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What the US Election Results Mean for Renewable Energy

More than 1,400 people listened to a roundtable discussion among five Washington insiders two days after the election in early November about what the results mean for renewable energy. The following is an edited transcript.

The US elections took away big Democratic majorities in Congress.

Republicans ended up with roughly 56% of the House of Representatives and with more seats in the Senate where, even though the Democrats retain control, they do not have enough seats to move any legislation without the support of both parties. The split in the Senate is now 53 seats for the Democrats and 47 for the Republicans. It takes 60 votes in the Senate in practice to move major legislation.

How quickly the political landscape can change. Barely 18 months ago, the mood in the renewable energy community was euphoric. The talk was about the ambitious agenda the new Obama administration had to usher in a new green economy. The new president wanted the United States to place a price on carbon, adopt a national renewable energy standard requiring utilities nationwide to supply a certain percentage of their electricity from renewables and take action to address growing congestion on the transmission grid. The administration worried that new renewable energy development would grind to a halt in the weak economy. It put through federal loan guarantees and Treasury cash grants as a short-term stimulus until the economy could recover.

The panel talked about the outlook for the green agenda after the / continued page 2

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START-OF-CONSTRUCTION ISSUES remain a focus for many US renewable energy companies as the year draws to a close. Wind, solar, geothermal, biomass and other renewable energy projects must be under construction by year end to qualify for cash grants from the US Treasury for 30% of the project cost.

The Treasury posted a form to its website in October that developers can use to ask the Treasury to confirm that it agrees that construction started in time. The Treasury had 120 such requests by early November, some preceding when the form was released. It is expected to issue the first confirmations shortly. / continued page 3

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election, including renewal of the stimulus measures in the next Congress.

The panelists are Jonathan Weisgall, head of the Washington office for Mid-American Energy Holdings, a large holding company based in Iowa that owns two US utilities, two natural gas pipelines and a large number of wind farms and geothermal facilities both through its utilities and an independent power subsidiary, John Shelk, president and chief executive officer of the Electric Power Supply Association, the trade association for the independent power industry in the United States, Richard Glick, head of the Washington office for Iberdrola Renewables, Inc., a global utility headquartered in Spain whose US subsidiary is the number two US wind company but that is also working on solar and biomass projects, Greg Wetstone, former chief lobbyist for the American Wind Energy Association and currently Washington office head for Terra-Gen Power, a growing renewable energy developer that is focused not only on wind but also solar and geothermal projects, and Joe Mikrut, a partner with Capitol Tax Partners who was the tax legislative counsel at the US Treasury Department under President Clinton and, before that, a lawyer on the staff of the Joint Committee on Taxation in Congress. The moderator is Keith Martin with Chadbourne in Washington.

MR. MARTIN: Before we launch into the discussion, let me set the stage by covering some Washington jargon you may hear used on this call. "Lame-duck session": Congress returns in late November for a short session. It will end some time before year end. This will be the last meeting of the old Congress with the Democrats still in charge.

The government will run out of spending authority on December 3; one phrase you may hear is "continuing resolution." That is a resolution that gives the government power to continue spending at the level it did in the last budget year. Congress will have to take action in the lame-duck session to renew the government's spending authority.

Unemployment benefits run out in late November. Congress will have to decide whether to extend them for the 9.6% of Americans who are out of work, many of whom may have exhausted their unemployment benefits.

The lame-duck session will also have to decide whether to extend Bush era tax cuts that are set to expire at year end. Both parties want an extension, notwithstanding the rhetoric about the pressing need to reduce the federal budget deficit, and the debate has come down to whether the tax cuts should be extended for Americans earning more than $250,000 a year and for how long.

Any work not completed by year end this year will have to start over in the next Congress. President Obama still will wield defensive power but will not have as much offensive strength. A bill must pass both houses of Congress to become law. However, once it passes, the president can veto it. A veto requires a two-thirds vote by both houses to override.

The Republicans are expected to end up with roughly 56% of the House and only 47% of the Senate.

Joe Mikrut, what is your overall assessment of the election results—are they good, bad or neutral for renewable energy?

Overall Assessment

MR. MIKRUT: I think largely neutral. My focus is tax issues. Both Republicans and Democrats have backed the tax incentives that are in the US tax code currently for renewable energy over many years. I think the larger question into which some of the other panelists may have greater insight is how the larger energy agenda in the House will change now that the Republicans have taken control. President Obama put renewables high up on his list of priorities. The Democrats backed that agenda in the House. My guess is that it may not be as high a priority for the Republicans.

MR. MARTIN: Jon Weisgall, what is your overall assessment?

MR. WEISGALL: President Obama is the third president in a row to lose a house of Congress in a mid-term election. A Reuters story yesterday said this has now dashed his hopes of moving comprehensive energy legislation because Republicans oppose a cap-and-trade program to limit carbon emissions and do not believe in putting renewable energy at the center of any national energy policy.

I have a contrary view. I think Republicans will help renewables. Republicans take an "all of the above" approach on energy resources, but not to the exclusion of renewables. Therefore, my sound bite would be we will not see any kind of a climate change cap-and-trade bill, but there is hope for a broad energy bill, including one that renews some of the tax subsidies to which Joe Mikrut referred. The $64 question is what will be in that bill.

MR. MARTIN: John Shelk?

MR. SHELK: I think the overall assessment is probably a negative, but there is a tendency, particularly in the few days after the election, to have it be black and white. You mentioned

in your introduction, Keith, that barely 18 months ago, the renewable energy industry was euphoric at the prospect of a pronounced policy shift in favor of renewable energy. Maybe some of the same people are now swinging to despair.

The results are a net negative. The reason I say that is not because Republicans will not support renewables as there are plenty of wind farms and biomass and geothermal projects in pro-Republican red states, but because the new speaker of the House is from a major coal state, the Senate Republican leader is from a major coal state, and some of the key committee chairmen will be as well.

The intriguing thing is President Obama seemed to signal yesterday at the press conference that he may be willing to discuss a delay or even a ban on Environmental Protection Agency regulation of greenhouse gas emissions in exchange for Republican support for clean energy. I think that is simply the pragmatic political calculus. He is looking ahead to 2012 and realizing he cannot win the swing states that just went Republican and win the White House in two years without making some accommodation to the agenda in those states that drove voters en masse to the Republican side. Many of those states have a lot of coal or other traditional fuels.

MR. MARTIN: Rich Glick, were the election results good, bad or neutral for renewable energy?

MR. GLICK: I think the outcome was generally a bad result for the reason that the Republicans will be controlling the agenda in the House not only through John Boehner, who is expected to take over as speaker, but also through the majority leader, Eric Cantor from Virginia, and also at the committee level.

Whoever ends up as chairman of the energy committee in the House is not going to make promoting renewable energy as high a priority as Henry Waxman from California, or Nancy Pelosi, the House speaker also from California, did in the last two years.

The one potential silver lining is that if, for whatever reason, the shift of seats to the Republicans causes Congress to start moving bills more efficiently, then it would be a plus for renewable energy since Congress might finally be able to move an energy bill.

For all the euphoria of the last two years, it is important to remember that we did not get much beyond the economic stimulus bill in early 2009 from the last Congress.

MR. MARTIN: Greg Wetstone?

MR. WETSTONE: I think you can distinguish between the tax world where I see a path for the two parties / *continued page 4*

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Ellen Neubauer, the Treasury cash grant program manager, said it will do what it can to respond quickly to requests received in October and November so that there is still time to fix any problems before year end.

Many of the requests to date are deficient or are for projects that will be completed by year end 2010. The Treasury posted a checklist to its website in late October to help ensure companies submit all the required information.

Meanwhile, the Treasury inspector general has been auditing companies that already received grants and, in some cases, questioning the grant calculations. The inspector general has issued at least one draft report asking for 3% of a grant back. Other reports are rumored. Many of the questions the inspector general's staff are asking during site visits have to do with payments to related parties. There is a presumption that any reports will be posted to the inspector general's website. However, the inspector general has authority to delete profit margins and other proprietary information.

He is also considering how much of the information in the reports is "taxpayer information" that the government is required by law to keep confidential.

PROPOSITION 26, which passed on November 2 in California, may inadvertently subject Treasury cash grants on renewable energy projects to taxes in California unless the state legislature votes by November 2, 2011 to waive the taxes.

It is unclear whether grants paid before November 2, 2011 would become taxable.

The state Franchise Tax Board concluded last year that the grants are taxable in California even though they are not taxable at the federal level.

California starts with a federal definition of taxable income for calculating California taxes. However, it has not / *continued page 5*

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to work together to renew expiring subsidies and the energy policy world where there is reason to be concerned that the gridlock in the last Congress will continue. The voters threw out many moderates on both sides of the aisle on Tuesday.

It used to be that if a member of Congress was willing to work across the aisle to get legislation passed, that earned points at home.

What we saw in this election is that the moderates who made the place work took the most heat in campaign ads. About half the moderate Democrats—the so-called "blue dogs"—in the House lost their seats. Republicans who were willing to work with Democrats did not fare well in the Republican primaries leading up to the election. It is not a great dynamic.

MR. WEISGALL: The interesting dynamic is you have voters who are saying don't compromise. That is especially true of the Tea Party movement. But at the same time, there seems to be an overwhelming interest among voters in seeing Congress solve problems and get something done. Picking up on what Rich Glick said, maybe split houses of Congress will result in a greater opportunity for compromise than we saw in the last two years where there was one party in control of the House, Senate and White House, leading the Republicans in the Senate to dig in their heels and block everything. Maybe they won't feel as great a need to block everything if some of the bills are coming over from a Republican House.

MR. MARTIN: I have been thinking lately that the renewable energy industry is probably the one industry hurt most by gridlock in Washington. It relies on temporary public policy supports that must be renewed periodically by Congress. If Congress isn't functioning, this industry suffers. However, that may be too simple a picture. Do you agree or disagree with this gridlock theory?

MR. WETSTONE: There are more than 70 expired or expiring tax credits that are now part of various "extenders" tax bills that are pending in Congress. I think the gridlock is hurting across the American economy. Businesses across the spectrum are pushing for action. It is partly because of that broad pressure that there may be some hope for moving forward on the tax front, perhaps even in the lame-duck session in December without waiting for the new Congress.

MR. MARTIN: One reason I thought it might be too simple a picture is half the subsidy for renewable energy in the US is permanent. It does not have to be renewed periodically. And a lot of the public policy support is at the state level in the form of renewable portfolio standards.

Joe Mikrut, everyone is wondering whether the Treasury cash grant program for renewable energy will be extended by Congress and, if so, when? What's your assessment?

> The energy policy debate tends to divide along geographic rather than partisan lines. However, Republicans take an "all of the above" approach to energy.

Cash Grant Extension

MR. MIKRUT: Let's make sure our listeners understand that the cash grant program actually runs through when the tax credits for renewable energy are scheduled to expire. That means through 2012 for wind, 2016 for solar and 2013 for other renewables such as biomass and geothermal. However, projects completed after 2010 do not qualify for grants unless they are under construction by the end of this year. Congress is considering extending the deadline to start construction.

This isn't the only issue like this that Congress has to tackle. The really big one is the Bush-era tax cuts that expire at year end. No one wants to see workers' paychecks go down on January 1 because of higher tax withholding.

I think the odds are better than 50-50 that Congress will vote in December, as part of a larger bill extending the Bush tax cuts and a number of other expiring tax benefits, to allow more time to start construction for the grant program.

The challenges will be to finish these items in a short lame-duck session and for the renewables industry to persuade Congress that the cash grants are like all the other expiring tax provisions that are extended periodically by Congress, rather than a one-time stimulus that was intended to disappear after 2010. The success of the cash grant program in stimulating new development and the continued need for it in an otherwise weak tax equity market should demonstrate that the program warrants extending. There are reasons to be guardedly optimistic.

MR. MARTIN: If Congress extends the Bush tax cuts in December without also extending the cash grant, then how would the odds look for an extension of the cash grant program next year?

MR. MIKRUT: It will depend on what else the Bush tax cut bill carries with it. If all Congress does in December is extend the Bush tax cuts without also extending the expired research and development tax credit, the ethanol tax credit and other popular extenders, then I think the cash grant program moves later with the other extenders. If the other extenders get done in December with the Bush tax cuts, then I think it will be much more difficult to extend the cash grant program in 2011.

MR. MARTIN: Rich Glick, what do you think are the odds that Congress will give developers more time to start construction and qualify for Treasury cash grants?

MR. GLICK: I am hopeful, if there is a tax extenders bill, that the Treasury grant program will be added to that bill. We have strong indications from both the House and Senate at the staff level that that is the plan.

I think the greater concern is what happens if there is no tax extenders bill in December. The Republicans will be in charge in the House. Dave Camp, a congressman from Michigan, will be in charge of the House tax committee. The question is how will they view this program? Will they view it as a traditional tax extenders provision or will they view it as part of the larger Obama stimulus effort to which Republicans have generally been hostile?

We're hopeful even next year, especially with Senator Harry Reid, the Senate majority leader and a supporter of renewable energy, having been reelected, but our chances are better if we can get it through this year.

MR. MARTIN: Greg Wetstone, what's your view?

MR. WETSTONE: I would characterize what I just heard as a little more optimistic for an extension in the lame-duck session than in the next Congress, at least that's */ continued page 6*

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conformed its tax code fully to recent changes in the US tax laws. Every so often it pushes the conformity date forward. The legislature voted in April this year to conform to federal treatment of Treasury cash grants.

Proposition 26 requires a two-thirds vote for tax increases, including fees and other charges. Unfortunately, the bill with the conformity language on Treasury cash grants also included some tax increases, and it did not have a "severability" clause allowing the conformity provisions to stand if the rest of the bill is negated.

It is unclear what this means for grants that have already been paid. The proposition says the following: "Any tax adopted after January 1, 2010, but prior to the effective date of this act, that was not adopted in compliance with the requirements of this section is void 12 months after the effective date of this act unless the tax is reenacted by the Legislature and signed into law by the Governor in compliance with the requirements of this section." The act is effective on November 2, 2011.

One issue the state attorney general and legislative counsel's office in the state legislature must consider is what it means to say a tax is "void" 12 months from now unless properly reenacted.

A California Supreme Court decision in 2006 suggests that the wording used in the proposition—that a law will be "void" on a future date unless properly reenacted—should be treated as a sunset clause where the statute is valid until the sunset date as opposed to being void from inception.

A BI-PARTISAN DEFICIT REDUCTION COMMISSION appointed by President Obama said in early November that Congress should consider eliminating all special tax incentives. The move would bring in another $1.1 trillion in tax revenue, the commission said, and would allow the corporate income tax rate to be reduced to 26% and the */ continued page 7*

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where I am. I feel like we have a pretty good shot to get this done in the lame-duck Congress. It will be harder to extend the section 1603 program in the next Congress given the change in leadership in the House and the ugly dynamic in some of the House races where members who supported the cash grant program were specifically targeted for it in hostile ads.

DOE Loan Guarantees

MR. MARTIN: John Shelk, we were talking before we went live about the outlook for an extension of the DOE loan guarantee program. Projects must be under construction by September 2011 to qualify for loan guarantees. Some developers, particularly of offshore wind farms, would like to have more time. What do you think?

MR. SHELK: There will be heightened scrutiny of all of the stimulus programs. The loan guarantee program will be harder to extend than the cash grants. You don't need to look farther than a leaked White House memo about which the *Wall Street Journal* reported last night on its website to understand why. The memo questioned whether it makes sense to keep even the existing spending authority in place for that program.

However, this is a discussion about the effect of the November election. Even if the election had turned out a little differently, some of these requests would have faced the same challenges because of growing concern about the federal budget deficits, the role of government and all the things we heard during the campaign.

MR. MARTIN: Greg Wetstone the leaked White House memo wasn't very complimentary about the loan guarantee program. Was it suggesting shifting money to something else?

MR. WETSTONE: The memo reflects an internal debate within the White House about whether the standby spending authority for the loan guarantee program might be better used elsewhere, like for more Treasury cash grants. Obviously the Treasury grant program is a priority for the renewable energy industry, but we would not want to see the loan guarantee program cut short. We would like to see it work more effectively.

MR. WEISGALL: I think it's important to recognize that if there is not bipartisan agreement on these issues—and this is going back to the tax extenders—nothing will get done on them in the lame-duck session. One Republican staffer suggested that the lame-duck session could last for three hours. The point is that with the big gains in the House and Senate, the Republicans have no incentive to compromise on policy.

The lame-duck session will be a very focused and narrow session limited to absolute must-pass resolution like the continuing resolution to keep funding the government beyond December 3.

MR. MARTIN: Joe Mikrut, do the election results make an extension of production tax credits more likely or less likely?

MR. MIKRUT: I think the election results are a neutral factor. The production tax credits have been extended in the past both when Republicans and Democrats were in control. Support for renewable energy breaks down more along geographic than partisan lines. The issue will be the larger approach the Republicans take to trying to bring the federal budget deficit under control. They have to decide whether they can afford to continue to extend not only these tax credits but also the other 70 or 80 provisions that are expiring almost on an annual basis.

> Any national renewable energy standard enacted is now more likely to be a "clean" energy standard that includes other fuels.

National Renewable Energy Standard

MR. MARTIN: Jon Weisgall, what effect will the election have on the push for a national renewable energy standard?

MR. WEISGALL: Senator Susan Collins (R.-Maine) was right when she said we don't do comprehensive well. President Obama suggested in his press conference yesterday that we

may end up having to develop an energy policy incrementally in small pieces.

One big piece could certainly be a federal RES or renewable electricity standard. I think the major impact of the elections will be to turn that RES into a CES. In other words, the elections will turn the renewable electricity standard into a clean energy or clean electricity standard that would include nuclear, carbon capture and sequestration and other things that go beyond renewables. This is more in keeping with the Republican mantra of all of the above.

It is a significant change in focus. A federal renewable standard has a goal of promoting renewables. A clean energy standard has a broader goal of reducing greenhouse gas emissions.

MR. GLICK: Two years ago, I participated in the same discussion, and I basically said it was a done deal that Congress would enact a national renewable energy standard. So maybe I should stay away from making any predictions this time, but I think Jon Weisgall is exactly right. The chances are slim for a renewable energy standard to get done in the lame-duck session. We need to start thinking more broadly in the renewable energy industry about working with some other groups such as nuclear and clean coal toward a broader clean energy standard.

There seems to be enough support for a broader standard among Republicans in both the Senate and the House. If an energy bill moves in the next Congress, we have a decent shot of getting a clean energy standard into it that might work for everybody.

MR. MARTIN: What percent clean energy, Rich, and by when? Is it 17% by 2020? 15%?

MR. GLICK: If you add these other technologies, the percentage will have to be higher than the 15% by 2020 that was being discussed earlier when this was just a renewable energy standard. You would need something like 25% to 30% by 2020. Senator Lindsey Graham (R.-South Carolina) proposed a broad standard earlier this year that had a much higher number than the RES proposals.

MR. MARTIN: He backed away from the proposal when it came time actually to push it. He was being heavily criticized by Republican leaders in South Carolina for trying to work with Democrats.

MR. GLICK: That's true, but when Senator Bingaman (D.-New Mexico) and Senator Brownback (R.-Kansas) offered a bipartisan renewable energy standard a few weeks ago, Senator Graham offered his bill again as a counter proposal. I / continued page 8

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maximum individual income tax rate to 23% if $80 billion were applied to deficit reduction and the rest were used to cut tax rates.

