — update studies to determine the level of capacity that is available for provisional interconnection on the grid. Any project can request provisional interconnection service to use this capacity, but higher-queued projects will have priority.

If updated studies are required to confirm the available maximum provisional interconnection service available for an interested project, then the project will be required to pay for such studies. FERC anticipates the studies will be streamlined, as they will be based in part on the results of other available studies.

This could go a long way to addressing the issues that wind projects will face in late 2020 as they rush toward that deadline to be placed in service to qualify for federal production tax credits at the full rate. Solar developers will face a similar crunch at the end of 2023 to qualify for investment tax credits at the full 30% rate.

Grid operators and owners will have to come up with forms of “provisional large generator interconnection agreements” for use with projects receiving provisional interconnection service while the projects are still going through the full interconnection process.

Projects must assume all risk related to changes between the provisional service and the permanent service, including cost responsibility for upgrades, interconnection facilities, system protection facilities and output limits that arise during the full study process. If a project can manage such risks, then provisional

service will allow the project to start earning revenue earlier than would otherwise be possible.

### Transparent Models

Developers must make significant decisions about project location, size, technology, interconnection points and development timing when submitting an interconnection request.

Although grid practices vary in different parts of the country, these decisions often must be made without the benefit of data necessary to appreciate how the request will be evaluated. A design change with minor commercial impact could significantly affect the interconnection process and costs. And when a project developer is surprised by unexpectedly high costs, there is little evidence available to confirm accuracy or appropriateness so that the developer can push back.

Order No. 845 directs each grid operator to maintain on its OASIS site or a password-protected website the following: base power flow, short circuit and stability databases, including all underlying assumptions, and contingency list, network models and underlying assumptions reasonably representing those used during the most recent interconnection study and representing current system conditions, and a list of all generation and transmission projects. The grid can require confidentiality agreements for commercially sensitive information or critical energy infrastructure information.

Standards for what information must be available should help “level the playing field” for developers in different regions.

They will help developers in regions where information is historically limited make more informed decisions and help keep projects that are not viable from entering the queue, and reduce the number of queue withdrawals, the need for re-studies and other compensating measures. This, in turn, should make the interconnection queue process more streamlined for the benefit of both developers and grid operators.

### Contingent Interties

FERC currently requires grid operators and owners to identify the unbuilt interconnection facilities and network upgrades that they are assuming will have been completed by the in-service date a new project is requesting.

If these “contingent facilities” are not, in fact, timely

Power projects may be able to connect to the grid on a provisional basis, thus helping to make in-service deadlines.

completed, it could delay a project and necessitate re-studies and cause significant cost increases.

Under Order No. 845, the grid operator must divulge its method for identifying contingent facilities, and explain why each specific contingent facility was identified and how it will affect the new project seeking interconnection.

This information must be provided at the close of the system impact study phase. Upon request, the grid operator must also provide the project developer with an estimate of interconnection costs and in-service dates for each contingent facility, provided the information is readily available and not commercially sensitive.

This proposal was widely supported and is expected to allow developers to better assess risk to proposed new projects and allow them to make earlier, more informed decisions about whether to withdraw from the interconnection queue.

FERC declined to impose a standard method for identifying contingent facilities, declaring that “it is not clear a single method would apply across different queue types and footprints,” but it left open the possibility that harmonization may be appropriate in the future.

## Energy Storage

FERC broadened how it defines “generating facility” to include a battery or other storage device. The term now includes “a device for the production and/or storage for later injection of electricity.”

This should make interconnection easier for standalone storage facilities and also make it easier to add batteries to existing or new power plants.

Many grid operators already permit owners of storage facilities to request interconnection service as a generation resource. FERC previously adopted a similar definition in its small generator interconnection agreement and procedures that applies to facilities as large as 20 megawatts in size in Order No. 792 in 2013.

The latest revision for larger facilities provides parity among grid operators and project sizes by allowing storage to connect to the grid using the same large generator interconnection procedures as traditional power plants.

FERC clarified that this does not mean that an energy storage facility must only operate as a generating resource and reaffirmed prior findings that energy storage may function as a transmission asset.

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critical infrastructure as a consequence of a FAST Act (Fixing America’s Surface Transportation Act) that was enacted during the Obama administration in 2015. The memo says the Department of Energy needs another two years to complete the analysis the FAST Act requires of it. The orders are a “temporary stop-gap measure to prevent further permanent loss of the fuel-secure electric generation capacity” until it can complete the analysis.

The White House press office released a statement on June 1 that the President “has directed Secretary of Energy Rick Perry to prepare immediate steps to stop the loss of these resources.”

Perry proposes to use a 1950 statute called the Defense Production Act enacted to help the country mobilize for the Korean War and also section 202(c) of the Federal Power Act as possible legal bases for the orders.

The Defense Production Act authorizes the federal government to require businesses to sign contracts or fulfill orders that it considers necessary for national defense. The 1950 law also gave the president the ability to requisition or redirect resources and services where they would be best deployed to support the war effort, impose wage and price controls, settle labor disputes, and limit consumer and real estate demands on financial resources that were needed for the war effort. The law was used in the 1980s as a basis for the Department of Defense to provide seed money to support development of various new technologies and materials and was reportedly invoked in 2011 to force telecoms companies to share details about some equipment with the government.

Section 202(c) of the Federal Power Act gives the Department of Energy authority to act after a sudden increase in demand for electricity or shortage of generating or transmission facilities. The department is authorized to issue orders requiring “temporary connections of facilities and such generation, delivery, interchange or

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## Interconnection

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### Technological Changes

Grid operators assess proposed changes to pending interconnection requests to determine whether the changes are a “material modification,” meaning whether they would materially affect the cost or timing of projects later in the interconnection queue.

If a proposed change is a material modification, then the project developer must either forgo the change or forfeit its queue position and start over.

The analysis is susceptible to discretion. FERC determined proposed changes in project technology are particularly vulnerable to inconsistent evaluation.

In an effort to promote transparency and efficiency, and encourage technological innovation, Order No. 845 directs grid operators to adopt a “technological change procedure” for assessing whether proposed technology changes to pending interconnection requests are a material modification of the original request.

The procedures must describe how a developer should prepare and submit a technological change request. FERC explained that the developer must demonstrate that the technological change will result in electrical performance that is “equal to or better than” the performance prior to the change, meaning that the change will not degrade the electrical characteristics of the generating equipment. The developer must also show that the change will not increase the requested interconnection service and that it will not cause any reliability concerns by demonstrating it would not affect the short-circuit capability limit, steady-state thermal and voltage limits, or dynamic system stability and response of the grid.

The procedures must also specify conditions under which the request would require studies. If a study is required, then the project developer will be required to post a deposit and pay for the study. The default deposit is \$10,000, but grid operators may propose alternative amounts. The grid operator must complete any necessary studies as soon as practical, but not later than 30 days after the developer submits a proposed change.

Grid operators must also provide lists of “permissible technological advancements” that are not material modifications by definition.

The lists are not expected to include changes in generation technology or fuel type because these alter electrical characteristics in such a manner as to require studies in most cases to determine whether they are material.

### Next Steps

Order No. 845 is effective on July 23, 2018.

With limited exceptions, grid operators are required to submit compliance filings that either revise their tariffs to comply with the order or make a showing their tariffs are consistent with or superior to the order’s requirements.

The current compliance deadline is August 7, 2018, but extensions to as late as November 5, 2018 have been requested.

Several grid operators or owners asked FERC for clarification and a rehearing of the order. These requests remain pending. Judging by past practice, FERC will probably grant a rehearing and may tweak certain compliance requirements, while reaffirming the broad concepts and the overall order. ☺

## Proxy Revenue Swaps for Solar

*by Hans Tuenter, with Nephila Climate in Bermuda, and Christine Brozynski, with Norton Rose Fulbright in New York*

Risk-transfer products, such as volume puts or swaps, are now standard product offerings, serving as offtake arrangements in lieu of traditional power purchase agreements.

One of these products, the proxy revenue swap, debuted in 2016 and caters specifically to the needs of wind energy projects.

In response to industry demand, the scope has now been extended to include solar energy. The first set of proxy revenue swaps for two solar projects in Queensland, Australia was executed in May 2018, covering a total installed capacity of 176 megawatts. Unlike virtual power purchase agreements or fixed-volume swaps, proxy revenue swaps hedge shape risk in addition to price and volume risk.

### Understanding Shape Risk

As markets and technology are maturing, many projects are now run as merchant plants and are, therefore, exposed to both volume and price risk.

There is an additional risk that is less obvious: shape risk, which involves the relationship between volume and price.

Solar energy is non-dispatchable and weather driven. When the sun shines, solar farms will come online, and will all produce

at the same time. This clustering of production depresses the market clearing price. Consequently, to determine the revenue that a solar project will earn, it is no longer enough to know the total volume produced and the average market price; when the power is produced is as important.

In many markets, the midday hours used to have the highest energy prices. This is no longer the case. The quantity of solar energy produced is usually at a peak at midday, and the combined volume of all solar generation can result in very low and even negative prices, as has happened in several jurisdictions.

As a simple example, assume that a solar farm has a total production of 300 megawatt hours over the three hours around noon and that the average spot price over that period is \$30 a MWh. Here are two examples of the potential shape of that production:

### Example 1: Flat Production Profile

Hour	11	12	13	Total
Production (MWh)	100	100	100	300 MWh
Price (\$/MWh)	35	20	35	
Revenue	\$3,500	\$2,000	\$3,500	\$9,000

### Example 2: Shaped Production Profile

Hour	11	12	13	Total
Production (MWh)	80	140	80	300 MWh
Price (\$/MWh)	35	20	35	
Revenue	\$2,800	\$2,800	\$2,800	\$8,400

In both cases, the total energy and the average price are the same. However, the revenue is significantly lower in the second case, as the highest volume is produced in the lowest priced hour. In the first example, the production-weighted price is \$9,000 divided by 300 MWh = \$30/MWh, whereas in the second case the production-weighted price is \$8,400 divided by 300 MWh = \$28/MWh.

The point is that shape risk affects total revenue in a market with fluctuating prices.

Counterintuitively, the risk is greater when all solar production within a market is highly correlated.

When one solar facility starts producing during a sunny hour, so will every other solar farm in the same market. As supply increases, the market-clearing price decreases. This can lead to situations with many hours where a project produces more

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transmission of electric energy” as in the department’s judgment “best meet the emergency and serve the public interest.”

It is not clear to what extent any orders might bog down in the courts. In January, the Federal Energy Regulatory Commission unanimously rejected a proposal by the US energy secretary to order grid operators effectively to dispatch coal and nuclear power plants that maintain at least a 90-day onsite fuel supply ahead of other generators at high enough prices to keep them in business. FERC instead launched a review of US grid resiliency that is still in process. PJM Interconnection, which operates parts of the US electricity grid from the mid-Atlantic states as far west as Illinois, rejected the notion that there is a problem with grid resiliency and said there is no emergency.

The move to justify administration actions from supporting coal to imposing blanket tariffs on steel and aluminum imports and possibly also autos, including against longstanding US allies like Canada, Mexico and the European Union, on national security grounds could have broader implications. For example, CFIUS, an interagency committee, reviews proposed foreign takeovers of US companies for potential harm to US national security. A broadening of what is considered a US national security interest and consistent application by the administration could affect inbound investment.

**IMPORT TARIFFS** and the possibility of an escalating trade war are being watched warily by US developers.

The Trump administration let lapse a temporary exemption from US import duties for Mexico, Canada and the European Union on steel and aluminum. The US started collecting duties of 25% on steel and 10% on aluminum imported from those countries on June 1.

Canada quickly announced it would impose \$16.6 billion in retaliatory duties on US products coming into */ continued page 9*

## Proxy Revenue Swaps

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energy, but earns less total revenue.

When the market penetration of renewables was still low, the revenue risks associated with the shape of production were negligible. However, as market penetration of renewables is increasing, the shape risk will increase drastically.

### Proxy Revenue Swap

To address the issue of protecting revenue streams for renewable assets, Nephila Climate, in conjunction with Allianz Risk Transfer and REsurety, pioneered an innovative risk-transfer product called a proxy revenue swap. This form of swap was designed originally to meet the needs of the wind energy industry, but it has now been adapted also to cover solar facilities and has the potential to make more solar projects bankable by de-risking project revenues.

Several projects using proxy revenue swaps as an offtake have been successfully financed by major lenders (such as Deutsche Bank) and tax equity players (such as JP Morgan and Goldman Sachs). The product has been used in US markets like ERCOT and SPP, and now also in the Australian AEMO market.

Under a solar proxy revenue swap, the hedge provider pays the project a fixed lump-sum amount per quarter, regardless of the level of irradiance, (intensity of sunlight), the volume and timing of the energy produced by the project, and the market-clearing price for electricity. The project pays the hedge provider a floating amount each quarter equal to the “proxy revenue.” The “proxy revenue” for a quarter is the sum of the “proxy revenue” for each settlement period in the relevant electricity market for that quarter. (For example, the settlement period for

the Australian AEMO market is 30 minutes.). The proxy revenue for a given settlement period is calculated as the hub price multiplied by the project’s “proxy generation” for the settlement period. The proxy generation for each settlement period is determined using a pre-agreed formula that converts irradiance, or the strength of local sunlight, into an amount of electricity output.

Because the fixed payment is not linked to actual output, the solar proxy revenue swap offers a predictable revenue stream and mitigates irradiance risk, price risk and shape risk for the project.

As fixed operational efficiencies are assumed in the calculation of “proxy generation,” the operating risks, such as availability of the project, stay with the project.

The proxy revenue swap is a financial hedge, meaning no energy is purchased as part of the transaction. Instead, the energy produced by the project is sold into the local grid, with the project collecting revenues at the nodal price for that electricity.

Separately, the hedge is settled quarterly with the hedge provider paying the fixed amount and the project paying the floating “proxy revenue.” If the fixed amount exceeds the “proxy revenue” amount for a given quarter, then the hedge provider makes a payment to the project equal to the difference. If, on the other hand, the “proxy revenue” exceeds the fixed amount, then the project makes a payment to the hedge provider equal to the difference. Ostensibly project payments are sourced from merchant revenues.

The proxy revenue is calculated using the electricity price at a market hub determined by the parties. A “hub” is used because there is more electricity trading and liquidity than at the node, thus allowing the hedge provider greater flexibility in managing its exposure. The risk that the revenue the project actually receives (based on the nodal price) differs from the price at the hub is called “basis” risk. It remains with the project.

Although the energy produced is not actually sold to the hedge provider under the proxy revenue swap, sometimes the hedge provider will purchase the associated environmental attributes.

Given that the availability is one of the assumptions in the

The first proxy revenue swaps for solar were signed in May.



calculation of “proxy generation,” the proxy revenue swap does not contain any availability requirements. Furthermore, the hedge does not contain minimum delivery obligations. Credit-support obligations are similar to those in other types of energy hedges; for example, the project might be required to provide a letter of credit or cash collateral as credit support to ensure the project has the means to make payments required under the hedge. ©

## Solar-Plus-Battery Projects Take Hold in Africa

by Laura Kiwelu, in Dar es Salaam

Governments and utilities in sub-Saharan Africa are sending a clear message in recent meetings that what really interests them is solar projects with battery storage.

Solar works for relieving pressure on hydropower during the day but, without batteries, it does not do enough to address evening peak demand. Hydropower is the main source of electricity in most sub-Saharan countries outside of South Africa.

