

US Policy

continued from page 7

on the other side from the President when it comes to oil and gas, and they may be less positive about renewables. We have work to do. I think the wind industry has done a good job reaching out in a bipartisan way to Congress, but there are new cross currents that are making life more complicated than it used to be. ☺

New California Rules May Complicate Financing of Renewable Energy Projects

by William Monsen and Laura Norin, with MRW & Associates, LLC in Oakland, California

Proposed changes in market rules and in future power purchase agreements could significantly complicate the financing of intermittent renewable projects being developed for the California market.

The new rules provide strong economic incentives for utilities to “curtail”—or cut back—electricity from intermittent resources during periods when market electricity prices are falling. Changes recently approved to the form contracts used by the large California utilities to buy electricity from independent generators make it likely that a portion of the curtailment risk will be passed from the utility to generators.

The proposed market rules would also remove protections that currently shield intermittent renewable resources from much of the risk of incurring liability for uninstructed energy payments that are required when a generator delivers more or less energy than scheduled during an hour.

As such, the proposed market changes will at minimum complicate estimation of project revenues and could at worst erode a project’s profitability.

Revenue Risks for Renewable Contracts

Recent power purchase agreements for wind and solar projects in California have typically been structured as “must-take” agreements with fixed prices per megawatt hour. The offtaker accepts power from the plant owner regardless of the current market price, pays the plant owner the agreed-upon fixed price for the power, delivers the power to the grid operator, and receives payment based on the current market price. As such, the utility or its ratepayers bear the market price risk while the project owner assumes the production risk.

Meteorological conditions and project performance characteristics are the key factors in determining production risk. Reasonable estimates of plant production can be developed using site-specific historical meteorological data and technology-specific performance data. Therefore, production risk does not generally impede project financing as long as the plant is sited in a suitable location and built with high-quality components.

Potential changes in California’s market rules may provide economic incentives for intermittent generators to allow curtailment of deliveries when market conditions are unfavorable. This is called “economic curtailment.” At the same time, regulators are encouraging utilities to shift some of the market price risk from ratepayers to project owners by not fully compensating suppliers for lost revenue in the event of an economic curtailment. Similar shifts are occurring in other jurisdictions nationwide.

Economic curtailments can cause a significant loss of revenue even when limited to a certain number of hours per year, since curtailments can occur when a project’s output is high. The risk is generally greatest for wind projects, since wind is often blowing the strongest when demand is low and curtailments are most likely to occur.

The risk to project revenues can be bounded only through an understanding of the rules governing economic curtailment, current and future market conditions that may contribute to curtailments, the utility’s incentives to curtail, the ability of project owners to receive production tax credits and renewable energy credits for curtailed deliveries, and contract provisions for compensation in the event of a curtailment.

Changing Rules for Renewable Curtailments

Curtailment incentives for project owners and utilities can diverge when market prices fall.

Since wind and solar projects generally have low marginal

IN OTHER NEWS

costs of production, it is in the interest of project owners with fixed-price contracts to keep their plants operating regardless of the market price. This incentive is particularly strong for projects that are eligible for tax credits or renewable energy credits that are tied to production.

Utilities have different incentives: when the market price falls below the contract's fixed price, the utility has a negative contribution to margin for each unit of energy purchased under the fixed-price power contract, meaning that it is generally in the interest of the utility to curtail purchases from the project.

As more renewable resources are being developed with insufficient transmission or load support, oversupply and congestion conditions are arising with increasing frequency, leading to electricity prices in certain locations that are significantly lower than prices in the power contract. In fact, it is not uncommon for market prices to be negative, particularly in areas with significant wind development.

Current market rules in California encourage must-take intermittent renewable power transactions to be self-scheduled outside of the market, meaning the owners of renewable power plants generate and deliver power to the purchasing utility regardless of market prices.

These transactions come with very high penalty prices for curtailment, effectively eliminating the opportunity for the purchasing utility to curtail output from the generator except if needed to preserve system stability or otherwise avoid an emergency situation. This provides a benefit to project owners, since they are guaranteed the price in the power contract plus relevant tax credits and renewable energy credits for nearly all the power that they can produce. It conflicts with the interests of the purchasing utilities, which would prefer to curtail their purchases from projects when market prices fall below the price in the power contract.

The California Independent System Operator or "CAISO" has proposed market rule revisions that would encourage intermittent resources to allow curtailment in the event of very low market prices. The proposed changes will almost certainly increase the frequency of curtailments and the amount of uninstructed energy penalties for intermittent renewable projects.

