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Euro Headaches

by Agnieszka Klich, in London

Lenders who made loans in euros may be wondering how best to protect the loans, especially if some countries leave the euro zone in the future. There is growing risk of a Greek exit.

Here are a few points to consider.

Exiting the euro or the euro zone is not easy. The laws regulating the establishment of the European Union and its single currency do not contemplate an exit from the single currency and, therefore, provide no guidelines to follow. A euro zone country deciding to exit the euro would either have to exit the European Union altogether or seek an amendment to the EU treaties (which could not be done by the exiting country alone). A unilateral exit might be contemplated as a sovereign act, but it would carry the risk of being illegal under international law. The other EU countries could refuse to recognize the new currency.

Various analysts consider a euro zone break up a possibility with a number of scenarios being considered. One possibility entails a single country exit while the euro remains in place in other countries; another considers multilateral action by several members with the euro still remaining in place, and yet another scenario focuses on a complete break up of the current single European currency and a potential return by some countries to their domestic currencies or the introduction of a new single European currency (ECU-2 or the European currency unit 2). It is the return to the new versions of the old domestic currencies that presents the biggest challenge.

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POWER CONTRACT VALUES remain under discussion by the US tax authorities.

Many smaller developers are unable to raise funds to build their projects. They do as much development work as possible and then sell the development rights. The rights might include a power contract, interconnection agreement, permits and a site lease.

The Internal Revenue Service suggested in a private letter ruling in April that a company buying the development rights to a project does not have to allocate part of the purchase price to the power contract if the contract requires electricity to be delivered from a particular power plant. Instead, all of the value is in the power plant.

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Euro Headaches

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The country or countries no longer using the euro would introduce new currencies leading to redenomination of some or all of the assets and liabilities of that country into the "new old" currency. It is likely that the euros that had been used by the governments to express their public assets and liabilities would cease being euros and would become expressed in the local currency. This means, for example, that a country like Greece could be expected to start paying for electricity delivered to the grid in the new drachmas instead of euros. The value of the new drachma, if left to its own devices, would most likely fluctuate and possibly suffer from inflation.

A euro exit could leave projects with revenue in local currencies while having to repay debt still denominated in euros.

While the public obligations would be redenominated into the new local currency, a number of private obligations would continue to be expressed in euros.

Those would include loans taken out by local companies from foreign or local banks. Some legal analysts conclude that loans governed by English or New York law would continue to require that the debt be repaid in euros. However, the analysis then is that the same treatment would most likely not apply to loans made in euros but governed by local law: once the redenomination takes place, those loans would be exposed to the redenomination as well.

Assuming that those analysts are correct (although our view is that this risk would need to be assessed on a case-by-case basis taking into account the drafting of each loan agreement), then a redenomination could result in a situation where a project sells its product (such as electricity) and is paid in the local currency while retaining the obligation to repay its loans in euros. Unless the government specifically protects certain industries (such as electricity producers), the mismatch between the revenues received in an unstable currency and the obligation to repay in another currency could quickly bankrupt the given producer.

Greece itself presents an interesting case study of the governing law, with the conclusions not being necessarily helpful to lenders. In recent years several major infrastructure transactions were funded by means of bonds issued pursuant to Greek laws, but governed by English law (except for certain provisions that had to be governed by Greek law). While this point has not been tested, some legal analyses indicate that the fact the bonds were issued pursuant to the Greek bond law could subject the entire loan transaction to Greek law with the consequent risk that the loans taken out in euros could be redenominated into the new drachma.

If both the loan and the revenues are redenominated into the new currency (take the case of a local-law governed loan or Greek bonds), the foreign lenders would probably see a significant reduction in the value of their debt investment.

It would be reasonable to expect that, in order to ensure the continued operation of key infrastructure industries, countries exiting the euro would seek to protect those industries by ensuring a flow of revenues that would enable each producer to meet its obligations to lenders.

If the circumstances force a given project into insolvency, then the reaction of its creditors will most likely depend on their make up. If they include major European financial institutions, those institutions may well be driven by the desire to protect the project, the borrower, the country and the other lenders. The debt obligations would most likely have to be restructured while the project (especially if it is a key industry, such as an electricity producer) continues to operate. Even if the investors are only private commercial banks or entities, one hopes that the government would preserve the operation of the key industry in order to ensure a greater degree of predictability, order and stability in the country. ◎

Interest Growing in US PPPs

Roughly 25 infrastructure projects have been funded to date in the United States through public-private partnerships, while the figure in Canada is roughly 150. Thirty US states now have some form of legislation authorizing use of PPPs to fund basic infrastructure. Interest in PPPs is growing, driven by increasing deal flow as more states realize that they are an effective way not only to plug funding gaps but also to transfer risk.

A group of industry veterans talked about recent developments in the US market during the annual InfraAmericas US Transport roundtable in New York in late March. The following is an edited transcript of the discussion. The panelists are Jane Garvey, North American chair at Meridiam, Nick Butcher, senior managing director at Macquarie, Marietta Moshiashvili, managing director at TIAA-CREF, John Anderson, senior managing director at John Hancock, Thomas Pelnick, senior vice president of ACS Infrastructure, and Paul Ryan, managing director and head of the infrastructure advisory group at JPMorgan. The moderator is Doug Fried from the Chadbourne New York office.

MR. FRIED: With employment on the rise and the stock market up, what impact do you think this will have on the US PPP market?

MR. RYAN: I think it is overwhelmingly positive for PPPs. On the public side, things have been tough, but as they improve, this adds confidence that projects will be able to get done. Public clients are taking the PPP alternative seriously. They are comparing PPPs on an apples-to-apples basis with traditional procurements. We did not see that as often in the last couple years. PPPs transfer risk and close gaps in funding. The ability to close gaps is dramatically improved with an improving economy and with more money flowing into the public sector.

MR. FRIED: Jane Garvey, how do general economic conditions affect Meridiam's strategy in this sector?

MS. GARVEY: We spend a lot more time asking questions about the sovereign health of a country or state. We probably do much more due diligence around those issues. We spend more time digging into the economic health of the surrounding region. But fundamentally the market strategy for us remains the same. In the depths of the economic crisis, we had two deals. One was awarded in California and */ continued page 4*

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The IRS analogized this to buying a building in which tenants have leased office space. Part of the purchase price does not have to be allocated to the leases. Instead, the building comes subject to the leases; they are a burden on the ownership. The purchase price is treated as a cost of the building.

The ruling is important because renewable energy projects qualify for large tax subsidies. These subsidies can only be claimed on the cost of equipment and not on the cost of intangible assets like power contracts and interconnection agreements.

The IRS and US Treasury are now having second thoughts about the ruling.

The ruling was issued to a utility that is buying the rights to a number of wind farms that are still under development. The wind farms come with power contracts. Each contract requires the holder to supply electricity from a specific wind farm. Current electricity prices are lower than the prices in the power contracts.

Until the ruling, most companies would have allocated value to each power contract to the extent it is "in the money," meaning the contact entitles the holder to a higher electricity price than he can fetch currently in the market. The ruling suggests that any such value is value in the wind farm to which the power contact is welded.

"We have a saying [at the IRS] that you know you issued a bad ruling if 70 people ask you for a copy the next day," one IRS official said. Some IRS and Treasury officials are not happy with the ruling. Kathy Reed, the chief whose branch issued the ruling, and Ellen Neubauer, the Treasury cash grant program manager, confirmed that it is under study.

A private letter ruling is binding on the IRS only for the taxpayer who received it. It is possible the agency could decide that the ruling makes more sense when someone buys a power plant that is already operating and that comes with a power contract than when only contracts are purchased.

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another came to a close in California. That was not only in a bad economic time, but also with a change from a Republican to a Democratic administration. I think that was a real vote of confidence, and it suggests that even in uncertain times, the stability of infrastructure as an asset class should make it very attractive for investors.

MR. FRIED: Nick Butcher, how are the states doing economically, and how does this affect the PPP market?

MR. BUTCHER: The states are facing a tough financial situation with pension deficits and long-term indebtedness. They have been taking short-term measures like cutting services and trying to manage the annual budget. We are not seeing the type of investment in new infrastructure that needs to happen.

The financial situation will force harder decisions that may not have been politically tenable five years ago. The Port Authority of New York and New Jersey is considering LaGuardia airport as a potential PPP. Nassau County is looking at granting the private sector a concession over its wastewater treatment and sewer system because it cannot raise any more debt and it is difficult to raise property taxes.

MR. FRIED: Will the economic condition of the states change how PPP deals are structured?

MR. BUTCHER: The challenge for states looking to do availability transactions is how to give confidence and certainty to the payment stream. It will force more revenue risk transactions where there is no availability payment stream.

MR. FRIED: Tom Pelnick, how will the problems in Europe affect the market?

MR. PELNICK: Companies focus on where the work is. It does not matter whether the companies are based in the US or outside the US. If there are opportunities in the United States, then we will continue to see European sponsors active in this market. Competition will remain very fierce here. As long as projects are good, there will be opportunities for work with European banks, but maybe not to the same extent there has been in the past.

MR. FRIED: Do you see a change in the number of European sponsors in the US market?

MR. PELNICK: In just about every major deal we are considering, we see quite a few European competitors. There is probably room for others to consider coming over here.

MS. GARVEY: As Canada has leveled out, some of the Canadian players are moving down to the US as well. It will be a pretty competitive marketplace.

Entry of Institutional Investors

MR. FRIED: John Anderson, do you see the pull back of the European banks from the US project finance market as an opportunity for institutional investors to get more active on the lending side of the PPP market?

MR. ANDERSON: The debt markets are very supportive for municipal credits, both taxable and tax exempt. We saw taxable municipal deals price at the same coupons as tax-exempt deals last year. The tax-exempt feature was not saving municipalities any money because there is such broad market demand for debt of infrastructure authorities.

The project finance sector saw traditional European lenders pulling their books shorter last year, and we saw a number of large deals get done quite easily with insurance companies making up the difference. In some large transactions — $400 to $600 million — the insurance companies took the long piece. That was a structure we saw frequently in the 1990s. Those long institutional pieces were well syndicated with a large roster of investors. You see Japanese, Canadian, Asian and some US institutions also within the bank market picking up some of the pull back by European institutions.

There are a lot of different pools of capital, both on the bank and the institutional sides, looking to support well-structured long-term projects.

MR. BUTCHER: For the well-structured deals, the capital is there. The challenge is when projects come to market with a big funding gap that it is uneconomic for the private sector to plug. This is more of a transaction-constrained market than a capital-constrained market.

MR. FRIED: John Anderson, what type of institutional investor do you see coming into the market?

MR. ANDERSON: Insurance companies and Canadian pension funds. US pension funds are very interested, but it is more difficult for them to staff the kind of specialized talent that the Canadians have been able to retain. I have not seen endowment money flow in, but you may see it in the future.

MS. MOSHIASHVILI: What is difficult for the insurance companies and pension funds is to participate in the bidding stages of development. It is very hard for insurance companies to dedicate their limited resources to transactions that may or may not happen.

One solution is bridge financings, but given where the rates are, it is probably more lucrative for equity investors to get a long-term private placement. We are mostly focused on equity-type investments and on mezzanine-type investments. Given

where the yields have been, it has been important for us to refocus our skills as an equity investor. A lot of other companies are trending that way as well in the insurance sector, but there may be some benefit for certain insurance companies to continue to do project finance lending.