The dramatic fall in the cost of solar has affected — for good and bad — the sub-Saharan Africa renewables sector in the last three years. Similar cost reductions in energy storage and wider deployment of batteries will have an increasingly strong effect on the renewables landscape in sub-Saharan Africa as projects that were uneconomic before become viable.

This year marks the start of a global roll out of solar-plus-storage projects. From a financing perspective, such hybrid solar projects are more likely to be financed on a project-finance basis in Africa before a standalone battery installation. This is because the revenue streams of the solar project support a conservative banking base case, independent of the performance of the battery. This is a common lender risk mitigation strategy when a developer has an assortment of assets with different credit profiles. Lenders will run a sensitivity analysis to determine the cash flow available for debt service if the projected revenues from the battery fall away.

Energy storage deployments in emerging markets globally are expected to grow at more than 40% / *continued page 10*

## IN OTHER NEWS

Canada. A 25% tariff will apply to certain wire and flat-rolled products made from iron or non-alloy steel. A 10% tariff will be collected on a range of other goods, including US cucumbers, gherkins, toilet paper, yoghurt, roasted coffee, maple syrup, dishwasher detergent, tablecloths, ballpoint pens, after-shave and beer kegs. The Canadian government will take comments from Canadians about the product list through June 15 and start collecting duties on July 1.

Mexico announced new tariffs on US flat steels, lamps and various types of food, including pork and apples.

The European Union advised the World Trade Organization that it plans to collect retaliatory tariffs on a range of iconic US products, including Harley-Davidson motorcycles, Levi Strauss jeans and Kentucky bourbon.

Meanwhile, the US administration has been giving conflicting signals about the status of threats to collect tariffs on Chinese products. The US government released a list of more than 1,300 products that account for \$50 billion a year in Chinese imports on which it said it would take up to 180 days to decide whether to slap 25% tariffs. The Chinese quickly threatened retaliatory tariffs at the same level on \$50 billion of US products, including soybeans. Roughly 25% of the US soybean crop is exported to China. The threats caused US soybean sales to China to drop by 96.9% in April as farmers were deciding what to plant.

President Trump then threatened to increase the annual volume of Chinese trade that would be subject to the 25% tariff by another \$100 billion. No list of additional products has been released. US solar developers are watching warily in case inverters are on the expanded list. A significant share of inverters used in US solar projects is imported from China.

Tensions appeared to ease when US Treasury Secretary Steven Mnuchin announced May 19, after a visit to / *continued page 11*

## Africa

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annually in the next decade, according to a report on “Energy Storage Trends and Opportunities in Emerging Markets” by the International Finance Corporation, the private-sector investment arm of the World Bank.

Grid connected hybrid solar projects with battery storage are in the early development stages in Africa. Those in the public domain are the 25-megawatt Madagascar project tendered as part of the International Finance Corporation’s scaling solar program, which attracted six pre-qualified bidders in February 2018, and the 30-megawatt solar-plus-battery storage project that is being developed by SB Energy Corp and Mara Corporation Limited in Rwanda.

In developed markets, battery storage is being introduced retrospectively as flexible capacity, smoothing an already-high penetration of renewables and enabling the injection of more intermittent renewable generation in future.

## Governments in sub-Saharan Africa are sending a clear message that they want more solar + battery projects.

In sub-Saharan Africa, we have seen grid-connected renewables deployed at a far slower speed than in developed markets, as a result of challenges such as government support, grid stability, political risk, appetite for intermittent renewables, supply-demand dynamics and offtaker creditworthiness.

At the same time, we have seen solar-plus-battery installations advance rapidly at an off-grid and mini-grid level, meaning that battery storage is not a novel technology in Africa.

However, for battery storage to displace the conventional African forms of baseload generation — particularly distributed

diesel generation, large hydro and thermal power — there are key challenges to overcome.

## Spreading the Word

As power sector stakeholders in sub-Saharan Africa gain awareness of the advantages of battery storage, interest in battery storage will cause more deployment, creating a positive feedback loop that will lead ultimately to further battery cost reductions.

Battery storage is quick to be deployed and capable of responding in milliseconds to grid demands, and it improves the quality of the grid. When combined with solar PV, it is capable of smoothing the electricity output from the solar project (maintaining the output curve on a daily basis and mitigating against forecasting errors) and providing solar time shifting (storing and releasing solar electricity during the evening peak hours), alongside the pure battery storage ancillary services such as frequency regulation, voltage support, black-start capacity, energy arbitrage

and ramp-rate control. Installing more batteries also helps to ease grid congestion, which is a key obstacle to trading in the Southern African Power Pool.

Improvement of grid quality and reliability leads to fewer unplanned grid outages.

This has two key economic effects on the typical state utility in sub-Saharan Africa. First, the likelihood of a grid-related “take-or-pay” event triggering an obligation for the state utility to provide revenue relief in the form of deemed electricity charges under its power purchase agreements would be reduced. Second, the propensity for large commercial and industrial customers to install on-site self-generation or captive sources of power could be mitigated.

In markets such as Ethiopia and Tanzania where generating capacity is being scaled up to drive industrial growth, but constraints remain around a fragile grid system, there is a clear role for energy storage.

Outside of Africa, there are emerging markets and island state examples that show the benefits of batteries and that are relevant in an African context. In Hawaii, some islands require

developers to couple any new generating facilities with batteries in order to stabilize the local grid. The Dominican Republic recently proved that battery storage assists in the event of an emergency response. Its grid remained operational during two hurricanes in 2017 due to 20 megawatts of lithium-ion battery arrays that remained online while most of its power plants suffered forced outages.

Africa is similarly prone to climate-change-related severe weather — such as the widespread flooding seen in East Africa this year — and consequential grid outages. Batteries can help to mitigate the adverse effects of such weather.

The Inter-American Development Bank has shown in a study in Latin America that, where renewable energy is combined with energy storage in markets with high-cost of conventional generation, the cost savings of using more renewable energy are higher than the additional cost to install storage. Sub-Saharan Africa is renowned for its high fuel costs, particularly as a result of installing emergency power plants and poorly procured conventional power plants, so the same savings are possible here.

Finally, batteries may prove critical as African countries try to reach the emissions mitigation targets set under the Paris climate accord. Batteries have the potential to reduce net greenhouse gas emissions by increasing the proportion of renewable energy injected into the grid, thereby displacing more conventional sources of power.

### Appropriate Remuneration

Ancillary services such as frequency regulation and voltage support are increasingly seen as high-value services, and certainly in developed markets it is in the provision of these ancillary services that allow flexible baseload plants to be highly remunerated.

In African independent power projects, the expected revenue stream from a solar-plus-battery project will usually be specified in the power purchase agreement, and not by reference to a market index or regulatory formula. We have seen various means of documenting the advantages of battery storage in offtake agreements in developed markets, with differing approaches to remunerating the battery storage services.

The challenge in Africa is to find a middle way between the generator being fully remunerated for the services that the battery provides and adopting a relatively simple revenue model that is more easily understood by both generator and offtaker. This applies to the structure / *continued page 12*

Washington by the top Chinese official charged with diffusing tensions over trade, that any trade war had been put “on hold.”

Trump then announced 10 days later that he is moving ahead with plans to collect tariffs on the first \$50 billion in goods and said he will announce new restrictions on June 30 on Chinese inbound investment as well as stronger controls on exports of sensitive US technologies.

There is a risk of a protectionist domino effect. However, Trump aides insist that these are all negotiating tactics, and no trade war is expected.

The potential effect on US coal shows the complexity of international trade relations. Metallurgical coal sales account for 60% of US coal exports, and such sales were up 22% early in the year before the announcement March 8 that the US would impose duties on imported steel. Metallurgical coal is used for making steel. If the European Union were to hit back with tariffs on US coal, US producers would have to reduce prices to maintain market share against cheaper supplies from places like Australia, Canada and Russia.

Meanwhile, the US Commerce Department is still evaluating 8,700 requests for individual product exemptions from the steel and aluminum tariffs, US Commerce Secretary Wilbur Ross told a Senate subcommittee on May 10. The department has asked for more money to hire 15 outside contractors to help process requests for tariff exemptions. One company submitted 1,167 exemption requests. Separate requests have to be made by each importer for each product under the process the Commerce Department has put in place. (For more details, see “Tariffs: Effect on US Power Sector” in the April 2018 *NewsWire*.)

Eight Republican Senators from five states are pressing the Trump administration to exempt jumbo 72-cell, 1,500-volt solar panels from the 30% tariff the US is currently collecting on imported solar / *continued page 13*

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of how the battery is charged (purely from the solar panels or also overnight from the grid) to how the output is measured (whether the output of the battery is differentiated from the output of the solar project and subject to separate interconnection and metering points) and to the tariff structure (whether the tariff is split between battery output and solar plant output). More complex and potentially lucrative tariff structures are likely to follow once familiarity is gained with the technology.

The revenue model will also be looked at closely by lenders. If the PPA remunerates the ancillary services that the battery is capable of providing, a conflict may arise between the developer's preference to stack multiple revenue streams that may be earned from the solar-plus-battery project and maximize the return on investment (including relying on different income sources at different times of day or seasons) and the desire by lenders to have a reliable long-term revenue stream to cover debt service (particularly important on earlier-stage projects in new jurisdictions).

Because battery storage technology is still seen as an early-stage technology, the lenders in the first wave of projects in sub-Saharan Africa will be development finance institutions, multilaterals and export credit agencies that are likely to take a conservative view. Innovations in the software supporting energy storage will also assist in maintaining a balance between profitability and predictability of revenue for solar-plus-battery projects.

Potential relatively simple structures could involve treating the project as a plant that is subject to dispatch by the offtaker by splitting the tariff between a capacity charge and an energy charge. This is a familiar structure on African large hydro or

thermal power plants, although the structure has some negative connotations in jurisdictions where state utilities have incurred substantial losses as a result of high capacity payments.

This structure is a departure from the traditional PPA single-tariff structure for solar projects in Africa as capacity payments are usually not appropriate for intermittent energy. The fundamental premise of a capacity payment is that it compensates a project for the ability to generate when dispatched. The creation of "dispatchable solar" through co-location of storage can qualify a solar project for a revenue stream that was once the exclusive purview of conventional plants.

Alternatively, a "time-of-use" pricing structure could be used, whereby the single energy charge of a solar plant could be maintained, with a higher tariff for output exported in the evening peak hours than the daytime hours.

### Missing Regulatory Framework

In developed markets, the deployment of battery storage has often outpaced policy and regulation, creating a "new frontier" environment. For instance, the US Federal Energy Regulatory Commission has been uncertain whether to classify storage as a generating asset, transmission asset or hybrid of the two. Consequently, battery storage parameters have often been incorporated in project documentation.

This is not new to Africa, where an absent or uncertain regulatory framework is the norm and often leads to key risks and structures being documented contractually and in contemplation of a change in law in the future.

We have seen this in jurisdictions where the grid code does not encompass renewables. In such instances, derogations from the grid code are documented so as to establish a day-one compliant position, with subsequent changes to the grid code or other electricity regulations that affect the power project being

governed by a change-in-law provision in the PPA or government support agreement.

The current regulatory view in Africa is that licensing is strictly split among generation, supply, transmission and distribution, similar to the way in which vertically integrated state utilities are being progressively unbundled. Therefore, a conundrum will also arise as to how to regulate and

The existing revenue models for compensating for storage services will have to be adapted for use in Africa.

license battery storage — either by adjusting the existing framework or by creating a new battery-storage-specific framework or a combination of the two.

Therefore, there is a risk of retrospective regulation of battery storage in Africa as utilities and regulators grapple with this new technology and as early-stage solar-plus-battery projects come online before energy policy fully encompasses battery storage.

We have seen this, to some extent, in the off-grid and mini-grid sector where regulation has applied retrospectively to issues such as the main grid subsequently connecting to the mini-grid, the permitting of very small mini-grid projects or a retrospective requirement to register diesel generators. Provided that time and resource are addressed to this issue at the project documents stage, the change-in-law clause is well drafted, and the regulator and ministry of energy are fully engaged with from a regulatory and licensing perspective, the impact of retrospective regulatory changes on grid-connected solar-plus-battery projects should be mitigated.

Aside from the contractual provisions, key to ensuring that regulators and state utilities are informed about battery storage is sharing knowledge. In this regard, larger initiatives, like the US Trade Development Agency Kenya solar-power-and-energy-storage reverse trade mission last year, and technical workshops on specific projects play an important role in ensuring that the key business divisions are aligned as to how the solar-plus-battery project will operate.

### Mitigation of Technology Risk

Most grid-scale energy storage systems are less than five years old. As with any new technologies, all stakeholders must get comfortable with the technology.

Battery risk is increasingly being mitigated in a number of ways, including the increasing availability of extended contractual warranties running up to 10 years, creditworthy suppliers and the specialization of firms in battery storage asset management to which battery performance risk may be passed through under robust operation and maintenance contracts. The strength of the operation and maintenance contract is important given expectations that batteries require replacing approximately 10 years after the commercial operation date.

If the solar-plus-battery project will be dispatched by the state utility, then the power purchase agreement must contain clear parameters around dispatch so as to ensure that the depth of charge or other performance parameters of the battery are not adversely affected by the method of / continued page 14

cells and modules. The Senators sent US Commerce Secretary Wilbur Ross, US Energy Secretary Rick Perry and US Trade Representative Robert Lighthizer a letter on May 9.

One Korean, one Chinese and two US companies have announced plans since the solar tariffs were imposed to increase US panel manufacturing capacity in the United States by 3,200 megawatts a year. Hanwha Q Cells announced plans on May 30 to open a factory in Georgia. JinkoSolar was already planning one in Florida. It remains to be seen whether any new Trump crackdown on Chinese inbound investment could affect these plans. SunPower acquired SolarWorld Americas and its manufacturing facilities in Oregon. First Solar said it plans to open a new factory in Ohio.

Chinese domestic demand for solar panels could fall to 30,000 to 35,000 megawatts, easing global pressure on panel prices. It was 53,000 megawatts in 2017.

The Chinese government, in a surprise move on June 1, scaled back central government support for new utility-scale solar projects and placed a low cap on distributed solar deployments this year that experts speculate has already been reached. It had already stopped issuing permits for new solar facilities in parts of the country where existing plants are sitting idle due to grid congestion.

**POWER CONTRACTS** are off to a good start.

Renewable energy developers reported coming into 2018 that the competition for power purchase agreements to supply electricity to utilities and corporate offtakers was “brutal.” The situation appears to have made a dramatic turnaround.

NextEra Energy CFO John Ketchum said during the company’s earnings call in April that the first quarter this year was “one of the best quarters of new renewables origination in our history.”

Tom Kiernan, CEO of the American Wind Energy Association, said / continued page 15

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dispatch with a consequential risk that the warranty is invalidated.