The commission offered two fallback options. The first would also allow the corporate income tax rate to drop to 26%, but require eliminating fewer corporate tax incentives. Still on the list to scale back or eliminate would be "depreciation rules," energy tax preferences for the oil and gas industry, a domestic manufacturing deduction that rewards US companies for manufacturing at home and use of the LIFO or last-in-first-out method of accounting. The fallback option also includes unspecified international tax reforms, but the US would move to a territorial system of taxing US companies with operations in other countries. A territorial system means the US would only tax income that is considered to have had its source in United States.

Alternatively, the commission said, the tax committees in Congress should set a deadline of December 2012 to enact comprehensive tax reform of their own choosing, but if they miss the deadline, then there would be an across-the-board "haircut" in all business tax credits. The haircut would keep increasing from year to year until there has been a comprehensive rewrite of the US tax code.

The commission is also recommending an increase of 15¢ a gallon in taxes on gasoline and switching to a different index for inflation adjustments that has tended to report lower inflation rates. Its final report with more details is not expected before the end of November.

SERIES LLCS were helped by proposed regulations the Internal Revenue Service issued in September.

At least eight US states and Puerto Rico have statutes that allow limited liability companies to create different pockets or cells of investments, each potentially with different owners, a different manag- / continued page 9

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think he still supports the proposal, although I don't know whether the grief he received at home for trying to work with Democrats on carbon will carry over to the energy standard as well.

MR. MARTIN: Isn't the idea that any of this will get through the next Congress something of a pipe dream given what Republican leaders have been saying in the last two days? Senator McConnell (R.-Kentucky), the Republican leader in the Senate, said number one goal of Republican Senators is to deny Obama reelection in 2012. If you listen to a lot of the newly-elected House members, they insist they are not coming to Washington to compromise.

MR. SHELK: I think what Rich Glick said is absolutely right on the mark. If all the different fuel groups can come together on some kind of clean energy standard, then that may be something that both the parties can get behind in Congress. The details will matter. One is how will any federal clean energy standard preempt or not preempt the individual state renewable portfolio standards that already exist. Another detail is how any program affects the playing field on which independent generators and regulated utilities compete.

MR. WEISGALL: I think a lot of what we heard during the campaign was campaign rhetoric. I mean, in addition to being demeaned as compromisers, people were being called whores and witches during the campaign. Now it is time to govern. A lot of Republicans realize they can't merely continue throwing hand grenades now that they are in charge. One strong message from the election—with independents once again throwing the bums out—is we are electing you to go to Washington to get something done. If that is what happens, then a divided government makes sense.

MR. WETSTONE: We are in a very polarized place in our politics in this country. The question is whether the election did anything to change that. I think it will take time for the bruises of the last campaign to heal. If we see significant legislation start to move, it will not be this spring or summer but more likely next fall or winter.

On the RES, the outlook will depend on who ends up as the top Republican on the energy committees in the House and Senate. Do we end up with Joe Barton from Texas or Fred Upton from Michigan chairing the House energy committee? Does Lisa Murkowski from Alaska, who has shown a willingness to work with the Democrats, still retain the top spot on the Senate energy committee, or does it go to a more doctrinaire conservative, Senator Burr from North Carolina? The bottom line is there may be a path forward, but I don't see it happening quickly.

Carbon

MR. MARTIN: Let's move to carbon. President Obama confirmed yesterday that cap and trade is dead. The immediate issue on the table is whether Congress will block the Environmental Protection Agency from acting on its own through regulations to control carbon. Rich Glick, what do you think?

MR. GLICK: The votes are clearly there in the House and possibly in the Senate in the next Congress to impose a moratorium on any EPA action to control carbon. The next question is whether the president would veto any such moratorium. It is not clear he would as a veto would complicate his reelection effort in 2012, particularly in the industrial Midwest.

What I suspect will happen is the president may pull back the regulations for a couple years until after the 2012 elections.

MR. WEISGALL: Senator Lisa Murkowski (R.-Alaska) tried to stop the process this past summer with a resolution that failed. Senator Jay Rockefeller (D.-West Virginia) has been promised a vote on his bill to impose a two-year time out, but I think that effort is now moving into the background as Republicans start looking at using appropriations measures to block EPA from moving forward.

You may recall that the Republican Congress blocked EPA from spending any money during the Clinton administration to implement its rules on increasing mileage standards for US vehicles. The thought is that it will be harder for the president to veto a broad appropriations bill that cuts off funding for implementing rules on carbon than to veto the kind of standalone measure that Murkowski and Rockefeller were offering.

MR. SHELK: The appropriations process might be easier to pursue, but any moratorium imposed through an appropriations bill would remain in place only for one year—not two.

Even if Congress imposes a moratorium on enforcement of the EPA greenhouse gas regulations, there are other significant new EPA regulations not specifically directed at greenhouse gas emissions, but that would have an impact that is maybe even as great or at least close to as great an impact as the climate regulations. I am referring to new coal ash rules, water intake rules and air transport rules. As analysts have started to model them, the effect is a significant number of retirements of older coal-fired power plants.

While the political battle has been on the greenhouse gas front, it may be more symbolic than real. The incremental effect of the greenhouse gas regulations may not be as great as first thought.

MR. WEISGALL: What happens on carbon is more likely to be decided in the executive branch and the courts than in Congress, with the exception that cap and trade seems dead. President Obama said yesterday that cap and trade is only one way to deal with the problem, and he is right. There are a lot of indirect measures that this country has taken, like the stimulus programs and longer-term tax subsidies for renewable energy, that affect the choice of fuel types for generating electricity.

MR. MARTIN: If Congress votes to block the EPA regulations and Obama vetoes the bill, are there enough votes in the House and Senate to override the veto? It takes a two-thirds vote by each house.

MR. WETSTONE: I would be surprised if you saw an override in the Senate. Unless this is something that is negotiated as part of a larger compromise on energy policy, I would also be surprised to see the moratorium get all the way to the finish line. The more likely outcome is that the EPA tailoring rule will bog down for a while in the courts.

MR. MARTIN: Our environmental lawyers point out that anybody looking for a boost from regulations to control carbon will have to wait some period of time because such regulations ultimately end up in the courts and then EPA itself must come up with a definition of best available control technology. That, too, takes time.

Let's move to the next topic. Are there any big winners from the election —- for example, nuclear energy?

MR. GLICK: Nuclear energy and maybe some clean coal technologies and natural gas might be considered winners. However, the overriding issue that will affect the extent to which anyone will be able to get new or renewed government incentives is the federal budget deficit. I don't see the next Congress spending wildly on any new technologies. We are going to have to look for more creative solutions that do not rely on tax or spending programs to promote those technologies.

MR. WEISGALL: Another theme of the incoming Republicans is a smaller role for government. This will have an effect on the willingness of the next Congress to fund energy research and development, for example. Maybe tax incentives are in a special category because of Republican support for tax cuts, but it is a double whammy for spending programs because of both the deficit concern and the concern that */ continued page 10*

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ing member and different assets. In at least three of the eight states, each series can have a separate right, in its own name, to sign contracts, hold title to assets and grant liens and security interests in the assets belonging to that series. The debts of a particular series may be enforceable only against the assets of that series.

The structure opens a number of possibilities. For example, wind companies that build out projects in 100- or 200-megawatt increments using a single interconnection agreement may have trouble getting consent from the utility to divide up the interconnection rights among separate project companies. If a series LLC were used, then the interconnection agreement could remain in the name of a single LLC.

One issue is how the IRS plans to treat the separate LLC subsidiaries. The agency proposed in September to treat each separate series as a separate entity for tax purposes. Therefore, some could be treated as separate partnerships at the same time that the parties might to choose to treat others as corporations.

How each series is classified for tax purposes may depend on whether the series LLCs are set up with the ownership rights in the parent LLC or in specified partners in the parent LLC. In the latter case, a series LLC would be treated as a partnership in its own right. In the former case, it would be treated as a "disregarded" entity that does not exist for tax purposes. Therefore, the parent LLC would be treated as owning its assets directly.

Curtis Wilson, an IRS associate chief counsel, suggested at an American Bar Association tax meeting in Toronto in late September that the IRS may be able to reach the assets of all the series to cover a tax liability of any one of the series, despite state statutory language limiting debt liability among series.

The IRS largely reserved on the tax treatment of foreign series. The ***/ continued page 11***

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government is getting involved in things that are best left to the private sector.

MR. SHELK: Let's not lose sight of the fact that there is more generating capacity today than there is demand. Virtually anything new will be more expensive than what we already have. Many people will argue that it is better to get the most out of what we already have rather than artificially increase supply at a time when all the projections push us out to mid-decade or beyond when additional generating capacity will be needed.

MR. WETSTONE: If nuclear or any other technology is going to get a new big leg up, it would require Congress to act, and that means changing the dynamics to a point where the political parties work together and actually get something done. If that happens, renewables will be helped as well. We all sink or swim together.

Energy Bill

MR. MARTIN: So the default position is little new gets done unless it does not involve money.

Will there be an energy bill in the next Congress and, if so, what is it likely to contain? Will we see anything done, for example, on transmission?

MR. WEISGALL: I think there is a real opportunity for something approaching a comprehensive bill, notwithstanding the comment I passed along earlier by Senator Collins that Congress does not do comprehensive well, and by "comprehensive," I mean a lot of things except cap and trade.

The last big energy bill was in 2005. The Energy Policy Act that year had 18 separate titles. Ultimately, Congress will have to put together the pieces of a puzzle in a way that satisfies different constituencies. It will have to have something for nuclear, something for carbon capture and something for renewables.

I could see an energy bill that has at its core an overall sense of weaning us off imported oil.

I think there can be agreement on support for electric cars, support for compressed natural gas cars, more R&D funding for some of the game changers that will not get done if left to the private sector and more incentives for carbon capture and sequestration. There can be agreement on stronger energy efficiency measures.

I deliberately did not answer your question on transmission. I think Congress is stalled on the three "P's" of planning, permitting and pricing. The Senate stalled last year primarily on the pricing question, the question of cost allocation.

The action on transmission is shifting to the Federal Energy Regulatory Commission. If Congress doesn't like what FERC does, it can step in.

MR. GLICK: There have been several attempts over the last few years to legislate on transmission issues, especially transmission access for remotely-located generation such as renewable electricity. The problem is there is way too much disagreement among regions and among the political parties. It is almost impossible to legislate effectively on these issues. So I think everyone has decided to punt the issues to FERC and, as Jon Weisgall said, if people are unhappy with what FERC does, they may come back to Congress to block it.

MR. SHELK: A major difference between John Boehner, who is expected to be the new speaker in the House, and his predecessors like Pelosi and Gingrich, is he is the first speaker in quite some time who is a former committee chairman and a ranking member. He will defer more to the committees. Therefore, who becomes chairmen of the energy committee in the House will be very important.

My own sense is that Jon Weisgall may be a little optimistic. I think a comprehensive bill has a chance. It would have to be comprehensive enough to move but not be so loaded down as to turn off members who criticized measures like health reform and financial sector reform for their sheer weight. I don't know whether the correct term is a thin comprehensive bill or a bill that is comprehensive as in wide but not deep.

I don't think you can just load it up as in the past with something for everyone because the bill will become too big, be too costly and be perceived as helping projects that are going to move anyway or tipping the scales in ways that ought to be left to the private sector. On the other hand, something that does something relatively surgical to help each of the fuels has a chance.

MR. WEISGALL: Coming back to transmission, transmission access and development are the Achilles heel for long-term renewable energy development. I have said this before, but you can't love renewables and hate transmission. Transmission remains a huge challenge. A lot of PowerPoint presentations have been made to members of Congress and their staffs, yet not a lot of new transmission lines have been built. I defer to Joe Mikrut on this, but I wonder whether it is possible to do something to spur construction of new transmission capacity

through the tax code. I know there are a number of renewables projects, especially in California, that are being held up because of the lack of transmission access.

MR. MIKRUT: It is hard to find a way to do it through the tax code. Tax provisions work best to address a lack of capital. That is not what is preventing construction of new transmission lines. The problems are siting and cost allocations, and these don't lend themselves as readily to help through the tax code.

MR. MARTIN: The IRS made it easier for transmission companies by opening the door in a private letter ruling three years ago to operate with just one level of tax through a real estate investment trust or master limited partnership.

Joe Mikrut, a bipartisan commission that President Obama appointed is expected to report in December on ideas for bringing the federal budget deficit under control. One thing that has been under discussion is cutting the corporate tax rate but then paying for it by getting rid of various tax incentives. Do you think this commission's report will go into the dust bin or does the rate reduction have legs?

MR. MIKRUT: At least half of what the commission is looking at has legs. The proposals that would pay for a corporate rate reduction are the most viable. I'm not sure the corporate rate reduction itself has legs.

The focus in the next Congress will be on deficit reduction. Look at what happened to the bill that Charlie Rangel introduced a few years ago when he was chairman of the House tax committee and that he called the "mother of all tax reforms." He proposed a corporate rate reduction offset by various measures to broaden the corporate tax base. Congress ended up enacting the base broadeners on a piecemeal basis over time to pay for other things, while the rate reduction languished. I fear that could happen again.

MR. MARTIN: And are there any potential base broadeners that would affect the renewable energy industry?

MR. MIKRUT: No, I believe the focus will be largely on international reforms. There has been a lot of dialogue about moving jobs offshore.

One area that Congress could address to make a meaningful dent in the deficit is accelerated depreciation. However, lengthening depreciation is completely counter to what the president and Congress have proposed recently as a stimulus for business investment. Congress has routinely extended the bonus depreciation provision that first became law in 2003, and the President has proposed doubling that to give immediate expensing for a short period of time. */ continued page 12*

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agency wants to make sure that a foreign series arrangement cannot be used to separate foreign tax credits from the related income.

Wilson said that a series LLC may be used to split services as well as assets.

The new regulations will not take effect until reissued in temporary or final form. The agency asked for comments in the meantime.

THE US PATENT OFFICE has issued as many as 122 patents on tax products and has another 151 applications pending. A coalition of 18 organizations sent Congress a letter in late September urging it to ban such patents to the extent they protect tax strategies.

Congress has been considering the issue since 2006. A House subcommittee held a hearing in July that year. If such patents become more widespread, they could force tax lawyers to research whether someone has applied for a patent on every tax-planning idea before using it with a client.

The new chairman of the House tax-writing committee, Dave Camp (R.-Michigan), has been a critic of tax patents.

Many of the patents are for computer software that carries out tax calculations rather than for tax-planning ideas. Some also involve tax planning as part of a larger business strategy. For example, US patent number 6,772,128 involves a method for using an insurance policy combined with a trust to cover the cost of decommissioning nuclear power plants. The patent claims the method produces tax efficiencies, but the main focus is on the structure for the insurance.

Patents can be obtained for "business methods" that are both novel and not obvious.

A search of the pending applications shows they include requests for patent protection for "power purchase methods, agreements and financial instruments for tax-advantaged financing residential renew- */ continued page 13*

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The President has proposed limiting some tax preferences for oil, gas and coal. Those proposals did not get much traction in Congress when the Democrats were in charge. They are likely to have even less traction with Republicans in control of the House.

State Action

MR. MARTIN: I have one more question before we turn to questions from the audience. The industry may refocus on what can be done to promote renewables at the state level. For example, the action on carbon could shift to the developing Western carbon market among seven western states and four Canadian provinces and the RGGI initiative in New England and some mid-Atlantic states. It also could shift to increasing renewable portfolio standard targets at the state level and getting a few more states to adopt RPS statutes.

Is this likely to be fertile ground given the number of state houses that shifted to Republicans?

Is there a risk that some states might scale back their RPS targets?

Is there a risk that a Congress on the warpath against federal action on carbon might make it harder for states to regulate carbon?

MR. WETSTONE: We are optimistic that the industry will be able to make further progress at the state level after seeing Proposition 23 defeated in California and a very pro-renewables candidate, Jerry Brown, elected governor. There is good reason to hope that the state legislature in California will be able to reach agreement on a 33% target for renewable energy by 2020. California is an important state for the industry and so what is done there has an impact.

Colorado just elected a new governor, John Hickenlooper, who is also a very strong renewables advocate.

MR. GLICK: I think Greg is exactly right. The renewable portfolio standards at the state level are still looking pretty strong, and we are hoping to expand them in some states.

However, there is a concern about state energy tax incentives for renewable energy. The states are facing enormous budget pressures. There is a risk of states starting to cut back or repeal some of their tax incentives for renewable energy as a cost-cutting move. We have already started to see it.

MR. WEISGALL: I agree with Greg to an extent. The Republican tsunami kind of stalled crossing the Sierra Nevada or perhaps even when it got to the Rocky Mountains. I don't think we can say the same in the eastern United States. There is a risk, with at least seven state legislature not to mention the governorships, changing hands to Republicans, that a lot of these state initiatives could become stalled—certainly not the ones in the West, but others could.

> The industry will have to propose ways to help renewables that do not cost money.

Audience Questions

MR. MARTIN: Moving to audience questions, what are the prospects for new tax subsidies for energy storage projects? Joe Mikrut?

MR. MIKRUT: Energy storage proposals have been popular for quite a while, but it will take something like a comprehensive energy bill that has several titles to it, one of which is a tax title, before this has a chance. One problem will be trying to find a way to pay for it that is acceptable to both Republicans and Democrats.

MR. MARTIN: Ironically, I spent the last two days in meetings or calls with the IRS on whether energy storage added to wind farms qualifies for the *existing* subsidies.

MR. WEISGALL: A number of Republicans, including Lamar Alexander (R.-Tennessee), list energy storage as one of the areas where there can be an agreement. Energy storage is a game changer that could have a major impact on carbon policy. I agree with Joe that the big impediment in the current climate is cost, but energy storage appears to be a high priority for both parties.

MR. SHELK: I think the days of incentivizing things simply to say you are for them are probably over. The greatest game changer in the energy sector as it relates to electricity in the last five years is the shale gas development that had absolutely no special subsidy or government catalyst other than whatever tax provisions apply generally to that industry. Remember that the Republicans want to move to an "all of the above" approach to energy policy. You can't incentivize all of the above; the overall landscape remains unchanged.

MR. MARTIN: Another audience member asks with Republicans now in control of the House, will they shut down spending for R&D on energy?

MR. SHELK: Not shut down, but there may be some trimming, perhaps back to levels of such spending in 2008.

MR. MARTIN: A listener asks what is the view of the new leadership and staff of the House Ways and Means Committee toward tax incentives for renewable energy?

MR. MIKRUT: I think they are less enamored with tax credits in general that are refundable, which means things like the section 1603 program may be more challenging to extend. On the other hand, the tax subsidies for renewable energy have been renewed from one Congress to the next no matter whether Republicans or Democrats were in charge.

MR. WEISGALL: The incoming chairman, Dave Camp (R.-Michigan), has a number of wind and solar manufacturers in his district. He has been friendly to the industry.

MR. MARTIN: Several listeners ask what are the prospects for a new clean energy bank?

MR. WEISGALL: I put that in the category of perhaps too far a stretch in the new atmosphere.

MR. WETSTONE: I think that gets caught up in the same dynamic about whether there is a comprehensive energy bill. If there is such a bill, perhaps in early 2012, maybe it has a chance.

MR. SHELK: The advocates for a clean energy bank may be helped by the frustration with the DOE loan guarantee program. I know the problems are not entirely the fault of the Department of Energy, but they suggest any such program might be better moved to an independent agency.

MR. WEISGALL: The term itself—a government clean energy bank—smacks of a greater government role. That's not a winner these days.

MR. SHELK: The Fannie Mae of energy wouldn't sell.