MR. FRIED: John Anderson, does John Hancock prefer to put debt or equity into PPP projects?

MR. ANDERSON: Both. Equity infrastructure is a rarer commodity. On balance, if we had two opportunities and they had the same probability of success, we would probably throw the resources to the equity opportunity first, just because of the scarcity.

MR. FRIED: Will there be a growing secondary market in the United States?

MR. BUTCHER: I would not call it a secondary market just yet, but one will develop. In the energy sector, there is a big secondary market, and that can translate to transportation if we have more projects. Infrastructure funds and pension funds are all short on US transport exposure. It is a good time to invest if you have a long view of the cycle and the recovery of the economy. Only 25 or so PPPs have been done to date in the United States. There have been 150 in Canada. There is potentially a big market. It is transparent. Equity returns are pretty clear. Developers can make good gains from developing and holding through construction and then selling in the operating phase.

Tolling v. Availability Projects

MR. FRIED: Do you prefer to invest in projects that are already operating?

MS. MOSHIASHVILI: We are not afraid to take construction risk. We will not take development risk. We know how to analyze construction risk. For us, the key is to align ourselves with experienced operators and construction companies that have good reputations and track records.

MR. BUTCHER: When we are looking at the forward pipeline, it is largely going to be new build. You can contract out construction risk and get comfortable. The demand risk is the bigger challenge. If the project opens, how do you get confident about the patronage volumes? Government sponsors will attract a deeper pool of financial capital to availability projects or to lower-risk patronage projects. At the extreme end, you have managed-lane transactions. Not a lot of financial investors are comfortable today with taking on that risk. If the project involves expanding capacity of an existing facility and collecting a toll from users, then that is an easier proposition.

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SECTION 1603 PAYMENTS to distributed solar companies remain somewhat unpredictable.

The Treasury is sensitive to the complaints and is trying to address them. It sent an email in March to solar companies that have filed or are expected to file at least another 50 applications for Treasury cash grants on solar installations with bases of more than $7 a watt.

The Treasury announced benchmarks in June 2011 for solar photovoltaic projects of roughly $7 a watt on residential installations of less than 10 kilowatts in size, around $6 a watt on installations of 10 to 100 kilowatts, around $5 a watt on installations of 100 kilowatts to 1 megawatt, and around $4 a watt on larger projects. These were benchmarks for solar equipment put into service during the first quarter of 2011. The Treasury said at the time that companies that claim "materially higher" tax bases can expect questions about their applications.

In the March email, the Treasury said it would focus on the average bases claimed for installations in each state. In states where the average basis is less than $7 a watt for rooftop residential systems, applications "will be processed without further upfront scrutiny as to costs as long as the claimed basis is supported by an appraisal with state-specific conclusions regarding the [fair market value] of such systems," the email said. (Most residential systems are financed in a manner that allows a cash grant to be claimed on the fair market value of the systems rather than their cost.)

Many residential solar companies are reading the email to say that they will be paid the grants for which they apply, as long as the basis claimed is less than $7 a watt and the amount is supported by a credible appraisal. Ellen Neubauer, the cash grant program manager, confirmed that is what was intended.

However, the Treasury is warning companies that claim bases below $7 a watt to be careful that they can support the bases claimed because the IRS may audit later. The Treasury appears also to be moving to after-tax */ continued page 7*

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MS. GARVEY: For demand risk, there is sometimes an alignment between the investor concerns and political concerns. The politics suggest that greenfield projects are a bit more acceptable and an availability payment is more acceptable because the state or public authority feels like it has more control over usage. From the investor's perspective, the project will be more attractive if the state or authority is willing to keep the demand risk.

Thirty US states now have some form of legislation authorizing use of PPPs to fund basic infrastructure.

MR. FRIED: Would you invest in a traffic risk project?

MS. MOSHIASHVILI: Yes as long as we see a pattern to the traffic. We are not prepared to take both greenfield and traffic risk.

MR. FRIED: John Anderson, what issues does funding during construction create for you?

MR. ANDERSON: We can underwrite construction risk, and we have participated in projects with construction risk. We do not like monthly draws, as banks do. We want to be taken down in bigger chunks up front. We have still been able to make that math work for customers.

MR. FRIED: When you invest in a project, whether as a lender or an equity investor, do you have a preference as to the type of project: a project with an availability payment or one with traffic risk? What do you look for?

MR. ANDERSON: Availability payments are a much better value for the municipality because we will bid a lower return against availability payments. We are more comfortable with that structure, and we price that comfort into the way we bid our capital. But we can do both. We can also price traffic risk for a new-build asset, but there is a much higher chance that we will not bother. There is a deeper pool of capital prepared to put money into availability projects.

MS. MOSHIASHVILI: TIAA-CREF is a long-term investor and, for us, "long term" really means long term: it is 20+ years. It is important to optimize the performance of the asset through operating it well and making sure that we align strategically with operators. We rarely would look at leverage or short-term sales to realize our return.

MR. ANDERSON: For John Hancock, it is a multi-channel strategy. We are trying to participate as a bond investor through corporate municipal bonds, as a project finance lender, as a private equity investor through funds and working with management teams, and in a direct capacity.

Political Risks

MR. FRIED: What impact does cancelation of the West-by-Northwest managed lanes project in Georgia have on the market?

MR. PELNICK: When a project is canceled and a contract is not awarded, nobody wins. As far as that project in particular, the agency had decided it was a fundamentally important project, and we shared that view. We were reasonably reassured that support at the executive level remained constant and strong. So it has probably just heightened the sensitivity to the potential for an executive to exert his authority and decide not to pursue a particular path.

MR. RYAN: I am not overly concerned about the contagion effect. Candidly, I am not overly concerned about it at all.

MR. BUTCHER: It will be tougher for Georgia to attract bidders the next time around.

MR. RYAN: If someone says, "We are going to do a PPP because I want to do a PPP," you have to think carefully about that. If someone says, "I have been through the analysis and I really understand what my challenges are and I am trying to close a gap and I have identified the value in a PPP," then that is a very different story. What do public authorities care about? They care about a bankruptcy. So when California State Route 125 went through a bankruptcy, it actually came out successfully. The documentation contemplates and can deal with a bankruptcy filing.

MR. FRIED: Marietta Moshiashvili, what issues did TIAA-CREF focus on, as an institutional investor, when deciding to invest in the I-595 highway project in Florida? *[Ed. note: ACS Infrastructure, which developed the I-595 project in Florida, sold half of its stake in the project to TIAA-CREF in 2011.]*

MS. MOSHIASHVILI: It was important that the state has the reputation that it does. The other very important component of the analysis was the partner, ACS Infrastructure. We felt we made similar analyses of the investment. We look at how strategic the asset is to our partner and how dedicated it is to constructing and operating the project well.

MR. FRIED: How important are public perceptions?

MR. RYAN: The outlook for federal funding does not look good, but state funding is starting to improve, which is the biggest positive at the moment. Create a project that is feasible, and capital will come. The most difficult part of creating a feasible project is the policy aspect of closing the funding gap. If the project is projected to produce a good return, then it will get done in the municipal bond market. Our focus in private-sector projects is on gap closing.

MR. FRIED: What do you think should be done with the TIFIA program?

MS. GARVEY: The good news is that TIFIA has bipartisan support in Washington. If you look at the Senate transportation bill, a number of changes have been proposed for TIFIA. The most visible one is funding would increase, which is really significant. Funding for individual projects would focus in the future on credit worthiness. Instead of relying on an allotment cycle, there would be a revolving application process. If the TIFIA funds are reduced, then you could draw on other federal funds to boost the TIFIA allocation. So all of that is pretty good news. The Senate bill would also do some streamlining.
I am less optimistic about the prospects for an infrastructure bank. People have said it may be a good idea but not this cycle.

MR. BUTCHER: More TIFIA would be great. That would definitely help projects. The debate is centered around using state or federal funding to leverage private capital. At the state level, there have been some interesting proposals in the last few months. Chicago has talked about an infrastructure trust. Virginia announced a state infrastructure bank. New York has talked about an infrastructure bank. The aim of all these proposals is to provide new-build financing alongside private capital.

MR. FRIED: How will the 2012 presidential election affect PPPs?

MR. PELNICK: I am not sure it matters. */ continued page 8*

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discounted cash flows as its preferred method for valuing solar rooftop installations.

In other developments, the Treasury is reassessing whether it will allow developer fees to be added to basis for cash grants. Most projects are owned by special-purpose project companies. It is not unusual for the project company to pay an affiliated company that has the employees who did the development work a fee at the end of construction. The fees can run as high as 15% or more of the project cost. They are taxable income to the affiliated company receiving such a fee. They normally add to basis in the project. The peculiar math of the renewable energy industry gives companies an incentive to pay them. The federal income tax on the fee is 35%. By adding them to basis, the project company can claim tax subsidies worth 56%. Developer fees have been paid historically in the independent power industry, even before there was a tax benefit for doing so.

Grant applications are taking more than 60 days currently to process. The Treasury has been flooded with rooftop solar applications.

The House Energy Committee sent a letter to the Treasury in early March challenging claims by the Obama administration that the section 1603 program has helped create jobs in the renewable energy industry and asking for lots of information as part of a potentially hostile investigation of the program. The Treasury responded to the letter on March 30. A copy of the response is posted to the committee website. The committee has not decided yet on next steps.

THE US COMMERCE DEPARTMENT is expected to announce anti-dumping duties on Chinese solar cells on May 16. Countervailing duties of 3.59% (4.73% for Trina and 2.5% for Suntech) have already tentatively been imposed. Commerce will make a decision on duties on Chinese and Vietnamese wind towers by early June.

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The outlook for the sector depends more on whether Congress can get together and come up with a reasonable approach, not just for PPPs but also for funding in general. The debate about the infrastructure bank was terrific because the proposal had bipartisan support. The local politicians have an even more significant impact, whether it is in setting a reasonable toll rate or whether to use tolls at all.

At least $35 billion in new PPP projects are expected to come to market in the United States through 2015.

Market Opportunities

MR. FRIED: Jane Garvey, could Colorado become a player in this market?

MS. GARVEY: I think five years ago people might not have mentioned Colorado as one of the movers. This underscores again the importance of political leadership and political will in a state for PPPs. The governor is bullish about PPPs. The executive director is very familiar with PPPs. He comes out of this community, and he understands them. Having that kind of leadership is really critical.

MR. FRIED: What other states do you see emerging in the PPP market?

MS. GARVEY: The first question is who has the right enabling legislation. That changes every day.

We focus on the first movers, the states that have PPPs like Texas, Florida and Virginia. The lesson of Colorado is that there are always new states ready to come forward. I think all of us are focused on California. There are questions about how and when it will move, but the needs are there, the marketability is there, and there is always interest in a state as large as California.

MR. FRIED: Nick Butcher, what is happening in Puerto Rico?

MR. BUTCHER: Puerto Rico deserves to be congratulated. It is not just looking at one sector. It is looking at airports, roads, prisons and schools. It established a PPP authority. It is a good example of what can happen when the government takes an active interest.

MR. FRIED: What deal flow do you expect for parking assets?