Ultimately, the sizing and usage of the battery and the solar plant — both together and separately — must be driven by grid requirements and patterns. If grid studies and consequential plant sizing and modelling are exhaustively carried out on the early-stage solar-plus-battery projects, then this will enhance the replicability of these projects and the trust in this technology. ☺

# CCAs and Risk Management

*Sixteen community choice aggregators that buy electricity, primarily from renewables, to supply to county and city residents are now operating in California. Another eight CCAs are expected to start operations this year.*

*The CCAs face a series of challenges, not the least of which is forecasting electricity load, since customers who sign up are free to switch electricity suppliers at any time. The California Public Utilities Commission is still debating how large an exit charge to assess against customers who leave the three California investor-owned utilities for CCAs to help reimburse the utilities for the cost of “stranded” equipment the utilities purchased at a time when they had a legal duty to serve a broader market.*

*A group of panelists talked at an Infocast community choice energy conference in La Jolla in April about the types of risks facing CCAs and how they manage them.*

*The panelists are Richard Engel, director of power resources, at the Humboldt County CCA Redwood Coast Energy Authority, Ramon Abueg, chief operating officer at Valley Electric Association, Inc., Ranbir Sekhon, director of portfolio planning & analysis and energy procurement & management at Southern California Edison, Samuel Golding, president of Community Choice Partners, and Kent Palmerton, principal at WK Palmerton Associates Inc. The moderator is Deanne Barrow with Norton Rose Fulbright in Washington.*

## Internal Risk Management

MS. BARROW: Let’s start by hearing from the two industry consultants on the panel. How have you seen the approach of CCAs to energy risk management evolve over time?

MR. GOLDING: Over the last 12 to 18 months, there has been a sea change in how CCAs go about energy risk management structurally. Richard Engel’s CCA — the Redwood Coast Energy Authority — had a lot to do with spreading the 2.0 model, as we have been loosely referring to it, and leading by example. The 2.0 model brings in a more transparent, industry-standard approach to managing energy risk.

The early CCAs relied on a broker or consultant who would hire a power marketer under a full-requirements contract plus schedule coordination to interface with the CAISO market. The new CCAs hire an independent contractor who operates as an extension of the CCA staff and has all the functional capabilities that energy service providers, power marketers or utilities have to manage the purchase of energy products. These energy “portfolio managers” are often owned by public power entities and operate on a non-profit and highly transparent basis.

By tapping into this institutional capacity from the start, the new CCAs are able to use industry-standard software and gain access to unbiased expertise to analyze all of the sources of risk. This allows the CCAs to contract with various counterparties for a range of products layered over different time periods, and they structure a diversified energy portfolio that is customized to their risk tolerance and policy objectives.

It is a night-and-day shift. The old-versus-new approaches are almost incomparable.

All CCAs are startup enterprises that rely on third parties at launch for key operations. Structurally, the big fork in the road for CCAs in terms of energy risk management is what type of advisors they choose to hire for planning and procurement. It used to be standard practice to hire boutique consultants, but over time CCAs have been moving to hire energy portfolio managers as a superior alternative. Redwood Coast Energy Authority was the first agency to adopt this business model. Kent Palmerton and Richard Engel can talk more deeply about the significance of that choice.

MR. PALMERTON: I started in this business in the 1970s. I have seen the municipal utilities grow up, and I have seen the marketers, brokers and independent power producers grow up. They all started not having a clue about what it took to run the grid and, over time, they have matured to a place where they are now contributing to keeping the grid running.

The CCAs started as full-requirements customers. They are now facing a much broader set of responsibilities. Whether or not the California Public Utilities Commission is correct in the way it is applying oversight will be worked out in the wash. There is a reliability council that needs to continue talking about how to keep the grid running. There is a distribution planning function. CCAs have to take responsibility for some of these issues.

Marin and Sonoma Counties and maybe Lancaster started out with a black-box approach. Political types created the CCAs, and then each outsourced its entire program to one vendor — Shell in the case of Marin, Constellation in the case of Sonoma. Inside the CCA, there were no professionals with utility experience.

They had no clue what was being done for them and, in some cases, it was inefficient. The CCA 2.0 model that Samuel Golding and others have been talking about is for the CCA either to have internal staff or dedicated internal professional consultants that act as staff.

Maybe the CCA 3.0 model will be one where there is an overarching joint action agency or actual professional staff.

Risk management in this context means managing uncertain outcomes, whether from a regulatory, financial, human resources, facility or infrastructure standpoint.

Risk management crosses boundaries within an organization. It is a means to mitigate or at least understand the exposures and risks facing the organization. As a CCA engages in things like long-term financing, it just adds additional risks with which the CCA lacks experience. Each layer has a new set of uncertainties that has to be managed.

It is not a good idea to have multiple parties responsible for the same areas. In time, we will figure out who should be responsible for the issues that affect the grid.

MS. BARROW: Let's hear from the CCA on the panel. Richard Engel, tell us a little about how Redwood Coast Energy Authority got started and the approach it takes to risk management.

MR. ENGEL: We are a bit different from most of the other CCAs in California in a few ways. One difference is we were a pre-existing joint powers agency. We were established around the same time as the San Diego Regional Energy Office. This was in the wake of the California electricity crisis in the early 2000s. Humboldt County was looking for a way to take more local control over its energy destiny. We are an energy peninsula that is somewhat isolated from the rest of the power grid in California.

In the face of these challenges, we set up the Redwood Coast Energy Authority in 2003. We focused initially on demand-side management. That was the lion's share / continued page 16

during a webinar that wind developers signed 2,300 megawatts of PPAs in just the first 60 days this year.

Corporate PPAs, under which companies like Google or Amazon sign contracts to buy electricity from renewable energy projects, are on track to set a record. The Rocky Mountain Institute, which tracks such contracts, reports 27 contracts signed for 2,480 megawatts through May 16. The previous high water mark for corporate PPAs over an entire year was 32 contracts for 3,120 megawatts in 2015.

Companies signing contracts so far this year include AT&T, Microsoft, Walmart, Facebook, Google, Target, T-Mobile, MGM, Kohler, Nike, Grupo Bimbo, Merck, Nestle, General Motors, Wynn Las Vegas, Ingersoll Rand, Bloomberg, Switch, Adobe, Brown-Forman and Iron Mountain.

Banks turned a corner last year when JPMorgan and Goldman Sachs signed contracts after working through potential bank regulatory issues. Fifth Third Bank signed a contract this year.

TransAlta Renewables appears to have signed the first contract with a blockchain platform that presumably offers members a portal to buy electricity at prices that are lower than the retail rates on offer from local utilities. It signed a contract in Canada on May 1 to supply 35 megawatts from an existing gas-fired power plant to the platform for a term of five years with an option to renew for another five years. The offtaker was described only as a "leading Canadian blockchain company."

Meanwhile, prices for contracted power from wind farms in the American Midwest hit \$12 a megawatt hour earlier this year. The levelized price in all new contracts signed by wind developers in 2017 was under \$20 a megawatt hour.

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of our effort for the first decade or so. We then branched out into transportation electrification, developing and operating a network of public electric vehicle charging stations around the county. We did a renewable energy secure communities study with funding from the California Energy Commission. It led to the establishment of our CCA program in 2017 as a strategy for moving to a renewable energy-based local energy economy. We are about to celebrate the one-year anniversary of our CCA launch in May. We have about 60,000 electric accounts serving about 700,000 megawatt hours of load annually.

I want to acknowledge what Kent Palmerton said about the value of building on the experience of others. People have been buying and selling energy for a long time — well before CCAs were around. In our case, our power manager is The Energy Authority, and it came in with years of experience serving dozens of clients like municipal utilities. We did not have to reinvent the wheel in terms of our risk management.

## It is challenging to forecast CCA electricity load since customers are free to switch suppliers at any time.

We have a risk management policy that is downloadable from our website, and I have made sure that the current version is posted there. We first adopted it in December 2016, which is about six months before we started serving customer loads. This coincided with when we started actually doing power procurement. We recently revised it and updated it to reflect some changes in our organization, and our board adopted the updated version earlier this month.

I encourage other CCAs to look at it. It is a good model. One feature is it defines our risk management team, of which I am a member. We have five director-level staff within our organization who share the role of being risk managers. They are supported

by a staff member from The Energy Authority, and one additional outside independent person of expertise in energy risk management also serves on that team. We review all developments affecting risk that have happened in the preceding month.

A table in the policy is the essential kernel of the risk management policy. It shows our transactions by volume, term, maturity and cash value. Smaller transactions can be done on our behalf by The Energy Authority. If transactions move above a certain level, they need to be approved by our executive director. Then there is another tier with cutoff points and specific numeric values that requires approval by majority vote of our risk management team. We have had a couple deals that exceeded that level and had to go to our board of directors for approval.

Taking a step back and looking at the broader concept of risk management, in 2012 we completed a study that was funded by the California Energy Commission to look at what it would take to make Humboldt County, our service area, a renewable energy power community over a two-decade time span. Forming the community choice energy program was one of the actions identified. It is what prompted us to establish the CCA program.

Forming the CCA was one measure to address a number of risks to our community, including climate change, energy security and resiliency, and energy affordability. I see the very creation of our CCA, its operation and its expansion as a risk management strategy.

MS. BARROW: Ramon Abueg, you represent Valley Electric Association, which is a not-for-profit electric cooperative based in Nevada and California serving 22,000 accounts.

What advice do you have, what parallels and commonalities do you see with CCAs, what best practices can you share?

### Advice for CCAs

MR. ABUEG: You have to decide how you are going to get from point A to point B, and you have to be able to take off-ramps. You need to be able to measure where you are at all times and see what progress you are making with the investment.

As a co-op, our main priority is to provide rate stability to our members. We have been innovative in the sense that we are



trying not only to leverage the infrastructure that we own, including transmission, but also to move into other applications like community solar.

We have a risk management plan in place to make sure that there are checks and balances at all times on our decisions. If decisions to be made are complex, they go to a risk management committee designated by our board, so that decisions are not being made in a vacuum. We make sure that the decisions are informed decisions.

MS. BARROW: While we are on the topic of sharing best practices for energy risk management, Ranbir Sekhon, as a veteran of the power industry at Southern California Edison, what practical advice and insights would you offer CCAs that are trying to come up the learning curve?

MR. SEKHON: CCAs are the next evolution in the energy market. As they develop, they should learn from each other and also leverage the knowledge of the utilities. These risk management practices do not need to be recreated from scratch. They exist. We should be sharing knowledge about them. We all want a stable grid. We should be working together to achieve that.

Having a risk management policy, having a hierarchy, having the structure that sets limits and ensures more people share in decisions the greater the risks are good practices.

One thing people often forget is that a good training program is needed. A good training process can help ensure that everybody working in the CCA understands what the risk policy is and how it affects the decisions they will make. The risk policy should include elements around market risks, regulatory risks and manipulation.

Market manipulation is a big deal and has a lot of strict rules. People need to understand what those rules are and be trained so as not to violate them inadvertently. This also requires checks and balances.

## Regulatory Risks

MS. BARROW: You mention regulatory risk. One of the biggest regulatory risks CCAs face is the uncertainty around the power charge indifference adjustment. The PCIA is a charge that CCA customers have to pay when leaving bundled utility service. It gets reset every year, and CCAs do not have visibility into what the amount will be. It has gone up every year since 2010. How in developing a comprehensive risk management policy can CCAs account for the uncertainty around the PCIA?

MR. SEKHON: It is an interesting question. Being aware of the risk is a good place to start. The next / continued page 18

**CREDITS** for renewable energy projects will remain unchanged in 2018 from 2017 levels, the Internal Revenue Service said in late May.

Credits for producing refined coal are increasing slightly in amount.

The credits for generating electricity from wind, geothermal steam or fluid or closed-loop biomass (plants grown to be used as fuel in power plants) are 2.4¢ a kilowatt hour in 2018. They are 1.2¢ a kilowatt hour for generating electricity from open-loop biomass, landfill gas, incremental hydropower and ocean energy.

The credits are adjusted each year for inflation as measured by the GDP price deflator. They run for 10 years after a project is originally placed in service.

The credits phase out if contracted electricity prices from a particular resource reach a certain level. That level in 2018 is 12.8576¢ a KWh. The IRS said there will not be any phase out in 2018 because contracted wind electricity prices are 4.85¢ a KWh going into 2018. It said it lacks data on contracted prices for electricity from the other energy sources.

Production tax credits for producing refined coal are \$7.03 a ton in 2018. Refined coal is coal that has been treated with chemicals to make it less polluting than regular coal. The IRS said there will not be any phase out of refined coal credits in 2018. The refined coal credit phases out as the reference price for raw coal moves above 1.7 times the 2002 price of raw coal. The 2018 reference price is \$51.09 a ton. A phase out would have started at \$87.16 a ton.

The tax credit amounts are in IRS Notice 2018-50.

**MASTER LIMITED PARTNERSHIPS** are losing some of their appeal.

A number of gas pipeline companies are converting to corporations after the US reduced the corporate tax rate and the Federal Energy Regulatory Commission ruled that gas pipeline companies structured as MLPs cannot factor income taxes into the rates they charge

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step is figuring out how the risk can be mitigated. This involves using data to forecast what the rate could be. It is important to understand the policies that are being considered and the laws that govern how the process is supposed to work.

I also suggest reading the comments on file from intervenors in the PCIA proceedings before the California Public Utilities Commission. In order to understand risk, you cannot just look at it from one side. You need to look at it from multiple angles to develop mitigation measures. This may involve applying forecasting techniques to predict the possible outcomes.

There is always going to be regulatory risk. The PCIA is just one example. Another example is the resource adequacy proceeding the CPUC completed last year. The commission looked at the intermittency of wind and solar resources and decided to adopt a new mechanism for measuring the resource adequacy of these power sources. That had been a process that had been ongoing since 2012.

## California requires CCAs to have signed long-term contracts by 2021 for at least 65% of the share of electricity they are required to supply from renewables.

The result took a lot of people by surprise, but it should not have done so because there were plenty of warning signals for anyone who chose to look. (For more on California market risks, see “America’s Leading Renewables Market in Flux” in the August 2017 NewsWire and “The Changing California Electricity Market” in the June 2017 NewsWire.)

MR. ENGEL: We had a case study on the PCIA. I can share how that played out for us.

Part of our risk management policy is to do periodic stress testing that involves modelling worst-case scenarios. The PCIA is a prominent component of that model.

What assumption to make in the model played out publicly in our board meetings. A substantial part of our energy portfolio comes from locally-generated biomass power. Humboldt County is the leading forest products-producing county in California. As a result, we have a lot of waste material from local saw mills. The preferred path for disposing of that waste material is in local biomass power production.

Sourcing our power needs from local biomass projects comes with a price premium. However, our board has demonstrated a willingness to pay that price premium because of the number of local jobs that are created. We use stress testing to figure out to what extent we can afford to pay the premium instead of buy power from other sources outside our community.

Our stress testing shows our board in very clear terms what the tradeoffs are under a business-as-usual scenario and also under a worst-case PCIA scenario. It helps us make decisions everybody is comfortable with at a risk level that everybody feels is acceptable.

MR. GOLDING: The power grid is the most complex machine ever constructed. There are changing fundamentals within that system due to the spread of distributed energy, the rapid adoption of variable renewables, the rise of community choice aggregators, new regulations and the market rules and the way we allocate the costs and benefits among market participants.

All of those features are changing in real time.

Right now we have 16 CCAs, 160 staff and some very qualified CEOs coming in and building up their teams. At the same time, the CCAs have started to work together collaboratively to share resources. For example, CalCCA is a trade association that is engaged primarily in regulatory and policy discussions and monitoring for CCAs.

Together we are far greater than the sum of our individual parts. We are seeing more joint-action initiatives among CCAs, joint procurement, consideration of joint services and how we can build more expertise in-house.

We call the evolving new individual business model “CCA 2.0” and the trend toward joint action “CCA 3.0.”