MR. MARTIN: Moving to another audience question, Rich Glick, you mentioned that ideas for boosting renewables that do not involve spending money might have / *continued page 14*

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able energy equipment," "risk-shifting method for investments in wind power generation" and "method for enabling American Indian tribes to attract equity capital investment."

The already-issued patents include a "method for capital creation for tax-exempt organizations," "synthetic funds having structured notes," "structured credit enhancements," "convertible financial instruments with contingent payments" and "methods and investment instruments for performing tax-deferred real estate exchanges."

According to Walter Hanchuk, a Chadbourne patent lawyer, anyone using a patented business method could become liable for royalties from the date the application is published—not just from the date a patent is issued—assuming a patent is ultimately issued.

INDIA plans to launch a green bank that would provide funds to wind, solar, tidal and other renewable energy projects.

The bank would either be housed in the existing Indian Renewable Energy Development Agency or complement it and be capitalized from a clean energy fund that the government established in the current budget and that is expected to reach about $1.1 billion this year through a new $1 a ton tax on coal.

Details of the bank remain to be worked out. India has a current electric generating capacity of 150,000 megawatts of which 6,000 megawatts, or 4%, comes from renewables. It has a population of 1.2 billion. (For purposes of comparison, the United States has a generating capacity of 1.1 million megawatts for a population of 311 million.)

Nepal, next door to India, has had a Clean Energy Development Bank since 2006 that operates as a joint venture with the Dutch development bank FMO (Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden N.V.). The United Kingdom is also moving to establish a green bank. (See separate article on page 45 of this issue.) */ continued page 15*

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a better chance in the new Congress. One of the themes Republicans have always had is cutting government regulation. Do you foresee possible steps like streamlining the National Environmental Policy Act where the Republican House might act?

MR. GLICK: I think the chances of that happening are very, very slim given the fact that the Democrats control the Senate, and I don't think that President Obama would sign such a package. Having said that, there is growing concern among renewables developers about how difficult it is to do projects on public land under the current regulations by the Department of Interior. There will be an effort to streamline some of those regulations.

MR. WEISGALL: Here is an example where a Republican House could be useful for renewable energy just from an oversight perspective. Doc Hastings (R.-Washington) is the new chairman of the House Natural Resources Committee. There may be pressure on Interior to move more quickly on leasing and permitting issues. None of this will single out renewables, but any push to expedite things under an all-of-the-above approach to energy policy could be a plus for renewables.

MR. MARTIN: Joe Mikrut, someone asks whether you foresee any action to allow master limited partnerships to be used for renewable energy projects?

MR. MIKRUT: Master limited partnerships are an idea that we may need to explore a little bit more. There were some attempts in the past to authorize their use by renewable energy companies. There may be another attempt in the new Congress.

MR. MARTIN: The tax committee staffs have squashed the idea in the past. Congress spent years trying to shut down tax shelters. They view any move to expand the use of master limited partnerships as reopening the door to retail tax shelters. Is there any reason to think the Republican staff will be more amenable?

MR. MIKRUT: There will be challenges, but perhaps not as insurmountable as in the last Congress.

MR. MARTIN: Here is the last question. A number of listeners asked questions along the same lines. Before Congress recessed for the election, the House passed a bill to authorize the US to impose countervailing duties on products from any country, like China, whose currency the US feels is being manipulated to give that country's products an edge selling into the US market. Earlier in the year, there were complaints about the Treasury cash grant program from several Senators—Senator Schumer (D.-New York) was probably the most outspoken—because grants are going to projects that use foreign-made equipment. He had his eye in particular on a large wind farm in Texas that plans to use Chinese turbines. Is this furor about China going to die down now with the Republicans in charge in the House or will we hear more about it in the new Congress?

MR. MIKRUT: I think the complaints will continue about China and about jobs being exported to other countries. Both parties are very much interested in job creation.

MR. MARTIN: Do you see that complicating the drive to renew the Treasury cash grant program?

MR. MIKRUT: No, I think that story rose and died, even though you saw it a little bit in some of the election ads. The National Renewable Energy Lab has shown through its studies that the section 48C tax credits for new factories that make wind turbines, solar panels and the like and the section 1603 cash grants actually promoted and saved jobs in the US.

MR. WEISGALL: There is a conflict between some US environmental goals and some of our technology goals. We want clean energy. We do not have enough manufacturing capacity here to produce all the wind turbines we need. We want a Buy America provision, but at the same time we complain about local content in some of the Chinese regulations. We complain about the Chinese keeping their currency low, and yet we print $600 billion more dollars. These are complicated and tough issues.

MR. GLICK: The bigger concern with China, at least in the renewables sector, is that China has a strong and consistent policy for promoting use of renewable energy while the US blows hot and cold on renewables. Consequently, the investment is going to China. China ends up with the manufacturing base. In those years when we decide to promote renewable energy, we end up having to buy the equipment from China because no one will set up shop in the US to manufacture for a US market that ebbs and flows. The irony of the criticisms against the Treasury grant program is the Treasury grant program actually increased US manufacturing because it created a stronger domestic market.

California: Moving Beyond the Elections

by Heather Mehta, Laura Norin and Brandon Charles, with MRW & Associates, LLC in Oakland, California

California's renewable energy industry can breathe a sigh of relief now that voters have rejected Proposition 23 and elected Jerry Brown, a strong supporter of renewable energy, as governor.

Proposition 23, had it passed, would have placed an indefinite moratorium on implementing the state's climate change law. Although the proposition did not specifically target a recently-approved increase by the California Air Resources Board in the state renewable energy target to 33% by 2020, climate change policy and the types of energy Californians consume are intrinsically linked, and passage of Proposition 23 would have put the 33% target at risk.

The election of Jerry Brown is also widely seen as a very positive development by renewables developers.

Jan Smutny-Jones, head of the Independent Energy Producers Association of California, a trade group for independent generators in the state, credits Brown with helping give birth to the renewable energy industry in California during his first term as governor in the 1970s. Californians sent a clear message that they continue to support the state's clean energy and environmental objectives even during rough economic times.

Despite the good news, there is still significant regulatory and market uncertainty at the implementation level for renewable energy developers.

After the election dust settles, regulators, policymakers, and the industry will have to address the conflict between the 20%-by-2010 renewables portfolio standard set by statute and the 33%-by-2020 target set by administrative rule. There will be a push to get the state legislature to codify the 33% target. An effort to do so failed in the fall. Governor-elect Brown is expected to support the effort. (The outgoing governor, Arnold Schwarzenegger, did, too.) Any 33% target that emerges from the state legislature could differ in the implementing details from the administrative rule.

A number of other issues are in play. Upcoming regulatory decisions on the use of renewable energy credits, a push to develop new energy storage, and efforts to / *continued page 16*

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FOREIGN CORRUPT PRACTICES ACT enforcement actions are skyrocketing.

There was not a single prosecution in 2000. In 2006, fines won by the Justice Department were just $18 million. More than $1 billion in fines have been imposed so far in 2010. The FBI has doubled the number of agents assigned to Foreign Corrupt Practices Act cases.

The Foreign Corrupt Practices Act is a 1977 law that bars US citizens and US companies from offering bribes to foreign government officials or employees of international public organizations in an effort to win or retain business or secure any improper advantage. The biggest risk is not that US companies will violate the law, but that agents or consultants working for them will do so.

Non-US companies become subject to the Foreign Corrupt Practices Act by raising money in US capital markets.

A TAX IDEA was not stolen, a state appeals court in California concluded in late October.

John S. Karls came up with a way for two companies to combine some of their income in a manner that would create a tax liability in two countries, one of which allows a foreign tax credit for the taxes paid in the other country, and allow both companies to claim essentially the same foreign tax credit.

He has sued a series of banks that he said used the idea without his permission, claiming they stole property belonging to him and asking for damages equal to four times the tax credits claimed. He had no patent or copyright protection for the idea.

Karls lost in a lower court in his case against Wachovia and Wells Fargo. An appeals court in California said in late October that the lower court was right. The bare use of an idea by someone else, without showing anything more, is not an adequate basis for a lawsuit, the court said. The court also said that a two-year statute of limitations for bringing such a claim had expired. */ continued page 17*

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streamline the siting and permitting of renewable energy facilities may also have large implications for the industry.

California RPS

The statutory RPS in California requires investor-owned utilities and power marketers to supply at least 20% of retail sales from renewable energy by 2010, although flexible compliance provisions allow for a three-year extension. California's three largest investor-owned utilities -— PG&E, Southern California Edison and SDG&E —- served just over 15% of their combined load with renewable energy in 2009. Municipal utilities in California are permitted to develop their own renewable energy goals.

In 2009, the California legislature passed a bill that would have increased the RPS requirement to 33% by 2020 for all California utilities and retail electricity suppliers. However, Governor Schwarzenegger did not endorse some aspects of the measure that passed and ended up vetoing it. Concurrently, he used his executive authority to direct the California Air Resources Board—called "CARB"—to implement a 33% standard, citing the need for such a standard under the state climate change law, AB 32. Observers have expressed mixed opinions as to whether AB 32 provides the legal authority to increase the RPS target.

CARB approved the 33% target in September 2010. The 33% target requires all utilities and power marketers, including municipal utilities such as the Los Angeles Department of Water and Power, to meet renewable procurement targets of 20% for 2012-2014, 24% for 2015-2017, 28% for 2018-2019 and 33% by 2020. The CARB plan prescribes other elements —- for example, a target for cogeneration facilities —- that still need fleshing out.

"There are some gaping holes in the CARB plan that need to be filled," former California Energy Commissioner John Geesman said. "That is likely to be a real focus for the new administration."

Another challenge is that, in the absence of a statutory 33% RPS, the 33% RES—the term for the administrative standard—will coexist with the 20% RPS that is implemented by the California Public Utilities Commission. There will need to be some degree of linkage between the rules and structures of the two programs to provide the policy certainty needed. A further challenge is the uncertainty of whether the administrative 33% RES has the force of law. Leaders in both houses of the state legislature have opposed CARB's 33% RES as being "contrary to law [and creating] economic uncertainty and potential job losses . . . [and an] inefficient and duplicative state bureaucracy."

The renewable energy industry fared better in the elections in California. However, several key issues are in play at the implementation level.

The California legislature attempted again in 2010 to pass a bill to codify the 33% target and eliminate this uncertainty. Senate Bill 722 reached the Senate floor in the final hours of the 2010 legislative session, but it did not come up for a final vote. Without legislative underpinning, the 33% RES is in danger of repeal by a new governor or new California Air Resources Board at any time: since one administrative order can overturn another, an administrative ruling does not provide the stability and policy certainty of a legislative mandate.

Efforts to pass SB 722 or a similar bill may move forward in a December special session. Alternatively, the bill may be held until the start of the 2011 legislative session or until Governor Brown's January 3 inauguration.

Laura Wisland of the Union of Concerned Scientists believes that given Governor Brown's stated aspirations for renewable energy, it is likely that movement on a 33% RPS bill will begin once he takes office. It is still possible to pass legislation before the end of Governor Schwarzenegger's term because both the Senate and the governor have expressed a desire to pass RPS

legislation, but Democratic legislators may prefer to wait until their Democratic governor takes office in January.

Jan Smutny-Jones told the *NewsWire* that the main factor in the failure to pass a 33% RPS was not lack of support from the current governor. Instead, the process was hamstrung by utility demands for off-ramps and other means to avoid penalties for non-compliance, union demands to limit the amount of renewable energy credits purchased from independent generators in other states that could be used to comply with the California targets, and other demands by members of the renewable power industry itself. How Governor-elect Brown handles these special interests will be worth watching. John Geesman suggested that Jerry Brown might sidestep SB 722 and seek passage of a simpler and more direct version of an RPS bill early in the new administration's term.

SB 722 in its final form differed from CARB's 33% RES in significant ways.

The 33% RES does not allow any exceptions or extensions for utilities and power marketers that are unable to meet the 33% procurement requirement. SB 722, on the other hand, made utilities and power marketers responsible for non-compliance only if the procurement barriers they faced were under their direct control. For example, a utility would not be responsible for missing the 33% target due to lack of transmission.

The use of tradable renewable energy credits tied to renewable energy generated at projects in neighboring states—called "TRECs"—for RPS and RES compliance is another issue where significant differences exist. CARB's 33% RES allows unlimited use of TRECs: all of the required renewable energy theoretically could be produced and consumed out of state. SB 722 allowed TRECs to be used for only a portion of compliance, with the amount varying by time period. For example, for the period after 2016, SB 722 would allow 25% of the RPS requirement to be met with TRECs, subject to the further constraint that no more than 10% of contracts executed after June 1, 2010 could be TREC contracts.

The amount of TRECs that can be used for compliance under the 20% RPS has yet to be resolved by the California Public Utilities Commission. The CPUC released a decision in March that limited the use of TRECs to meet up to 25% of annual procurement obligations by the investor-owned utilities and imposed a price cap of $50 per TREC. It also determined that a TREC transaction is any transaction in which only a TREC is exchanged between a buyer and seller, and the generator's first point of interconnection with the WECC */ continued page 18*

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The case is Karls v. Wachovia Trust Co. of California. *The appeals court released its decision on October 27.*

SOLAR REBATES to homeowners by their local utilities must be reported in some cases as income.

Section 136 of the US tax code says that any payment a homeowner receives from his or her local utility as an inducement take energy efficiency measures to reduce consumption of electricity or natural gas does not have to be reported as income.

However, in at least one state, homeowners receiving the payments must agree to transfer all the renewable energy credits to which they are entitled to the utility. The utility treats the payment as a forward purchase of the RECs.

The IRS said in a private letter ruling that homeowners receiving such payments must report them as income. The homeowner who received the ruling was probably in Arizona. He or she bought a rooftop solar system and then agreed to transfer the rights to all "environmental credits, benefits, emissions reductions, offsets and allowances" associated with the electricity produced to the local utility for a fixed term of years for a one-time payment.

The IRS said the homeowner had to report the payment as gain from the sale of RECs.

However, because of that, it can claim a 30% residential tax credit on the cost of the solar system. If the payment had not been income, then the tax credit could only be claimed on the portion the system cost not covered by the utility rebate.

Solar residential companies who lease solar systems to homeowners or sign power contracts to sell them the electricity from such systems find the ruling troubling. If the rebates are taxable to the homeowners, it could mean the amounts will be taxed twice—once to the homeowner and again to the solar company— */ continued page 19*

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transmission system is physically located outside of California and is not interconnected to the CAISO system or another California balancing authority's system. In response to motions by various parties, the CPUC stayed the March decision pending resolution of petitions for changes to the decision.

tion dates for the usage cap and the price cap, but it would otherwise maintain the 25% TREC cap and the other rules in the March decision.

The CPUC has not yet voted on these proposed decisions, but may do so before the end of the year. Approval of either of these decisions would result in a much more limited TREC policy than authorized by CARB in the 33% RES. Given this conflict, CARB has announced that it will open a proceeding to harmonize its TREC policy with the CPUC's once the CPUC has adopted a final decision on the matter. CARB did not say that it would adopt the CPUC's policy, so the extent of the harmonizing remains to be seen. Should SB 722 pass, any legislative TRECs requirements included in the law would presumably take precedence over CARB's ruling.

Table 1: Large-Scale Solar Thermal Projects Reviewed in 2010

Project Name	Developer	Size *(MWs)*	Technology	CEC Approval Status	BLM Approval Status
Beacon	Beacon Solar, LLC	250	solar trough	approved 8/25/10	N/A
Mojave	Abengoa Solar Inc.	250	solar trough	approved 9/8/10	N/A
Blythe	Solar Millennium LLC	1,000	solar trough	approved 9/15/10	approved 10/25/10
Ivanpah	Solar Partners/BrightSource Energy	370	solar tower	approved 9/22/10	approved 10/7/10
Imperial Valley	Imperial Valley Solar LLC	709	Stirling engine	approved 9/29/10	approved 10/5/10
Genesis	Genesis Solar LLC/NextEra Resources LLC	250	solar trough	approved 9/29/10	approved 11/04/10
Calico	Calico Solar LLC/Tessera Solar	663.5	Stirling Engine	approved 10/28/10	approved 10/20/10
Palen	Solar Millennium LLC	500	Solar Trough	expected by 12/31/10	under review
Ridgecrest	Solar Millennium LLC	250	Solar Trough	under review	under review
Rice	Rice Solar LLC/Solar Reserve LLC	150	Central Tower	expected by 12/31/10	N/A

CPUC President Michael Peevey issued a revised proposed decision in October that would change the rules set out in the original TREC decision by increasing the TREC usage cap from 25% of the annual RPS procurement obligations to 30% and delaying expiration of the TREC usage cap and the $50 price cap until December 31, 2013. It would modify the grandfather provisions to provide that all contracts that were approved by the commission prior to the effective date of the original decision would be characterized as bundled contracts for RPS compliance purposes and would not count toward the TREC usage cap. It would also apply the same TREC usage caps to the smaller power marketers. Commissioner Grueneich subsequently issued an alternate proposed decision that would eliminate the expira-

Brown's Energy Goals

Governor-elect Brown is expected to keep up the pressure to increase use of renewable energy. He promised during his campaign to support AB 32 and CARB's efforts to implement this legislation. He also supported the 33% RPS and the development of large-scale (8,000 megawatts) and distributed (12,000

megawatts) renewable power, transmission lines, energy storage, peaker plants and cogeneration facilities (6,500 megawatts).

These goals are largely consistent —- at least at a qualitative level -— with the state's current energy policy goals. The 33% RES, incentives for distributed renewable power and efforts to site new large-scale renewable power plants and transmission lines are already in place. The CPUC continues to evaluate the need for new peaker plants and other fossil-fueled power plants. Energy storage initiatives have also begun in recent months.

AB 2514, which Governor Schwarzenegger signed on September 29, requires the CPUC to open a proceeding by March 1, 2012 to adopt energy storage system procurement targets for 2015 and 2020, and the large utilities have already begun to pursue energy storage projects. The CPUC approved PG&E's request for funding for a 300-megawatt compressed air energy storage demonstration project in Kern County, California to be completed in 2015 and is studying PG&E's request for funding for a study of a new 1,200-megawatt pumped storage hydroelectric facility, the Mokelumne pumped storage project, to be completed in 2020. The other investor-owned utilities in California are also engaged in energy storage projects, including projects to test advanced battery systems.

Given the consistency of Brown's objectives with the state's existing goals and programs, the primary challenge that the new governor will face will not be at the policy level, but rather at the implementation level. In other words, the certainty and speed of regulatory processes may affect the feasibility of renewable energy development in California as much as the outcome of policy debates. Developers often complain about California's siting and permitting processes, which can be long and contentious. This implementation bottleneck is widely seen as having prevented California from meeting its 20% RPS goal by 2010.

The key California energy agencies have been working together to streamline their regulatory processes. The CPUC, the California Energy Commission, CARB, the California Environmental Protection Agency, and the California Independent System Operator recently developed a blueprint for jointly achieving the environmental and energy policy goals that were established by outgoing Governor Schwarzenegger. This document, *California's Clean Energy Future*, designates agency responsibility for various aspects of the plan so that each agency is acting in a coordinated fashion with the others.

These agencies demonstrated their */ continued page 20*

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when, as typically happens, the homeowner assigns its right to the rebate to the solar company.

SOLAR CURTAIN WALLS qualify for federal tax credits, the IRS ruled privately.

A curtain wall is tinted glass installed in place of a window in a building with a thin solar panel embedded in the glass to generate electricity. The IRS said a 30% investment tax credit can be claimed on the cost, even though structural components of buildings generally do not qualify for tax credits. It described the curtain wall as more a piece of machinery than a structural component of a building.