MR. BUTCHER: There have been a few canceled procurements, but I think it is an asset class that people should still be looking at. The Ohio State University process is an interesting one. Ohio State has had good response from the market, and if it is successful, then that will encourage other universities to consider granting private-sector concessions over their assets. Most universities are probably not as politically constrained as a city. Part of the challenge has been that cities, in some instances, have put together a grab bag of not-so-good assets, and have been a bit surprised perhaps when the private sector has not been keen to buy them. There have also been difficulties delivering things from a political perspective.

MR. FRIED: There was a recent bill in Florida to allow local governments to engage in social infrastructure projects. There is a procurement out for advisors for the Yonkers schools. There is the Travis County courthouse. What will it take to make investors comfortable with social infrastructure projects in the United States?

MS. MOSHIASHVILI: More education is needed before these projects can go ahead. PPPs would stand a better chance than privatization. There is a notion that certain infrastructure should be owned by a municipality. Understanding the experiences in other jurisdictions could be of benefit. Investors will want to understand how vital the asset is for a particular community, the benefits that it would provide to that community and the risks associated with the particular jurisdiction.

MR. FRIED: Jane Garvey, could you share with us what challenges you faced in the Long Beach courthouse PPP transaction?

MS. GARVEY: You have many of the same challenges as in transportation, but facilities like courthouses are often in the

center of a community, so paying attention to urban design becomes even more paramount. We put a big emphasis on the urban design. The challenge for the concessionaire and the investor is striking the right balance between a beautiful urban design and a competitive bid.

MR. FRIED: Tom Pelnick, what do you foresee for the Ohio River bridges project?

MR. PELNICK: I am very optimistic. The state has decided the project is a priority and makes sense. Governor Daniels clearly supports it. The project makes commercial sense. The state has the legal authority to do it. The team overseeing it is commercially reasonable. The state hit its target date with the release of the RFQ. Now it is up to the market to give the state at least one proposal to consider. We think it could get to commercial close this year.

MS. GARVEY: They did a terrific job setting up that bridge authority. Excellent leader, very clear view of what they want to get accomplished, and to their credit, they approached that very deliberatively and carefully.

MR. FRIED: Paul Ryan, what is your view of the I-77 HOT lanes projects?

MR. RYAN: North Carolina has shown it is open to innovation. It is acutely sensitive to what an attractive market is in terms of construction cost and has moved quickly. The state has a good track record, which is so critical in this space.

MR. BUTCHER: The Tappan Zee bridge in New York would be great if it came to a PPP model. There is a lot of interest around it at the moment. The project is in a design-build procurement, but the state will have to find the money to pay for it. If the state does not have the money, then it will have to look to the private sector for funding.

Future of the Market

MR. PELNICK: While there are tremendous needs in the market, there are also significant challenges. The availability payment model could facilitate more projects, but there is still a challenge with debt capacity. If states and municipalities make the basic PPP decision because they do not have debt capacity, then that will restrict the use of availability payment models. The need is there. We are optimistic that the United States will remain a good market.

MR. BUTCHER: There are 30 states with PPP legislation, but there are not yet 30 states doing PPPs.

MS. GARVEY: If you look at the pipeline between now and 2015, a pretty conservative estimate is / continued page 10

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US FINANCIAL INSTITUTIONS may become subject to a new financial transactions tax in the European Union, starting in 2014, if plans to extend the proposed tax are agreed by the European parliament later in May.

However, it is equally possible that the tax may never be introduced and its planned introduction shelved.

A quiet battle has been raging in Europe since September 2011 when the European Commission presented draft legislation to introduce a financial transactions tax or FTT. While the majority of EU member states, led by Germany and France, support the introduction of an FTT, others, particularly the United Kingdom, have been vocal in their opposition. Earlier this month, the EU committee in the upper house of the British parliament, the House of Lords, warned that 70% of the tax raised would come from UK financial institutions.

While it is theoretically possible that the UK and certain other member states might opt out from the FTT, such an opt-out may not be practical if the FTT is introduced throughout the euro zone. Findings of a report from one of the big four accountancy firms suggested that the significance of the City of London within EU financial markets is such that even if the UK opted out, 50% of the cash would still come from UK trades. With that level of UK-based collections, it is perhaps unlikely that the UK would forgo the right to share in the income from the tax that would, presumably, be a consequence of opting out.

Under the 2011 proposals, tax will be due on qualifying transactions, excluding primary issuance, in certain financial instruments, including shares, bonds and derivatives. Share and bond transactions are expected be taxed at 0.1% of the higher of the payable consideration and market value, and derivatives at 0.01% of notional amount. Bank loans, mortgages and "day-to-day" financial activity would be outside the scope of the FTT.

The FTT was originally planned to apply only where at least one / continued page 11

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about $35 billion for states that have hired financial advisors and taken the step really to move. It is important to watch the legislation. Our job continues to be education and, as often as we can, to speak to policy makers about what the implications are and also the benefits.

MR. ANDERSON: Let's take advantage of the building pool of precedents, of successful stories that we have. Ontario is not that far away. Ontario has a big, robust PPP program. It is a bit of a blind spot for Americans not to look outside US borders. We are not as integrated in North America as we probably should be. There are some good stories there that we can share with state officials.

MR. RYAN: We are encouraged anecdotally by what we see in terms of PPPs being taken seriously and being thoroughly analyzed, which was not happening two years ago. Interest in PPPs is more systemic.

MS. MOSHIASHVILI: We all talk about uncertainties, but these uncertainties create opportunities. People are more focused in the US, and it is a pretty exciting time. ◎

California Rules Worry Out-Of-State Generators

by William A. Monsen and Briana Kobor with MRW & Associates, LLC in Oakland, California

California is tightening the rules on how utilities can use electricity products, including unbundled renewable energy credits, from power projects in neighboring states toward meeting state targets for renewable energy use. The new rules could end up in court over whether they impede interstate commerce in violation of the US Constitution. In the meantime, development of some projects in nearby states has slowed and valuations for such projects have fallen.

The new rules apply to renewable electricity and RECs sold under contracts signed with California utilities after June 1, 2010. Amending an older power contract could subject the revised contract to the new rules.

California's regulations for meeting renewable energy goals are continuing to evolve amidst controversy. A bill the governor signed in April 2011, called SB 2 (1X), increased the amount of electricity from 20% to 33% that utilities and other load-serving entities in the state are required to supply from renewable sources by 2020. Renewable energy currently accounts for 21% of electricity delivered by California's investor-owned utilities to their customers.

SB 2 (1X) reworked the state renewable portfolio standard or RPS program to divide renewable energy products into three categories.

Category 1 is largely electricity from sources inside California or that can be delivered to California. The category includes renewable electricity that is directly connected to a California balancing authority (CBA). Examples of CBAs are the California Independent System Operator, the Sacramento Municipal Utility District and the Los Angeles Department of Water and Power. Category 1 also includes energy that can be directly scheduled from the generator into the CBA without substituting electricity from another source, meaning that the seller must obtain transmission service from its first point of interconnection to a CBA. While firm transmission rights are not required to be considered as a category 1 resource, such transmission rights would make the out-of-state renewable resource more attractive to purchasers in California. Finally, category 1 also includes electricity delivered under an agreement for dynamic transfer to a CBA. Category 1 is aimed at ensuring that electricity generated by the RPS-eligible resource is consumed in real time by California customers.

Category 2 is output from renewable energy resources that has been firmed and shaped prior to being delivered into a CBA. An example of a resource that provides firmed and shaped power would be a wind generator that delivers energy to a third party and then the third party delivers energy at a different time or with a different pattern than the original generation to the ultimate purchaser in California. Even though these types of transactions usually involve out-of-state renewable generation, this is not a requirement for such an arrangement. Since the firmed and shaped energy is delivered with a pre-determined pattern, this product can provide firm energy to the purchaser if the delivering entity obtains firm transmission rights to the CBA.

Category 3 includes unbundled RECs as well as electricity that does not fit in the first two categories.

The following table summarizes the three resource categories:

Breakdown of California Renewable Resource Categories	
CATEGORY 1	Direct connection, scheduling without substitution, or dynamic transfer to a California balancing authority
CATEGORY 2	Firmed and shaped resources delivered to a California balancing authority
CATEGORY 3	Other resources and unbundled RECs

SB 2 (1X) places different limits on the percentage of energy supplied by resources from each category during three compliance periods.

In the early years of the program, SB 2 (1X) allows utilities to meet a larger percentage of their RPS compliance obligations with category 2 and 3 resources such as unbundled RECs or firmed and shaped generation from out-of-state resources. However, the percentage of renewable electricity that must come from category 1 sources, generally sources inside California or that deliver to a CBA directly, increases over time. The three compliance periods are: prior to 2014, from January 1, 2014 through December 31, 2016, and January 1, 2017 and beyond. The figure on page 12 shows the targets for each category for each of the compliance periods.

The level of category 2 and 3 resources — in which most out-of-state resources are expected to fall — declines from 50% of total RPS compliance by the end of 2013 to 25% by the beginning of 2017. Category 3 resources get hit the hardest: an individual utility (such as Pacific Gas & Electric) can meet no more than 25% of its RPS obligations in 2013 from category 3 sources, and this level shrinks to 10% for 2017 and beyond.

These definitions and targets mark a significant departure from California's previous approach. Under the prior RPS rules, there was no required minimum amount of directly connected or dynamically scheduled resources. Also, firmed and shaped resources (now category 2) were key tools for utilities to meet their near-term compliance obligations.

On the other hand, the new RPS law does not present much of a change in the ability of utilities to use unbundled renewable energy credits, called "TRECs," for RPS compliance, at least through the end of 2014. TRECs are renewable attributes associated with generation from renewable resources. However, unlike bundled renewable transactions, / continued page 12

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party to the chargeable transaction is a financial institution established, or deemed to be established, in the European Union. However, at the end of April, the EU Economic and Monetary Affairs Committee proposed that the charge be expanded to include transactions between non-EU parties if the securities being traded are issued by a company in a member state that has opted for FTT. So, by way of example, a securities trade between a US institution and one established in, say, Japan would be subject to the FTT if the traded securities were issued in France. Support for the new proposal within the committee was far from unanimous, but the resolution was eventually passed by 30 votes to 11.

The picture remains confused. Prior to the French elections, Mr. Sarkozy indicated that France might go it alone in introducing a form of FTT later this year, and EU policy makers have been looking to expand the 2011 original proposals.

At the same time, there has been significant lobbying from the financial sector against any form of FTT, and the EU member states with most to lose continue to oppose it.

What is certain is that even if it does go ahead there are many problems still to be resolved: not least the question of how the tax would be enforced where neither party is established in an EU state that has introduced the FTT.

The 2011 proposals provide for joint and several liability so that the EU party to a trade would be liable for the non-EU party's failure to account for FTT, but if neither party is established in a state that has elected to charge FTT, it is difficult to see how the tax could be effectively collected.

RESCISSIONS remain under study.

The US tax authorities have generally let the parties to a transaction rescind it as long as the rescission occurs in the same tax year and the parties are restored to the same position economically as if the transaction never occurred. / continued page 13

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the purchaser of TRECs does not also take delivery of the physical electricity generated by the renewable generator. Until now, the policy of the California Public Utilities Commission has been to allow utilities to use TRECs to meet up to 25% of their RPS compliance obligations through 2013. SB2 (1X) did not change this. However, it did extend restrictions on TREC usage for RPS compliance after 2013. (For a full discussion of California TRECs, see "Using Tradable Renewable Energy Credits in California," by Laura Norin and Heather Mehta of MRW & Associates in the March 2011 *Project Finance Newswire*.)