Currently, prices in the CAISO markets have a floor of -\$30 per mWh. At a market-clearing price of -\$30 per mWh, a supplier to the CAISO would have to pay \$30 per mWh to deliver power to the CAISO. The proposed market rules would reduce the floor price to -\$300 per mWh in an

/ continued page 10

power plant and the power plant uses it as the sole source of fuel.

It is not usually considered an integral part if less than 75% of the fuel is dedicated to the power plant.

The latest guidance opens the door to cash grants on cellulosic biofuels plants provided at least 75% of the biofuel is dedicated to a power plant that could qualify for production tax credits.

If only a fraction of the biofuel is dedicated to the power plant, then only that fraction of the biofuel plant qualifies for a grant.

Separate grant applications would be filed where the gasifier, biodigester or other conversion equipment and the power plant are owned by different parties.

The conversion equipment can be built after the power plant. Thus, for example, a grant might be paid on a cellulosic biofuel facility on which construction starts in 2011, provided it is completed by 2013, to supply biofuel to an existing power plant, depending on the facts.

DEPRECIATION BONUS rules that the Internal Revenue Service issued in late March were more favorable to project developers than expected.

Congress voted last December as an additional stimulus measure to allow a 100% "depreciation bonus" to be claimed on new equipment put into service after September 8, 2010 through December 2011 or 2012, depending on the equipment. That means the owner can deduct his full tax basis in the equipment immediately in the year the equipment goes into service. He gets no other depreciation.

A 100% bonus is worth 4.45¢ per dollar of capital cost for wind, solar and geothermal projects. It is worth 18¢ per dollar of capital cost for coal-fired and combined-cycle gas-fired power plants.

Wind, solar and geothermal projects have until December 2011 to be completed to qualify for a 100% bonus. Coal- and / continued page 11

California

continued from page 9

attempt to encourage more projects to bid a price point for economic curtailment. In other words, the bidder would submit a price at which it would be willing to allow the CAISO to curtail deliveries in order to avoid potentially paying as much as \$300 per mWh to deliver.

In addition, the CAISO would phase out its “participating intermittent resource program” and eliminate the benefits that the program confers to participants. Currently, participants agree to a number of conditions, including self-scheduling and paying for CAISO meteorological forecasts, in exchange for being shielded from some of the cost of output variability. In particular, other resources are subject to “uninstructed energy payments” if they do not deliver to the CAISO the expected amount of energy in each 10-minute period. However, program participants are liable for these payments only for deviations from expected amounts of energy deliveries over an entire calendar month. Without this program, intermittent projects would lose this

participate in the MISO market instead of using self-scheduling. However, projects will be allowed to update their schedules up to 10 minutes prior to the time of delivery, and, as with other resources, they will be assessed uninstructed energy payments only for deviations that remain outside an 8% tolerance band for four or more consecutive five-minute intervals within an hour. In addition, these requirements will apply only to wind projects that began operating after March 2005, that do not meet certain requirements demonstrating that the project has firm transmission rights, and that are not “qualifying facilities” under the Public Utility Regulatory Policies Act. (See related article in this issue starting on page 21.) Notably, MISO had requested to apply these requirements equally to both wind and non-wind intermittent resources, but FERC ruled that non-wind intermittent resources should continue to be allowed to self-schedule.

The CAISO has not responded directly to the proposal to model its curtailment rules after the MISO rules. However, given the contentiousness of its initial proposal, the CAISO has announced that it will issue a revised proposal that will again be open to public comment. This will delay approval of the proposal until the end of June at the earliest. Further delays are possible.

Renewable energy projects entering into new power contracts with California utilities risk curtailment when the contract prices are above market.

benefit, and their uninstructed energy payments would be calculated every 10 minutes without the benefit of netting over-deliveries and under-deliveries over the month.

The CAISO’s proposal is subject to considerable controversy. Market participants have proposed alternatives that may subject intermittent resources to less market risk.

One approach is to follow more closely the framework that the Federal Energy Regulatory Commission approved in February to bring wind resources into the Midwest Independent System Operator’s security-constrained economic dispatch process. Under this framework, many wind projects will be required to

Curtailment Risk Sharing

Economic curtailment can be used to shift some of the market price risk from the purchasing utilities to project owners.