The ruling is interesting because the IRS usually takes the position that solar equipment that is put to a dual use can only qualify for a tax credit to extent it is used at least 75% of the time as a solar device and then the credit is the share of solar use above that. For example, if the equipment is used 80% of the time as a solar device, then only 80% of the full tax credit can be claimed, and the credit is subject to partial recapture to the extent the percentage drops in any of the next four years after the equipment is put into service.

The IRS said in this case that a full credit is allowed. The IRS lawyer who worked on the ruling said he did not see any dual use of the window. It serves a "dual purpose," the ruling said, but it is not put to dual use. It is basically a solar panel that happens to have been installed on the side of the building rather than the roof.

The ruling is Private Letter Ruling 201043023. The agency released a redacted copy in late October.

QATAR adopted a new 10% corporate income tax on October 6 that will apply retroactively to corporate profits earned in the country since last January. There is speculation that it may lead to similar taxes in cash-strapped countries along the Persian Gulf.

Dubai is still struggling */ continued page 21*

Implications of Proposition 26

California voters approved Proposition 26, which expands the definition of a tax to include fees and charges that address health, environmental or other societal or economic concerns, thereby requiring a two-thirds majority of each house of the state legislature for approval.

While this proposition did not explicitly mention climate change or renewable energy, it could directly affect these programs, since CARB intends to rely on such fees to implement AB 32 and the 33% RES.

Some environmental groups have expressed concern that raising the bar for passing a new fee to a two-thirds vote could ultimately starve these programs of funding.

However, in an e-mail to National Public Radio-affiliate KQED's Climate Watch following the election, CARB Chairman Mary Nichols expressed optimism: "Prop. 26 does not impair the scoping plan adopted in 2008 or any regulations developed under that plan. AB 32 is on track, with renewed vigor thanks to the resounding defeat of Prop 23 by the voters," Nichols told the radio station.

ability to expedite their regulatory processes over this past year in the coordinated effort to accelerate development of a number of large-scale solar thermal projects. In recent months, the CEC has approved licenses for seven solar thermal plants totaling 3,500 megawatts. Five of these projects also required approval from the US Bureau of Land Management. In all, 4,150 megawatts of solar thermal capacity could receive regulatory approval from the CEC by the end of 2010 (see table 1). These approvals were expedited in order to assure project eligibility for federal cash grants covering up to 30% of the project cost.

Governor-elect Brown will have the opportunity to further his energy agenda through appointments to fill upcoming vacancies. At the CPUC, he may have the opportunity to replace (or reconfirm) four of the five commissioners by the end of 2011: terms for two commissioners end in 2011, the CPUC president has said he will continue to serve only if the new governor retains him as president, and a third commissioner is serving

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without having been formally approved by the state Senate. (Commissioners have one year from their appointments to receive Senate confirmation. If not confirmed, they are removed from office.) A similar opportunity is found at the CEC: of the five commissioners, one has a term ending in January, two are serving without Senate confirmation, and one more has a term ending in January 2012. Finally, the 11 members of the California Air Resources Board serve at the pleasure of the governor and, therefore, could theoretically all be replaced.

Outlook

The broad policy framework for renewable energy in California is well established. The election showed that climate change and environmental issues continue to resonate strongly with the California electorate. Public acceptance of renewable energy has been increasing among the business and non-business public in recent years. Renewable energy is seen by many, including the newly elected governor, as a path for the creation of green jobs in the state. Others promote renewable development for environmental, public health and environmental justice reasons.

Many important implementation decisions have not been made or must be harmonized across multiple agencies. Passage of 33% RPS legislation could be months away or it could languish far longer. John Geesman said the incoming administration faces real challenges aside from energy policy. "Codifying a renewable energy standard is something the new governor supports, but he is going to face tremendous budget and economic problems that are likely to be priority number one for his administration," he said.

This need not hamstring the industry. Jan Smutny-Jones, head of the independent energy trade association, said the renewables industry in California does not depend solely on passage of a 33% RPS bill. The utilities are already "pregnant" in that they rely on renewables to provide needed diversity to their supply portfolios. Smutny-Jones said that without additional renewables, new natural gas-fired generation would dominate the utilities' future resource portfolios -— an outcome that is contrary to sound resource planning -— given that incremental nuclear and coal purchases are effectively barred and there are no opportunities for large hydro.

Under the "business as usual" scenario, CARB and the utili-

ties will move forward with implementation of the 33% RES, and the CEC and other agencies will continue to push for a more streamlined process for the siting and permitting of renewable energy projects.

Laura Wisland of the Union of Concerned Scientists summed up the situation as follows: "Renewable energy policy is more insulated in California than some of the other [environmental] issues because it's very tangible, has clear economic benefits, we know we have the resources, and there's been so much work that's been done already."

The authors acknowledge the contributions of colleagues Steve McClary, David Howarth, and Bill Monsen to this article. The authors also wish to thank John Geesman, Laura Wisland and Jan Smutny-Jones for both their time and their willingness to share their views on the election and the future of the renewable energy industry in California.

Financing Utility-Scale Solar Projects

The following is an edited transcript from a roundtable discussion that took place at the Solar Power International 2010 convention in October in Los Angeles among three developers and three financiers about the financing terms on offer for US utility-scale solar projects in the debt and tax equity markets and the challenges developers face in financing such projects.

The developers are Fred Vaske, vice president for project finance with Recurrent Energy, Steve Holman, senior vice president and general counsel of Fotowatio Renewable Ventures, and Jack Jenkins-Stark, chief financial officer of BrightSource Energy. The financiers are John Eber, managing director and head of energy investments for JPMorgan Capital Corporation, Gisela Kroess, director of power and environmental global project finance in the New York office UniCredit Bank, and Gavin Danaher, managing director of John Hancock Financial Services. The moderator is Keith Martin with Chadbourne in Washington.

MR. MARTIN: Fred Vaske, you have been in the market seeking financing for photovoltaic projects. How would you characterize the current market?

MR. VASKE: For projects in the five- to 25-megawatt range and aggregated projects up to 50 megawatts, the financial market is active with many interested lenders. We are not seeing any stress for well-structured projects. / continued page 22

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with large debts after the collapse of the real estate market. However, the Chadbourne office in Dubai says it considers introduction of a corporate income tax unlikely.

MUNICIPAL UTILITIES can make bilateral sales of renewable energy credits from wind, solar or other renewable energy projects they own without fear that the projects will be considered put partly to private business use, the IRS ruled privately.

Municipal utilities often use tax-exempt debt to finance their facilities. However, such debt can only be used for facilities are that put to public use. More than 10% private business use of a municipal facility will cause the interest on any bonds used to finance it to become taxable to bondholders. It would normally be private business use for a municipality to enter into a long-term contract to sell the electricity from one of its power plants to an investor-owned utility. The amount of private business use would be calculated by looking at the power sold as a percentage of the expected output of the power plant over the term of the bonds.

The private ruling was addressed to a joint action agency that generated electricity and supplied it to municipal utilities that are its members. The joint action agency planned to issue tax-exempt debt to acquire and then finish building a partially-constructed wind farm and then sell all of the electricity from the project to an unidentified "company" that would resell it to the municipal utilities. The joint action agency plans to sell the renewable energy credits on the project separately to private parties.

The IRS was not bothered by the REC sales. It said that anyone buying RECs is not really "using" the wind farm in the same way as someone buying the electricity. "Although the contract provides for liquidated damages in the event of non-delivery of RECs to [the buyer]," the agency said, / continued page 23

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MR. HOLMAN: I agree. For good projects, the money is still there. There is a lot of interest. Things are better than they were a year or two ago.

MR. MARTIN: John Eber, you told me before the session that you are prepared to provide tax equity to utility-scale projects, but you are not seeing a lot of projects that are far enough along to justify taking a close look.

MR. EBER: There are only a few that are far enough along for serious review at this stage, but there are a lot coming. The challenge for some of the larger projects that use newer technologies will be their size, the fact that they are using unproven technologies and how long an advance commitment of tax equity the projects require. Fortunately, most of what we see in the pipeline is more manageable in size, involves proven technology and does not require a two- to three-year advance commitment.

MR. MARTIN: How would characterize the tax equity market at the moment?

MR. EBER: It has recovered from the problems that it had at the end of 2008 and early 2009 and is getting better every day. The recovery is largely due to the Treasury cash grants.

MR. MARTIN: Gisela Kroess, how would you characterize the debt market?

MS. KROESS: Much better than it was a year ago. We have seen a lot of volume this year in terms of transactions—both in wind and solar. A lot of the volume has been spurred by the Treasury cash grants and the need to meet the deadline to start construction by the end of this year.

MR. MARTIN: We have heard from bankers that they are open for business, but they are not seeing the hectic activity this fall that they might have seen in past years when the economy was healthy.

MS. KROESS: There is uncertainty about the political and regulatory environment going forward, but I disagree. We have been very busy recently closing our first US solar financing—a 45-megawatt PV financing of about $210 million in total. We continue to be busy. There are about 30 banks that are active in the market right now, so you have a fair amount of competition among lenders.

Thin Film Versus Crystalline

MR. MARTIN: Gavin Danaher, as an insurance company, you tend to lend longer term than the banks. How do you view thin film versus crystalline in terms of risk and willingness to lend?

MR. DANAHER: We have financed crystalline four times, including two of the three of the largest projects in the US. We made proposals to finance thin film, so we are also open to that. However, the issue with thin film is whether it makes sense to finance such a project in the institutional market. The main attraction of the institutional market is one can borrow for longer terms. We are not prepared to lend longer than 15 to 20 years to a thin film project while the debt tenor for crystalline is 20 to 25 years.

MR. MARTIN: The problem with thin film is that you just don't think it will last as long as crystalline panels?

MR. DANAHER: Yes. It is a proven technology, but we do not have the long-term data that we do for crystalline.

MR. MARTIN: Fred Vaske, Recurrent is a PV company. Do you use both thin film and crystalline?

MR. VASKE: We look at both. The differentiating factor when I go out to discuss financing is much more who is the manufacturer and whether the manufacturer is perceived as being in the top tier. Both products can be financed. I agree that use of thin film limits how far out the debt can go.

MR. MARTIN: Gisela Kroess, you just heard from Gavin Danaher that the institutional market is offering 20- to 25-year

Banks and institutional lenders will finance solar thermal projects using trough technology, but large projects using other technologies require DOE loan guarantees to be financed.

debt for crystalline projects and 15 to 20 years for thin film. What about the bank market?

MS. KROESS: The bank market is obviously a little more limited as far as tenor is concerned. The PV project on which we just closed the financing recently was a thin film project. We basically provided a construction financing and 15-year term loan. The construction financing included a bridge to the Treasury cash grant. In Europe, I know we have done PV financings up to 18 years, but I think it is difficult in the US to get beyond 15 years at this point. You might for a smaller facility with the right sponsor, but if you need a club of banks, I think 15 years is probably the limit.

MR. MARTIN: Are there other issues with thin film besides a suspicion that it will not last as long as crystalline?

MS. KROESS: You have to structure around the inverter risk. Make sure that you either have a reserve or extended warranties to cover that risk. The inverters typically last only about 10 years, so at least some portion of them will have to be replaced after 10 years. If do a 15-year financing, then you need to take that into account.

MR. DANAHER: You have that risk with crystalline as well.

MR. KROESS: Yes, that is a general risk that applies both to thin film and crystalline, but there is less operating history with thin film. You need the right manufacturer, the right credit quality behind the manufacturer and a high-quality warranty that guarantees you a certain amount of degradation, and you model that accordingly.

MR. MARTIN: How rapidly does thin film degrade per year?

MS. KROESS: There is a limited amount of data available. If you want to be conservative, you assume 0.8% a year.

MR. DANAHER: These panels either just stop working or they work. At some point, you might have to start replacing them. There isn't enough operating data to know when that point will be reached. We have been modeling 0.75% annual degradation for crystalline.

MR. MARTIN: To what extent do you worry about the rate of technological change? You are lending money. The loan is secured by assets that may be outmoded within five years.

MR. HOLMAN: It is not a concern because we are borrowing against contracted revenues. We have a contract with a utility or customer that runs 20 years or longer. There will always be something faster, more efficient and better down the road, but it will not affect your project as long as the project is performing. This is no different than in the thermal power sector where there are also technological improvements over time. */ continued page 24*

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"these provisions do not rise to the level of control over the facility or its operations."

The ruling is Private Letter Ruling 201037006. The IRS released a redacted version in September.

TEMPORARY UTILITY RATE INCREASES are not compensation for storm losses, the IRS said in an internal memo.

The conclusion is important because it let the utility deduct the storm losses. Losses compensated by insurance or otherwise are not deductible.

The public utility commission let the utility add a temporary surcharge to utility bills to recover the losses. However, the IRS national office concluded in an internal memo made public in late September that this should not prevent the utility from deducting its casualty losses as it was in no different position from other business that increase prices to recover the amount of the loss. "Arguably the result should not differ because a business' rates are set by a government regulator rather than the market," the agency said.

The memo went to an IRS appeals officer handling the issue on audit. It is ILM 201036001.

MINOR MEMOS. President Obama signed a "Plain Writing Act" on October 13 that would require federal agencies to write tax forms, instructions and other public documents in plain English. Unfortunately, it does not apply to government regulations. Critics are having a hard time articulating what bothers them about the measure . . . . The IRS said in an internal legal memo that became public in mid-October that a company that purchased a vineyard in one of the 198 designated "American viticultural areas"—geographic areas with distinct grapes that the vineyard can use as an appellation on its wine bottles—had to allocate part of the purchase price to the right to use */ continued page 25*

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MS. KROESS: I agree. We basically lend against contracted cash flow and, as long as the project performs as required under the power contract, we trust the warranty and the quality behind the warranty. One big advantage of a solar plant compared to a wind farm is the modular nature of the solar plant where you can easily replace inverters and modules that stop performing.

MR. DANAHER: I have a question for the developers on the panel about crystalline versus thin film. Do the requests for proposals from utilities and other offtakers distinguish between the two technologies? Clearly, thin film is a cheaper product. Can you still play in crystalline and compete with thin film?

MR. VASKE: I don't think the RFPs are necessarily driving one technology or the other. It is true that thin film is cheaper by some measures. Weighing against it are technology risks and production efficiency. We take a serious look at thin film, we evaluate it and Recurrent Energy's view could change in the future, but at the moment we favor crystalline from a financing and technology standpoint. At the end of the day, we know it is financeable, so we lean toward it all other things being equal.

MR. HOLMAN: I agree. I am not aware of any RFP in which we have participated that stated a preference for one versus the other. Our analysis is that crystalline absolutely can compete on price terms and, in many cases, it outperforms thin film from an economic perspective. Crystalline also has some additional advantages, depending on the location. Thin film obviously requires more land. If you are constrained on land, crystalline may be a better solution. The insolation of the project site is also a factor.

Financing Solar Thermal

MR. MARTIN: Jack Jenkins-Stark, there are two or three different types of concentrating solar power projects. There are power towers, troughs and what is third?

MR. JENKINS-STARK: The Stirling engine. It is a satellite dish technology.

MR. MARTIN: Does the financial market distinguish among satellite dishes, power tower and troughs in terms of risk and willingness to do a financing?

MR. JENKINS-STARK: The trough technology is either bankable or approaching bankability. There are examples of tower projects that are not quite commercial scale, so the sense we have is that long-term bankability is yet to be proven. We are fortunate in that we have a conditional commitment from the US Department of Energy to provide the debt under the innovative loan guarantee program. We think tower projects will be eminently bankable in another couple years.

MR. MARTIN: Only one CSP project has been financed in the US since 1991, and that was the Nevada One project three years ago that was financed in the tax equity market. John Eber, what type of technology was it?

MR. EBER: It was trough technology, the same technology that was used for the SEGS projects in California in the early 1990s.

MR. MARTIN: Gisela Kroess, will you do trough CSP at this point?

MS. KROESS: We have financed trough projects in Europe, but banks require a creditworthy completion guarantee. I believe the older deals had not only completion guarantees, but also production guarantees for the first one or two years.

MR. MARTIN: So you will require a completion guarantee, meaning a construction contractor must provide a "wrap" guaranteeing that all the parts will work together once the project is built?

MS. KROESS: Either a creditworthy wrap from the general contractor or a creditworthy sponsor guarantee. You need support.

MR. MARTIN: Is a production guarantee for the first two years required or are you now confident enough with the technology?

MS. KROESS: In Europe, some trough deals have been done with production guarantees, but there is a debate about whether they are still required. No CSP deals have been financed yet in the US market other than the Nevada One deal.

MR. MARTIN: Jack Jenkins-Stark, you have the Ivanpah project with tower technology in the market currently. You expect to have a DOE loan guarantee. What pushback are you getting from people whom you are approaching for capital? What sort of guarantees do they want?

MR. JENKINS-STARK: The transaction is likely to involve a number of different forms of capital, and a lot of different players. The two obvious primary candidates are debt, which would be both construction and long-term debt from the US government, and then equity. We have found the parties become comfortable with the technology as soon as they engage with independent engineers. We are fortunate in that the founder and the senior engineering team at our company

are the same people who built the SEGS projects that were referred to earlier. This is a group of people who are extraordinarily capable. They understand trough. They were the pioneers in trough. They built all the CSP that existed in the United States up until Nevada One.

That said, we have worked purposely through a series of steps from building a demonstration facility through working with Bechtel to develop completion guarantee arrangements that we think address the construction wrap risk. With regard to performance, I think we will see the equity and, to a certain extent debt as well in the case of the DOE, demand certain performance guarantees. We are feeling fairly confident that we will get to a successful financing.

Market Data

MR. MARTIN: John Eber, give me some data about the state of the tax equity market. The last good year for the tax equity market was 2007. How is 2010 compared to 2007?

MR. EBER: We have seen $4.2 or $4.3 billion committed in the first nine months of 2010 in just wind and solar. In 2007, tax equity committed in those two types of projects was around $5.4 billion, so 2010 is off to a good start.

MR. MARTIN: So the tax equity market may turn out as strong in 2010 as 2007 in terms of dollar volume. How many active tax equity investors are there today compared to 2007?

MR. EBER: We count 16 institutional investors who are active. There are probably another half a dozen who are thinking about it and looking at deals. The strength of the market is due to the Treasury cash grants. There are people who are investing today who could not have done a production tax credit or investment credit deal in 2007 and could not do one today.

MR. MARTIN: Gisela Kroess, do you have data for me on the debt market?

MS. KROESS: We have seen tremendous growth this year. Ignoring two bond financings that accounted for about $900 million, bank financings for the year to date are roughly $6 billion. There have been 28 deals. There have been six bank financings of solar projects for a total of about $600 million. The Treasury cash grants are also the catalyst in the debt market since part of the lending is in the form of equity bridge loans against future cash grants. Bank financings in 2009 were only $300 million in total.

MR. EBER: If you break the numbers down in both the tax equity and debt markets between wind and solar, the bounce-back is almost entirely in wind. The solar / *continued page 26*

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the appellation. The agency said the right was a separate intangible whose cost must be recovered over 15 years. The memo is Chief Counsel Advice 201040004 . . . The Netherlands Antilles, previously a separate country under Dutch sovereignty, ceased to exist on October 10. Some multinational corporations have used offshore ownership structures that run partly through the Antilles. Curaçao and Sint Maarten have become separate countries with the same status as Aruba with full responsibility for their own internal affairs. Holland will continue to handle their foreign affairs. They are not part of the European Union. Both will still use the same laws, including tax laws, as before.