MR. ABUEG: Once a risk management policy has been established, it cannot remain static. Things are changing constantly, so an organization must be nimble with its policy. An organization must stay on top of market and industry changes and make sure that its policy evolving with changes in how the market functions.

MS. BARROW: One change on the horizon is SB 350. This bill requires that, starting in 2021, at least 65% of every retail seller's procurement in California to be under long-term contracts, meaning contracts with terms of 10 years or more.

However, developers entering into long-term power contracts with CCAs are taking a risk because CCAs lack credit ratings and do not have long operating histories. Lenders and tax equity investors in the underlying projects focus on these risks, too. Will CCAs be able to rise to the occasion and meet their obligations under SB 350?

MR. PALMERTON: There are lot of moving parts that might not make that possible. If the PCIA question is not resolved, it is hard to know what portfolio a CCA will have as customers may be reluctant to depart bundled service from the local investor-owned utility until the exit fee is settled.

The inherent problem with long-term procurement is the long-term nature of the obligation. A CCA may have a hard time predicting its electricity load over an extended period. Meeting the requirements of SB 350 is going to be very, very difficult.

Sixty-five percent of the portfolio needs to be long term. It may be too early in the life of CCAs to do that.

### Creative Structures

MR. SEKHON: SB 350 defines "long term" as 10 years or more. Banks might be looking for contracts that are longer than that. CCAs will need to take that into account.

The panel discussions yesterday were primarily focused on how the banks view risk associated with CCAs. In the short term, the lock box process has worked, but that may not be something that is feasible longer term. This market will require creativity, such as through aggregate procurements where small CCAs enter into joint procurements to get to a bigger deal size. Another proposal that was floated yesterday is for the developer to sell only part of his output to a CCA and to sell the rest to other creditworthy entities, possibly corporates like Google. Another idea is to combine projects into a portfolio where only part of the portfolio depends on CCA contracts. Creative structures like that will allow CCAs to do long-term deals, given the fact that they may not yet have the credit ratings / continued page 20

customers for shipping gas in cases where rates are set on a cost-of-service basis. MLPs that ship gas at negotiated or market-based rates would not be affected.

An interesting question is whether renewable energy companies that have been pressing Congress for permission to use the structure will abandon the effort.

A master limited partnership is a partnership whose units are publicly traded. Partnerships are not subject to income taxes. This allows MLPs in theory to raise capital at higher multiples to earnings than a corporation would be able to do because the earnings are subject to only one level of taxes (at the investor level).

MLPs are not a good vehicle for accumulating earnings to make capital investments. Because income flows through to partners and is taxed to them, there is pressure not to retain cash that the partners need to pay taxes. In addition, some MLPs give the sponsor, who remains as general partner, "incentive distribution rights" that pull an increasing share of cash over time to the sponsor.

The potential investor base is also more limited than for a corporation. It consists mainly of wealthy individuals. Pension and sovereign wealth funds are not interested in investing. Investors in MLPs are considered to be engaged in business in all the states in which the MLP is active, making filing tax returns more complicated for investors.

Kinder Morgan shed the structure in 2015 in a roll up that was a taxable transaction for the existing investors. Enbridge Energy Partners, LP, Spectra Energy Partners, LP, Williams Partners LP, Tallgrass Energy Partners, LP and NuStar Energy, LP are just some of the MLPs that have announced plans so far this year to convert to corporations. Boardwalk Pipeline Partners, LP said it is also considering converting. Williams said it does not expect to have to pay taxes after the roll up until after 2024. / continued page 21

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they need.

MS. BARROW: So joint procurement — for example, where two or more CCAs form a new joint powers agency, a “super CCA” if you will — is one strategy the CCAs are considering using to contract for long-term resources.

The proliferation of distributed energy resources in California is another change that is not so much on the horizon as already at our doorstep. How does distributed energy change the risk equation for CCAs?

MR. GOLDING: Distributed energy and energy risk management are highly interrelated, and this creates an opportunity for joint action as a “super CCA.”

As context, customers expect to have fairly stable rates over the course of the year. In practice, this means that the CCA must predict electricity needs, hedge a certain volume through forward purchase contracts and then manage the residual market-price exposure going forward. Customer load profiles are uncertain and variable. This creates financial risk for the CCA.

## A joint CCA and PG&E offshore wind project using floating turbines should be in operation within seven years.

Another way to think about this conceptually is that if a CCA did not have to contract for power ahead of time and instead used the wholesale market to supply all its electricity needs and just passed those costs through to customers, then there would be no financial risk for the CCA. The risk is created by the need to offer fixed rates to customers and hedge ahead of time.

How does this relate to distributed energy? Distributed energy changes the pattern of electricity usage of the customer base. It has a direct effect on forecasting and energy risk management.

California is the most rapidly expanding distributed energy market in the nation. Distributed energy can affect customer electricity usage patterns in both passive and active ways. The volume of dispatchable distributed energy resources today in California is equivalent to a large nuclear power plant. These are assets that can be controlled to varying degrees, such as battery storage, electric vehicles, micro-turbines, fuel cells and so on. The volume of non-dispatchable distributed energy resources — primarily rooftop solar — is equivalent to several large nuclear power plants.

We need to be constantly monitoring the spread of distributed energy resources of various types, assessing the energy usage patterns of our customer base and factoring this into our forecasts, electricity purchases and energy risk management strategies. It is a complex, big-data challenge.

Creating a “super CCA,” where two or more CCAs establish a joint-action agency, is particularly important here because of how complex the issues are. If CCAs can tackle the challenge together by forming a unified operational agency, then they will be in a much better position collectively to integrate distributed energy into their operations.

MS. BARROW: A common theme running through this discussion is collaboration by CCAs — for example through joint procurement — and also through CCAs leveraging the institutional knowledge and experiences of other CCAs, the three California investor-owned utilities, municipal utilities and coops.

Richard Engel, RCEA is collaborating with Pacific Gas & Electric, on several new local projects.

One is a distributed energy project that will connect solar and storage on a micro-grid to supply electricity to the airport in Humboldt County. Can you tell us more?

MR. ENGEL: The project will get underway this year with funding from the EPIC program run by the California Energy Commission in partnership with the Schatz Energy Research Center at Humboldt State University. RCEA is putting in a substantial amount of the cost to the tune of about \$6 million.

It is a four-year project that will put in 2 MW of wholesale solar plus another 250 KW net-metered solar and 8 MWh of energy

storage for use by our regional airport. The system will also serve Coast Guard facilities that provide search and rescue along the California coast between the Oregon border and the Sonoma-Mendocino county line. The storage component will let us do energy arbitrage and better match loads with supply.

PG&E sees value in developing micro-grids throughout its service territory and establishing tariffs that ensure all parties are properly compensated. In this case, the generating and storage assets will be owned and operated by us, RCEA. There are multiple customers of the micro-grid. The Coast Guard base is one. There are another 17 electric accounts that will be served, mostly county government agencies and a few tenants of the airport.

This will be a good learning opportunity for PG&E.

RCEA and PG&E will share control of the dispatch. When in islanded mode during power outages, PG&E will have full control of the facility. Working out the details to that will be really critical. RCEA as an organization existed before we started serving our CCA function. We have a 15-year history of working with PG&E. We probably have a less adversarial relationship with our local investor-owned utility than most of the other CCAs have with theirs, and we are leveraging that positive working relationship for this project.

## Offshore Wind

MR. BARROW: We are running short on time and will get to audience questions in a moment, but Richard could you also tell us about the floating offshore wind project that RCEA is developing in partnership with PG&E?

MR. ENGEL: I'll keep this short. When we did a survey called "renewable energy secure communities" several years ago, it was the first time that anybody had looked comprehensively at all the different renewable energy resources available to our county. On the resource side, we discovered the big elephant in the room was offshore wind. If you look at the National Renewable Energy Laboratory map of the wind resources in North America, at about 20 miles offshore in far northern California and southern Oregon, you encounter just about the best wind resource anywhere in North America, on or offshore.

Because of the nature of the continental shelf on the West Coast, it is not feasible to construct the type of fixed-bottom offshore wind project that has been widely done in northern Europe and that is starting to show up at Block Island and other planned projects off Rhode Island and Massachusetts. Off the West Coast, you must use floating / continued page 22

The Alerian index, which tracks MLP units of the top MLPs accounting for 85% of MLP value, tracked 50 MLPs three years ago. The number is down to 38. There are 122 publicly-traded partnerships today in total. Two investment funds that operate as publicly-traded partnerships, KKR & Co. and Ares Management, are both converting this year to corporations. (Ares already converted effective March 1.) One stock analyst estimated that the KKR conversion would broaden its potential investor base by seven times.

The Alerian index has lost roughly half its value from a peak in 2014.

MLPs that own gas pipelines could be ordered by the Federal Energy Regulatory Commission to make billions of dollars in refunds later this year to pipeline customers as a result of the FERC decision in March that pipeline MLPs cannot include an income tax charge in cost-of-service rates. (For more about the FERC proceeding, see "Pipelines and Partnerships" in the April 2018 *NewsWire*.)

Roll ups can be both costly and complicated for investors. The investors are considered to exchange their units for buyout payments or stock in a taxable transaction. Each investor must compare the value received to the "basis" that he or she has in the MLP units. Basis is a fluid concept that makes it tedious to calculate because it changes over time. It goes up as the investor has to report a share of MLP income. It goes down as the investor reports a share of partnership losses. Debt at the MLP level also factors into basis, but is considered relieved and, therefore, part of the sales proceeds when the investor sells the MLP units. (For a discussion about the tax consequences to the investors when Kinder Morgan converted, see "Master Limited Partnerships" in the August 2014 *NewsWire*.)

**HAWAII** is looking for a / continued page 23

## CCAs

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turbines. There are not very many turbine manufacturers that have gotten very far into developing that technology. However, one of them, Principle Power, is based here in California, in Emeryville. It approached us last year with the idea of exploring the possibility of an offshore wind project.

We entered into a memorandum of understanding with it for purposes of early exploration. It quickly became clear that to move forward, we really needed to apply for an offshore lease with the federal Bureau of Ocean Energy Management. Last week, we applied for the grid interconnection study with CAISO.

Being a public agency, we felt we had to put out a public request for proposals before committing to Principle Power, so we put out an RFP in February. We got a number of impressive responses to that from developers all over the world. We had a great experience putting together a local review team for the statements of qualifications that included a broad range of stakeholders, including PG&E, ourselves, fishing interests, environmental groups and local labor unions. We see this as a great development opportunity for port revitalization and re-stimulating the local blue-collar jobs that have been on the decline with the timber industry shrinking.

For this project to be cost effective, it must be at a larger scale than what our own energy appetite would justify. We have sized the project at the 100- to 150-MW range. We will be looking for other offtakers for this project.

We are looking at probably a five-to-seven-year timeline for development of the project. From the data, it looks like there is a 50% or 55% capacity factor when you get out 20 miles or more out to sea, so it could be a great project, but we definitely need to do our due diligence. We are be eager to keep this project moving forward. ☺

# New Tools to Overcome Barriers to Financing Impact Projects

*by Clare Karabarinde and Princess Fuller, in New York*

When traditional forms of funding are unavailable because private investors are risk averse, enthused philanthropic organizations have devised ways to minimize risks and thereby lower the barriers to private investment.

The impact investment mechanisms they use include guarantees, first-loss reserves and other structures.

The Global Impact Investing Network, an industry association for social finance, defines “impact investments” as “investments made into companies, organizations and funds with the intention to generate social and environmental impact alongside a financial return.” In May 2017, the association published the seventh edition of its annual impact investor survey. Collectively 208 respondents reported managing a total of \$114 billion in impact assets. In total, 205 investors committed more than \$22 billion to impact investments in 2016 and are expected to commit 17% more (\$25.9 billion) in 2017. Figures for 2018 are not yet available.

## Guarantees

Guarantees are used to enhance credit. Only creditworthy projects can secure financings. Sometimes one or more narrow risks are scaring away private investors. Guarantors are usually third parties who contribute to impact investments by partnering with public institutions to offer a loan guarantee (often in the form of a grant) to reduce particular risks and potential losses. Hypothetically, this could be seen within a multi-layered capital structure like a social investment bond or SIB featuring senior investors, subordinate investors, recoverable grants, non-recoverable grants and guarantors. SIBs are discussed in more detail later in this article.

Some of the first SIBs in the United States had guarantors like Bloomberg Philanthropies and The Rockefeller Foundation.

According to the Global Impact Investing Network, guarantees have covered 9% to 75% in impact investment capital.

## Philanthropies are covering risks in “impact” projects to help the developers attract private capital.

Community-based solar projects, battery backup, distributed co-generation and micro-grids are all areas within the renewable energy sector that could benefit from guarantees. These projects involve new business models that could benefit from credit enhancement while in the testing and proving stages. Community solar projects often require financing on longer terms than banks are prepared to lend. Guarantees could be used in such cases to cover refinancing risk.

The challenges to using guarantees in impact investment include perception issues. Philanthropic organizations might be reluctant to be seen only as a last-resort option to “bail out” deals gone bad, which could be addressed in part by holding a diverse impact investing portfolio of investments and loans as a form of downside protection. Additionally, there are only a limited number of organizations that are willing and able to provide third-party guarantees with the structure and coverage levels needed.

### Catalytic First-Loss Capital

Catalytic first-loss capital — called CFLC for short — refers to an investor, or grant-maker, agreeing to bear the first losses for an impact investment in order to catalyze participation by other investors.

The fact that someone else will take the first-loss position makes other investors more likely to invest, assuming the particular risk is a reduction in revenue rather than total inability of the project to perform.

The first-loss position can be shed to an impact organization through a range of instruments, including grants, capital contribution commitments, subordinated debt and guarantees.

The fact that a philanthropic organization or public entity like a green bank is willing to take the first-loss position improves the risk-return profile for private-sector investors. At the same time, it helps to channel commercial capital toward the achievement

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new business model for its regulated utilities.

The governor, David Ige, signed a bill in late April that directs the Hawaii Public Utilities Commission to come up with a new framework for setting utility rates that ties the rates to performance rather than the amount of capital spending the utility has made that goes into rate base. The bill is SB 2939.

The commission has until the end of 2019 to act.

Regulated utilities in the United States charge rates that are projected to give them an agreed rate of return on a rate base, which is their capitalized spending on plant and equipment reduced over time by depreciation. The regulators hold periodic rate cases to refresh the numbers and adjust rates. New capital spending plans by a utility may lead to an increase in rates.

The state legislature said it believes this approach misaligns the interests of customers and utilities because it makes utilities biased toward spending on assets the utility will own rather than considering other options that do not add to utility rate base but are better for customers.

It directed Hawaii regulators to “establish performance incentives and penalty mechanisms that directly tie an electric utility’s revenues to that utility’s achievement on performance metrics and break the direct link between allowed revenues and investment levels.”

**GAS PIPELINE** approvals have come under a spotlight.

The Federal Energy Regulatory Commission opened an inquiry in April into its process for approving new gas pipeline projects. Comments are due by July 25.

Thom Hirsch, a gas pipeline expert with Norton Rose Fulbright in Washington, said pipeline companies thought initially that the inquiry was an opportunity to help FERC find ways to accelerate pipeline approvals by streamlining the approval process, but it

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## New Tools

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of certain social or environmental outcomes.

CFLC can play a critical role in the impact investing industry. It helps to test new business models, increase investor familiarity with community investing, and make capital available on appropriate terms for new types of deals. For philanthropic organizations or public finance institutions, social aspects play a more important role than financial returns. Thus, they have room to play the role of a CFLC provider to help unlock capital from investors with more interest in financial returns.