The amount of risk that is shifted and how the risk sharing is structured can vary significantly depending on the terms of the power contract.

In April, the California Public Utilities Commission (CPUC) approved very different risk-sharing structures for the 2011 renewable procurement form contracts to be issued by the state’s two largest utilities.

For Pacific Gas & Electric’s contract, it approved a provision allowing 5% of expected annual generation to be curtailed for economic reasons with generators receiving their full contract price for all curtailed energy. However, generators would receive no reimbursement for lost production tax credits.

For Southern California Edison’s contract, the CPUC approved

a provision allowing curtailment without compensation or reimbursement for lost tax credits up to an agreed-upon cap of between 50 and 200 hours per year, with compensation and a discounted buyback option for any excess curtailment.

This decision is likely to be challenged by wind developers and renewable power advocates, particularly since its economic curtailment provisions were substantially revised just days before the decision was approved. Even if implemented as adopted, these form contract provisions are only the starting point for negotiating a power contract and project owners can attempt to negotiate more favorable terms.

As part of the power contract negotiation process, generators should insist on contractual clarity and specificity with regard to the process and rules regarding curtailment. Without such clarity, projects can face significant effect on net income. For example, three wind farms owned by FPL (now called NextEra) were forced to pay \$29 million in deficiency payments last year because their contracts with TXU omitted a common contract provision that would have allowed curtailed energy to be counted as if it were generated for the purpose of evaluating compliance with output guarantees.

As curtailments become more frequent, more contract disputes are likely.

Potential disputes are already brewing in California, where Southern California Edison claimed — to the shock of many of its counterparties — that its *existing* renewable energy contracts allow it an expansive right to curtail without compensation to the generator.

In addition, given that there are often differences between scheduled output and delivered energy from variable renewable resources, disputes regarding the amount of energy that has been curtailed are likely to arise if contracts are not clear on how the amount of curtailed energy should be determined.

Implications for Project Owners

The consequences of economic curtailment for an individual project will depend critically on the market rules and the contract provisions for curtailment procedures and payments.

In general, for projects located in areas with large amounts of wind and insufficient transmission access or local load, project owners and their lenders should anticipate curtailments for new (and possibly for existing) projects.

The amount of curtailment will depend on factors such as the location of the project and the current and planned load, generating capacity, and transmission

/ continued page 12

IN OTHER NEWS

gas-fired power plants have until December 2012.

There had been fears that the 100% bonus would prove illusory for most power projects.

The fear was that the 100% bonus could not be claimed on projects on which work was too far advanced last September 9 when the 100% bonus took effect.

The IRS said in late March that even if a project was too far advanced, the owner can still claim a 100% bonus on the portion of the work completed after September 8, 2010 in most cases.

It also made it easier to conclude that a project was not too far advanced and to treat tax basis as building up after September 8 when the bonus increased to 100%.

A project on which a 100% bonus cannot be claimed should still qualify for a 50% bonus. A 50% bonus means that half the tax basis can be deducted immediately and the other half is depreciated normally.

To qualify for a bonus, a project cannot have been too far advanced before a key date.

That date is September 9, 2010 for the 100% bonus. It is January 1, 2008 for the 50% bonus.

The IRS said that it will interpret the 100% bonus in a way that makes it easier to conclude that a project was not too far advanced before last September 9.

The rules are complicated.

They differ depending on whether the developer is "acquiring" or "self constructing" the project.

Most utility-scale power plants are considered "self constructed." A power plant is self constructed, even though the developer hires a contractor to build it, as long as the construction contract was "binding" before work started on the project and the contract is not later substantially amended during construction.

A self-constructed project was too far along if construction started before the key date. However, a developer can take the position that construction did not / continued page 13

California

continued from page 11

capacity in the project's vicinity. Market rules will determine the level of curtailment, whether intermittent generators risk imbalance charges when they deliver more or less power to the grid than expected, and other market risks.

Contract terms are equally important, as they will determine how parties share these risks. As evidenced by the FPL and Southern California Edison disputes, specificity and clarity of curtailment terms in power purchase agreements can avoid large financial surprises.

Unless all curtailment risk is borne by the purchasing utility, curtailment and market risks inject additional uncertainty into the projection of project revenue, which may make it more difficult to finance intermittent power projects.

Project owners and lenders will need to examine carefully the economic curtailment provisions in the PPAs as well as the correlation between generation patterns and market prices: low market prices during periods of high generation could significantly reduce project revenues if the offtaker is not obligated to provide some sort of make-whole payment for curtailed generation.