— *contributed by Keith Martin in Washington.*

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market has been remarkably constant. For the last three years, it has been about $800 million. It dropped a little last year. This year, it looks like it will be the same as last year. Most of the solar financings have been of rooftop and other distributed solar PV systems.

Debt Terms

MR. MARTIN: What are current debt service coverage ratios for utility-scale scale solar?

Life for a developer is like a piece of taffy. The key is to retain something in the middle after the offtaker, contractors, lenders and tax equity investors are finished pulling.

MS. KROESS: We generally size the debt using a 1.0 coverage ratio on P99 output and a 1.35 coverage ratio on P50 output.

MR. MARTIN: That's for PV. What about the CSP?

MS. KROESS: I don't have the data for CSP, but I would think the coverage ratio would have to be higher. It would depend on the support.

MR. HOLMAN: I was going to ask what coverage ratio the Department of Energy is requiring, since it seems to be the only one doing the deals.

MR. JENKINS-STARK: I can tell you, Steve, but then you know what I would have to do. [Laughter.]

MR. MARTIN: What about current rates? The last time I checked, rates on bank debt were between 225 and 325 basis points over LIBOR with a 275 up-front fee. Is that still current?

MS. KROESS: We have seen really a wide range this year on pricing, especially in the first half of the year, but the range appears to have settled in the low 200s to low 300s.

MR. MARTIN: LIBOR is currently just under 1%.

MS. KROESS: You can get incredible swap rates right now. Long-term swap rates for 15 years or longer are below 3%. So even if you have a margin of 250 or 275 basis points, the all-in rate is still pretty compelling. You have to distinguish among construction financing only or a combination of construction and term debt or a bridge to the cash grant. Bridge debt would be priced on the lower end. The price for bridge debt depends on your evaluation of construction risk, but it is pretty straight forward for solar PV and most banks that are active feel very comfortable with the cash grant risk.

MR. MARTIN: Gavin Danaher, are the rates the same for institutional market debt?

MR. DANAHER: We price our products off Treasuries, and so with the 10-year Treasury around 2.5% with a credit spread of 300 or 350 basis points at most, you are looking at 5.5% to 6% coupons on long-term financing. That is a low rate in historical terms. It is down from what has been 7% to 7.5% even in the last 12 to 18 months.

MR. MARTIN: Are the spreads somewhat illusory because the base rate—whether it is LIBOR or the 10-year Treasury rate—is subject to a floor?

MR. DANAHER: There is no floor on our coupon. Some institutions do have coupon floors where they can't participate in the project financing if the rate is less than 6% or under some other level, but ours is just a credit spread on the risk and whatever Treasuries have triggered, so 5.5% is possible.

MR. MARTIN: The maturity in the bank market is 15 years—perhaps 17 years as a maximum tenor. What is it in the institutional debt market?

MS. KROESS: Of the 28 deals done so far this year, really the majority have been in mini- or maxi-perm range of eight, 10 or 12 years. I only counted about six deals that were really 15 years or longer.

MR. DANAHER: I forgot to mention that we don't charge up-front fees in the institutional market, so if you amortize the up-front fee charged in the bank market over the debt term, the institutional market is becoming more competitive with the bank market. Two or three years ago, we couldn't compete.

The maturities on institutional debt are 20 to 25 years. We do not finance beyond the life of the power purchase agreement. If

you have a 25-year PPA, then maybe we would consider a 25-year term, but we have certainly gone to 24 years.

MR. KROESS: Unless you are worried about the make whole, right?

MR. DANAHER: Yes. That's right, that's right. [Laughter]

MR. MARTIN: What does that mean? Gisela explain it.

MR. DANAHER: Here we go. [Laughter]

MS. KROESS: Banks loan are made based on a spread above a floating LIBOR rate. If you prepay the remaining balance on the loan at some point, there may be a small breakage fee if the prepayment is made in the middle of the month, but otherwise there is none. Institutional lenders lock in rates for a long period. If the loan is repaid ahead of schedule, then the institutional lender will charge a make whole, which is the difference between what it would have been able to earn under the loan carried to full term at the fixed rate compared to what it will be able to earn by redeploying the funds in the current market. The amount could be considerable.

MR. MARTIN: So there is some significant fine print in the institutional markets deal.

MR. MARTIN: Fred Vaske, Recurrent Energy does PV projects. Are you trying to raise debt or mainly tax equity?

MR. VASKE: We have spent quite a bit of time looking at debt. I agree with everything that has been said so far. Compared to a year ago, the term of the debt has improved markedly, rates have improved, fees have improved. With regard to the debate we just heard, whether Recurrent Energy finds bank or institutional debt more attractive is a function of what type of a deal we have. Which type of debt fits better? Banks are trending toward longer tenors. Fees are coming down. In the case of our San Francisco Sunset Reservoir project, I had a 25-year power purchase agreement. We worked with Prudential and put 24-year debt on that project. It could have gone to 25 years, but we were limited by the warranty on the modules.

MR. MARTIN: So you paid a higher rate for the institutional debt than you would have paid in the bank market, but you got a longer term. That was a better trade off.

MR. VASKE: I think the rate was fairly competitive. It might have been slightly higher, but the higher average life of that debt when you start looking at the levered equity returns is very material. It was a very big improvement for us.

MR. MARTIN: Explain the concept of average life.

MR. VASKE: It is a way of looking at effectively how long you have the use of the money. The average life of our 24-year debt is well into the teens. For bank debt that you might pay back over 15 to 17 years, it is closer to 10 years. The point is I have that less expensive debt money for much longer into the transaction. It allows me to make a much higher return on the equity I have invested in the project.

MR. MARTIN: Jack Jenkins-Stark, how much debt can one raise as a construction loan to finance a project? Is it 50%, 55%, or maybe you are a special case because you have a DOE loan guarantee?

MR. JENKINS-STARK: I think that you would have to put us in a special case. Ivanpah is a $2+ billion project. We are not out in the construction debt market or the term debt market for that project because we expect to borrow through DOE.

MR. MARTIN: What percentage of the cost does the DOE guarantee enable you to borrow?

MR. JENKINS-STARK: That information is confidential. It is fair to say that DOE is willing, as a result of the cash grant, to lend more during construction and that both the construction and term loans will be sized like a bank loan based on some kind of debt service coverage ratio.

MR. MARTIN: Fred Vaske, what percentage of construction costs can you raise in debt as a PV developer?

MR. VASKE: As a general rule for a well-structured project, we can raise close to 50% and, on top of that, during the construction period get nearly a full advance against the expected Treasury cash grant so that we can pull in close to 80% of the project cost.

Treasury Cash Grants

MR. MARTIN: How do lenders handle risk tied to Treasury cash grant. Gisela Kroess, you said that lenders are pretty comfortable with the cash grant.

MS. KROESS: The cash grant has been probably the most successful government program because it's simple and banks feel very comfortable with the rules. Most banks lend 90% to 95% of the expected cash grant as an equity bridge loan. We have lent up to 100%. We generally lend without sponsor support. We have had up to 85% in construction debt. That's why the cash grant is so important.

MR. VASKE: Are you seeing any second guessing by the Treasury on the amount of grant claimed?

MS. KROESS: Not really. In the beginning, grants were paid fairly quickly within three weeks. Even now, they take up to two months, which is still fine. We generally have a six-month cushion. Questions are asked sometimes, but we haven not seen more than a 3% deviation from the original budget. */ continued page 28*

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MR. EBER: We have seen deviations. We have done about half a dozen grant deals. If you do it right—if you have all the right kind of experts involved—you will get what you applied for, but we have had situations where Treasury has come back on the 59th day with a page or two of questions and the clock starts running for another 60 days. It was pretty clear that if we were in a big hurry to get the money, we could have settled for something less than we applied for. However, in each case, everybody involved felt that the grant had been properly calculated, so we had to spend time and money going back and answering all the questions. At the end of that next 59 days, the full grant was paid.

MR. MARTIN: The Treasury released a form last week that developers can use to ask Treasury to confirm that their projects got under construction this year. The only projects that qualify for grants after this year are projects that were under construction by December 2010. Do you expect lenders and tax equity investors to make it a condition in the future to funding that the project have gotten confirmation from Treasury that it started construction on time?

MS. KROESS: Projects that close on construction financing as the year draws to a close require more diligence because the lenders have to feel confident that they are under construction in time to qualify for a cash grant. A project must meet either the physical work test or the 5% rule. That can be done. Banks request an auditor to identify the costs that qualify. It is straightforward. I think the biggest discussion may be around what developer fee the lenders are prepared to assume will be counted as basis for the cash grant.

MR. EBER: If there is a form that developers can use to ask Treasury to confirm their projects started construction in time, tax equity investors are going to require it.

DOE Loan Guarantees

MR. MARTIN: Jack Jenkins-Stark, the DOE loan guarantee program has been torture for developers to get commitments and then to negotiate the terms so that they actually get a loan guarantee. I believe at last count only four loan guarantees have been issued and there are 15 commitments. That's on more than 400 applications. Projects have to be under construction by September 2011 to qualify. Knowing what you do about the process, would you start down this road again?

MR. JENKINS-STARK: If you'll indulge me I have three points to make.

Number one is I want the transcript to properly reflect that BrightSource does not view the DOE loan process as torture.

Number two, how many of you in the audience are US taxpayers? I can tell you that you should rest easy. Your funds are being cautiously dispersed by the Department of Energy and you should be pleased with the discipline and the exhaustive and exhausting nature of the due diligence that is being conducted.

The third point is that BrightSource is making it much easier for everyone who comes next. And we should get some kind of fee on that. [Laughter]

MR. MARTIN: Gavin Danaher, the so-called FIPP part of the program where the government guarantees repayment of private-sector debt to projects that use commercially-proven technologies—I believe there have been at least five or six applications for guarantees under this part of the program—John Hancock is the lender in a large share of these applications. What has been your experience? Would you go down this path again?

GAVIN DANAHER: Thank you, Jack, for reminding me that this transcript's being recorded. [Laughter]

We were the first firm to have a loan guarantee issued under the FIPP program just a month or two ago, and we have six other applications in. We have probably been the most active institution under that program. We are a small team managing a pretty large portfolio. The process is time consuming. It is not something we are marketing or that we really want to do a lot of. However, if our customers want us to go through that process with them, we are happy to take them through it. It is a process.

MR. MARTIN: I think the window is closed at this point for additional applications, with the exception of loan guarantees for new factories that will manufacture wind turbines, solar panels and other equipment for the green economy.

Just to be clear, there are a lot of very capable people at DOE trying very hard to make the program work. Our own people say that their hearts in the right place. They just have a lot of structural impediments that aren't of their making. In some ways, the comparisons of the Treasury cash grant program, which has worked exceptionally well, and the DOE program are unfair because the Treasury has a program that is built on existing concepts many of which go back 48 years. DOE was trying to set up a program from scratch.

MR. DANAHER: As Jack says, we are hopefully making this process easier for applicants two, three and four. I think the DOE staff has gone from 25 people a year and a half ago to 125 and so, when you think about the process and the credit approvals that are needed, it is one thing to work with us as an institution and get our credit approvals but a very different thing to work through the process a second time with the US government.

MS. KROESS: Gavin, you said you have made six or seven applications. How long does it take to negotiate with DOE?

MR. DANAHER: It's a six to nine month process. The longest lead-time item is the NEPA review.

MS. KROESS: We had heard it is much longer than six to nine months. I can say, for our institution, that is one of the reasons we have not bothered with the loan guarantees because our clients need to close the financing for their projects within a reasonable time frame. That's impossible with the DOE at least on the FIPP program. You need a lot of time and patience to go through that process and, from what I've heard, the outcome is anything but certain.

MR. JENKINS-STARK: Our loan guarantee is coming through the innovative technologies part of the program. In fairness to DOE, many of the issues in the BrightSource project were probably questions of first impression. Ours is a complicated transaction. We are not only the developer, but an affiliated company is also the manufacturer of a lot of the equipment. In fairness to DOE, we are cutting a lot of ground that the DOE team has not seen before and is deeply concerned that it get right from a programmatic standpoint. At the same time, the process has taken longer than we expected.

Tax Equity Terms

MR. MARTIN: Let's switch to tax equity terms and rates. John Eber, you never let me pin you down on rates so let me tell you what I think are current tax equity yields in the market and you tell me whether you disagree. Yields for wind farms are somewhere between 8% and 8.5% for the least risky projects with well-capitalized developers using established equipment in markets that are not oversaturated and that do not have curtailment risk. Any disagreement?

MR. EBER: No. That sounds right.

MR. MARTIN: Are yields headed up or down?

MR. EBER: They have remained pretty stable for the last year and a half. I think they will continue to be.

MR. MARTIN: Solar PV has been the biggest mystery of the tax equity market. The yields for PV used to be roughly the same as for wind, but they seem now to be all over the map. Why is that?

MR. EBER: Most PV projects have been done as single-investor leases with 15- to 20-year terms. At the end of the lease, the developer has to pay the full value of the equipment at that time if he wants to buy it back. It is difficult to compare perceived yields in a single-investor lease to a partnership flip return, which is an identified eight- or 10-year number.

MR. MARTIN: Fred Vaske, what rates have you seen in the market?

MR. VASKE: I am not going to give specifics because the information is a little too close to home, but I think the range you quoted is accurate. Rates are significantly higher than what I saw two years ago. Recurrent Energy is not satisfied with where rates are today. We are looking hard at the single-investor structures and we are also considering levered equity structures. We are glad that JP Morgan and many of the other investors have been in the market. They have carried it. We would like to see more investors come into the market. There is not nearly enough competition.

MR. MARTIN: Steve Holman, what PV tax equity rates are you seeing at Fotowatio?

MR. HOLMAN: We are seeing high single digits with rates in deals with project-level debt 200 basis points or so higher than that.

MR. MARTIN: Does it strike you that PV yields are unnaturally high?

MR. HOLMAN: Absolutely. [Laughter] But seriously, I think where yields are today reflects a certain level of scarcity of tax equity in the market. The situation is improving with improvement in the general economy. We share Fred Vaske's view that current yields overstate the risk profile of PV projects. They are more a reflection of opportunity cost. Investors have other places they can put their money.

MR. MARTIN: John Eber, how long a forward commitment is it possible to get from a tax equity investor? Six months? Nine months? A year?

MR. EBER: Most investors would prefer to keep it inside a year and maybe even a little shorter than that. A lot can happen in the space of a year in terms of tax law changes, yield expectations and risk profile.

MR. MARTIN: Do you charge a commitment fee for having a commitment outstanding?

MR. EBER: Generally not. We don't get into various fees for the different activities that you would see */ continued page 30*

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in a typical bank deal. It is all rolled up inside of our very modest yield requirements. [Laughter]

MR. MARTIN: Jack Jenkins-Stark, how long a construction period is the Ivanpah project expected to have?

MR. JENKINS-STARK: It is actually three power plants for a total of 392 megawatts. The individual plants are 126, 133 and 133 megawatts. The entire project will take a little over 36 months to build, depending on what you count as the construction start date. Any one power plant will take about two years.

MR. MARTIN: If you are looking for tax equity to help take out construction debt, you will not be able to have the tax equity committed from the start of that 36-month cycle. Do you do it in stages or are you just stuck having to use true equity as the backup take out?

MR. JENKINS-STARK: Our preference is to avoid the need for tax equity by having investors who have tax appetites. That is our objective, and we are having some success so far. I would love it if John would extend his reach for a modest fee to two or three years in case we do have an investor who doesn't fit the profile.

Biggest Challenge

MR. MARTIN: Steve Holman, what's the biggest current challenge for financing a utility-scale solar project?

MR. HOLMAN: Predictability. We need predictable, stable policy to support the industry. The ups and downs, the fits and starts make it very challenging.

Another challenge is simplifying the capital structure. It is the intersection between development and finance and getting through the process of diligence and underwriting of the project documents by our capital providers. In some cases, because of unique situations with a particular project, we may have one construction lender, a different term lender and then a tax equity investor. If you then bring in DOE, you have quite a party. Each of them is looking for things to fix in the project documents.

Everybody knows the saying that life is like a box of chocolates. For a developer, life is a whole lot more like a piece of taffy. You are being pulled by the construction lenders, pulled by the tax equity investors, pulled by permanent lenders and, at the same time, there are the offtaker, the equipment suppliers and the contractor. If you can hold it all together, there is a really delicious treat right in the middle for the developer, but it is a challenge.

The interational banks are likely to shift focus to the Canadian market if the Treasury cash grant is not extended.

MR. MARTIN: Fred Vaske, what is your biggest challenge?

MR. VASKE: For Recurrent Energy it is the fact that so much of what we do relies upon our ability to convert tax subsidies that we cannot use into capital to help pay for our projects. It is the need to find an equity investor which fits the profile of having the balance sheet, the tax appetite, the knowledge of solar and the desire to work in this area. Compare that to debt where we see a very liquid market with many participants. The transacting in that market is much more straightforward and efficient. I agree with Steve Holman that we also need stable policies. I would like to see a situation much more like we see in other countries where developers are not as dependent on equity investors which fit a very limited profile.

MR. MARTIN: Jack Jenkins-Stark, what is your biggest challenge? Are you feeling like a piece of taffy?

MR. JENKINS-STARK: For us, it's more like a box of chocolates. It's all good. I agree with Steve Holman. The biggest challenge is lack of a stable and rational policy. We have a 47-year tradition of being irrational in our policy, and it's a shame. There is not one person up here who would welcome the chance the say, "I worked on the most complicated deal ever," but the complexity can be overwhelming.

The level of complexity has reached a level that is just not smart from a public policy standpoint. All of us on this panel are US citizens. We wish we could look at ourselves and say the US is leading the world in its sensible energy policies. The sad fact that the US policy, to the extent it has one, is not one that any other major country has tried to emulate.

MR. MARTIN: Gavin Danaher, speaking now from the other side of the table—the lenders and the tax equity investors—what is the biggest challenge from where you sit with financing utility-scale solar projects?

MR. DANAHER: The debt market is pretty efficient. The hardest part of financing a utility-scale solar project from a debt perspective is getting the project to a position where it is ready to be financed.

Developers bring in power purchase agreements that are not financeable because of curtailment issues, because of inadequate power prices, because of regulatory out clauses and other things that make the project a challenge to finance. Once you make the grade on financeable contracts, then the process is pretty straightforward.

MR. MARTIN: From your standpoint, it is a simple business if the developer has put all the pieces in place by the time he brings you the project.

MR. DANAHER: That's right. We get a lot of calls from developers who are in the early to middle stages of development work. We just have to say call us back when you have your contracts and permits. We cannot spend the time on development.

MR. MARTIN: John Eber, I asked you at a conference a several years ago how long it takes to close a tax equity deal. You said two months if you will just agree to my deal documents. What is your biggest challenge as a tax equity investor?

MR. EBER: We have spent years building up and being very successful in the wind business. The deal structures have become very efficient. We have seen that industry go from $2 or $3 billion a year to more than $20 billion a year. So when I look at the solar marketplace, the first thing I say is why can't we just do the same thing we have been doing so successfully in the wind sector? The greatest challenge is trying to convince developers who come to us for tax equity to stop trying to reinvent the wheel. Let's use the same structures that have worked so successfully in a sister industry.

MR. MARTIN: So you like simplicity.

MR. EBER: Everyone has his own suggestions about how to build a better mousetrap. We spend the time with everyone who comes in, but our preference would be to replicate the very successful structures that have been used in the wind industry with the same pricing as for wind. We have done $6 billion in financings in the wind sector. It is so much simpler and less expensive to replicate what has worked well before than to return to square one and try to come up with new and different structures.