Many impact investors choose to invest through funds whose social, environmental and financial goals match their own. Major financial players like Blackrock and Goldman Sachs have reportedly ramped up their impact investing offerings in response to client demand.

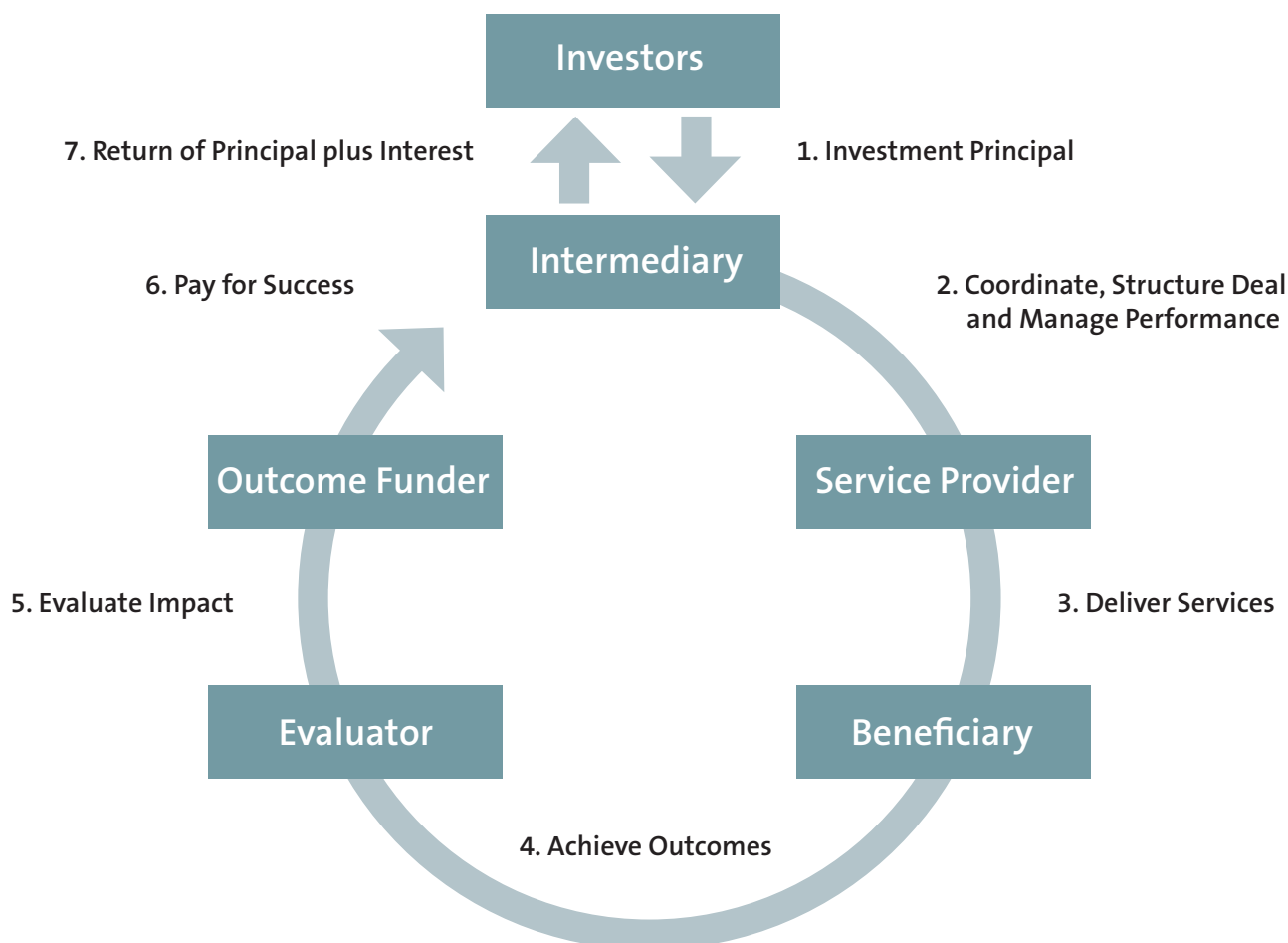
Impact investment was responsible for more than \$114 billion in assets in 2017, ranging from equity shares in real estate (particularly renewable energy real estate) to loans for businesses in emerging markets and social enterprise investments within developed economies. The Wharton Social Impact Initiative reported that the pooled, internal rate of return on 170 impact investments, made solely by private equity funds through 2017, was 12.9%.

## SIBs and DIBs

The United Nations Development Programme defines social impact bonds as a form of public-private partnership where one or more investors provide upfront capital for the realization of public projects that generate verifiable social or environmental outcomes.

Under a typical model, the government contracts with an

A simplified SIB/DIB structure is shown in the figure below:





intermediary or project sponsor to implement a social or environmental project in exchange for the promise of a payment contingent on the social outcomes delivered by the project.

The intermediary, service providers and anchor investors will then conduct assessments to determine whether the project is viable. After developing a detailed project plan and metrics for measuring success, the intermediary raises the capital for the project from commercial and philanthropic investors. Once enough funds have been raised, the service providers begin to execute the program. At some time after implementation, an independent third party uses the agreed metrics to evaluate whether the project is a success. If the program meets or exceeds expectations, then the outcome funder will repay the full amount of upfront capital plus a return on the invested capital. If the project is not successful, then there is no payment.

Development impact bonds or DIBs are similar to the SIB model. Unlike SIBs, DIBs involve donor agencies, either as full or partial sponsors of outcomes, and the project is by definition in a developing country.

SIBs and DIBs are not bonds in the traditional sense. Investor returns are linked to results. SIBs and DIBs operate as equity investments with investors owning a stake in the project and later receiving dividends if the project is successful. The approach is also referred to as pay-for-success in the United States.

A notable recent example of a SIB is the DC water environmental impact bond that was issued in September 2016 by the District of Columbia Water and Sewer Authority in an effort to redirect approximately two billion gallons of sewage overflow away from the Chesapeake Bay to improve water quality in the US capital. The Authority used a pay-for-success model to share performance risk between itself and investors. Under this model, its cost of capital (the interest paid to investors) would be reduced in the event of flow reduction underperformance. Its cost of capital (the return to investors) would increase in the event of flow reduction overperformance.

### Social Success Note

A social success note or SSN is a concept that was developed and piloted by The Rockefeller Foundation and Yunus Social Business. It is an innovative pay-for-success financing mechanism that addresses the investment gap for impact-oriented enterprises.

In the SSN structure, a private investor agrees to make capital available to an impact enterprise at a below-market rate. The impact enterprise is obligated to repay the capital. If the enterprise achieves a predetermined social / continued page 26

quickly became clear that environmental groups intend to use the inquiry to find ways to slow down new pipeline approvals. Hirsch said that FERC, composed mostly of Trump appointees, has already been taking slightly longer to approve new pipeline projects than the Obama-era commission took.

The inquiry comes at a stressful time for pipeline companies, as an unusually large number of new pipeline projects are teed up to start construction if they can get approved or if approvals already granted, but facing local opposition, survive court challenges. A number of new projects are also in the midst of preparing filings.

FERC is wrestling with a number of questions in the inquiry and looking for input. The questions include how the agency should confirm there is a need for the pipeline. For example, are pipeline precedent agreements enough evidence of public need? “Precedent agreements” are contracts signed with gas suppliers or gas users committing to ship gas on the pipeline subject to certain conditions that are important either to the pipeline or the shipper. These contracts are sometimes with affiliates of the pipeline company.

Another issue is how FERC should account for projected greenhouse gas emissions by the end user of the gas that would be shipped when deciding whether to approve a new pipeline.

Other issues are whether there should be ways to jump to the head of the queue upon a showing of special need and whether any transition relief should be given to pipeline applicants who were already in the queue when the inquiry started in the event the approval process becomes harder.

**NORTH CAROLINA** reaffirmed that solar rooftop companies may not enter into contracts to supply electricity to homeowners or businesses in the state.

They can make direct / continued page 27

## New Tools

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outcome, then a philanthropic outcome payer provides the investor an additional “impact payment” that aims to get the investor to a market-rate return. The investor bears the risk of the impact not being achieved, which would lower the return to the investor.

The SSN serves two goals: to attract private capital while placing the risk of the impact not being achieved on the investor. Unlike other pay-for-success models, where the returns to the investor are linked only to the outcomes, the impact risk is limited to the return portion that is provided by the philanthropic organization. The philanthropic organization stands to achieve the desired impact for a limited cost and bears no cost if the impact is not achieved.

## Renewable Energy

Private foundations have been instrumental in advancing impact investments. An initiative called “Smart Power for Rural Development,” launched by The Rockefeller Foundation, is an example of an effort aimed at spreading use of renewable energy to areas that are lagging adoption of renewable energy in major markets. This \$75 million initiative began in 2015 to promote decentralized renewable energy projects to India and some countries within sub-Saharan Africa.

Bill Gates has become a vocal advocate for impact investment in clean energy projects. In 2016, Gates founded the Breakthrough Energy Coalition as a gathering of business leaders, entrepreneurs and institutional investors devoted to promoting original, zero-emissions energy technologies.

Gates later established Breakthrough Energy Ventures, a fund with a capitalization of \$1 billion and a goal of bringing reliable and cost-effective clean energy to parts of the world that are not currently served by it. What is unique about the venture fund is that it provides a space for investors who are patient and tolerant of risks. Investors determine profitability through the lens of risk-adjusted returns over a longer trajectory of time as compared to other funds. Meanwhile, the coalition advocates for the private sector playing a larger role in the procurement, management and distribution of energy, as compared to relying solely on public resources.

In 2016, global wind and solar company Mainstream Renewable Power closed a \$117.5 million equity financing package as part of its funding commitment to Lekela Power to build 1,300 megawatts of solar and wind power projects across

Africa over three years through 2019. The Rockefeller Brothers Fund, a private grant-making foundation, was part of the investor consortium that also included entities such as the International Finance Corporation and Latin American & Caribbean Fund. The deal was evidence of the increased interest among private and public-sector investors to ensure that not only are there reasonable financial returns, but there is also a positive social and environmental component.

The Dutch Infrastructure Development Fund invested in 2013 in a special-purpose vehicle set up by Newcom, LLC, a Mongolian clean energy and company, to finance the construction of the Salkhit wind farm and related transmission lines in Mongolia to bring the power to the electricity grid. The total investment was €21.4 million of senior debt and €5.3 million of equity. The European Bank for Reconstruction and Development was a co-investor, alongside the Mongolian developer. The wind farm offsets 180,000 tons of carbon dioxide emissions per year, saving 1.6 million tons of fresh water and reducing coal usage by 122,000 tons annually. ©

## Infrastructure Opportunities in the US

*The Trump administration is moving forward with efforts to rebuild US infrastructure. A group of panelists talked about the outlook and timetable for the Trump infrastructure plan and then had a wide-ranging discussion about other current topics and potential growth areas for new infrastructure investment at a breakfast roundtable hosted by Norton Rose Fulbright and Inframation in late April in New York. The growth areas include such things as expanding broadband to cover rural areas and the large number of new transportation projects that will be needed to honor a promise by Los Angeles that spectators at the 2028 summer Olympics will be able to move easily in an area that has legendary traffic congestion.*

*The panelists are Jim Ray, senior advisor for infrastructure to the US secretary of transportation, Colin Peppard, senior director in the office of extraordinary innovation at the Los Angeles Metro, Jane Garvey, North American chairman of*

*Meridiam, Christophe Martin, CEO of North America at VINCI Concessions, Tom Rousakis, senior managing director at Ernst & Young Infrastructure Advisors, and Tom Mulvihill, managing director and head of infrastructure for KeyBanc Capital Markets. The moderator is Doug Fried with Norton Rose Fulbright in New York.*

## Trump Infrastructure Plan

MR. FRIED: President Trump unveiled an infrastructure plan in February that involves spending \$200 billion in federal dollars to generate at least \$1.5 trillion in total new infrastructure investments over 10 years .

Jim Ray, what can you tell us about the plan that might not be evident just by looking at it, and how much private investment do you think \$200 billion in federal seed capital will bring?

MR. RAY: The administration's efforts are much broader than just this plan. They fall generally into two buckets. One bucket is the things that we need Congress for. An example is the \$1.5 trillion plan that you mentioned.

The other bucket is things that we can do ourselves. The executive order that was signed last week directing federal agencies involved in environmental permitting to streamline the process is an example. We are fundamentally changing the way Washington coordinates itself on permitting.

There are also opportunities within existing programs. During the Bush administration, we put out a program called the "congestion initiative" with about \$1.5 to \$2 billion of "found" money. It makes sense to look under the sofa cushions in Washington. There are usually a few dollars lying around. We used some money we found to help make variably priced toll lanes more palatable as we think they will help ease traffic congestion.

We are looking for ways to transform federal programs to draw in more non-federal dollars. Congress has given us discretionary grant dollars that we can use for this purpose. These are all part of a broader package on infrastructure.

Returning to the new \$200 billion of federal spending that we are proposing to Congress, we intend that \$100 billion of that will be awarded as incentives. The money will go to projects where states and cities are willing to throw in more of their own money or money they can raise.

It is perfectly fine with us how the state or city chooses to raise its share, whether it means increasing the gas tax or doing some sort of hotel tax or another type of user fee increase. If another state or city wants to embrace public-private partnerships and have toll lanes on highways, that is also fine with us. We do not view it as the federal role to dictate / continued page 28

## IN OTHER NEWS

sales of solar equipment or lease the equipment to customers, but not sell electricity.

A non-profit group installed and owned solar panels on a church in Greensboro and entered into a power purchase agreement to sell electricity to the church for 5¢ a kilowatt hour. The state supreme court in May upheld decisions by the court of appeals and by the North Carolina Public Utilities Commission that the group was violating a state law that bars anyone other than the local utility with a monopoly over the service territory from making retail sales of electricity.

The non-profit group — NC WARN (North Carolina Waste Awareness and Reduction Network) — entered into the contract with the church as a test case and asked the Public Utilities Commission for a declaratory order. It planned to contribute the rooftop system to the church after resolution of the case.

The appeals court said the dispute was over whether NC WARN is producing electricity "for the public," therefore making it a "public utility."

The group argued that the arrangement was a private sale with a single party. The appeals court disagreed. It said since the group planned to enter into the same arrangements with other churches and non-profit entities if it won, it is serving the public. A unanimous supreme court upheld the appeals court decision without comment.

North Carolina is one of nine states that bars solar rooftop companies from entering into PPAs with customers, according to the North Carolina Clean Energy Technology Center.

The case is *State of North Carolina v. North Carolina Waste Awareness and Reduction Network*. (For earlier coverage of a case in Iowa that concluded a rooftop solar company was *not* making retail sales of electricity on similar facts, see "A Solar Rooftop Company" in the August 2014 *NewsWire*.)

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## Infrastructure

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what the new source of revenue is, but we want more skin in the game from other participants.

Fifty of the \$200 billion will go to a new rural program. A lot of good can be done in what I still think is a core federal interest, which is farm-to-market roads and similar rural infrastructure.

MR. FRIED: Colin Peppard, this infrastructure plan asks cities and states to develop their own funding sources so that they can pitch in more money. Are they prepared to assume these types of responsibilities?