California is making it harder for power projects in neighboring states to supply renewable electricity and RECs to California utilities.

Help For California Projects?

Among other things, SB 2 (1X) has proven controversial because of the legislation's clear preference for resources from category 1 and the inherent difficulty for out-of-state generators to meet category 1 requirements.

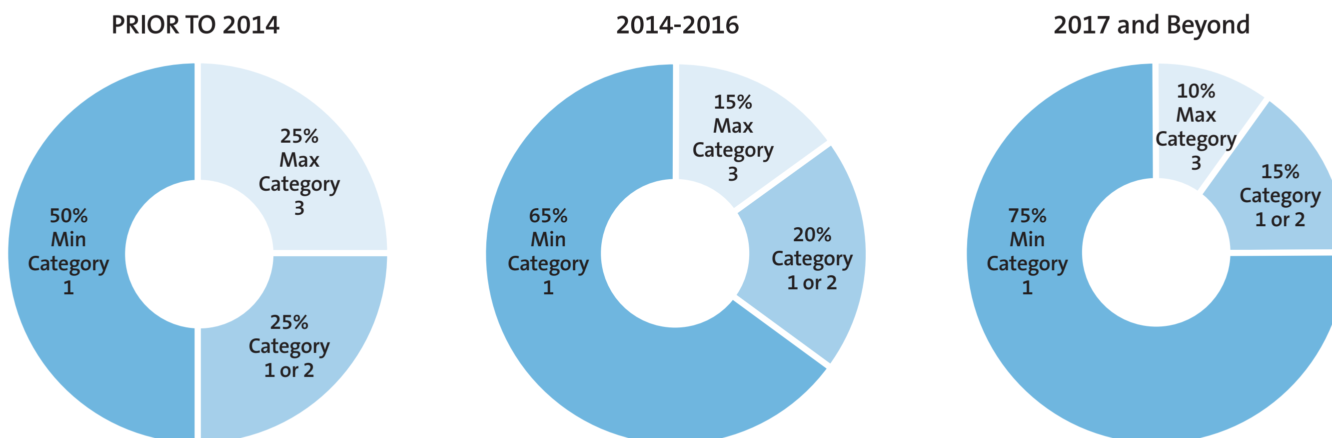
Some opponents of the new RPS rules claim that the law's clear preference for category 1 resources creates an unfair advantage for generators located within (or in close proximity to) a CBA. Indeed, some entities claim that category 1 resources are three times more valuable than category 2 resources and are as much as 40 times more valuable than category 3 resources.

While generators located within or near CBA boundaries would have little trouble meeting category 1 requirements, more distant generators will need to meet the more nuanced requirements for scheduling without substitution or dynamic scheduling in order to qualify for category 1.

Developers working on projects outside of California are concerned that the shrinking percentage of resources from categories 2 and 3 that can be used to meet future RPS compliance will undercut their development efforts.

The Cowlitz County Public Utility District in Washington state suggested to the CPUC in a recent filing that most out-of-state generators will be unable to sign contracts that qualify for category 1 treatment. It said the new rules discriminate against out-of-state generators and, as such, violate the Commerce Clause of the US Constitution.

California RPS Compliance Targets by Category



Commerce Clause

The Commerce Clause bars states from erecting unfair barriers to interstate commerce.

Several groups are supporting the request by the Cowlitz Public Utilities District to the CPUC for a rehearing or reexamination of how the CPUC is implementing SB 2 (1X). The groups are the Western Power Trading Forum, the Alliance for Retail Energy Markets, the Retail Energy Supply Association, and Marin Energy Authority. Two groups are opposing the request: the Independent Energy Producers Association and The Utility Reform Network.

Much of the controversy boils down to whether SB 2(1X), with its limits on different categories of electricity, discriminates based on state lines and, if so, whether any discrimination can be justified by reasons other than economic protectionism. While California generators are more likely to be located in or near a CBA, the boundaries of the CBAs are not drawn on state lines and include interconnection points that extend into parts of Oregon, Nevada, Utah and Arizona. Proponents of the program argue that this means the new rules do not discriminate against out-of-state generators. Opponents say that the requirement for a renewable resource to deliver to a CBA in order to be a category 1 resource is a burden in practice for renewable generators outside California.

Opponents also point to a statement by California Governor Jerry Brown when he signed SB 2 (1X): "This bill will bring many important benefits to California, including stimulating investment in green technologies in the state, creating tens of thousands of new jobs, improving local air quality, promoting energy independence, and reducing greenhouse gas emissions." Many believe that the California legislation is ripe for a challenge based on the Commerce Clause.

Bust for Northwest Renewables

The uncertainty surrounding the new RPS rules in California has helped wreak havoc on renewable energy development in the Pacific Northwest. Between 2005 and 2011, installed wind capacity in the Northwest grew from 1,000 megawatts to roughly 6,000 megawatts. Randall Hardy, a former administrator of the Bonneville Power Administration, said the rush has cooled since California enacted SB 2 (1X). He sees "little or no [regional] renewables development in the next two, three years. There just aren't any buyers out there." With the advantages the California program gives to in-state renewables, developers of renewable resources in / continued page 14

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The IRS may now be having second thoughts about this policy.

It is no longer issuing rulings to taxpayers who want to rescind transactions, and it committed in its annual business plan to issue new guidance by the end of June. However, that guidance is now proving difficult to write.

There is sympathy at the IRS for giving taxpayers the ability to fix mistakes by rescinding transactions, but a subjective test that requires an IRS agent to determine the intention of the parties is hard to administer. There is little sympathy for letting companies do retroactive tax planning.

The IRS associate chief counsel for passthroughs and special industries — the part of the IRS that deals with partnerships and the energy industry — issued five private rulings between 2002 and 2008 allowing rescissions. The associate chief counsel for corporate taxes issued at least 15 rulings between 2005 and 2011. The most recent was in June 2011.

The rescission doctrine dates to a 1940 US appeals court decision in Penn v. Roberston *and a 1980 ruling, Revenue Ruling 80-58.*

TAX-EXEMPT STATUS proved elusive for a solar company.

A US solar company tried to persuade the IRS to treat it as a tax-exempt entity on grounds that it installs rooftop solar systems and provides electricity to low-income people. If the company had succeeded in persuading the IRS, then it would not have had to pay income taxes and anyone making contributions to it would have been able to deduct them. The solar company planned to keep any revenue from selling excess electricity from the systems into the grid.

The solar company kept changing the description of what it planned to do during talks with the IRS. It started with a plan to deal solely with people earning less than $30,000 a year but then changed this to people earning up to 120% of the area median income. The IRS said it did not see how the solar / continued page 15

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the Northwest may see limited opportunities for new power contracts to sell electricity into California. The fact that most utilities in the Pacific Northwest have already procured enough renewables to meet their own states' RPS obligations through 2016 is just another blow to developers in that region.

Some of the more dire predictions regarding the impact SB 2 (1X) might have on renewable generators located far from California may be borne out if the results of the ongoing request for offers from renewable generators by the California utilities are indicative. The most recent news from the Pacific Gas and Electric Company renewable solicitation is that PG&E has decided to remove all proposals to sell PG&E unbundled renewable energy credits from the shortlist. PG&E also removed from its shortlist two offers from out-of-state generators who did not propose direct connection to the California grid.

Market Outlook

To the extent that the new rules restrict the supply of RPS-eligible resources, economic theory suggests that projects that qualify under category 1 will be worth more and there will be a disincentive to develop new projects whose output falls under categories 2 and 3. Even in cases where out-of-state projects can qualify under category 1 or 2, the increased costs of firm or non-firm transmission rights to ensure that these resources qualify may make these projects uneconomic. If prices increase for renewable electricity from out-of-state projects, then this could run afoul with another element in SB 2 (1X): a still-to-be defined cost containment mechanism.

While it is unclear what will happen with the controversy over California's alleged Commerce Clause violation, the new legislation is already affecting the market for out-of-state renewables. California appears to be counting on in-state renewable projects to carry the state's needed renewable requirements, but even the future of these projects remains uncertain due to issues with project viability, interconnection and permitting. ◎

New Debt Instrument Helps Infrastructure Financings in Peru

by Carlos Albarracín and Augusto Cáceres, in New York

Public infrastructure projects are being financed in Peru by bringing in private parties to build, operate and eventually transfer them to the government, but with a special form of debt instrument backed by payment obligations from the Peruvian government that ensures the private party repayment of its construction costs.

The private party is also assured of receiving its operating and maintenance costs over time if revenue from the project falls short of the amount needed to cover costs.

The government experimented with the concessions it awards private developers of large-scale public infrastructure projects for more than a decade before it found a form of concession that works. All of the projects use a build-operate-transfer or BOT model under which the project is eventually transferred to the government after the private developer has been able to get his capital back plus a return.

Experimentation

Peru has been one of the most active and innovative countries in Latin America in terms of developing essential infrastructure through the use of public-private partnerships.

According to data published by Proinversion, a government agency, for the period 1995 through 2011, Peru awarded 73 concessions to private developers for infrastructure projects involving investment commitments of approximately US$14 billion. More than 60% of the projects have been completed and are currently operating. Peru's success in attracting private sector investments to develop public infrastructure projects has been credited by many to the introduction in the early 1990s of pro-market economic policies and a well-designed privatization and deregulation program by former President Alberto Fujimori and the continuation of these policies by Fujimori's successors, Alejandro Toledo and Alan Garcia.

As recently as the early 1990s, substantially all of Peruvian infrastructure and services were owned and operated by state-owned companies, which were poorly managed and lacked funding. These companies had no funding other than govern-

ment grants and no access to local or international financing. In order to promote private sector investment in these companies and reduce government spending, in 1991, the Peruvian government launched a comprehensive privatization program to divest state-owned assets and companies through auctions and the granting of concessions. This privatization program included several investor-friendly features designed to promote foreign investor participation. They included equal treatment of domestic and foreign investors, tax stability agreements and protection under bilateral investment treaties. Peru is a party to 32 bilateral investment treaties that ensure legal protection for private investments in various sectors.

In the mid 1990s, the Peruvian government switched its focus from privatizing existing infrastructure to granting BOT concessions to projects ranging from ports and airports to toll roads, power plants and transmission assets. However, this initiative was unsuccessful because is coincided with a downturn in the local economy. It was also a period of local political unrest.

New BOT Concession Structure

In the early 2000s, the government overhauled its private investment promotion agency, Proinversion, to step up the effort to promote private sector involvement in public infrastructure.

The BOT concession structure designed for this purpose (known as *concesión autosostenible*) benefited from several innovative risk mitigation features such as providing "step-in" rights to the project lenders, naming the lenders as direct beneficiaries of a portion of any termination compensation payments, and providing for U.S. dollar-indexed or inflation-adjusted rates that allow concessionaires to repay the project lenders and earn an adequate return on their investments.

Examples of projects implemented under this BOT concession regime include the 30-year Lima international airport concession awarded to a consortium of local and European investors and the 25-year Red Vial 5 concession awarded to Graña & Montero to build Red Vial 5, the only highway linking metropolitan Lima to Peru's productive regions in the north, Ecuador and Colombia.