Part of the problem in the solar market is that the deals are weaker economically. I look at the numbers in a typical solar deal, and I look at the numbers in a typical wind deal, and I am wondering how a lot of these solar folks are making any money. And this is on the large-scale deals.

MR. MARTIN: The developers on either side of you on the panel all look well dressed. [Laughter]

MR. EBER: It puts a lot of pressure on them to try to find a way to make the very tight economics work, including trying to get it out of the financing.

MR. MARTIN: Gisela Kroess, what is your biggest challenge?

MS. KROESS: It is regulatory uncertainty, lack of coherent policies and, especially from a lender's perspective trying to structure around technology risk, the limited operating history of many of these technologies, supplier credit risks on warranties and curtailment risk in some parts of the country.

MR. MARTIN: Last question: what effect to do you see on the market if Congress fails to extend the Treasury cash grant program?

MR. EBER: I don't think there will be a big effect for the first six months of 2011, because there is so much work being done to get projects that go into service after 2010 still to qualify for grants by starting construction this year. After that, it will be a big challenge if we are back in a production tax credit and investment credit world to find enough tax equity to cover the escalating demand we see coming from the solar market on top of the base business that will continue to be done in the wind sector.

MS. KROESS: It would be tragedy. If the grant program has not been extended by the first quarter, then we will see a substantial decline in the number of wind and solar projects and bankers in the North American offices of the large money-center banks will shift focus to the Canadian market.

Solar Market Expanding in Pennsylvania

by Todd Alexander and James Berger, in New York

Pennsylvania is poised to take off as a solar market as a result of an "alternative energy portfolio standard" adopted in 2004 whose solar targets are expected to ramp up rapidly.

Trading in renewable energy credits in the state will also escalate rapidly, including credits tied to renewable energy projects in 12 neighboring states.

Pennsylvania is one of 16 states that require utilities to supply a certain percentage of electricity specifically from solar. Despite this, the state still has only 29 megawatts of installed solar capacity.

The Pennsylvania alternative energy portfolio standard or "AEPS" requires both utilities and power marketers that serve retail customers to supply a small, but rapidly increasing, percentage of their electricity from solar photovoltaic systems each year. There are 11 covered utilities in Pennsylvania and about 50 power marketers.

Electricity suppliers covered by the program must hold a minimum number of solar alternative energy credits—called "SAECs"—to meet their obligations. SAECs are awarded to utilities that use solar equipment to generate their own electricity. SAECs can also be purchased along with electricity from independent generators who use solar in a bundled transaction or purchased separately through a tradable instrument.

The amount of SAECs required, as a percentage of electricity sold, increases nearly 400-fold during the 15-year period covered by the program. The solar targets are expected to increase faster than overall demand for electricity.

Table 1: AEPS Requirements by Reporting Year

Percent of Total Electric Sales

Reporting Year	Time Period	Base Tier I Requirement	Solar PV Requirement	Tier II Requirement
1	2/28/07—5/31/07	1.50%	0.0013%	4.20%
2	6/1/07—5/31/08	1.50%	0.0030%	4.20%
3	6/1/08—5/31/09	2.00%	0.0063%	4.20%
4	6/1/09—5/31/10	2.50%	0.0120%	4.20%
5	6/1/10—5/31/11	3.00%	0.0203%	6.20%
6	6/1/11—5/31/12	3.50%	0.0325%	6.20%
7	6/1/12—5/31/13	4.00%	0.0510%	6.20%
8	6/1/13—5/31/14	4.50%	0.0840%	6.20%
9	6/1/14—5/31/15	5.00%	0.1440%	6.20%
10	6/1/15—5/31/16	5.50%	0.2500%	8.20%
11	6/1/16—5/31/17	6.00%	0.2933%	8.20%
12	6/1/17—5/31/18	6.50%	0.3400%	8.20%
13	6/1/18—5/31/19	7.00%	0.3900%	8.20%
14	6/1/19—5/31/20	7.50%	0.4433%	8.20%
15	6/1/20—5/31/21	8.00%	0.5000%	10.00%

Important Details

The Pennsylvania AEPS requires annual increases in energy production from alternative sources of energy over a 15-year time frame ending in 2021.

The AEPS splits different technologies into two classes, tier I and tier II, and establishes minimum thresholds that must be met from each class, along with a separate solar PV minimum that counts towards the tier I requirement. The requirements for each category are shown in table 1. Tier I includes technologies such as solar thermal, solar PV, wind, geothermal and biomass, and tier II includes technologies such as waste coal, demand-side manage-

ment, hydropower and municipal solid waste.

SAECs have become much more valuable than tier I and tier II credits (all credits are per megawatt-hour) because of the separate minimum requirement for solar PV. The weighted average price in 2009 for a tier I credit was $3.65 and only $0.36 for a tier II credit. This compares to a weighted average price of $260.19 for an SAEC (with a range of $225 to $690).

If an entity failed in the 2009 "energy year" to obtain the minimum number of SAECs, it had to make a compliance payment of $550.15 per megawatt-hour of shortfall. The 2009 year ran from June 1, 2008 to May 31, 2009. (For purposes of the Pennsylvania market, the energy year, compliance year and reporting year all begin on June 1 of the previous year and end on May 31 of the stated year.) The prices for compliance year 2010 have not yet been released.

The AEPS is expressed as a percentage of total electricity sales. It increases each year so that by 2021, 18% of the electricity consumed in Pennsylvania must be generated from alternative energy sources -— 8% from tier I technologies and 10% from tier II technologies.

The solar PV requirement, which is a set aside but counts toward the tier I requirement, increases from .0013% in energy year 2007 to .5% in energy year 2021.

At the end of each compliance year, the electricity supplier must hold the proper number of SAECs. If it does not, then it must pay a solar energy compliance payment. The compliance payment varies from year to year and is only computed after the end of the compliance year. For a given year, it is 200% of the market value of SAECs for the reporting period plus the levelized value of up-front rebates received by sellers of SAECs.

An SAEC is issued for every megawatt-hour of electricity produced from a qualified solar PV system located in the PJM footprint. (PJM is the regional transmission organization responsible for the electricity grid that covers nearly all of Pennsylvania and part or all of 12 other states and the District of Columbia.) This means that facilities located outside Pennsylvania can receive SAECs in Pennsylvania. Despite this, most systems are located in the state. More than 70% of the approximately 2,900 systems currently certified under the program are in Pennsylvania.

A proposed bill that the legislature failed to enact this year would have limited credits under the solar set aside to solar PV systems in Pennsylvania. The bill could still be enacted in the future.

A facility can generate SAECs for as long as the facility remains certified as an eligible generator, and the SAEC may generally be used for compliance by a utility for the energy year during which the SAECs were generated or one of the two following years. If a utility purchases an SAEC while the utility is under a rate cap, then the SAEC may be used in the energy year the rate cap is lifted or in the year after.

There is a three-month true-up period after the end of each energy year during which covered utilities and power marketers may acquire additional renewable energy credits to avoid having to make the alternative compliance payment. This could have the effect of producing a spike in credit prices three months after each energy year ends. The alternative compliance payment acts as a cap on how high credit values can go.

Outlook

The Pennsylvania program has been in effect since February 2005, but the first reporting year under the program was February 28, 2007 to May 31, 2007. In the first reporting year, the program covered only two utility service territories representing less than 4% of the total electricity load in Pennsylvania. Only 26 SAECs were turned into state authorities.

In the 2008 reporting year, four more utility service territories representing another 10% of the load became subject to the program. Another 349 SAECs were turned in. No new utility service territories became subject to the program in 2009, but one more service territory representing approximately 26% of the total electricity load in the state became subject to in the program in reporting year 2010. Total volume reached 1,221 SAECs.

During reporting year 2011, the final 60% of electricity load will be covered. This is four more utility service territories. Utilities and power marketers operating in these areas will be required to comply started January 1, 2011. In the 2012 reporting year (the first reporting year the entire state will be covered), 29,000 SAECs will be required to comply. By 2021, a total of 937,931 SAECs will be needed.

There is support in the state legislature for a dramatic increase in the state solar target, but not enough to pass it.

House Bill 2405 would increase the solar requirement to 3.0% by 2025, rather than the current .5% by 2021, and would add solar thermal as an eligible technology for the solar requirement. The bill would set a yearly value for the alternative compliance payment for failure to meet the specific solar target and require that all solar systems be located in Pennsylvania. The tier I and tier II requirements would also be / *continued page 34*

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increased. The outgoing governor, Ed Rendell, wrote an op-ed article in *The Philadelphia Inquirer* recently supporting the bill, but proposing an increase in the solar target to 1.5%, given opposition to the higher 3% target. There is not enough support to pass the bill. It failed recently to reach a vote in the state Senate for the third time in two years.

Maximizing SAEC Value

There are several ways for developers to maximize the value of their SAECs, including bringing production on line in the next few years, showing an ability to enter long-term contracts and pushing for enactment of the higher requirements that have been proposed.

Current forecasts are for approximately 27.8 megawatts of solar PV capacity to be available in 2010 against a demand of only 5.8 megawatts. However, demand for solar PV will exceed capacity in 2015 if only 25% (the historical rate) of the PJM queue projects—projects within the PJM footprint that are currently planned—are actually built.

The market price of SAECs is expected to increase over the next several years because of the escalating number of SAECs required by utilities and power marketers.

Another means of maximizing value is to enter a longer-term contract. In February 2010, the Pennsylvania Public Utility Commission approved 10-year agreements to purchase six megawatts, or 80,000 SAECs, by PECO Energy at an average price of $256.57 per credit. This is important because it shows that utilities are willing to pay prices in long-term contracts that are not heavily discounted and it gives solar developers financial certainty for a longer period of time. In some states, it is rare to have a contract for more than a few years that is not heavily discounted. Large, high-quality installations could attract utilities willing to enter long-term contracts. Knowing that utilities will enter contracts can also attract new, large installations. For example, in late October, GlaxoSmithKline started installing North America's largest rooftop solar array at its facility in York, Pennsylvania. The company expects to sell about 3.4 million kilowatt hours worth of SAECs to utilities per year to help pay for the system.

Demand for SAECs is expected to exceed solar capacity additions over the next few years. Neighboring states have higher solar targets than Pennsylvania, and this will have an effect on the value of Pennsylvania SAECs since they can be used by utilities in these other states to comply with those other state programs. Delaware has a 3.5% solar target. New Jersey has a 4% requirement.

US Investigates Chinese Energy Subsidies

by Christopher Flood, in Beijing, and Amanda Forsythe, in Washington

The United States Trade Representative is expected to announce by mid-January whether it believes China is unfairly subsidizing its manufacturers of wind turbines, solar panels and other equipment for the clean energy sector.

If the conclusion is that it is, then the next step could be a complaint filed with the World Trade Organization in Geneva. A WTO case would take at least a year to be decided, but could lead ultimately to permission for the United States to impose import duties on Chinese products.

By January 15, the USTR must start negotiating with China on any policies and practices that the USTR thinks violate China's WTO obligations. If the negotiations, known as "consultations," fail to bring a settlement on some or all of the allegations, the United States could move next to formal litigation against China at the WTO.

Although results at this early stage are difficult to predict, what can be predicted with reasonable certainty is that the US will encounter strong resistance from China in any formal dispute involving the green technology sector. This view is supported by the preliminary reaction to the USTR investigation by the Chinese government.

The policies and practices that are the subject of the investigation form the foundation of China's efforts to develop green technologies –- including solar and wind energy, advanced batteries and efficient vehicles –- as a technologically-advanced alternative to its traditional manufacturing focus, and they are a key response to growing environmental and energy security concerns.

Growing Clamor

The USTR investigation was triggered by a 5,800-page petition

filed on September 9 by the United Steelworkers Union under section 301 of the US Trade Act of 1974. That section allows US businesses and trade unions to ask the USTR to investigate whether a foreign country's practices violate an international trade agreement or whether they are unreasonable and a burden to or restrict US commerce.

The steelworkers complained about a lengthy list of subsidies, discriminatory practices and restrictive legislation that they said give a boost to Chinese products over competing products made in the United States and restrict foreign access to the growing Chinese market. An example is a program introduced by China's Ministry of Finance in 2008 that provides wind turbine manufacturers grants of RMB600 (about US$90) per kilowatt for each turbine meeting domestic content requirements for "critical" components.

No country has complained to date to the WTO about Chinese practices and policies in the green technology sector.

The steelworkers have a significant amount of Congressional support behind their position. In late September, 185 members of Congress, including several Republicans, sent a letter to President Obama expressing support for the steelworkers' petition and urging prompt action by the Obama administration. A similar letter was sent by 43 members of the US Senate to President Obama on October 1. The Senators said the Chinese policies described in the petition should be "aggressively countered" by the United States.

Tensions are rising in Congress. The House voted on September 29 to address China's "fundamentally undervalued currency" by treating it as an export subsidy that can be offset by imposing countervailing duties on imports from China. The bill passed by a vote of 348-79. A bill must pass both the House and Senate to become law. It is not clear yet whether and when it will be taken up by the Senate. The current Congress runs only until the end of December. A new Congress takes office in January and the legislative process must start over for any bills that have not made it into law.

Preliminary official reaction from China has been forceful. In a statement on October 16, China's Ministry of Commerce, known as MOFCOM, called the steelworkers' allegations "groundless and irresponsible" and described the USTR's decision to launch an investigation as "sending a wrong signal of trade protectionism to the rest of the world." A MOFCOM spokesperson also pointed to the United States' own subsidies in the clean energy sector, stating that the US is in no position to be critical of another country's policies in that regard. That criticism is especially misplaced against China, according to a MOFCOM spokesperson, who said the United States is applying a double standard by simultaneously pressuring China for greater emissions cuts, on the one hand, and challenging its clean energy policies, on the other.

That view was echoed by Zhang Guobao, the head of China's National Energy Bureau. In an interview reported widely in the Chinese press, Zhang predicted that the USTR investigation will backfire by exposing large subsidies in the United States clean energy sector. In particular, he referred to the 30% Treasury cash grants and federal loan guarantees through the US Department of Energy that, according to Zhang, are part of a massive $25.2 billion subsidy to the renewable energy sector. He denied the steelworkers' allegations outright, saying that there are no discriminatory rules in China on clean energy equipment manufacturers.

Although posturing on both sides is common to many trade disputes, the implications of a decision by the USTR to pursue some or all of the steelworkers' allegations at the WTO could extend far beyond the area of green technology. The dispute is unique in that it calls into question not just a specific product or government measure, but a broad set of policies and practices. It can also be seen as a direct challenge to China's domestic industrial policy of supporting home-grown champions across a range of industries. For this reason, the progress of the dispute will be watched closely by observers from outside the clean energy and green technology sectors.

Specific Allegations

The subsidies and restrictive practices about which the steelworkers complain fall into five broad areas.

Restricting access to "rare earths": The steelworkers claim that China is illegally restricting exports of critical raw materials known as "rare earths" that are essential to certain green and other technologies through the use of export quotas, taxes and licensing requirements. China produces 90% of worldwide supplies of rare earths and in July announced large cuts to its export quotas for the elements citing the high environmental costs of mining and producing them. China has denied recent stories in western newspapers that in October it began implementing a more comprehensive embargo on rare earth exports.

"Prohibited subsidies": Countries belonging to the WTO can subsidize domestic manufacturers or project developers but not if the subsidies are linked to export performance or use of domestic goods rather than imported / *continued page 36*

China

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goods. The steelworkers charge that China is violating WTO rules by imposing domestic-content requirements in the green technology sector as a condition to the availability of certain subsidies, preferential tax treatment and R&D grants. They also complain that export credits and export credit insurance provided through state-owned financial institutions give Chinese manufacturers an unfair advantage.

On October 22, the WTO found in favor of the United States in a separate dispute in which China challenged US anti-dumping and countervailing duties imposed in response to alleged illegal subsidies on certain carbon steel pipe, off-road tires, rectangular pipe and tube, and laminated woven sacks. The WTO held that the duties did not violate the United States' WTO obligations and that the US Department of Commerce was correct in finding that low-interest loans by Chinese state-owned banks gave an unfair advantage to manufacturers of the affected products.

Discrimination against foreigners: The steelworkers allege that a number of Chinese policies and practices discriminate against foreign businesses and products in the green technology sector. Among the complaints is that China limits the availability of carbon credits under the clean development mechanism to projects that are wholly- or majority-owned by a Chinese company.

Technology transfer requirements: China promised when it joined the WTO not to require western companies to transfer rights to their technology to China as a condition to doing business in the country. The steelworkers charge that the Chinese government imposes technology transfer requirements on foreign investors seeking regulatory approval or domestic financing for investments into China. Since approvals are required for most inbound foreign investment, the steelworkers maintain that the licensing requirements amount to a transfer of intellectual property on a very large scale.

Trade-distorting subsidies: The steelworkers complain that $216 billion of Chinese subsidies granted to the domestic green technology sector have distorted trade to the detriment of US companies and unfairly advantaged Chinese manufacturers in global markets by forcing price undercutting that has led to US job losses.

The US government must make a decison by January whether to pursue a trade dispute against China in response to a complaint by US steelworkers that China unfairly subsidizes its clean energy sector.

Historically, section 301 petitions have been an infrequently used and ineffective mechanism for US businesses to challenge foreign trade practices. Since the WTO was established in 1995, no section 301 case has led to sanctions being imposed or formal WTO proceedings. The reason is that all prior petitions have either been rejected by the USTR or settled through negotiations. The Obama administration has yet to establish a record in this area.

The United States has brought 96 cases to date in the WTO.

Ten of those cases have been brought against China. Seven out of the last 10 disputes filed by the US have been against China, including two disputes filed by the US in September 2010 affecting the flat rolled steel and electronic payments industries.

The litigation phase of WTO dispute resolution consists of two parts.

First, it can take up to 45 days for the WTO to appoint a panel to investigate the facts and reach a legal conclusion based on WTO rules. This panel reports its findings within six months. The report goes to a dispute settlements body that has 60 days to decide whether to adopt the report, after which the party that loses can decide whether to appeal.

The second phase is any appeal, which is submitted to an appellate body and generally takes 60 to 90 days.

Overall, the dispute resolution process should take about a year without an appeal (factoring in consultations between the litigants that precede the work by the initial panel investigation

and report), plus an additional three months with an appeal. However, the time frame is flexible, and the process may take substantially more time than expected.

If the United States were to succeed in challenging some or all of the Chinese practices, the WTO would order China to amend its policies. Although clearly a number of events would need to occur before such a ruling, any such outcome could have a profound effect on the Chinese green technology sector.

If China were to fail to comply with an order within a reasonable period of time, then the parties would enter into negotiations to determine mutually acceptable compensation. If the parties do not reach an agreement on compensation within 20 days, then the US could ask the WTO for permission to impose trade sections against China. These could take the form of duties on Chinese goods.

Other WTO Energy Disputes

As of press time, no WTO member had filed a complaint about China's green technology practices. However, a separate dispute related to the renewable energy sector recently was brought to the WTO.

Japan requested consultations in mid-September with Canada over Canadian measures relating to domestic content requirements for the province of Ontario's solar feed-in tariff program, claiming that such measures are inconsistent with Canada's WTO obligations.

Additionally, Japan believes that Ontario has a prohibited subsidy in place. Japan says that there appears to be a financial contribution or form of income or price support that confers a benefit upon Canadian businesses and that subsidy is contingent on the use of domestic over imported goods, particularly equipment manufactured in Ontario.

Both the United States and the European Union asked to join the consultations, and Canada accepted each country's request.