Understanding these conditions will allow developers and lenders to incorporate curtailment and market risks into revenue projections and price them into power supply bids.

Properly incorporating market risks into the PPA price increases the probability of meeting financial targets and allows projects to be financed with lower risk premiums. ☐

Effect of UK Bribery Act on Project Finance Market

by M. Scott Peeler in New York, Heidi Lawson in London, and Ramsey Jurdin Dubai

Companies with any tie to the United Kingdom — beyond just share listings in London — will be subject to a tough new anti-bribery statute that takes effect on July 1.

The new law is expected to have an effect on the project finance market.

Its scope is similar to the US Foreign Corrupt Practices Act,

with three important expansions. First, accepting a bribe from or paying a bribe to *any* individual is prohibited, no matter where it occurs. A bribe paid to an employee of a private company is illegal. This is a much broader prohibition than the US Foreign Corrupt Practices Act, which makes it illegal to offer anything of value only to foreign government officials and employees of international public organizations. Second, a company can be held strictly liable for bribery if the company fails to put in place procedures to prevent corruption. Third, there is no limit on the size of fines, and the potential prison sentences are longer.

What is Illegal

The UK Bribery Act 2010 makes it illegal to make or accept a bribe, under any circumstances, whether to a private individual or public official. The Bribery Act does not only apply to UK companies or companies listed on the London Stock Exchange. In fact, listing securities in London does not, by itself, subject a company to the Bribery Act. Rather, the Bribery Act applies to anyone who conducts business in the UK.

The very nature of project finance makes the industry particularly susceptible to violations of this ambitious statute. Its far-reaching jurisdictional reach, along with the well-used and successful US Foreign Corrupt Practices Act playbook, is shaping up to be a new strategy in the war against corruption.

In order to comply fully with the Bribery Act, it is necessary to understand its meaning and applicability to companies involved in various projects around the world.

By doing so, companies that were not previously subject to the Foreign Corrupt Practices Act or "FCPA" will be able to immediately assess the risk involved with the implementation of the Bribery Act and the effect of any violation.

If a company arranges financing, uses an agent, supplies or purchases goods or does any other "part" of its business in the United Kingdom, it is likely subject to, and must comply with, all of the provisions of the Bribery Act. Merely visiting London to conduct business meetings or using London as a place to negotiate contracts is not enough by itself to subject a company to the statute.

The Bribery Act applies to any bribe regardless of whether it took place in the UK.

For example, a US company arranging financing in London for a project in Africa could be held responsible under the Bribery Act if any one of its agents makes or accepts a bribe on the company's behalf. It is also important to note that, unlike the FCPA, the Bribery Act does not have an exception for facilitation

Infrastructure Bank

continued from page 55

Congress of the House to Republicans and that brought a large incoming class of new members of Congress backed by the Tea Party and determined to scale back government did not improve the bank's prospects.

Some analysts suggest Congress is more likely to expand existing federal aid programs than to create new ones. Three key members of Congress — John Mica (R-Florida), chairman of the House Transportation and Infrastructure Committee, Barbara Boxer (D-California), chairman of the Senate Environment and Public Works Committee, and James Inhofe (R-Oklahoma), the senior Republican on Boxer's committee — have said they favor putting more money into the TIFIA program.

There are important lessons to be learned from recent experience with other federal infrastructure aid programs. It took six years from 2005 to 2011 before the loan guarantee program in the Department of Energy was working effectively. Many thought during the wait that an independent agency, perhaps modeled on the

Overseas Private Investment Corporation, would have been able to move more quickly. In this respect, the AIFA and NIDB proposals, which offer specialized, independent infrastructure banks, are attractive models for a national infrastructure bank. In a similar vein, a national infrastructure bank should not be developed at the expense of other successful and established programs, like TIFIA.

Congress should also be concerned not to let a national infrastructure bank serve as a vehicle for funding pet projects and other politically popular, but economically dubious, projects. Some argue that an independent agency is better able to deflect political pressure.

Finally, the lessons of the TIFIA program demonstrate that, for a federal credit assistance program to reach its full potential, supply must keep pace with demand. Modest investments and unrealistic funding projections will do little to address the infrastructure funding gap.

Regardless of the outcome, the federal government will have no choice, given budget pressures, to look to the private sector to fill the infrastructure funding gap. ☐

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