However, the design of this initial BOT concession structure remained flawed. Some large-scale projects were completed using it, but financing sources (other than the multilateral lending agencies) remained scarce. They were deterred by the fact that the concession structure did / continued page 16

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company was engaged exclusively in relieving poverty or another charitable purpose. The ruling is Private Letter Ruling 201210044. The agency released it in March.

It is unusual to see a negative ruling; most taxpayers withdraw the ruling request when told that the IRS will rule against them. The IRS gave the solar company a chance to protest, but the company failed to take up the offer.

INDIA AND VODAFONE are now fighting on several fronts in a high-stakes battle over whether the British phone company should have withheld $2.2 billion in capital gains taxes when it bought a roughly 67% interest in an Indian mobile phone business from Hong Kong-based Hutchison Whampoa for $11.2 billion in 2007.

The Vodafone CEO met with the Indian finance minister on May 1 to explore a possible settlement where the company would pay $700 million rather than the full $2.2 billion. However, the Indian government refused to negotiate and announced that the tax bill had increased to $3.7 billion due to additional interest on the back tax liability.

Vodafone insists it does not owe any taxes. A Dutch subsidiary of Vodafone bought a Cayman Islands subsidiary of Hutchison Whampoa that owned an interest in a mobile phone company in India through several tiers of Mauritius companies. Even if there was a tax, the seller should have paid it on its gain. However, Indian law requires a buyer to withhold tax from the purchase price where the seller is outside the Indian tax net. The Cayman company that Vodafone purchased owned only a 52% stake in the Indian phone company. Vodafone was given options to buy another 15% directly from minority shareholders in the Indian company.

The government lost the case in the Indian Supreme Court in January, and the court declined in March to hear an appeal.

The government then moved to amend the law retroactively to / continued page 17

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not mitigate construction and performance risk (which was substantial due to the historically lower or uncertain demand for services from these projects due to low population density or low traffic projections, in the case of toll roads). These factors made commercial bank and capital markets financing on a limited-recourse basis virtually unavailable.

Peru experimented with the concessions it awards for large infrastructure projects for more than a decade before finding a model that works.

In 2005, the Peruvian government introduced an enhanced BOT concession structure (known as *concesión co-financiada*) in which the government provided financial support to mitigate the construction and performance risks associated with these projects. This new concession structure provides the concessionaire with a guaranteed stream of payments to cover construction costs. To make this new structure financeable on a limited recourse basis, the new concession allows concessionaires to grant a lien on or securitize these payment rights, thereby enhancing the risk profile of the projects and allowing for access to a variety of financing sources (for example, international and domestic capital markets, pension funds, commercial banks) that would otherwise not be available under the traditional concession model.

The success of the new Peruvian BOT concession structure is attributable to a number of factors.

It has an investor-friendly legal framework that includes beneficial features such as equal treatment of national and foreign investors, no restrictions on capital remittance, virtually no foreign ownership limitations, tax stability agreements and investor protection under bilateral investment treaties.

The concession agreement includes "step-in" and other rights for lenders, such as the right to be secured by a mortgage in the concession agreement, receive termination compensation payments, request certain amendments to the concession agreement necessary to make it bankable and, upon default by the concessionaire under the financing arrangement, appoint a new concessionaire based on a pre-agreed objective qualification procedure.

The new BOT structure incorporates something called *Remuneración por Inversiones según Certificado de Avance de Obra*, or RPICAO, a payment mechanism under which, by submitting a construction progress report (*certificado de avance de obra*, or CAO) to a government agency or state-owned company, a concessionaire earns the right to receive compensation for construction costs incurred in connection with a project. RPICAOs are denominated in either US dollars or local currency (adjusted for inflation), and represent an irrevocable and unconditional payment obligation of the relevant government agency or state-owned company. RPICAOs are not direct obligations of the Peruvian government; however, the Peruvian government is obligated to honor their payment if the relevant government agency or state-owned company fails to make the payment. RPICAOs are not treated as Peruvian sovereign debt like their predecessors called CRPAOs. The Peruvian government had originally declared CRPAOs not to be sovereign debt obligations, but in 2010 the International Monetary Fund determined that CRPAOs were to be treated as sovereign debt of Peru. This discouraged the Peruvian government from continuing to use CRPAOs for these projects.

The new BOT structure also incorporates something called PAMO (*Pagos por Operacion y Mantenimiento*). These are payments to cover operation and maintenance costs of the concession. These payments are made to the concessionaire in the event that it does not receive enough toll or fee revenue from the project.

The credit enhancement features provided by RPICAOs and CRPAOs made the projects more financeable. Certain financing sources, such as local pension funds and domestic and international capital markets, were not available to these projects prior to these enhancements.

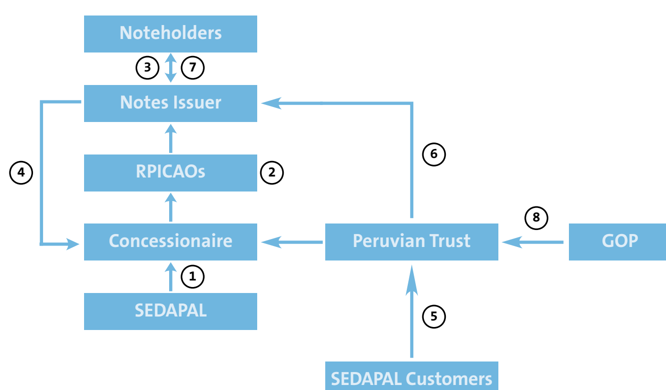
RPICAO-Backed Notes

The real innovation has been the use of RPICAO-backed bonds that are issued in the domestic or international markets.

The first project financed using RPICAOs was the Huascacocha-Rimac water derivation 30-year BOT concession (US$215 million in total project costs) whose aim was to increase the supply of potable water in the highly-populated districts of Lima and Callao. This project was financed through a local currency denominated international note offering backed by RPICAOs.

The second transaction that used the RPICAO payment structure was the Taboada waste water treatment plant concession (US$330 million in total project costs), which was also financed by a local currency-denominated international note offering.

The following diagram shows the RPICAO structure used to finance the Taboada project:



1. Servicio de Agua Potable y Alcantarillado de Lima, or SEDAPAL, grants the concession to the concessionaire and agrees to issue RPICAOs supported by a guarantee from the Government of Peru ("GOP").
2. Concessionaire sells the right to receive RPICAOs from SEDAPAL to a special purpose vehicle ("Issuer") formed to issue notes backed by RPICAOs.
3. Proceeds from the notes go to the Issuer to purchase the RPICAOs from the concessionaire.
4. The Issuer pays the purchase price of the CRPAO to the concessionaire with the proceeds from the notes.
5. SEDAPAL customers pay water consumption bills into the Peruvian trust that collateralizes payments under RPICAOs.
6. The Peruvian trust makes payments of the RPICAOs to the Issuer as owner of the RPICAOs.
7. Issuer pays principal of and interest on the notes with payments received from the GOP under the RPICAOs.
8. In case funds from the Peruvian trust are not sufficient to pay for the RPICAOs, the GOP pays such shortfall.

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require taxes be paid on indirect sales of assets in India back to April 1, 1962. However, there is a six-year statute of limitations on back tax claims. The government is under international pressure not to put the bill through parliament. The lower house of parliament passed the bill on May 8. The Indian finance minister dismissed concerns about driving away foreign investors during debate on the bill in the lower house. "Please remember, when the investment was also not there, we did not eat lizards," the minister said.

Vodafone filed notice of its intention to force the Indian government into arbitration under a bilateral investment treaty between India and Holland over the Indian threat to amend the tax law retroactively to overturn the Supreme Court decision. Such arbitrations can take years. This is not the first time the Indian government has faced arbitration. It lost an arbitration in February brought by White Industries, an Australian mining company, under a bilateral investment treaty between India and Australia, and the Indian government was ordered to pay a fine of about $4.15 million plus interest and other fees. It also faced a case over the Dabhol power project in the early 2000s that was settled, but reportedly at a cost of roughly $1 billion. It is not clear whether the Vodafone arbitration demand will work since the bilateral investment treaty with Holland does not cover tax disputes.

The saga is a warning to other international companies buying or selling interests in Indian businesses or projects to price in risk that a capital gains tax will have to be paid in India.

MAURITIUS hopes to finish rewriting parts of its income tax treaty with India by the summer.

More than 40% of foreign direct investment in India is invested through Mauritius.

The Indian government is unhappy that Indian companies have been using the treaty to avoid capital gains taxes on asset sales in India by "round tripping" where Indian companies establish residency in Mauritius and then invest in India under the guise of foreign investment. Under the income tax treaty between Mauritius

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CRPAO-Backed Notes

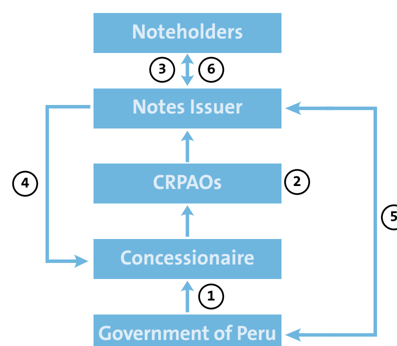
While not used in recent transactions, CRPAOs may be a feasible option for certain projects that cannot be structured using RPICAOs.

CRPAOs are certificates issued by the government of Peru through the relevant ministry or government agency. Each certificate evidences an unconditional and irrevocable obligation of the government to make a payment denominated in US dollars to compensate the concessionaire for its construction costs to date. CRPAOs are freely transferable and, once issued, the government is unconditionally obligated to pay them. The main differences with RPICAOs are that CRPAOs are a direct obligation of the Peruvian government and are represented by negotiable certificates.

CRPAOs were first used in the 30-year BOT concession for the IIRSA toll road projects as part of the IIRSA initiative (*Iniciativa para la Integración de la Infraestructura Regional Suramericana*), adopted by a number of South American countries in 2000. The IIRSA toll roads link northern and southern Peru with Brazil, and provide Brazil with access to several ports located on Peru's Pacific coast. The total cost of these projects was approximately US$1.9 billion, and the projects were financed by a combination of local bonds, international notes and bank loans, all secured by CRPAOs. The credit enhancement provided by CRPAOs was key to securing financing because, while strategic to Peru, the IIRSA toll roads were located in areas of low population density and, therefore, traffic projections were insufficient to cover debt service payments.

A key part of the new model is a debt instrument called a RPICAO.

The following diagram summarizes the CRPAO structure used to finance the IIRSA Norte project:



1. The Government of Peru (GOP) grants the concession to the concessionaire and issues CRPAOs based on completion of construction milestones.
2. Concessionaire sells the CRPAOs issued by the GOP to a special purpose vehicle (Issuer) formed to issue notes backed by CRPAOs.
3. Proceeds from the Notes go to the Issuer to purchase the CRPAOs from the Concessionaire.
4. The Issuer pays the purchase price of the CRPAO to the Concessionaire with the proceeds from the Notes.
5. The Government of Peru makes payments of the CRPAOs to the Issuer as owner of the CRPAOs.
6. Issuer pays principal of and interest on the notes with payments received from the Government under the CRPAOs.

The boom in infrastructure projects experienced by Peru in recent years is unprecedented for the country, and for most other countries in Latin America. Two elements that contributed to this success are Peru's consistently strong macroeconomic performance and a concession regime designed to promote investment in large infrastructure projects and to tap non-traditional financing sources, such as local pension funds and the domestic and international capital markets.