Some of the steelworkers' claims regarding Chinese practices are similar to those raised in the Japanese complaint against Canada, so the progression of the Japanese complaint may provide an early indication of how any US complaint against China is likely to fare. ◎

UK Holding Companies: Not Yet Working?

by Paul White, in London

"Good for business, good for the UK" is a theme of much UK government rhetoric that has been reflected in a series of "good for business" tax changes.

The bad news is that newspaper reports of major businesses and high-profile entrepreneurs relocating from the UK to low-tax jurisdictions that began under the last government have continued this summer despite the new government's assurances about its future fiscal policy.

The ugly result is that the effectiveness of new legislation enacted to encourage the establishment of EU holding companies is undermined by the negative impact of established UK groups moving abroad.

Relocation, Relocation, Relocation

At the end of September, Wolseley plc, a FTSE 100 plumbing and heating group, became the latest UK public company to announce its intention to leave the UK.

Perhaps not a household name, Wolseley is actually the biggest supplier of plumbing and heating products in the world. Headquartered in Britain for more than a 120 years, it now trades in more than 20 countries and derives over 80% of its revenues from its activities outside the UK, both factors that materially increased it UK tax costs.

This is not a new phenomenon. Since 2008, a string of significant UK groups have moved offshore including WPP (advertising and media), Shire plc (pharmaceuticals), UBM (business media) and Regus plc (office accommodation). The one thing they all have in common is that a high proportion of their profits is derived from activities outside the UK.

The trigger for all these moves has been dissatisfaction with the UK tax regime, but not necessarily with the same aspects of it. By the time the relocations began, a perception had developed that certain EU member states had more competitive regimes and the UK was not doing enough to keep up with them. The Republic of Ireland, for example, used fiscal incentives to encourage inward investment, introducing a 12.5% tax rate on general trading income and establishing / *continued page 38*

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itself as a center for securitizations with the tax-favored "section 110" regime. By contrast, the UK's own belatedly introduced securitization regime aimed merely at tax neutrality.

Also, despite an ongoing program to simplify the tax rules, each year's finance act seemed longer than the last and was usually augmented by voluminous secondary legislation. The complexity of the rules together with frequent changes materially increased the compliance burden for many groups. The final straw for a number of companies that had significantly expanded outside the UK was a perception that the Labour government planned to extend the UK's taxing rights in relation to certain offshore activities.

When announcing Wolseley's intention to reallocate its tax residence to Switzerland, Ian Meakins, chief executive, was very clear about the primary reason. He said, "Our underlying tax rate has now moved up to 34%; by redomiciling to Switzerland, that rate will come down to about 28%." He went on: "We don't want to go to Switzerland, but the tax number is enormous." To emphasize the company's reluctance to move offshore, he revealed that the prospect of relocation had been discussed with the government, but he concluded that "it is hard to see how the government can solve the problem."

Moving Out

For UK purposes, the tax residence of a company normally resides in the location from where the central management and control of the company are exercised. So the tax residence of a UK-incorporated company can usually be moved offshore simply by holding all meetings of the board of directors outside the UK.

In practice, this is unlikely to be the most efficient means of relocating a UK-incorporated company. First, the location of management and control is a question of fact, and the UK tax authorities are unlikely to be easily persuaded that central management and control have moved offshore if, as is likely, a significant proportion of influential directors remain resident in the UK. Second, if relocation is successful, an exit tax charge may be imposed on the company's capital value on migration. Third, other methods provide material benefits in addition to the direct tax savings.

The more usual method of migration is to transfer the ownership of the existing UK group to a new parent company incorporated, and resident for UK tax purposes, offshore. This may be achieved either by the existing shareholders exchanging their shares for new shares in the offshore company or pursuant to a court-authorized 'scheme of arrangement.' The latter allows the existing UK shares to be cancelled and, in effect, replaced by new UK shares issued to the offshore company so that the UK group becomes owned by the new offshore parent. Shares in the new parent company are issued to the original shareholders of the UK parent so that there is no change in the ultimate ownership of the group, but a new non-UK parent has been interposed between the ultimate shareholders and the UK holding company.

Unlike simple migration, both methods of reconstruction migration should be tax neutral. Although the current shareholders dispose of their UK shares, the fact that they are exchanged for, or otherwise replaced by, shares in the new parent should enable their capital gains tax positions to be "rolled over" into the new holding. Similarly, because the beneficial interests of the ultimate shareholders in the underlying businesses are unchanged, it should also be possible to avoid a UK stamp duty on the reconstruction.

The final step is to create at least two sub-groups so that only the UK activities remain under the original UK holding company. Once the new offshore parent is in place, the foreign trading subsidiaries and trading sub-groups can be transferred from under the UK parent to be directly owned by the new offshore parent. Although these transfers are disposals for the purposes of the charge to corporation tax on capital gains and the involvement of the offshore parent generally means that 'group relief' is not available, the transfers will not give rise to UK taxation if the UK's substantial shareholding exemption criteria are satisfied.

In the majority of cases to date, the new offshore parent has been incorporated in one jurisdiction but tax resident in another. Jersey has proved a popular jurisdiction for incorporation because it offers a respected but flexible company law environment and does not impose any capital or transfer tax on the issuance or subsequent transfer of shares.

Wolseley's new holding company is to be incorporated in Jersey but resident for tax purposes in Switzerland; Shire chose the Republic of Ireland for its tax residence, and the Regus parent company is headquartered in Luxembourg.

Moving In

For a US business looking to expand into Europe, news of another FTSE 100 company relocating offshore must inevitably

create doubt as to whether the UK is an appropriate jurisdiction for a European holding company.

However, for many businesses the UK does now offer a competitive tax environment when compared with other common EU locations.

Since the spate of corporate emigrations in 2008, significant positive changes have been made to the basis of business taxation in the UK. Some of these changes were made as a reaction to the first set of relocations, and the flow appeared to have been stemmed. At the beginning of September, Chadbourne published a client alert that highlighted aspects of the UK tax regime introduced or adopted by the new coalition government to promote the UK as a viable location for EU holding companies.

In his "emergency budget" in June, the chancellor, George Osborne, announced a headline-grabbing program of four annual 1% reductions in the rate of mainstream corporation tax to just 24% from April 1, 2014 from the current 28% rate. The client alert gave details of the UK's additional participation exemptions in relation to foreign dividends, introduced in 2009, and capital gains realized on the disposal of trading subsidiaries, the ability of the UK subsidiary holding companies to repatriate profits by way of dividends without being subject to withholding tax or, for those with long memories, "advance corporation tax" (which was abolished in 1999), and the entitlement of UK resident companies to access the benefits of more than 100 double tax treaties that will often reduce the incidence of foreign withholding tax on income and remove any UK requirement to withhold tax on cross-border interest payments.

The majority of commentators reacted positively to the program of change. No one expected that those companies that had already incurred the considerable expense of relocating offshore would be prompted to return to the UK but Mr. Osborne no doubt hoped and, presumably expected, that he had done enough to prevent further corporate emigrations.

Then came the news that Wolseley is leaving.

So, what is the problem? With the mainstream rate of corporation tax already at an historic low of 28% and a recently introduced dividend participation exemption, why was Wolseley's effective tax rate 34%?

The answer is to be found in the controlled foreign company or "CFC" legislation that is similar to the US subpart F regime. Where those rules apply, a UK company that has an interest in an offshore holding company may be subject to UK tax on part of its undistributed profits, calculated according to UK standards, unless the arrangements fall within a statutory safe harbor.

The CFC rules do not apply to a UK holding company on a subsidiary in a country on the approved lists or a subsidiary in a jurisdiction where actual tax suffered is at least three quarters of the hypothetical UK tax on the same profits.

Accordingly, the CFC rules will not be a problem for many UK groups or for new EU holding companies established in the UK, but they were for Wolseley given the geographic spread and significant low-taxed profits of its very diverse group.

In reaction to Wolseley's announcement, a Treasury spokesperson was quoted as saying, "The government's long-term aim is to create the most competitive corporate tax system in G20 and, in the budget, we announced a 4% reduction in the main rate of corporation tax. The government is committed to reform of the controlled foreign company rules and will introduce new rules in 2012. Any changes will deliver a more territorial approach, refocusing on artificially diverting UK profits and exempting genuine commercial activities."

Although Wolseley was not persuaded, the government appears confident that the CFC rules can be amended to limit their impact on genuine commercial arrangements, but that will take at least another 18 months.

Moving Forward

International tax lawyers are often asked, "Which is the best country in which to establish a European holding company?" The answer will always depend on the nature of the client's business, its plans for expansion, the source of funds, the status of the ultimate owners and so on. Most frustratingly of all for the client, the country that is 'best' today may not be 'best' tomorrow, as tax laws have a habit of changing and businesses seldom develop exactly as planned.

For many businesses, the UK has always been a favored location in which to establish an EU holding company, and it can now boast a tax regime able to compete with that of countries such as Luxembourg, the Netherlands and the Republic of Ireland, a position that may improve further without the UK having to make more changes. On October 1, *The Financial Times* reported that, despite the Irish government's commitment to low corporate taxation, Olli Rehn, the European Commission's head of economics and monetary affairs, had indicated that Ireland may have to increase its business and personal taxes and "become a normal tax country" in order to restore its public finances following the banking crisis. */ continued page 40*

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But what the UK does not yet have, and what distinguishes Switzerland, is long-term fiscal stability. For some commentators, the real problem with UK taxation is that it seems to be in a constant state of flux, but happily the new government has already identified the problem and begun to address it.

George Osborne used his first budget to herald a new approach to the development of tax policy. This was followed by a discussion paper that highlighted the key objectives of simplifying the process of developing tax policy, bringing increased predictability to tax, and creating a more stable fiscal environment. In addition, the document revealed the government's intention to bring transparency to the process of updating tax legislation so as to increase the level of public scrutiny.

The UK, like the US, is at the forefront of developments in the finance and broader business markets. Consequently, the tax policymakers are regularly faced with new challenges that inevitably require adjustments to the tax rules. Change is unavoidable and well-managed businesses can deal with change. But they should not have to cope with unnecessary secrecy and surprises. Hopefully, the new procedures will smooth the process so that surprises, at least in the tax regime, become a thing of the past.

FERC Opens the Door to Feed-In Tariffs in the United States

by Robert Shapiro, in Washington

In a feat of legal gymnastics worthy of Cirque du Soleil, the Federal Energy Regulatory Commission in late October largely blessed in concept a proposed feed-in tariff in California for small cogeneration facilities that meet stringent operating and efficiency standards.

The order paves the way for other possible feed-in tariffs for renewable energy projects, including feed-in tariffs for solar facilities.

The California Public Utilities Commission filed a petition asking FERC to declare that its proposed feed-in tariff for cogeneration facilities of up to 20 megawatts in size does not violate federal law.

The CPUC was directed to establish a feed-in tariff under recent California legislation.

The regulated investor-owned utilities in California filed a separate petition asking FERC to find that the proposed tariff violates federal law because only FERC, and not a state, can set rates at which electricity is sold in the wholesale market, unless wholesale rates are established by the state to implement the Public Utility Regulatory Policies Act of 1978, a 1978 statute called "PURPA" that requires utilities to buy electricity from two kinds of power plants owned by independent generators. The two kinds are power plants up to 80 megawatts in size that use renewable or waste fuels and cogeneration facilities of any size. A cogeneration facility is a power plant that produces two useful forms of energy on a sequential basis—electricity and steam, for example—from a single fuel. These two kinds of power plants are called "qualifying facilities." A utility must buy electricity from them at their "avoided cost," or the amount a utility would pay if it built a power project itself or purchased equivalent power from an alternative source. The state utility commission determines avoided cost pursuant to FERC-established guidelines.

Even though the CPUC, in its declaratory order request to FERC, made it clear that it was not asking FERC to approve its feed-in tariff on the basis of compliance with PURPA, FERC decided, in an initial order, to respond as if it had, and informed the CPUC that it could set a tariff if use of the tariff was limited to projects that are qualifying facilities under PURPA, and reserved on the issue whether the rates in the tariff were consistent with "avoided cost."

On October 21, 2010, in response to the CPUC request for "clarification" of FERC's initial order, FERC decided to expound on permissible ways for the CPUC to price power for qualifying facilities under PURPA. In the process, it effectively overturned longstanding FERC precedent on PURPA implementation and temporarily avoided a potentially nasty jurisdictional federal-state conflict.

Background

In 1995, FERC invalidated the CPUC's PURPA implementation directive in response to a petition by Southern California Edison Company. In the initial *Southern California Edison* order and in a rehearing order, FERC found that the CPUC implementation violated PURPA because its avoided cost determination "did not

consider all sources" of alternative power available to the purchasing utility. The CPUC had limited a utility's solicitation of power to qualifying facilities only, and FERC determined that, by excluding non-QFs, the resulting price could not necessarily result in a price at or below a utility's avoided cost "because it excluded potential sources of capacity from which the utilities could purchase." FERC also held that a state "may not set avoided cost rates or otherwise adjust the bids of potential suppliers by imposing environmental adders or subtractors that are not based on real costs that would be incurred by utilities." Finally, FERC said that if the states wanted to encourage renewable resources, the states could use other incentives outside of PURPA, like tax incentives, direct subsidies or taxes on fossil fuels. But the main point was that a state could not monkey with the prices in a way that would cause the prices to exceed a utility's avoided cost.

What FERC is Saying Now

Although FERC was careful to reiterate in its rehearing order in late October that it is not deciding whether the feed-in tariff was consistent with the PURPA avoided cost limitation, it offered "guidance" to the CPUC that makes clear that most of the restraints contained in the 1995 Southern California Edison orders have been considerably loosened.

First, FERC said that avoided cost does not have to include alternative costs of other technologies, like fossil fuel plants, if the state requires a minimum purchase from a specific technology. In reaching this conclusion, FERC said this is consistent with the Southern California Edison orders because FERC said in one part of those orders that in the process of determining avoided cost, the state must "reflect prices available from *all sources able to sell to the utility* whose avoided cost is being determined." According to FERC, this means that "where a state requires a utility to procure a certain percentage of energy from generators with certain characteristics, generators with those characteristics constitute the sources that are relevant to the determination of the utility's avoided cost for that procurement requirement."

In other words, if the state says that a utility has to buy 10% geothermal power under PURPA, the avoided costs of a utility do not have to include the alternative costs of other technologies. Even FERC recognized that it is stretching on this one, so, for good measure, it overruled the Southern California Edison decision to the extent that it "can be read" to require all sources in the determination of an avoided cost rate. No explanation was provided as to why it is appropriate for FERC to overrule a 15-year-old interpretation of PURPA that has been relied upon by the industry since that time.

Second, even though FERC made clear in the 1995 decision that price "adders" are not consistent with avoided costs unless they are based on real costs to the purchasing utility, FERC found that the feed-in tariff could be based on a "10% location bonus" if the bonus is based "on the expected costs of upgrades to the distribution or transmission system that the QFs will permit the purchasing utility to avoid." Given that the 10% bonus is a feature of the California legislation rather than an actual determination of cost, it is difficult to assess how FERC could support the view that the bonus represents a "real cost" avoided for a particular cogeneration facility or that the 10% figure is the right number.

Again, FERC was careful to say it was not blessing the actual tariff rate as being consistent with avoided cost under PURPA. However, FERC was also careful to point out what California could do to avoid preemption by federal law rather than address the aspects of the tariff that would not be consistent with federal law.

It should be noted that this issue of limitation on a state's ability to establish a feed-in tariff based on principles consistent with PURPA is, jurisdictionally speaking, quite different from a state's implementation of a *state* law renewable portfolio standard. Under a renewable portfolio standard, the state has determined that it wants a minimum percentage of generation to come from specific categories and sizes of renewable projects. Utilities undertake competitive solicitations to developers of renewable projects, and selections are made as a result of the solicitation. Because this is done under state law, not federal law, and because the state is not directing the purchasing utility to offer a specific wholesale rate to the bidder and the solicitation produces rates proposed by the bidder rather than the state, state RPS programs, now in place in more than 30 states, have not been challenged as violative of federal law.

The Challenges Facing Renewable Energy Developers in Emerging Markets

Chadbourne hosted a workshop for the multilateral lending and export credit agencies on renewable energy projects in emerging markets in September in its offices in Washington. The workshop covered a lot of ground. The following is an edited transcript of a panel discussion among three developers whose companies are working on renewable energy projects in Africa and Asia. The panelists are Aparna Rao, vice president of AES Africa Power Company, Brian Kubeck, senior vice president for development at Sithe Global Power, and Jim Scarrow, director of legal affairs for the Americas at SunEdison. The moderator is Todd Alexander with Chadbourne in New York.

MR. ALEXANDER: Aparna Rao, do you see much difference in how multilateral lending agencies like the International Finance Corporation and other lenders view a renewable energy project compared to a conventional power plant?

MRS. RAO: I think they use the same standards. The motivation for investing in a country and the reasons the country is looking at renewables are very important. Both they and we pay close attention to the electricity sector framework.

MR. ALEXANDER: Is it your experience that the agencies do not seem as eager to finance power plants that use fossil fuel today as they are to finance wind farms and other renewables projects? For example, we worked recently with an export credit agency that is making it easier to finance small renewables projects by scaling back the level of diligence and working toward expedited closings.

MRS. RAO: I don't think we get better pricing for renewables projects than other types of power plants, but the multilaterals seem willing to get involved at an earlier stage. The cost structures in some of these countries are front loaded in the sense that there are additional high costs to build transmission lines and other basic infrastructure that get rolled into the project cost. What might start as a 50-megawatt project can end up with the cost structure of a 300-megawatt project.

In some cases, there may be a clean investment fund set up by the agencies to help fund developers.

I would encourage banks and particularly multilaterals, because they have traction with the governments, to find innovative ways to lend directly to local banks who, in turn, might fund developers and share the development or country risk.

MR. ALEXANDER: Brian Kubeck, do you see much difference between the level of diligence and the allocation of risk in renewables projects compared to conventional power plants?

MR. KUBECK: We don't see much difference in terms of diligence. It is dangerous to cut corners. What we have seen is a potential for tension between the agencies and governments in some of these countries. The agencies are keen to do projects that fit into a larger strategy for reducing carbon emissions. That motivates the multilaterals to watch the carbon so carefully that it can create friction with governments whose countries are still at a stage where they really need to find the least-cost alternative. The two goals can be integrated in the longer term, but the priority in these countries has to be economic development, and it is hard for a country at an early stage of development to put all its eggs in the renewables basket.

I like Aparna's idea of trying to work through local banks. Funding resource studies for renewables is a huge risk for a developer. It is difficult to mobilize all of your resources for smaller projects, which renewables tend to be, and to go into a country, for example, solely to develop a 20-megawatt solar plant. The resource work is the highest risk capital when you go in to measure the wind or sunlight.

If the multilaterals can work in advance with governments to get some of those resource studies off the ground, that would speed development. You need at least a couple of years of data to be able to finance a project. It is tough for a developer to go into some of these countries and say, "I am going to fund resources studies in the hope that I will have a project on which to start working in two years time, and I hope in the meantime that the regulatory regime firms up so that we can have a financeable project."

MR. SCARROW: I have a slightly different perspective. SunEdison operates and installs PV systems around the world, and one of the benefits of solar in emerging markets is the data. In the US, we have very good sun data. The sun, as it turns out, is extremely reliable. In the US, we know where the sun is going to shine. It is variable during any 24-hour period, but over the course of a year or two years, we nail it.

We have closed a billion dollars in solar financings over the last few years. The toughest part is educating banks, and I am talking now about New York banks. We are just becoming more

acquainted as a company with the multilaterals.