MR. PEPPARD: I think it cuts two ways. In Los Angeles, we have been fortunate that the voters have consistently been willing to invest dedicated tax dollars in infrastructure. We have a broad enough tax base that we are able to do that.

Other cities, especially some of the more distressed areas in the upper Midwest and the Southeast, will have a harder time doing that. The point that Jim Ray made about not being too prescriptive about where that money comes from is important. It may be fine to require these areas to pitch in, but it is important to recognize that different areas have different capacities and they can contribute in different ways.

A new \$100 billion carrot is a great incentive for areas like Los Angeles to invest. The move to update procurement processes and rethink technologies is equally important.

I moved from the federal to the local level. Seeing how the thicket of procurement rules weighs down these projects and makes them less attractive to outside investment was a real eye opener. I would not underestimate the importance of these provisions as part of the overall package.

MS. GARVEY: I applaud the administration for rethinking how incentives can help Congress reach consensus regarding federal spending in this area.

Setting aside the dollar figure, the whole idea of matching and trying to figure out ways to incentivize local communities is a terrific idea. Even the Brookings Institution, which is considered left of center on policy issues, has put out papers calling for use of federal dollars as incentives to bring in other capital.

Some of the city organizations, like the Urban League and the US Council of Mayors, are focused on this part of the bill. This is a terrific opportunity to make some real links to those groups.

MR. RAY: A lot of people have faulted us for not coming out with legislative language. We are not so naïve as to think that the ideas that we put forward will just be enacted as proposed. There has to be a dialog. We have heard pushback on the dollar figure as well as other items. We are more than open to discussion.

There are other things that were contemplated that are not yet fleshed out. Some of that is because we have had a robust conversation with leadership in Congress who said to leave the drafting to Congress, so we tried to be respectful and play the role that we are meant to play.

Doug, you asked whether state and local governments can afford to contribute more money. The proposal sits on top of an existing program. We are not talking about changing the way the formula is done underneath. This is an opportunity for projects to secure additional federal money beyond what they might already receive. Even with our discretionary grant programs, the vast majority of the money goes out by formula.

MR. FRIED: Jane Garvey, what odds do you give that the Trump infrastructure plan will clear Congress?

MS. GARVEY: I do not think it will be enacted this year. We are dealing with a short legislative calendar in 2018. Congress must pass a bill reauthorizing the Federal Aviation Administration this year. There is talk about a separate bill reauthorizing federal water programs. There is no time to do much more than that. We might see within the FAA or water bill the opportunity for a targeted piece of the Trump plan to happen.

**A large number of new transportation projects will be needed in Los Angeles ahead of the 2028 Olympics.**

But I would go back to Jim Ray's point. We still have tools without waiting for Congress. We have a terrific TIFIA program. Funding has increased for it. There are some wonderful things happening at the state level. Let's think more about the cities. I think there are opportunities.

It is also the beginning of the dialog. This is a process. All of us need to be involved. Compromises will be worked out. Something will emerge in the end that reflects a collective effort.

MR. RAY: I think we, the American public, like to see things really neat, to fit within a 20-second news segment. But that is not how our founders set up Washington. I think the plan will move in pieces. We will chip away at this piece and then that piece until the remaining package really has its day in the sun.

### P3s

MR. FRIED: Tom Mulvihill, what parts of the infrastructure plan would most help P3s?

MR. MULVIHILL: The P3 market has not had the desired deal flow. I have always felt that the problem has been lack of funding. The fact that the president has identified funding as an issue and has proposed using federal dollars as an incentive for local governments to pitch in more hopefully will unlock a large pipeline of deals going forward.

I am encouraged about the funding. I think you are right there will be plenty of discussion, but I think that we will have that discussion is a good development.

Getting into the financial aspects of the plan, I think the proposed improvements to various existing programs — TIFIA, WIFIA, RIFF and private activity bonds — are fantastic.

I am encouraged by things like the streamlining process. Trying to shorten the time from the drawing board to shovels in the ground is very important. Having been a consultant to governments on infrastructure projects for many years, I have seen firsthand how the process works and how things get studied and then restudied. There is always concern about litigation, so it is studied again.

MR. FRIED: Christophe Martin, what does the infrastructure plan say to foreign companies about the future of the US P3 market?

MR. MARTIN: We do not consider ourselves a foreign company. We are present in North America through incorporated local companies, and we are based in Miami. Most of our staff, the engineers on the different sites as well as our partners, our subs and our supervisors, are American.

MR. FRIED: Point taken.

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**FLORIDA** confirmed that contracts used by Sunrun to lease solar equipment to customers are not retail sales of electricity.

Only regulated utilities can make retail electricity sales in the state.

The Public Service Commission issued a "declaratory statement" on April 20 confirming that the form of solar lease that Sunrun proposed to use with customers is not a sale of electricity in substance and would not turn Sunrun into a public utility. Sunrun asked the commission for such a statement at the end of December before starting to use the contract in the state.

Florida law allows utility customers to lease equipment that they use to generate their own electricity.

The commission staff said the key in this case is that the customers will pay fixed rent for use of the equipment that does not vary with the electricity output.

Two Florida utilities called the commission staff's attention to several contract features. The staff said Sunrun will not guarantee customers that the equipment will generate any particular amount of electricity. It analyzed whether Sunrun can still maintain the equipment for customers and also be responsible for monitoring the equipment, before deciding that Sunrun can. It said Sunrun is providing customers who are leasing equipment essentially with a separate maintenance plan.

**NEW IRS GUIDANCE** may face delays.

Under pressure from President Trump and some Republicans in Congress, the US Treasury and the White House Office of Management and Budget reworked a 1983 understanding that new tax guidance generally does not have to be vetted by OMB before it can be made public.

The new understanding is that three types of "regulatory tax actions" will now be subject to OMB review.

The three are actions */ continued page 31*

## Infrastructure

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MR. MARTIN: There is no doubt there are huge infrastructure needs in the US. We consider Trump's plan a positive sign and maybe a commitment to allow the private sector to play a major role. From our perspective, it is a fantastic opportunity to bring in more expertise and investment and take advantage of our worldwide concessions experience.

MR. FRIED: Tom Rousakis, the infrastructure plan proposes to expand existing credit-assistance programs like TIFIA, WIFIA and private activity bonds. How necessary is this expansion for growth of the P3 market in the US? [Editor's note: *The federal government makes low-cost loans to transportation and water projects under TIFIA and WIFIA. Private activity bonds, or PABs, are tax-exempt bonds issued by state and local governments to finance 15 types of projects that may be privately owned or put to other private business use, but that are considered to benefit the public.*]

MR. ROUSAKIS: I want to combine that with the discussion of the plan in general.

## LA Metro is encouraging unsolicited proposals.

TIFIA has played a tremendous role in the expansion of P3 projects and projects in general. Programs like it can help projects get over the finish line, reduce public subsidies and make or break a project. The market expects these programs to remain in place.

What would be most interesting is expansion of PABs to other asset classes, especially social infrastructure. We are seeing tremendous natural growth in interest in P3s for social infrastructure at the smaller city scale. Many less sophisticated public agencies are being pitched these ideas. The taxable versus tax-exempt debt issue is a big hurdle for them. If Congress were to

allow PABs for social infrastructure, that would send an important signal. It is kind of psychological.

The decision to do a P3 is a local one. PABs, TIFIA and WIFIA are tools that help demonstrate to local governments how these projects can be more cost-effective.

Whether the Trump plan will move the needle massively in core areas like transportation, leading to more deal flow, is an open question.

MR. FRIED: You have a point about the psychological aspect. When the people in this room talk about P3s, we talk about risk transfer, life-cycle management and benefits like that. However, when it gets to the decision makers, they look at the coupon, right? They say risk transfer is nice, but show me the money.

MR. ROUSAKIS: That's right, but we have come a long way. I have a lot fewer of those conversations today.

Public officials also ask why they should lock into a long-term contract with a private party. They want flexibility. Public leaders are really sticking their necks out when signing long-term deals. P3s are all about fiscal sustainability and the long-term condition of assets. People still get elected to build things.

MR. MULVIHILL: It is hard to get away from the tax-exempt debt discussion. When you tell public officials that a P3 might cost 100 basis points more, but they will get risk transfer, they do not hear the risk transfer part. The fact that the debt will be at tax-exempt rates is a big psychological benefit.

MS. GARVEY: Tying this to incentives, maybe the politicians will feel they get more if you can demonstrate a commitment to long-term maintenance and a commitment to life-cycle costs.

That can become part of the incentive program and one way to shift the narrative.

MR. FRIED: We have been talking about educating government officials since the P3 market started in the US. Tom Rousakis, you advise a lot of government agencies. Do you feel that we have made significant progress?

MR. ROUSAKIS: Even though the deal pipeline is not massive, it is diversifying. Clearly something is happening across the country. Progress is made by word of mouth. Someone tries

something, someone learns a lesson, and so on. Eventually those lessons get widely disseminated. We still spend a lot of time holding our clients' hands and explaining things, but there has been progress.

MR. MULVIHILL: Public officials are not paid to be risk takers. What is their upside if they try a new tool and it works well? Maybe they get a pat on the back. There is no monetary incentive. If things do not go well, bad things can happen to them, including losing their jobs and possibly their pensions.

MR. FRIED: Yet one of the biggest changes in the last 12 to 18 months is we are seeing P3s applied to a broader range of assets.

MR. MULVIHILL: You still need a champion. You need someone who is willing take the risk.

## Opportunities

MR. FRIED: Tom Rousakis, in what states do you expect the most opportunity for P3s?

MR. ROUSAKIS: The pendulum swings back and forth. We are not talking about Texas these days. There has been a real push-back in Texas.

Maryland is exciting. Its HOT lanes could be a massive project. It would be a natural extension of what Virginia has already done on its half of the Capital Beltway.

California and Los Angeles are also exciting. Who would have thought three or four years ago that this would be the epicenter of P3 transactions? It is not just the current projects, but more is also coming. LAX airport still has the consolidated rental car facility — or ConRAC — project to do. The Los Angeles Civic Center project may happen as well.

New York is another. The governor here wants to do more projects.

Those are the really exciting areas. We are not talking about Texas and Florida like we did five to 10 years ago.

MS. GARVEY: Energy is a new area at which we are taking a close look. Water is another. Some places that have done P3s like Miami or Florida are now looking at different sectors for P3s.

One of the great challenges as we look at new markets is the notion of risk transfer. We are learning a lot as we think about new potential uses of P3s. For example, use of P3s for street lighting and other areas of technology that are likely to change quickly is interesting but challenging. Maybe these ends up with shorter-term P3 concessions. Maybe there is a new P3 model for these deals.

MR. FRIED: Tom Mulvihill, Jane Garvey mentioned the energy industry. The Ohio State University / *continued page 32*

that “create a serious inconsistency or otherwise interfere with an action taken or planned by another agency,” “raise novel legal or policy issues” or “have an annual non-revenue effect on the economy of \$100 million or more.”

The new policy is in a joint memo signed by the two agencies in mid-April. The earlier policy, dating to the Reagan administration, was that interpretive — as opposed to legislative — tax guidance did not have to run the gauntlet at OMB because it is generally welcomed by taxpayers who want the government to shed more light on what tax laws written by Congress mean.

The part of OMB that will do the review is called the office of information and regulatory affairs or “OIRA” for short.

The reviews are supposed to be done within 45 days.

The IRS cannot release covered guidance until OIRA notifies Treasury that it has waived or concluded its review. Treasury can ask for an expedited review period of 10 business days, although this can be extended.

The IRS is struggling to update tax forms and put out guidance about how a large number of new tax provisions work that were enacted as part of a massive tax reform bill at the end of December. Companies have many questions. The agency is shorthanded and seeking a budget increase from Congress to hire more tax experts to help. The Trump administration is also requiring that two existing regulations must be withdrawn before any new regulation can be issued. It is not clear how the 2-for-1 policy applies to the IRS.

The new policy of subjecting new tax guidance to an additional layer of review by OMB is a response to Executive Order 13789 in which President Trump ordered the Treasury and OMB to revisit their earlier protocol.

It could provide companies that are unhappy with where the IRS may be headed on policy decisions another avenue to try to turn around the decisions by / *continued page 33*

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energy transaction reached financial close in the summer of 2017. Why hasn't that model taken off and been applied by other universities?

### An Ohio State energy project may be a model for other large campuses.

MR. MULVIHILL: Ohio State has been a leader in P3s, first with a transaction around its parking facilities and then with the energy utility deal. A few other universities have looked into emulating the parking deal, but we have not seen that take off.

Universities are conservative by nature. They see big numbers that are startling. That scares them more than incentivizes them to pursue some of these deals, because they fear the risks that usually come along with big numbers.

Universities run like small cities. They must provide heating, cooling and power throughout a campus that has maybe 20,000 to 50,000 students and faculty.

Providing those services is not core to their missions, so the services wind up being more of a headache for them. They have to spend a lot of time at the executive level that they would rather spend on academic services. Fundamentally, I believe many universities would be delighted for someone to take utilities off their hands.

There is a gradual trend toward it, but some sectors move more slowly than others.

MR. FRIED: Christophe Martin, Tom Rousakis mentioned the potential \$7 billion HOT lanes deal in Maryland. Is it feasible to do that large a project or is it better to break it into smaller pieces?

MR. MARTIN: We believe this type of project has to be split into two or three sections because of its size. Imagine for a second what would happen if there were a problem with a concessionaire or a contractor. This is a risk. Splitting the project will provide security for all of the parties.

### LA Metro

MR. FRIED: Colin Peppard, why has LA Metro relied on unsolicited proposals over solicited? Will that continue?

MR. PEPPARD: We expect to continue using unsolicited proposals. Phil Washington, our CEO, has had a lot of success with unsolicited proposals, and he feels that the model allows the private sector to see our blind spots in ways that are helpful to us. To presume that we know everything about our needs and the best approaches for addressing them is just wrong.

Entertaining unsolicited proposals does not require a tremendous amount of work. The work to submit them is not insubstantial, but the amount of work to submit is manageable for a conceptual proposal. The proposal is really an abstract of a vision about what could be possible.

Unsolicited proposals have yielded tremendous creative thinking within our agency. We have also leaned on unsolicited proposals because our experience defining where P3s would work best has, frankly, not been particularly good. Unsolicited proposals have helped us to see potential P3s that we would not have spotted on our own.

We are still developing and screening our own projects internally, doing our own P3 assessment and doing the types of due diligence that you need to do to understand the best procurement model across the range from design-build to a full concession. But with the \$120-billion program and 60 or so projects that we have, identifying potential win-win situations for both LA Metro and the private sector quickly, without a big screening effort and a lot of politics, is incredibly valuable.

MR. FRIED: You have currently in pre-procurement the Sepulveda Pass transit corridor project, the West Santa Ana transit corridor project, the Vermont Avenue bus rapid transit



project, and the Orange Line project. Will any of these advance as P3s?

MR. PEPPARD: The Sepulveda Pass transit corridor project and the West Santa Ana transit corridor project are both moving forward as P3s. We are doing additional due diligence and building business cases for both. The Sepulveda Pass project will likely have a preliminary development agreement in some form, and the West Santa Ana project will likely be a hard bid, potentially with a variable scope. We will see how that bears out depending on the business cases that we develop.

The Vermont Avenue BRT project is a possible technology project. The bus service itself is likely to be retained by Metro, but there are so many new technologies that can facilitate the type of reliable, consistent, high-quality bus rapid transit service that you need to drive ridership. The idea of Metro procuring and integrating all those technology components is really challenging. We are trying to think about this project in new ways, including as a potential P3 with risk transfer.