Peru has an ambitious strategy to upgrade its infrastructure. The Humala administration will probably face challenges as it will be required to provide substantial credit support for several large projects currently in the government's pipeline while, at the same time, trying to maintain a sound sovereign credit profile. This promises to be a true balancing act, particularly in times of economic turbulence and political uncertainty. ◎

The US Distributed Solar Market

The renewable energy market in the United States is moving into a more challenging phase. A tax credit for wind farms expires at the end of this year. Low natural gas prices are making it difficult to compete for long-term power contracts to supply electricity to utilities. However, the one bright spot in terms of deal flow remains the rooftop solar market. Falling panel prices and a financing model where developers offer customers the ability to lease or buy electricity from rooftop systems that the developers put on customer homes have helped. The business is strongest in states where retail electricity prices are high and where customers qualify for rebates from utilities or local governments as an inducement to go solar.

A panel of solar industry veterans talked about the distributed solar market at an Infocast conference in San Diego in December. The panelists are Paul Detering, CEO of Tioga Energy, Rob Krugel, managing partner of Smart Energy Capital, Mark Lerdal, CEO of MP2 Capital, Ned DeWitt, vice president of sales for Borrego Solar, and Perry Rosensweig, a business development manager with Mitsubishi Electric & Electronics USA. The moderator is Keith Martin from the Chadbourne Washington office.

MR. MARTIN: The company earnings reports in the latest Photon magazine were decidedly mixed, maybe even grim. Many large solar companies have been reporting disappointing results this year. Is this a problem solely for people who manufacture solar panels or is it a more widespread problem also for developers?

MR. DETERING: Panels prices have fallen steadily for at least the last three years. This has enabled developers to do projects that they might not have been able to do before. However, falling prices create their own challenges. Some panel suppliers are in the middle of restructuring their operations. It is harder for developers to predict where they will be able to buy panels in the future and at what cost.

MR. KRUGEL: This is a sign of an imbalance between supply and demand. We are dealing with a subsidized market on a global basis. The subsidies are not large enough or predictable enough to produce as large a demand for product as the manufacturers were expecting when they built new factories.

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and India, neither country can impose capital gains taxes on residents of the other country. Mauritius does not collect any capital gains taxes.

The treaty also limits India from collecting more than a 5% withholding tax on dividends, but India neutralized this benefit years ago by moving to replace its higher withholding tax on dividends with a tax on the Indian company when it distributes earnings.

India is also unhappy with the large number of foreign companies that use the Mauritius treaty to avoid capital gains taxes when they exit investments in India. Many foreign investors hold shares in Indian companies through Mauritius holding companies. However, the government seems inclined to attack this problem by tightening the requirements for accepting tax residency certificates from Mauritius rather than by amending the treaty. A finance bill that is expected to pass parliament by the summer will require that any residency certificate produced must contain "such particulars as may be prescribed." This would give the government the tools to require that there be substance behind the claim to be a real tax resident of Mauritius.

Meanwhile, Mauritius adopted a new form of limited partnership in December that may appeal to foreign investors in place of offshore holding companies. Mauritius is also keen to become a gateway for foreign investment into Africa. It already has 12 income tax treaties with African countries, and another eight treaties are awaiting ratification.

STATE TAX CREDITS can be sold in some states.

The IRS addressed the tax consequences of such a sale in a chief counsel advice or memo by the national office to the IRS field office in Boston.

It said that anyone selling a state tax credit must usually report the sales proceeds as a capital gain. Since the seller has a zero basis in the tax credit, the entire amount received is gain. The purchaser takes a basis in the tax credit equal to what it paid for the

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Rooftop Solar

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The greatest distress is in the upstream end of the market: the manufacturers with large fixed costs. The developers who operate downstream are nimble and flexible, and the impact on them has not been as great. They have fewer fixed costs.

MR. LERDAL: Manufacturers are being forced to compete by offering longer and longer warranties. This causes customers to look more closely at the balance sheets of the manufacturers to assess whether they are likely to be around long enough to make good on such warranties.

The most challenging thing about the US distributed solar market is how quickly the landscape can change.

Biggest Challenges

MR. MARTIN: What are the most challenging things about the US market?

MR. KRUGEL: Incentives at the state and local level are not as robust as the industry would like. The market is fragmented. Each local area has its own complicated rules on net metering and permitting. We are dealing with a fairly nuanced and complex market, and navigating that complexity requires a certain level of skill and discipline.

MR. MARTIN: Several years ago, the CEO of the US subsidiary of Enel, the Italian utility, told me the US power market is too chaotic. It is an odd thing to hear from an Italian. But he was right. We have 50 different sets of state rules — 51 if you count the District of Columbia — and a separate federal system on top of them. What else is a strain?

MR. LERDAL: It is more complex than that because each utility has its own set of rules as well. Overlay 400 utilities in 50 states and the regulatory system is pretty complex.

Another issue is the Treasury cash grants the last three years really allowed any Tom, Dick and Harry to get into the distributed solar business because the equity was provided by the United States government.

What happens after the cash grants go away is probably the biggest question that we will be facing in the next six months. We have seen the tax equity market able historically to handle 200-megawatt projects and portfolios of 1,000 rooftop solar systems. But the smaller distributed solar developers have trouble raising tax equity. Few tax equity investors are interested in writing only a $3 million check. The project pipelines of these smaller developers are just too small.

MR. DEWITT: The most challenging thing about the US distributed solar market is how quickly the landscape changes. There are 29 or 30 different state renewable portfolio standards whose rules keep changing. There was a 10% investment credit at the federal level, then it went to 30%, and then there was a Treasury cash grant. Trying to grow a business within an environment where major elements of putting deals together change so frequently is very challenging. You have to be really nimble.

MR. DETERING: Let me inject a note of optimism. The audience must be wondering why any of us does this for a living. Frankly, if the landscape that we see today with the highly fragmented nature of distributed generation, the 50 different state rules, the 400 different utilities, cash grant yes and cash grant no, bonus depreciation maybe and maybe not, and all the different state-level subsidies were expected to remain the landscape in the future, then I would not be in this business. It is way too complex.

The problem is not just in this country; the feed-in tariffs in Europe are not a whole lot better. Germany is on and off every six months.

Why do we do this?

We do it because we believe we are on the road to grid parity after which we will not need all these subsidies. The veil of complexity will be lifted, and a lot of these problems will go away.

MR. ROSENSWEIG: Some of the complexity will go away, but not all of it. Even if it were not for the different tax and incentive issues, just dealing with the Balkanized permitting

departments — it is not that you have 51 different jurisdictions, you have thousands — is a nightmare of its own dimension. Each one has its own personality. A customer told me recently that he knows the local building code better than the inspectors do, but each inspector enforces his own version of the code. This slows installation and adds to the cost of each project. The industry needs to come together as conventional energy industries have and work toward greater uniformity in building codes for solar projects.

Chinese Inroads

MR. MARTIN: Solar World and the six other US panel manufacturers filed a petition with the US government in October asking for large anti-dumping and countervailing duties against Chinese solar cells. They are alleging dumping margins as high as 233%. How significant is this? What effect do you see on domestic solar development?

MR. DETERING: It is ironic — some people would call it rich — that you have a German company filing a complaint in the US against its competitors in China. It is a little like your neighbor coming into your backyard to pick a fight with one of your other neighbors. It is unfortunate that this is taking place in the US because the Chinese have started their own investigation into unfair trade practices of US suppliers.

What this is doing in the short run is creating uncertainty. Someone starting work today on a new commercial-scale solar project is likely to start building it next summer. The trade complaint has left us unsure what panels are likely to cost next summer. It is just another layer of complexity.

MR. LERDAL: The whole situation is like a circular firing squad. I do not see any winners. The trade complaint comes at an unfortunate time given all the uncertainty about the future of other subsidies on which the US industry relies. A big spike in panel prices now would kill a lot of projects and would probably wipe out a number of developers.

MR. ROSENSWEIG: Of course developers do not want higher panel prices. However, let the trade complaint be considered on its own merits. Part of the reason for the complete lack of manufacturing of modules in the United States is because of the incredibly low price of modules imported from China. You can hardly ask me, a Japanese manufacturer manufacturing is Japan, to be objective about this.

MR. MARTIN: How are the Chinese faring in the effort to gain market share and, if they are managing to increase it, how are they doing it? Is it purely on price? / continued page 22

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credit. When the purchaser uses the tax credit, it has a gain or loss, depending on whether its basis is more or less than the taxes it uses the credit to offset. For example, if it paid $40 for a $50 tax credit, then it has a gain of $10 when it uses the credit to offset $50 in state taxes. It also has a deduction for $50 in state taxes that it will be treated as having paid.

The memo is Chief Counsel Advice 201147024.

CARBON SEQUESTRATION CREDITS are turning into a battleground between gas producers and others.

The US tax code allows tax credits to be claimed for capturing carbon dioxide and sequestering it underground so that the carbon dioxide does not add to global warming. The CO_2 must be captured at an "industrial facility" owned by the taxpayer. The credits are $20 per metric ton of CO_2 stored underground. They are $10 per metric ton for CO_2 used as a tertiary injectant to recover oil or gas.

Gas producers want credits for removing CO_2 from the gas they produce. US Senator Kay Bailey Hutchinson sent a letter to the IRS commissioner on behalf of gas producers last summer. Hutchinson is from Texas. Others say that this is not capture at an "industrial facility." There was a meeting with senior Treasury tax officials in early April.

The stakes are high. The IRS is supposed to track how much CO_2 has been sequestered on account of the tax credits and announce when 75 million tons are reached. No more tax credits may be claimed after the year in which the 75-million-ton target is reached. Total US greenhouse gas emissions are about 6.8 billion tons a year, of which roughly a third come from power plants.

HART-SCOTT-RODINO filing thresholds have been increased.

The Hart-Scott-Rodino Act is a US antitrust law that requires certain acquisitions be reported to the US Federal Trade / continued page 23

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MR. DEWITT: I don't think it is purely on price, but price is an important factor.

MR. MARTIN: What is another important factor?

MR. DEWITT: Quality. The top-tier manufacturers are investment grade, and the quality of their products is high. If the Chinese were peddling low-priced merchandise of inferior quality, then they would have nowhere near the market share they have today.

MR. KRUGEL: The Chinese are also offering creative financing terms.

MR. LERDAL: Not everywhere. The utilities still have a monopoly in many parts of the country on the electricity supply. They still hold great sway with the public utility commissions, and they still get a rate of return based on the number of assets they own. They have no interest in ceding ground to others who want to supply electricity in their service territories.

MR. MARTIN: But the utilities can't stop someone from putting a panel on his roof.

MR. DEWITT: They can't stop you, but they can make life difficult. Why isn't Florida covered in rooftop solar panels?

MR. MARTIN: At some point, it will have to cede its title "sunshine state" to someone else.

MR. KRUGEL: The reason is a combination of economics — you do not see panels on every rooftop in Florida because the incentives are not there to support it — and state protection for the monopoly utilities. In some states, solar growth is inhibited by a prohibition against entering into power contracts to supply electricity to retail customers. In other markets, there are caps on net metering.

Chinese solar panels are selling in the US at a 20% discount from non-Chinese equipment.