The risk profile for a solar photovoltaic project is different than for a wind farm. We both use P50 and P90 numbers to project output. P50 means there a 50% chance that the project will generate more than projected output and 50% chance that it will generate less. P90 means there is a 90% chance of doing better and only a 10% chance of doing worse.

For a wind farm, the difference between the two projections can be fairly significant.

For solar, the difference is something like 3% or 4% of cash flow. Irradiance data in emerging markets is pretty reliable, even though it is not as reliable as in the US.

Contrary to the conventional wisdom, we don't need two years of data to go in. We are diving into emerging markets very quickly. I think our challenge is almost the same internationally as domestically -— to convince lenders that this is reliable technology and that the data is credible.

Moving to another point, one thing we do run across is that once a solar system is installed, there are no moving parts and very little maintenance is required. We monitor the equipment through wireless communications. People sit in our Sacramento office and can tell you within 10 minutes when any string of panels around the globe shuts down. We are able to monitor everything internationally from one location.

The significance is there are not a lot of jobs. One of the challenges we have in fact, whether it is with stimulus programs in the United States or talking to governments internationally, is these countries are interested in jobs first. Energy security is a secondary concern.

Where solar could produce jobs is in local manufacturing, so that is what we are seeing. To the extent a government wants a jobs program, you see solar panel factories being built—not just in emerging markets but also in places like Canada. The feed-in tariff in Canada has domestic content requirements and has been very successful. There are huge amounts of investment going into Ontario for solar facilities.

MR. ALEXANDER: Samsung alone committed to an $8 billion investment in Ontario. Do you think you receive preferential treatment from the host country because you are trying to bring green energy or are you treated the same as if you were building a coal-fired power plant?

MR. SCARROW: We get very good receptions internationally. The same is true in the US. For example, we are installing a large solar facility in North Carolina. Sometimes it is surprising how receptive communities are to solar. I had thought when they see the back 40 acres being covered in blue pieces of glass, they would go through the roof. But either it is good fortune or it is North Carolina, but we have been welcomed everywhere.

MRS. RAO: Just to return to the resource mapping initiative, in India, the solar division of the National Renewable Energy Laboratory is conducting studies everywhere and it has released maps already for, I believe, the northern and western parts of India. Our solar group is following on the heels of where maps are released. It just secured a power purchase agreement in one of these areas.

Various agencies are working on resource mapping, but it is not a very well coordinated approach or the data is not always made widely available.

Another challenge in some of these countries is the governments appear to hand out licenses to anyone with a telephone and you get essentially a large number of local science projects.

MR. KUBECK: I agree with what was said about solar data. However, it is still a good idea to have at least a year of on-site collection.

The more challenging area involving data is geothermal. The problem is that it is like drilling for oil. A lot of money must be spent to prove the resource.

Turning to the reception in developing countries, India is going to be very successful in solar because it has invested in the manufacturing end of the business. But when you get to smaller countries that are really in the early stage of development, manufacturing is not an option. For them, whether to install solar comes down to questions of reliability and cost. Jumping on the green bandwagon for the sake of being green is not always the best approach.

Small Scale

MR. ALEXANDER: Scale is another challenge in the developing world. You may not be able to do a 200-megawatt wind farm. There isn't the infrastructure to accommodate it.

MRS. RAO: I think it makes sense for a private developer to go into a country where it is possible to build a pipeline of projects that aggregate to 150 or 200 megawatts. We are not opposed to doing a series of smaller projects. In Tanzania, for example, I believe the World Bank supports an 8.5¢ per kWh subsidy for projects that are less than 20 megawatts in size.

MR. ALEXANDER: Many of these projects are not competitive with coal or gas, at least at this time. Some countries have feed-in tariffs to support renewables. How worried are you that the law might change as it did in Spain and / *continued page 44*

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Germany? How much risk is there in a country that is struggling to decide whether to support renewables or put food on the table?

MR. KUBECK: There is a crowded graveyard of developers who said, "I have a good contract, and that's all I care about." We need to feel the project fundamentally makes sense for a country. The subsidy might be provided through the financing, making it less susceptible to change. The burden does not have to fall entirely on the country's shoulders. For example, the subsidy might be in the form of carbon credits.

MR. SCARROW: Let me come back to the question of scale. I came from Chadbourne where I worked on very large projects. When I got to SunEdison and someone asked, "Jim, can you help with this big project? It is 15 megawatts." I thought, "Are you kidding me? Is that before construction?"

My perspective has changed. To give you a very rough rule of thumb because prices are all over the map, it costs about $5 million a megawatt of installed capacity for solar PV. The company started with solar systems on roofs of big box stores like Walgreens, Best Buy and Wal-Mart. A small Walgreens system would be on the order of 30 kilowatts. A big Staples distribution center, meaning a warehouse, might be one megawatt. The challenge when working on projects on this scale is to come with efficient financing structures. We have done a good job in the US coming up with structures whose transaction costs don't bury us.

Internationally that becomes more of a challenge. We are a subsidiary, as of last November, of MEMC, which is a semiconductor manufacturer with a global footprint, particularly in Asia. Our projects are coming in from many sources. We are particularly active in India. The challenge is to find $2.5 billion to build lots of very small projects.

Change in law risk is significant. We saw the markets close in Germany and Spain. Then the market sort of re-opened in Germany and, suddenly, all of the panels in the world gravitated towards Germany again, driving up prices everywhere else. Italy is our most active international market today where the changes in law are working in the market's favor. We are building a 70-megawatt project outside Venice, which I think will be one of the larger PV projects in the world until we get leap frogged by someone else.

Screening Projects

MR. ALEXANDER: How do you recommend developers screen projects?

MR. SCARROW: You can't get to a meaningful size just screening 4,000 small projects as they come in the door. You need to find a way to make the utility the ultimate credit behind the deal. That's the only way in some countries to do financings on a large scale.

MR. ALEXANDER: Aparna, how does AES get comfortable in countries where it has to charge more for electricity than competing suppliers using fossil fuels? The project is not economic without some form of government support. That support can be pulled away.

MRS. RAO: It boils down to how strongly motivated the country is to move to renewable energy. A credible motivation in richer countries is a drive for energy security and for alternatives to continuing to deplete scarce natural resources. When you are screening countries, it is very, very important to understand what is driving them. A general interest in being green and keeping people happy does not translate into a stable regulatory framework.

MR. ALEXANDER: Does involving a multilateral lending agency or export credit agency in the financing give you any legal protection?

MRS. RAO: We often take advantage of political risk guarantees from the agencies. I am now speaking more broadly than

One challenge in emerging markets is justfying spending the upfront costs for what may be only one or two small-scale projects.

just renewable energy development. Political or civil unrest does not necessarily make a project more likely to default on its financing. For example, in Côte d'Ivoire, the government has never defaulted on a payment despite the civil unrest over the past decade, and you find examples like this elsewhere. The fact that a country has had to borrow from the International Monetary Fund instills some fiscal discipline.

MR. ALEXANDER: Brian Kubeck, how important is it to have a savvy local partner?

MR. KUBECK: Boots on the ground are critical. We need a local partner whom we trust. Screening local partners is no easy task. It often takes a year or more to find someone with whom you can really get comfortable. We have had projects on which we have spent a lot of money and time and, six months in, we end up with concerns about whether our local partner is complying with the Foreign Corrupt Practices Act. That sort of behavior from a local partner is a non-starter, no way, no how, no benefit of the doubt. If we have any doubt, we don't proceed, so that's a challenge.

It is hard for us to justify spending time on a project that is less than 200 megawatts in size. It can be a pipeline or a couple different types of projects, but if we are going to invest development capital and take the time to vet a local partner and put our own team on the ground for a long period of time, it has to be a large opportunity.

MR. ALEXANDER: Jim Scarrow, in the next five years, what do you think are the biggest growth opportunities overseas?

MR. SCARROW: Asia and South America. We are keeping an eye on Chile and Peru, although those markets are not yet ripe.

Solar, like most renewables, requires some form of government inducement. There are plenty of inducements in the developed countries. We are in India, Malaysia and Thailand. In South America, we are not seeing the fundamentals in place yet where a lot of the existing capacity is in cheap hydroelectricity.

MR. ALEXANDER: Brian Kubeck, where are the greatest opportunities for Sithe?

MR. KUBECK: Hydroelectric projects are a no-brainer. After that, we think geothermal is poised for growth. Those are the projects that we think make the most sense if we can figure out a way to get the resource studies financed at an acceptable level of risk.

MR. ALEXANDER: Aparna Rao?

MRS. RAO: My focus is in Africa. I think we are looking harder in eastern Europe for PV solar and some in South Africa. For wind, the growth will be largely in China. China is a very good example of what we have talked about earlier in terms of government support and having extremely good coordinated efforts among developers, offtakers and regulators and providing innovative financing packages such as financing for turbines. Obviously the turbines are manufactured in China, and it is all local content, but our experiences in China have been good for wind projects. Returning to Africa, geothermal is looking like a good resource, especially in east Africa.

UK Green Investment Bank Update

by Julie Scotto, in London

The UK chancellor, George Osborne, revealed more information about the UK government's plans for a green investment bank in the comprehensive spending review in late October.

The government is putting forward £1 billion for the green investment bank, half of the £2 billion that was previously anticipated. This £1 billion is massively lower than the £4 to £6 billion for which some in the industry had called.

It was also revealed in the Treasury's national infrastructure plan that £250 million of the allocated £1 billion funding for the green investment bank is dependent on the Scottish government agreeing to a drawdown of funds from the Scottish fossil fuel levy surplus. Should the Scottish government refuse, the £1 billion funding will be reduced to just £750 million.

The spending review said that the government hopes that more funds will be raised from the private sector and the proceeds of future government asset sales.

The spending review has, in the main, been rather supportive of the renewable energy sector, setting aside £1 billion for the creation of one of the world's first commercial-scale carbon capture and storage demonstration plants, over £200 million for the development of low carbon technologies and creation of a renewable heat incentive, and grants to promote use of electric vehicles. The government will provide more than £200 million for development of low carbon technologies, which will include offshore wind technology, and £860 million over the period to 2014-15 to encourage households and businesses to invest in renewable heat measures through the introduction of a renewable heat incentive from 2011 providing long-term support for renewable heat technologies. */ continued page 46*

UK Green Bank

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Aim of the Green Bank

The chancellor said that the aim of the green investment bank is to ensure that Britain is at the forefront of the "new green economy." He said it will create jobs, save energy costs and reduce carbon emissions. The hope is that all of this will incentivize the population to reduce their energy bills, promote greater home energy efficiency and allow the government to "phase out the warm front program," a government-funded initiative that provides insulation and heating improvements up to a value of £3,500 (or £6,000 where oil, low carbon or renewable technologies are recommended).

The UK government has set low carbon emission goals that will require great investment, but this may not be possible at present, as only a third of the investment could be available from commercially-funded sources, so the government views the green investment bank as a way to fill the funding gap.

Reaction in the UK to the reduction in the amount of funding for renewables from the previously anticipated level is that the reduction is likely to exacerbate the difficulties that the renewables sector is already facing raising financing for its projects. Doubt also remains as to whether the green investment bank will have sufficient funds to leverage capital from any potential private investors and instigate projects on a large enough scale to have any sort of credible impact.

The spending review failed to give more details relating to the green investment bank, such as how the bank would make grants and whether it would possess the capacity to issue bonds and credit guarantees. However, a few more details were laid out in the Treasury's national infrastructure plan. The government aims to complete the design and testing work of the green investment bank by spring 2011 and the initial time frame for implementation is 2013-14. Until further information is released relating to the exact structure of the bank, it will remain to be seen whether the proposed bank will live up to expectation.

Although the chancellor did not reveal in the spending review what government assets will be sold to fund the bank, and the Treasury has since declined to specify how much funding would come from asset sales, it is believed that there are plans to sell the High Speed 1 (Channel Tunnel) rail link, portions of the student loan book, the radio spectrum released by the switchover to digital television, and the UK's one-third stake in Urenco, a company that produces enriched uranium for nuclear power. Urenco has been valued recently at £3 billion, which could add much needed investment to the green investment bank. The previous attempt of the Labour government to sell the UK's share in Urenco proved unsuccessful when the sale was blocked by other shareholders in 2006.

This lack of clarity in where the funding will come from for the bank and the reduction in its initial capitalization have provoked comments that there is a lack of real commitment on the government's part to the initiative. Some have even suggested that, due to the far lower amount of funding than was expected, the green investment bank will function more as a "guarantee department" than a senior lender.

Given that experts in the industry, such as Ernst & Young (which was commissioned by the Green Alliance, E3G and Transform UK to provide a report on the possible role of the green investment bank and its likely capitalization requirements) recommended the green investment bank start with an initial capitalization of £4 to £6 billion, the £1 billion that has been allotted is causing many to question how the bank is supposed to be fit for its purpose.

Ernst & Young published in October an independent report on the green investment bank that gives a view of the potential role of the green investment bank and its likely capitalization requirements. The report gives recommendations for potential products.

The consultancy suggested that the bank might provide short-term construction equity to bridge the funding gap in the construction equity segment, long-term debt for offshore, carbon capture and storage and energy efficiency projects in the form of bonds, and medium-term secured subordinated debt (subordinated to senior secured debt provided by commercial banks) for offshore and carbon capture and storage projects. It also thought the bank should provide multi-year wind insurance for offshore wind projects (as presently no commercial insurer provides this type of product)and a default risk guarantee product for energy efficiency projects. The green investment bank's provision of this product over the long term to the institutional lenders would be an alternative to providing long-term debt to small-scale energy efficiency, micro-generation and smart grid projects, and given the correct legal security, there should be the possibility for such projects to achieve an underlying credit rating of BBB- or above.

Environmental Update

The election results in California mean that the state's greenhouse gas cap-and-trade program remains on track for an expected launch in 2012.

California voters rejected Proposition 23, which would have suspended certain greenhouse gas emission limits and regulations until the unemployment rate in California drops below 5.5% for four consecutive quarters.

The California greenhouse gas program regulates all but *de minimis* stationary sources of emissions. A 2006 law requires the California Air Resources Board or "CARB" to adopt regulations that would reduce carbon emissions to 1990 levels by the year 2020. It has issued a draft framework for a cap-and-trade program. Its plan would limit facilities like power plants that collectively emit about 85% of greenhouse gas emissions in California.

Starting in 2012, covered entities emitting more than 25,000 metric tons of CO_2-equivalent per year would be required to submit allowances or offset credits to cover their emissions each year. The cap would be set initially at predicted emissions in 2012 and would ratchet down through 2020. Up to 8% of a covered entity's allowances may be offset credits. Offset credits are created from approved projects, like reforestation, that reduce greenhouse gases.

The draft framework is set up with three, three-year compliance periods. Covered entities would be required to submit allowances and offsets for every metric ton of CO_2-equivalent emitted. Electric utilities that serve retail customers would receive allowances free of charge, but each year the utilities would have to resell these allowances and use the proceeds for the benefit of retail ratepayers. CARB also plans to link the California cap-and-trade program with similar programs in six other western states and four Canadian provinces through the "Western Climate Initiative."

CARB is accepting comments until December 15, 2010 and will hold a public hearing on December 16, 2010 to consider adopting the program.

Cooling Water

Existing power plants in the United States that use once-through cooling water systems may require significant retrofitting to comply with regulations the US Environmental Protection Agency is expected to release as early as February.

These regulations will implement section 316(b) of the Clean Water Act. That section requires "effluent limitations that will assure protection and propagation of balanced, indigenous population of shellfish, fish, and wildlife." Power companies will have to install "best technology available" or its equivalent to minimize harm to fish and shellfish and their eggs and larvae from water intake structures. .

In 2007, the US appeals court for the 2nd circuit sent regulations setting requirements for cooling water intake structures at existing power plants under section 316(b) back to the Environmental Protection Agency for more work. The decision was in a case called *Riverkeeper, Inc. v. EPA*. The court said EPA improperly rejected closed-cycle cooling as the best technology available. It was not clear whether EPA properly weighed cooling tower costs and benefits when drafting the regulations.

Some expect the new regulations to be out in draft in February 2011 and for the final rules to be issued in July 2012. In the absence of federal regulation, states determine best technology available on a case-by-case basis.

In March 2010, the New York State Department of Environmental Conservation issued a draft policy establishing wet closed-cycle cooling or its equivalent as the best available technology for existing industrial facilities using intake structures that withdraw at least 20 million gallons per day of contact or non-contact cooling water from waters in New York state. The draft policy describes wet closed-cycle cooling as a system designed to withdraw the smallest amount of water to support contact and/or non-contact cooling uses within a facility. A closed-cycle cooling system uses between 93 and 98 percent less water than a once-through cooling system. The water is usually sent to a cooling canal, channel, pond, or tower to allow waste heat to be dissipated to the atmosphere and then is returned to the system. New source water (makeup water) is added to the system to replenish losses that have occurred due to cooling tower blow-down, drift and evaporation.

In cases where wet-cycle cooling is not available—for example, because of real estate constraints—facilities in New York will be required to achieve at least a 90% reduction in both entrainment and impingement mortality of what would be achieved with a wet closed-cycle cooling system. Although the guidance contemplates an excep- */ continued page 48*

Environmental Update

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tion for existing power plants that have operated at less than 15% of capacity over a five-year averaging period, the New York draft policy suggest some such power plants may still need to reduce operations, use a combination of operational measures (like seasonal outages, installation of screening mechanisms or variable-speed pumps) or even shut down completely.

It is not clear whether New York will phase in any best technology available requirements or even "grandfather" facilities that comply with, or are in the process of complying with, earlier best technology available determinations from being required to comply with a new standard. The state is expected to issue its final policy shortly.

Climate Change and the Wind Industry

We are often asked what regulations that the US Environmental Protection Agency issued to control greenhouse gases—and that may still be blocked by Congress—mean for the wind market in the United States. Perhaps the best way to look at this is to break the question into three subquestions.

First, will there ultimately be any EPA action on greenhouse gas regulation?

EPA did not just issue one rule. It had to issue three to set up the greenhouse gas regulatory program, and there are more steps still to be taken, particularly a decision about what is best available control technology for controlling greenhouse gas. Every action taken by EPA so far has been challenged in court, and there will be a very different Congress next year. Thus, look for delays in implementation while the regulations are challenged in court and a possibly subject to a moratorium on enforcement by Congress.

Second, are the EPA greenhouse gas regulations even the main threat to coal?

It is almost impossible to build new baseload coal plants because of more stringent environmental regulations and general community opposition to coal. There are already some other major EPA air programs that could have a significant effect on coal facilities, including the new air transport rule that requires significant reductions in SO_2 and NO_X emissions in roughly the eastern half of the United States and the upcoming emissions standards for mercury and other hazardous air pollutants from coal plants.

Finally, how much more help will wind developers need or be able to take advantage of?

If Congress adopts a national clean energy standard, or even if it does not, given the number of states that require utilities to deliver an increasing percentage of their electricity from renewables, it looks like there will already be substantial demand for wind energy going forward.

The question then becomes how much additional wind capacity developers can really build and how much can the grids tolerate? Sites with little to no environmental concerns are becoming harder and harder to find, and new rules and litigation about bat, migratory bird, eagle and similar issues suggest that the siting pressures could get even more severe.

Putting it all together, the wind industry should get a moderate boost if the EPA greenhouse gas regulations are not blocked by Congress and energy prices are driven up to the point where new marginal wind projects are desirable, but the real boost would come from a Kyoto- or EU-type trading program that would create a new source of value for new projects. That is not going to happen anytime soon, except at the regional level.

— contributed by Andrew Giaccia and Sue Cowell in Washington

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