The Orange Line is likely to remain with Metro. We will have to reassess when we get closer. The planned conversion to light rail is not until 2051 or something like that, so the light rail unsolicited proposal we received was a little bit early.

There is also the San Fernando Valley light-rail line, for which the locally preferred alternative will be identified in the next couple months. That project was identified internally, not through an unsolicited proposal, and shows a great deal of promise as a P3 as well.

MR. FRIED: Are there any other projects about which you are thinking that you could share with this group?

MR. PEPPARD: Yes. The great thing about the way that the ballot measure M that yielded the sales tax that underpins our entire program is structured is that it has a detailed expenditure plan, or project pipeline. Voters could see that expenditure plan when voting about whether to dedicate an additional penny of sales tax in perpetuity to transportation.

So the expenditure plan is your project pipeline. There are about 40 or 50 projects on it, and they have anticipated ground-breaking and revenue service dates and the anticipated cash flows associated with them.

One key thing to understand is that it was all laid out assuming design-build construction because we needed to start somewhere. Those assumptions would obviously change if any of the projects is procured in a different method.

One project that is not on the plan is our express lanes network. We currently operate two managed variable-price toll

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complaining to OMB or other White House staff.

Other agencies already submit their regulations to OMB before publication. In practice, fewer than 10% of regulations end up being reviewed.

**CORPORATIONS** with tax years that straddled year end 2017 got instructions on how to calculate their 2018 US taxes. An issue arises because the corporate tax rate fell from 35% to 21% on January 1, 2018.

The IRS said in a notice in mid-April that such a corporation should calculate its taxes using the 35% rate for the entire straddle year and then the 21% rate for the entire straddle year and then apportioning the tax at the different rates based on the number of days in calendar year 2017 versus 2018.

The notice is Notice 2018-38.

It does not expressly address what happens where the corporation is a partner in a partnership. Partnerships allocate their income to the partners. The entire income for the year is allocated on the last day of the partnership tax year.

Thus, if the partnership uses a November 30 year, all of the income through November 30 would have shown up on November 30, 2017. If the partnership uses a January 31 year, all of the income for the year would have been allocated to partners on January 31, 2018.

If the partnership had sold an asset, triggering a large gain, on November 30, under the notice, the gain would have been taxed to a partner whose tax year straddles the end of 2017 partly at a 35% rate and partly at a 21% rate. It seems like the same principle should apply where income is allocated to the partner by the partnership on a single day during the straddle year.

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lanes on the 110 South and the 10 East. But we have a vision for a 632-lane-mile managed-lane network throughout LA County. It is laid out in great detail in our express lane strategic plan. It is built to function as a network operationally, but also financially, with inter-fund loans and cross-collateralization of assets to enhance the credit of the network. Unfortunately, the state law allowing us to do P3s on state-owned highway facilities has expired. We are working to try to get it renewed.

The demand for freeway space and travel time in Los Angeles is nearly limitless. The willingness to pay is pretty high. The public acceptance of tolls in Los Angeles is higher than in many other places around the country, especially if we are reinvesting some of the revenue back into additional transit assets in the corridor.

### Improving Deal Flow

MR. FRIED: Christophe Martin, a big theme has been thinking about how we might increase the deal flow in the United States. You have vast experience globally. What does the United States need to do?

MR. MARTIN: We see three issues. The first one is funding.

Beyond funding, there is room to be innovative to create more deal flow. We were talking about managed-lanes projects, but we can also talk about asset recycling. I just arrived one year ago in the US, and I was a bit disappointed by the number of brown-fields that were on the table: not too many, maybe one or two every year. This is disappointing. Maybe operations and maintenance could be privatized in some states. We think that could help to increase deal flow in the market.

**A push for broadband in rural areas is another area for growth.**

That said, the main issue we have to face is uncertainty. We need to address the uncertainty whether a project will go all the way to the end. Support at the highest levels of government for a project is key.

MR. FRIED: Jim Ray, Christophe mentioned recycling of assets. In the infrastructure plan, there was some mention of divesting or selling federal assets. Can you provide more color?

MR. RAY: In the last round of the TIGER discretionary grants, we included a secondary criteria that was meant to open the door to asset recycling. I don't know how many people picked up on that. Discretionary grant programs do not provide a lot of lead time to develop projects, but you should expect to see more of that as we move forward.

We are trying to think creatively. This gets back to the issue of what can we do within the authorities that Congress has already granted us. We are looking for ways we can help asset recycling get traction in the United States.

Your other question was about federal assets. This may come as a massive surprise, but the federal government owns a heck of a lot of stuff, and not all of it, I think, is in the best hands. Not all of it needs to reside within the confines of the United States government. We have started looking broadly at assets that perhaps the federal government might be able to sell.

Does anybody here know that the federal government owns a couple of toll bridges? We have openly questioned whether the government is the best entity to own them and, if we are not, then should those assets go to the state, which can then decide what to do with them, or should the federal government go directly to the market? There are assets all over the place and that effort is afoot. I think it will be controversial.

This is something for which we will need to go to Congress, unless it fits under the rules for excess property. Some of the things we may be able to make a case for could be done on that basis. We have to get fair market value for the assets.

MR. FRIED: Are you thinking about sales or concessions, or have you not gotten that far?

MR. RAY: We are thinking about both. We see value in maintaining ownership of some assets over the long haul, but perhaps there are better options

in the short and medium term. There are other assets that the United States government probably does not need to own. For example, an asset may have run its useful life. In some cases, assets are in the process of being decommissioned, meaning torn apart and destroyed, and the private sector has approached us and said it thinks there is an alternative use for that asset. That would be a case for an outright sale.

MS. GARVEY: Probably even more controversial is that there are a number of federal assets that should stay with the federal government, but they are in terrible, terrible shape. I have often thought that if we really want to promote P3 as a public policy, you could take the federal buildings, just even the ones in the Washington area, and improve them all through a P3 and, with life-cycle cost analysis built in, it could be a wonderful model.

Or you could take the facilities that the Federal Aviation Administration owns that I know need to be replaced. There are anywhere from 10 to 15 facilities that could be replaced through a P3 model. The scoring rules in the budgetary process have always been the big stumbling block. There is a way forward if you really wanted to kick start this market and show what could be done. The leader really could be the federal government.

MR. FRIED: The last infrastructure roundtable we had here at our offices was two days after the presidential election in 2016. In preparing for that roundtable, we all thought that we were going to be talking about Hillary Clinton's policies. Donald Trump became president and the focus obviously shifted, but at that roundtable, there was a tremendous amount of optimism about infrastructure and particularly with what could be done with bipartisan support.

Looking back now a year later, do you think that optimism still exists?

MR. RAY: I am still very optimistic. There may have been people who were enthusiastic in a Pollyanna type of way in the early days, and who did not think about the system of government that our founders created and how life in Washington is hard on purpose. It is difficult to move things for reasons that I think over the last couple hundred years have proven to be valid.

I think we are moving things forward in dramatic fashion within the confines of what we can do.

In terms of the bill and bipartisanship, Washington is a difficult place. The president has already shown his ability to work with the other side as it relates to the debt ceiling. I think infrastructure is one of those items that we can pull together in the same way.

Not cementing our ideas in bill text is a sign of our willingness to shape the plan in ways that work for / continued page 36

**CARBON SEQUESTRATION** credits increased slightly in amount.

The US government offers a tax credit for trapping carbon dioxide emissions from any industrial source, including a power plant, and then either burying it permanently underground or using it for enhanced oil recovery. Future sequestration projects will be allowed to put the CO2 to broader uses.

The credit is in section 45Q of the US tax code. It is adjusted each year for inflation.

The 2018 amounts are \$22.87 per metric ton if the captured CO2 is buried permanently underground and \$11.44 a metric ton if it is used for enhanced oil recovery. These are the amounts where the carbon capture equipment was put in service before February 9, 2018. The credits for using newer equipment are higher, but the IRS has not announced the figures.

One problem with the tax credit has been that it can only be claimed on the first 75 million metric tons of carbon dioxide sequestered nationwide. No more tax credits can be claimed after the year the IRS announces the 75-million cap is reached. The cap applies only to carbon captured with older equipment put in service before February 9 this year. There is no cap on credits for capturing carbon using newer equipment.

The IRS said in May that credits have been claimed on 59,767,924 metric tons of CO2 based on the "most recent annual reports filed with the Internal Revenue Service."

The IRS made the announcement in Notice 2018-40 in May.

Credits had been claimed on 52,831,877 tons a year earlier. (For a full discussion about carbon sequestration credits, see "Tax Equity and Carbon Sequestration Credits" in the April 2018 *NewsWire*.)

**BRITISH OVERSEAS TERRITORIES**, like Bermuda, the Cayman Islands and the British Virgin Islands, will have to post public registries disclosing ownership of companies

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everybody. Somebody had to move. It was us because we established it as a priority.

I remain optimistic. Looking at the two baskets I mentioned earlier, I know one will be successful, and I have a pretty good feeling that the other one will be, too. It may just not be exactly the way that we painted it, which is okay. That is our system of government.

### LA Olympics

MR. FRIED: Colin Peppard, Los Angeles will host the Olympics in 2028. What are some of the most critical infrastructure investments that Los Angeles will need for the Olympics, and what role do you think private capital can play in delivering these projects?

MR. PEPPARD: Without sounding too self-serving, it really is the transportation network. I just moved to LA two years ago, and I moved from Washington, DC which is known for its traffic congestion. I was blown away. Local streets, freeways — you try and get across town on a Saturday morning at 5:30 a.m. There is gridlock.

## The move to automated vehicles will change urban areas.

As a condition of getting the games in 2028, there were specific guarantees that the mayor and the bid committee made in terms of travel times, not just for athletes and support staff, but also for the real show, which is the production squads, the entertainment aspect.

We are going to have to figure out how to move people to meet those guaranteed travel times. The clock is already ticking on these projects.

MR. FRIED: But you have this room of people to help you. [Laughter]

MR. PEPPARD: Which is why it is very exciting to be here. We have a lot of opportunity, and we have a lot of political motivation. We are being asked to put together an accelerated “28 by 28” plan of the highest priority projects for acceleration by the 2028 deadline. At the same time, we need to take into account robust hiring requirements, environmental processes and fights about scope and alignment, which can take years.

We are being squeezed on both sides. It is our job to impose some discipline, including considering where the private sector can help provide bridge funding and smooth out our cash flows, especially when it comes to the spikiness of design-build project funding.

People’s expectations are high in this era of new mobility options such as Lyft and Uber. Everybody just expects travel to show up and take you away when you push a button on a phone.

It is in meeting that challenge that the people in this room and the broader marketplace can help us, including through our unsolicited proposal policy. The “28 by 28” list was approved by the board. You can find it online. It was in the Los Angeles Times.

LA County is the size of Rhode Island. Hosting the Olympic Games is going to be a real challenge if people cannot get around.

### Final Thoughts

MR. FRIED: Let’s get some final thoughts from the panelists. Jane Garvey, please lead us off.

MS. GARVEY: A lot of good points have been made, and I would go back to just a couple.

One is the importance of incentives. I think there is a growing consensus that incentives are important, but can we think about incentives in such a way that we advance not just P3s, but we also look at them from the perspective of the local communities?

The second is about rural infrastructure. We did not get much

chance to speak about it, but if you are looking for compromises in Congress, there will have to be a merger of the big urban interests with rural interests. A number of people running for office today are talking about rural infrastructure. For example, there is a candidate for governor in Maine talking a lot about rural infrastructure and broadband.

The final point is the importance of the champion. Especially when thinking about new markets or new geographies, there has to be a local champion. I have never seen a complicated, difficult public works project that has succeeded without a local champion.

MR. MARTIN: Vinci will be proud to help advance Trump's plan. We are fully aware as a concessionaire that our fate is closely linked to the economic development of the country. Our revenue is strongly dependent on the economic momentum of the country. We are confident about the outlook for both the US economy and P3s.

If properly developed, a P3 can drive strong political and community concessions.

MR. MULVIHILL: I am excited about where this market is headed. This already feels like a good year. I think certainly by the second half of the year, we will see some big deals closing. This could be a breakout year for P3s in everything from very large airport-related projects to small courthouses to technology. The market has diversified, and it is digging more deeply into the municipal levels.

We are reaching the point where people do not have to bid every deal like it is the last one they will see. I think people can start to pick their spots, which is good.

I think 2019 will be another great year. I feel like there are enough procurements starting now that will not get done this year. That is all right because we need deals next year, too. I am very encouraged about the market and that a compromise can be struck at the federal level. Bring in some of the proposed funding, bring in some of the streamlining and we can continue to grow the market.

MR. ROUSAKIS: One state I left out earlier was Georgia. In terms of the near-term pipeline of possible P3s, there are major availability-payment transactions there.

Also on the theme of diversification are broadband projects. We are working on such projects with Pennsylvania and Georgia, and other states are starting to look at broadband.

We think broadband will be a big opportunity that will happen fairly quickly because there is new value in the fiber that has already been laid with the advent of 5G / continued page 38

based there.

The registries must be posted by the end of 2020. The House of Commons added a rider ordering 14 overseas territories to disclose share ownership as part of an anti-money laundering bill that cleared the Commons on May 1.

David Cameron, the former British prime minister, called anonymous shell companies in tax havens the getaway cars of money launders and tax evaders.

The requirement to post share ownership does not apply to the Channel Islands, which have a different legal relationship to Britain as crown dependencies.

The prime minister of Bermuda reacted angrily to the House of Commons vote in a speech on May 4, as did leaders of some other affected former British colonies, calling the move overreach by Britain. The current British prime minister, Theresa May, had favored leaving decisions on secrecy to local voters in the affected overseas territories, but she lacked the votes in the House of Commons to enforce her position. The politics shifted after the attempted poisoning in Britain of ex-Russian spy Sergei Skripal and his daughter. The incident brought renewed scrutiny into the use of Britain by Russian oligarchs to launder dirty money. David Cameron had committed Britain to open share registries before leaving office in 2016.

A new anti-money laundering directive from the European Union in June is expected to require all EU countries to set up public registries.

**US FOREIGN CORRUPT PRACTICES ACT** enforcement actions were down 50% in the first quarter of 2018 compared to the average number over the last 10 years.

The Foreign Corrupt Practices Act makes it a crime to offer anything of value to an official of a foreign government or international public organization in an effort to win business or secure / continued page 39

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networks. The question will be whether our clients can reach their social goals and maybe make some money off the rights-of-way that they have. These projects tie into automated vehicles, they tie into ITS, they tie into all sorts of social needs.

MR. PEPPARD: Something that Jim Ray said was important. He thought he understood how the federal transportation programs worked, and then he realized he didn't when he switched from the federal government to the private sector. Having helped to write parts of the federal program, I feel the same way. Things that I drafted look totally different on the other side.

I thought we were drafting a series of policies. At the local level, however, we are looking for a package of solutions to really big problems. Politicians can be petty and self-serving, but they are ultimately trying to look out for the public interest.

My closing comment would be to ask, as somebody who is trying to build what could be the biggest P3 market in North America if we are successful, not to look at this as a series of deals, but to look at it as a series of solutions. Let's not focus solely on the next closing, but put in place a model that works for the long term. These solutions need to bear out, they need to show value. We talk about value for money. They need to demonstrate that, not just on paper, but in real life. We all have a responsibility to make that happen.