MR. MARTIN: Is it possible that distributed solar will make more central station power plants unnecessary in some states?

MR. ROSENSWEIG: For the most part, solar cannot support base load and peaking as central power plants can. Fuel cells can because the electricity is available when you need it just by pumping more gas through the fuel cell, but solar is an intermittent source of power. Until somebody invents some sort of super battery, it will not be able to occupy that niche.

MR. MARTIN: My impression is that if Chinese solar panels are selling for $1 a watt, US-made solar panels are being sold at $1.25 a watt. Does this sound like the right order of magnitude?

MR. ROSENSWEIG: I think you are looking at a 20% discount between Chinese and non-Chinese panels.

MR. MARTIN: The irony is that because of the way the US trade laws work, the dumping and countervailing duties could end up being considerably larger than that 20% margin.

Transformational Shift?

MR. MARTIN: The Economist magazine predicted 15 years ago that we would soon see the last central station power plant built. It thought the distributed hydrogen fuel cell market was about to take hold, and everyone would soon have a fuel cell the size of a small refrigerator in his house. That didn't happen, but are we about to see such a transformational shift in how electricity is delivered in this country due to widespread deployment of rooftop solar panels?

MR. MARTIN: There has not been much growth in electricity demand in the United States. Is it possible that enough solar panels are being installed to soak up all of the load growth?

MR. ROSENSWEIG: There will still be a need for central station power plants to provide a stable electricity supply. Solar will not be able displace such power plants until it gets much wider penetration than the 1% to 2% market share it has today.

MR. MARTIN: Is there anybody on this panel who thinks we are on the verge of a transformational shift, or is rooftop solar just too small? Will it always be too small?

MR. DETERING: I don't think it is a question of being too

small. US electricity demand is very large and will continue to grow. Nothing changes overnight. It will take a long time before distributed solar is a threat to central station power plants because of the sheer magnitude of the US market.

I spent many years in the telecommunications industry and lived through deregulation of that market. There are a lot of interesting parallels. It used to be when you wanted phone service for your office, you got it from your local monopoly phone company. It had a central switch in some building downtown, and it delivered a phone handset to your desk. That whole industry completely transformed itself, and the centralized model has given way to a decentralized model. We all carry mobile phones. But think about what happened to phone service in this country. The quality of phone service has gone down tremendously. I am not just talking about mobile phone service; I am also talking about landlines. I would suggest there is nobody in this room whose landline in his office works as well as it used to 25 years ago. Now, when we look at the trade-offs, we say it was worth the trade-off; we hope the quality comes back.

In the power industry, a similar dip in quality will not be acceptable. We will see lots of distributed generation. There will not be wholesale adoption overnight. However, it is a huge market, and there are tremendous opportunities for early movers in this market.

MR. MARTIN: You made an interesting point about phone service. Newspapers, the recording industry, retailing and book publishing are examples of industries that have had fundamental changes forced on their business models by changes in technology. Are we about to see a similar fundamental change forced on the utility business model by distributed generation?

MR. DETERING: Yes. It is already happening. For example, here in California, there is a 5% limit on distributed generation, after which the utilities are not required to allow any more net metering. That needs to be changed because we will bump up against that 5% cap sooner than we think. Go over to Germany, where the penetration of distributed generation is much higher already. The utilities are already coping with both the technical and the economic effects of high penetration by distributed generation in those markets.

MR. DEWITT: We are close to an inflection point where solar really takes off. Probably the most exciting time to be in the industry will be when it goes from 2 to 3% of the US electricity supply to 15%. Those will be wild times, and I think they will happen sooner than people are expecting.

MR. MARTIN: Let me ask this one / *continued page 24*

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Commission for review before the transactions can close. The review period is 45 days.

As of March, the statute applies to transactions valued at more than $272.8 million. Smaller transactions of more than $68.2 million must also be reported if one of the parties — for example, the buyer — has total assets or annual net revenues of at least $136.4 million and the other party — for example, the seller — has total assets or annual net revenues of at least $13.6 million.

CHILE is expected to raise the corporate income tax rate to 20%. The rate is 18.5% currently and had been scheduled to drop to 17% in 2013.

The rate hike was part of a plan that the Chilean president presented in late April.

Under the plan, the stamp duty on loans would be reduced from 0.6% to 0.2%. The 6% import duty would be phased out by 2% a year over three years starting in 2013.

A TAX STRATEGY PATENT was denied by a US appeals court.

A real estate company tried to patent an idea where it put real estate into a portfolio that was then divided into shares that were sold to investors. Each investor was considered to own an undivided interest in each property directly as a "tenant in common" (rather than a share in a portfolio company). This allowed investors to defer taxes on gains when swapping real estate for interests in the portfolio.

A lower court invalidated the patent on grounds that abstract ideas at not patentable. A US appeals court agreed in late February. The case is *Fort Properties v. American Master Lease, LLC*. The real estate company claimed it has to use machinery — a computer — to track the investors and portfolio interests. The appeals court was unimpressed.

Business methods and tax strategies have become more difficult to patent.

A Supreme Court decision in the case *Bilski v. Kappos* last year left / *continued page 25*

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more way, and that is, the residential solar rooftop business seems like the cable television business by another name. You have a lot of houses that need to be wired. Will this industry mint new multi-millionaires or billionaires just the cable TV business did people like John Malone?

MR. DEWITT: Yes. We spent a lot of time in the residential space and then exited it. The biggest change since we left has been making finance options available to customers. When we were active in that market, it seemed like an interesting idea, but the banks were not comfortable with it. That model has been figured out to some extent.

MR. LERDAL: I agree with that. You look at SunRun, Sungevity, SolarCity and the number of rooftop solar systems they are installing. Those companies are creating a lot of value.

MR. MARTIN: The U.S. Department of Energy is predicting grid parity for solar by 2014, maybe 2015. One thing that is helping the industry reach scale is tax subsidies on the order of 56¢ per dollar of capital cost. The Treasury cash grant is phasing out. Corporate tax reform in 2013 or 2014 is a risk since Congress might strip most incentives from the tax code in order to reduce the corporate tax rate. How significant a blow is this potential reversal in federal tax subsidies? The industry is like a plane on a runway about to take off. Is it possible the runway will end just before grid parity?

MR. KRUGEL: If it happens in the near term, it would be catastrophic.

Solar Geography

MR. MARTIN: When you look at a map of the United States and think about distributed solar, what do you see? What does the map look like to you?

MR. DETERING: Most of the growth in distributed generation has been in a handful of states and, if you stretch it, two handfuls of states, but when you get to that second handful, there are very narrow veins of opportunity. Even in that first handful, the incentives that are spurring the activity are on and off again. New Jersey was sizzling hot for a couple years and then became overheated. Now it is almost impossible to build projects in New Jersey; the economics have changed. It is very hard to build a business in a market where you have incentives that are on one year and off the next year. The growth will remain spotty until the industry reaches grid parity. Grid parity will be reached first in states that have sunshine and a high retail electricity rates. When I look at the map, I see a hodge podge of activity.

MR. MARTIN: So you see a light turning off in New Jersey. Where do you see the lights about to turn on?

MR. DETERING: There are not many new places where the lights are expected to turn on in 2012. New York looked promising, but the state legislature failed to act, so that state still remains on the cusp. We see solar incentives continuing in a handful of existing states, but we do not see a lot of new states opening up to solar in the next 12 months.

MR. LERDAL: I agree. What I see when I look at the US map is many small markets: very nuanced, very nichey and very local. Local not only from an incentive perspective and an economic perspective, but decisions are made locally. Other than a handful of Fortune 500 companies and national retailers who have pursued solar, the rest of the market is won one installation at a time. It is a particular school district, a particular municipality or an individual business.

Market Drivers

MR. MARTIN: There are four main drivers for the solar business in the United States. They are federal tax subsidies, state renewable portfolio standards, high retail electricity rates and utility rebates to encourage homeowners and businesses to install solar. How do you rank these in terms of relative importance?

MR. DEWITT: For me, the most important is renewable portfolio standards at the state level because they address "What are we going to do?" The other incentives that you mentioned address "How are we going to get there?" or "How are we going to bridge the gap between solar costs and what people are willing to pay?" When we look at the map, the first question we ask is, "Where are the RPS programs?" That is where you will find markets for solar.

MR. MARTIN: Do you see any backtracking in RPS programs? California is moving forward. Are other states moving backwards?

MR. DEWITT: Not really. Some states are adjusting their energy programs. What we see most is new states talking about adopting new programs that sound exciting but then get stalled.

MR. LERDAL: Solar will reach grid parity in selected markets ahead of the rest of the country. It will be a long time in central Illinois where coal is used to make electricity before you can put in new solar and be at grid parity. However, in Bakersfield,

California where people are peak shaving at 4:00 p.m. on an August afternoon, solar is already at grid parity.

MR. MARTIN: So the most important guy on your staff is the guy who forecasts electricity prices.

MR. LERDAL: He is a great guy.

MR. DETERING: The federal tax benefits are even more important in today's market than state RPS programs. They represent more than 50% of the value of a project. It will be critical to be able to monetize them in a post-cash grant world.

MR. ROSENSWEIG: High retail electricity prices are the most important driver for us. Retail electricity prices in places like Hawaii and Puerto Rico are sky high.

MR. MARTIN: How important is the cost of capital to your business? If the cost of capital goes up by 100 basis points, is there a way to quantify what effect that has on your ability to wean customers from the grid?

MR. LERDAL: It is really important, but it is not something I have thought much about for the last three years. [Laughter]

MR. MARTIN: Why? You can't raise it?

MR. LERDAL: I saw that CalTech just did a 100-year bond at 5¼%. Interest rates do not keep me up at night. I am more concerned about tax equity rates, which seem to move independently of interest rates.

MR. MARTIN: Can anyone quantify the effect of a 100 basis point increase in the cost of capital?

MR. KRUGEL: It really depends on the particular project, what the state and local incentives look like and the duration of the investment. It could be worth a penny or two on the electricity rate. I have a different view than Mark Lerdal. Cost of capital is absolutely critical. We strive continuously to improve the efficiency of our capital because that will create more opportunity.

MR. DETERING: There is a critical point that sometimes gets overlooked in these discussions. There is a time lag between when the cost of capital increases and customers perceive that electricity prices are increasing so that we can charge more for our product. If we get into an inflationary environment, it will be a challenging period for the industry.

MR. LERDAL: Most of the country has gas or coal at the margin. Because of the new fracking techniques for drilling for gas, electricity prices will not rise with general inflation in large parts of the country. Paul is right: there will be inflation and the cost of capital will go up because of inflation, but electricity prices will stabilize because the long-term gas prices are likely to remain at $3.30 or $3.50 an mcf.

MR. ROSENSWEIG: Wholesale elec- / continued page 26

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the law unclear about when business methods can be patented. The case involved a patent for a strategy for hedging risk when buying energy commodities. The court said the "invention" was not patentable because it was purely a mental process for doing mathematical calculations to determine how best to hedge a particular risk and then identifying and executing a transaction that the calculations suggested would be a good hedge.

Even though the Supreme Court said the idea was too abstract, it rejected the notion that only inventions involving machinery or physical transformations are eligible for patents. The justices could not agree beyond that where to draw lines. Five of the nine justices signed a majority opinion that suggested that only a narrow range of business methods are likely to qualify for patents. The other four justices joined in three concurring opinions concluding basically that business methods are not patentable.