MR. RAY: I can't speak for how other administrations approached things, but I know from my time during the Bush administration that we took a lot of things as they were. I liken it to walking into a professionally staged house. You may be out shopping and the couch is there, and there is a table, and a vase is there, and the TV is on that wall. Everything is just perfect. I think that when most people buy that house and move their own furniture in, a lot of it goes in the same spot because that is their mental image of how that room is supposed to look.

What has been really energizing about working where I work now is that this White House will not allow that type of assumption to be made. You question everything. In so doing, you run down some rabbit holes, and you find there was a good reason for why somebody put that existing policy in that place.

And then you go down other holes and you find no one recalls why a particular decision was made or why those rules were in place. I have brought back to Washington with me the lessons learned over the last eight years of working on deals, shoulder to shoulder with a lot of really thoughtful, committed people in the industry.

Colin Peppard said earlier about unsolicited proposals that you should not look at LA Metro as though it knows all the answers. Don't look at the administration as though we know all the answers. Look at us as people who are there for the right reasons and are absolutely committed — to the point of tremendous self-sacrifice — to doing the right thing and finding a better mousetrap. But we will not be able to do it without you.

Regardless of who you are or what your perspective is, your opinion is really valued by us. Before complaining about the marketplace, call me first and tell me what we can do differently.

Please, if you think that we have the opportunity to include something in the FAA or water reauthorization, or you think we have the opportunity to change a piece of the infrastructure package, or you think that we have the possibility not to make a mistake tomorrow, call us. You are going to find a receptive listener. I cannot promise we will do what you ask, but we will evaluate your request and hopefully at the other side of it come out with a better program. ☺

# California Update

by Jim Berger, in Los Angeles

Marin Clean Energy became the first community choice aggregator in mid-May to receive a credit rating. Moody's Investors Service assigned it a Baa2 rating and stable outlook. This is the second-lowest rating that is considered investment grade.

Market response has been muted. Bankers report that they had already been viewing Marin as essentially investment grade.

Moody's cited the strength of the California joint power agency statute and the Marin Clean Energy joint power agency agreement that underpin MCE's business model. Moody's also cited MCE's established track record of operations and consistently improving financial performance in giving the rating.

Community choice aggregation allows local governments to pool their electricity load in order to purchase power on behalf of their residents, businesses and others, who have the choice to sign up with a CCA.

Currently, there are 16 CCAs in California. According to the California Community Choice Association, more than 80 cities are currently engaged in or considering community choice energy and more than 50% of California residents will be served by a CCA by 2020.

Unlike traditional utilities, CCAs do not have a strong financial record. This makes project financing a renewable energy project based on a contract to sell its output to a CCA difficult, because financial parties look to the revenue stream and how strong it is. In addition, customers can leave a CCA, and if enough leave, the CCA could shut down. (For more information about California CCAs, see "Community Choice Aggregators and Community Solar" in the April 2018 *NewsWire*, "Financing Projects with CCA Contracts" in the December 2017 *NewsWire* and "America's Leading Renewables Market in Flux" in the August 2017 *NewsWire*.)

There have been at least two financings of large solar projects that have power purchase agreements with CCAs and other projects are coming to market, but the financings to date have not been as favorable to the sponsors as they would have been with a utility PPA. The lenders protect themselves with additional cash sweeps and other mechanics that help to pay down the debt faster and create additional reserves that can be accessed if necessary.

With Marin Clean Energy having been given an investment grade credit rating, this could have / continued page 40

## IN OTHER NEWS

any improper advantage. The Department of Justice investigates bribes. The Securities and Exchange Commission administers another part of the statute that makes it a crime to disguise illegal payments in company accounts.

The Department of Justice announced just two enforcement actions in the first quarter: one against a company and the other criminal charges against another executive of the company beyond the six company executives that the government has already indicted. The SEC filed two actions against companies.

All three corporate actions had been settled by the time they were announced. The case against the seven company executives is still pending.

The agencies had 62 ongoing investigations open at the end of March.

Walmart disclosed in SEC filings that it incurred \$877 million in legal fees and other costs in connection with an internal Foreign Corrupt Practices Act investigation it launched before November 2011 into alleged illegal payments. The amount includes the cost of revamping its compliance systems around the world and is more than three times the \$283 million the company said it has set aside to cover the fine it expects to have to pay as part of an anticipated settlement with the US government.

**DATA POINTS.** Coal-fired power plants accounted for 28.1% of US electricity generation in the first quarter of 2018, according to the latest *Electric Power Monthly* from the US Energy Information Administration in late May. That is down from 40% as recently as five years ago. Total US electricity output in the first quarter was 999.6 million megawatt hours. Gas accounted for 31% and renewables accounted for 18.7%. . . . The IRS is targeted by 2.5 million cyberattacks a day, the acting IRS commissioner, David Kautter, said.

— contributed by Keith Martin in Washington

## California

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several positive effects.

First, it could be the start of a trend. If more CCAs receive credit ratings, they could be viewed as viable alternatives to utilities in terms of financing projects. CCAs can look to the factors that Moody's cited to determine what rating agencies view as important in assigning a rating to a CCA.

In addition, developers may be more eager to sign PPAs with CCAs, knowing that the projects have a better chance at being financed. With a dearth of utility PPAs, especially in solar-drenched California, most new contracts are expected to be signed in the next few years with CCAs or corporate offtakers.

### New Homes

California became the first US state in May to require solar panels on all new homes. The California Energy Commission voted unanimously to adopt building standards that require solar photovoltaic systems on all new homes starting in 2020, in an effort to cut energy use in new homes by more than 50%.

The new solar mandate applies to all houses and condominium and apartment buildings up to three stories tall that obtain building permits after January 1, 2020. There will be limited exceptions, such as when a roof is too small to accommodate solar panels.

**Most new homes and two-and three-story residential buildings in California must have solar panels starting in 2020.**

The new standards are expected to increase the cost of constructing a new home in California by about \$9,500, but will save \$19,000 in energy and maintenance costs over 30 years. This calculation does not take into account the time value of money.

Homebuilders can take one of two steps — add solar panels to the homes or build a shared solar-power system serving a group of homes. Any rooftop solar panels installed can be included in the cost of the home or, based on a customer's preference, made available for lease or to supply electricity on a monthly basis.

Most of the details still need to be fleshed out. However, this will create a significant new market for solar installers and the rooftop solar companies that retain ownership of rooftop solar systems and either lease or sell electricity to the homeowners on whose roofs they sit. California builds nearly 100,000 new homes every year, and only about 20% come with rooftop solar systems already installed. The new rules are expected to result in about 200 additional megawatts of solar developed per year in California.

### Offshore Wind

Redwood Coast Energy Authority selected a consortium in April to develop a floating offshore wind farm off the coast of Humboldt County, which is in northern California. There were six respondents to the request for qualifications that Redwood issued on February 1, 2018.

The winning consortium is comprised of Principle Power Inc., EDPR Offshore North America LLC, Aker Solutions Inc., H. T. Harvey & Associates and Herrera Environmental Consultants, which will enter into a public-private partnership to pursue the development of the wind farm.

To date, only one offshore wind farm has been constructed in the United States, the Block Island wind farm off Rhode Island. Most other offshore wind farm activity has been in the Atlantic Ocean, where the



ocean remains shallower for much further distances than off the west coast.

The ocean floor becomes deep very quickly in California, making traditional offshore wind farms, which are anchored in the ocean floor, unworkable. The proposed solution is to design wind farms that float and then are tethered with long cables to the ocean floor so that they do not float away.

The proposed project off Humboldt County is a 100- to 150-megawatt floating wind farm planned more than 20 miles off the coast of Eureka, California. There could be 12 to 17 700-foot tall wind turbines in the project, which is expected to take five to seven years to develop.

The floating platform technology that Principal Power has developed was used in a small demonstration project for five years off the coast of Portugal.

Other companies are also working to develop floating offshore wind farms. The first commercial-scale floating wind farm began producing electricity in late 2017 off the coast of Scotland. The potential market in the US is massive. The National Renewable Energy Laboratory estimates that more than 800,000 megawatts of energy potential is available to floating offshore wind technology off the US west coast. ©

## Environmental Update

The US Environmental Protection Agency proposed in late April to limit the scientific studies that it will take into account when writing future agency regulations related to air pollution, toxics and other health risks.

The new approach is to ignore scientific studies where the underlying data is not made available to the public. The agency said this will be a boon for transparency, but thousands of scientists and public health groups have cautioned that it would block EPA from relying on landmark studies on the harmful effects of air pollution and pesticide and chemical exposure because such studies regularly involve confidential medical histories or other proprietary information.

Former EPA administrator Gina McCarthy said the new approach would have prevented EPA from considering studies linking neurological damage to exposure to leaded gasoline. Scientists regularly collect personal data from subjects with a promise to keep it confidential.

McCarthy said, “The best studies follow individuals over time, so that you can control all the factors except for the ones you’re measuring, but it means following people’s personal history, their medical history. And nobody would want somebody to expose all of their private information.”

Under the proposal, no regulation may go into effect unless the scientific data and modeling justifying it is publicly available for review, though the plan allows the administrator discretion to waive the requirements.

EPA said it is proposing to do without scientific data that relies on confidential sources because it wishes to foster openness, balance, and scientific integrity.

The proposal was initially subject to a 30-day comment period, but EPA extended the comment deadline from May 30 to August 17 after multiple scientific groups and other interested parties campaigned to block it from being finalized. The agency has already received thousands of comments about the proposal.

Some in the pesticide and chemical industries have raised concerns that the proposal could prevent the use of studies that support product safety because they rely on proprietary confidential business information. However, EPA indicated it might protect the underlying information if it were confidential business data, meaning EPA might / *continued page 42*

## Environmental Update

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accept studies for which the underlying data are not public as long as the sponsors claim such information is confidential.

A number of critics charge the proposed rule is intended to block the use of confidential medical studies that the agency has previously relied on in setting stricter air quality and other health-based standards.

On May 12, 10 top EPA science advisors issued a memo criticizing the proposal. The authors serve on the EPA science advisory board working group that was set up to look into the issue, and include some members who were appointed by EPA administrator Scott Pruitt. Its authors want EPA to ask the full science advisory board for its view because the “design of the rule appears to have been developed without a public process for soliciting input from the scientific community.”

EPA is not legally obligated to obtain and publicize data underlying the research it considers in fashioning regulations, according to various court cases.

The new proposal comes on the heels of restrictions Pruitt has imposed on who can serve on EPA advisory committees, including barring scientists who received agency grants for their research.

### Air Permitting

An update of the federal air pollution permitting program for expansions and upgrades at power plants and other facilities — known as the “new source review” program — is now expected to be issued in September.

The update will revise how power plants and other large industrial sources of air emissions calculate changes in their emissions and thereby when they would trigger a requirement to install new air pollution controls.

Pruitt said in late April that EPA would issue a comprehensive new rule that will change how facilities like power plants and boilers calculate the emissions that trigger new pollution control requirements under the program.

### NEPA Review

Twelve federal agencies signed a memorandum of understanding in April intended to hold federal permitting and environmental review for major infrastructure projects to a two-year timeline.

Key signatories include EPA, the US Army Corps of Engineers, and the Departments of Agriculture, Commerce, Energy, Interior and Transportation.

The MOU implements the “one federal decision” policy established by President Trump in Executive Order 13807 on August 15, 2017.

The designated lead agency for purposes of the environmental review will decide whether a project is a “major infrastructure project.” If so, the memorandum of understanding and the executive order will guide the environmental and permitting review for the project, directing the agencies to streamline the process.

The executive order defines “major infrastructure project” as “an infrastructure project for which (1) multiple authorizations by Federal agencies will be required to proceed with construction, (2) the lead Federal agency has determined that it will prepare an environmental impact statement . . . under the National Environmental Policy Act . . . and (3) the project sponsor has identified the reasonable availability of funds sufficient to complete the project.”

**EPA will not use scientific studies unless the underlying data can be fully inspected by the public.**

## New federal air permitting rules for upgrades of existing power plants are expected in September.

The memorandum of understanding commits the agencies to communicate with one another and project sponsors in a regular, structured manner and to develop a set of best practices.

Cooperating agencies must collaborate with the lead agency to prepare a “permitting timetable” identifying the environmental review and permitting milestones to meet the two-year goal, and the timetable will be made available to the public online. Cooperating agencies have agreed to conduct their own environmental reviews and to make their permitting decisions concurrently with the lead agency’s National Environmental Policy Act review.

Within the two-year timeline, the lead agency must publish a notice of intention to prepare an environmental impact statement, conduct the necessary environmental review, consult with cooperating agencies that are concurrently conducting their own permitting and environmental assessments, prepare the EIS, issue the record of decision, and undertake any other work in the permitting timetable.

The MOU requires agencies to issue all necessary permitting decisions within 90 days after the record of decision.

The executive order requires the White House Office of Management and Budget to track agency performance. It will score agencies and take the scores into account when formulating future budgets that it recommends to Congress. The executive order gives OMB discretion to impose financial penalties on agencies that fail to adhere to the timetable.

the White House Office of Management and Budget. A decision is expected in June with implementation by the end of the year.

### Superfund

A US appeals court held in late April that environmental regulators can sue to collect their costs for remediating contaminated property from a buyer who took title in a tax auction.

The Comprehensive Environmental Response Compensation and Recovery Act, known as CERCLA or “Superfund,” provides that a person is not liable for contamination caused by a third party with whom the person has no contractual relationship. While current owners have been found to have disqualifying contractual relationships with prior owners in the chain of title, amendments to CERCLA long ago defined “contractual relationship” to create an “innocent purchaser” defense that allowed a buyer to show that it was not liable under certain circumstances if it conducted due diligence amounting to “all appropriate inquiry,” but did not discover the existing contamination.

Amendments to CERCLA also provided that public entities that take properties through any involuntary transfer or eminent domain acquisition are not in a contractual relationship and, therefore, are not liable. This shields the taxing authority from liability.

In this case, the court rejected a tax buyer’s claims that it had no “contractual relationship” / *continued page 44*

### WOTUS Delayed

EPA pushed back its timeline from August 2018 to September 2019 to propose a replacement for an Obama administration definition of what streams and wetlands are protected under the Clean Water Act.

EPA has already proposed to jettison the more expansive Obama-EPA definition. That proposal is currently being reviewed by

## Environmental Update

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with the owner who caused the contamination and held that even transfers through a taxing district are enough to create the contractual relationship necessary for strict liability under CERCLA.

The tax buyer in the case took title to contaminated property through a tax auction. In California, the government never holds title to, or acquires any possessory interest in, tax-defaulted property sold to a private party at auction. California had already investigated the contamination and determined a remedy, and the state remediated the property and then sued the tax buyer to recover its response costs.

The 9th circuit US court of appeals took an expansive view of the statutory definition of “contractual relationship,” finding that such relationships can be direct or indirect and voluntary or involuntary. Reversing the lower court, it held that even if the transaction could be viewed as more attenuated due to the taxing body’s involvement, there still was a transfer of title and that was sufficient to create the contractual relationship necessary to negate the defense to CERCLA liability.

The take away is that even tax buyers need to perform appropriate environmental due diligence before taking title to try to understand and avoid potential CERCLA liability — at least in western states considered part of the 9th circuit.

The case is *California Department of Toxic Substance Control v. Westside Delivery LLC*. ©

— contributed by Andrew Skroback in Washington

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