Congress got into the act last fall. The Leahy-Smith America Invents Act bars the US Patent Office from issuing patents for tax strategies; software for preparing and filing tax returns remains patentable. The ban is prospective. Roughly 150 tax strategy patents that were issued before the law was enacted remain on the books.

The IRS has proposed adding transactions that use patented tax strategies to a list of transactions that must be reported to the agency as potential tax shelters.

SOME PAPER COMPANIES may be filing amended tax returns to get back large refunds from the US government.

All of the companies claimed alternative fuel credits of 50¢ a gallon for mixing black liquor, a by-product of paper making, with waste wood or diesel fuel before using the fuel. International Paper Company said in its 2011 annual report that that it amended its 2009 tax return to take the position that $1.7 billion it claimed that year in alternative fuel credits did not have to be reported as taxable / continued page 27

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tricity prices are tightly coupled to natural gas in most markets in the US, but retail prices are not as tightly coupled. On the west coast, they don't seem to be coupled at all; electricity prices have continued to go up on the west coast in the face of falling natural gas prices. On the east coast, that statement is not as true.

MR. MARTIN: What discount are solar companies offering from current retail electricity rates? What is market?

MR. DEWITT: It varies. The non-profit or public sector people tend to be happy if the deal turns positive after a few years. For private sector clients, the discount does not even need to be 10%, because they are projecting that electricity rates will rise at 3% to 4% a year. A power contract with a 1% to 2% annual escalator works.

MR. LERDAL: It is also a function of how robust the government incentives are in the local market. Last year in New Jersey, people were offering discounts on the order of 75% and, in some cases, free electricity.

Most of the growth in the rooftop solar market has been in just a handful of states.

What Resonates with Customers

MR. MARTIN: Perry Rosensweig, you are on the front line with customers. What resonates most with customers whom you are trying to wean from the grid?

MR. ROSENSWEIG: It is always a dollar and cents decision.

MR. MARTIN: What is your business proposition to them? For example, do you promise them solar electricity at a 10% discount from the retail price charged by the local utility?

MR. ROSENSWEIG: What sells with the facility manager and the CFO is the payback time as compared to the current and the projected rising costs of electricity. If you can get a payback within a three- to seven-year period, a break even, then the project is likely to go. If it is beyond that, the project usually stalls.

MR. MARTIN: Ned DeWitt, you are on the front line, too. What resonates with customers?

MR. DEWITT: There are few things as attractive to customers as saving money in year one. That is why the financing products have been so successful. If you can tell a customer who is paying 12 or 13¢ for electricity that he will be able to pay only 10¢, he will go solar with somebody. Another attraction is not having to put up much capital. Customers have other uses for their money. They don't feel a need to own the solar system.

Turning the Corner

MR. MARTIN: How efficient are the solar systems that you are installing? What is the cost per watt? Where does it need to reach to be in grid parity?

MR. DETERING: Most of what we do is standard crystalline PV, so it is in the 14% to 16% range for conversion efficiency. I don't even know exactly what it is. The reality is that it does not matter, because we look ultimately at the cost per watt to get the system installed. If you know the output, then it is easy to figure the electricity prices that will cover costs and earn a return. In some cases where space is at a premium, conversion efficiency starts to become important, but that does not happen very often.

MR. MARTIN: Where do you need price per watt to be to reach grid parity?

MR. DETERING: A Raymond James study said that commercial systems in the US are going to cost around $2.50 to $2.75 a watt by 2016 or 2017. At that point, large parts of the US commercial market will be at grid parity. Our analysis suggests that you do not have to get that low to get to grid parity.

MR. ROSENSWEIG: The 900-pound gorilla sitting in the corner is greenhouse gas regulation. However, let's assume it will not happen quickly because Europe is even talking about backtracking. If and when it does come about in the United States, it will change the rules of the game for grid parity quickly.

MR. MARTIN: The National Renewable Energy Lab issued a paper earlier this year in which it said German homeowners

paid significantly less for solar equipment than Americans. In 2010, smaller residential systems of three to five kilowatts in size cost $4.20 a watt on average in Germany but $6.90 in the US for the same system. Why the difference?

MR. LERDAL: To be a real cynic, the US figures probably came from the reported data from the 1603 grant program.

MR. DEWITT: I can only speculate. When we put a system on a house, it was incredibly customized. It was a lot of work to get a permit and do the designs properly, and it was really very difficult for us to reach scale. From what I hear, in Germany the rules are very different. The rules are more standardized. There isn't as much hassle dealing with local officials. I wouldn't say they slap the systems on roofs, but it is a lot easier for them; it takes a lot less manpower.

MR. MARTIN: Mark Lerdal, you said that once the Treasury cash grant goes away, that will be a push in the industry toward more consolidation. If you were trying to spot today who will be the survivors of that consolidation wave, what would you look for? How do you spot the companies that are likely to come out on top?

MR. LERDAL: It depends on the part of the value chain on which you are focused. If you are focused on developers, look for developers who have broad relationships with institutional lenders and investors and who have the track records to be able to transact. The capital to grow will have to come from banks, insurance companies and corporate and strategic investors, and one needs to have the credibility as well as scale to be able to engage with those types of entities.

MR. MARTIN: Here's the last question. Answer as succinctly as you can. What do you think we will be talking about on this same panel next year? What will be the main topic?

MR. DETERING: Public policy.

MR. DEWITT: Largely the same issues we talked about today. I don't think any of them will be resolved in the next year. However, I think we will look back on 2012 and it will have been probably a surprisingly good year, better than maybe some of the doomsayers would have guessed.

MR. MARTIN: Rob Krugel, you get the last word.

MR. KRUGEL: Uncertainty. ◎

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income. The company could receive as much as a $580 million refund from the US Treasury, according to *Tax Notes* magazine.

The magazine said KapStone Paper and Packaging Corp. disclosed in its 2011 annual report that it recognized a deferred tax benefit of $63 million after closing a 2009 IRS audit. The company had set aside a reserve for that amount in case it had to pay tax on $178.3 million in black liquor credits it claimed in 2009.

Several other paper companies took the position from the start that they did not have to pay income taxes on the tax credits. These companies included Rock-Tenn Co. and Temple-Inland. In all, 19 companies disclosed claiming black liquor credits worth more than $6.4 billion. The credits were claimed in 2008 and 2009. Congress barred any further tax credits for mixing black liquor in 2010.

Section 87 of the US tax code requires that income tax credits for blending ethanol and biodiesel with other fuels must be reported as income. The tax is a way of taking back some of the benefit and reducing the revenue loss.

> *The paper companies claimed excise tax credits. Since the credits exceed any excise taxes owed on the fuel, the companies had the option to convert them into income tax credits or receive a refund. The IRS must have decided on audit that the refunds do not have to be reported as income.*

MINOR MEMOS. The average time for tax cases that US companies appeal after being told they owe more taxes on audit increased to 494 days in 2011 from 346 days in 2010. The IRS appeals staff is shorthanded . . . Three Mercury Solar customers lost cases in the US Tax Court in April. The facts of each case are similar. Each of the taxpayers bought a rooftop photovoltaic system or solar hot water heater for personal use and also bought a separate unit for investment that Mercury Solar installed on someone else's house. Each taxpayer hired out the job of collecting monthly payments / continued page 29

State of the Tax Equity Market

Many renewable energy projects in the United States are financed in the tax equity market. A panel of four veteran tax equity investors and one veteran advisor talked at the Infocast wind finance and investment summit in San Diego in February about the state of the market before an audience of several hundred people. The focus was on wind projects. The panelists are Jack Cargas, managing director for renewable energy finance at Bank of America, John Eber, managing director and head of energy investments for JPMorgan Capital Corporation, Martin Pasqualini, managing director of the consultancy CP Energy, George Revock, a director at Citigroup, and Jerry Smith, managing director at Credit Suisse. The moderator is Keith Martin with Chadbourne in Washington.

MR. MARTIN: John Eber, what was the deal volume in the tax equity market in 2011?

MR. EBER: We saw about $3.5 billion of tax equity raised for wind farms last year in 19 transactions. Most of the transactions used the unlevered partnership flip structure. There were 13 such transactions. There were five partnership flip transactions in which there was debt at the project or partnership level. We saw one sale-leaseback of a wind farm last year.

MR. MARTIN: What percentage of the tax equity transactions in wind last year involved production tax credits rather than Treasury cash grants?

MR. EBER: About 55% of transactions involved production tax credits. That may sound surprising, but it makes sense. The cost of turbines fell significantly and the capacity factors improved.

The US wind and solar markets raised roughly $6 billion in tax equity in 2011.

MR. MARTIN: So given a choice between a tax subsidy tied to output and one tied to equipment cost, wind companies chose output. What deal volume do you expect this year?

MR. EBER: It is hard to say, but I expect the deal volume this year to be as large as last year if not greater. That's not because of wind financings, but because activity in the solar market is increasing. There were about $2.5 billion in solar transactions in 2011 compared to only $1.5 billion in 2010. Almost all of the solar transactions involve Treasury cash grants.

MR. MARTIN: How did the volume in the market last year compare to the volume in 2007, the last good year before the economy collapsed?

MR. EBER: We saw about $6 billion in total tax equity in the wind and solar markets in 2011. That was a larger deal volume than in 2010.

2012 Forecast

MR. MARTIN: Does anyone else have a forecast for the year ahead? I read that someone said he thinks the tax equity market for wind will be dead after about mid-year.

MR. PASQUALINI: I think that might have been me. I agree with John Eber. Those who were active in the market in 2011 are extremely busy right now. Wind companies that need outside financing are rushing to arrange tax equity. Construction lenders want the developer to have permanent financing lined up before construction starts. Construction must be completed by year end to qualify for production tax credits or Treasury cash grants. There is not a lot of time left.

However, I think we will see another rush of business late in the year from the larger, balance sheet players. There might be a lull of a month or two at mid-year, and then the larger players will bring their business to market and that business will be fairly significant.

I agree that it will be as big a year as last year if not slightly bigger in terms of overall deal volume.

However, we are going to see different wind companies start to wind down remaining projects unless Congress acts early in the year to extend the deadline to qualify for production tax credits. That will have some effect on the deal volume this

year, but a much more pronounced effect next year, even if the tax credit is extended at year end because there will not be as large a deal pipeline as in recent years to finance.

MR. MARTIN: A number of new tax equity investors entered the market in the last half of 2011 or were on the verge of doing so. Is the pool of potential tax equity investors still expanding, and how many active investors do you think there are currently in the market?

MR. REVOCK: There are roughly 20 active investors. There is a lot of interest in the sector, but it is a slow process for new entrants to take the leap. It takes time for them to get to a point where they feel they truly understand the risks. I counted four new entrants last year. Maybe we will get to 25 active investors by the end of this year.

MR. CARGAS: We count 22 active tax equity investors. That counts investors in the wind and solar sectors. But it is a misleading number for a developer because it is not as if each one of the 22 investors will be interested in every transaction. Many of them have esoteric requirements, specific needs or quirks. A developer is likely to find a much smaller number of potential investors in any single transaction.

Current Yields

MR. MARTIN: Federal tax subsidies for wind amount to at least 56¢ per dollar of capital cost of a typical wind farm. Of that amount, 30¢ is in the form of tax credits or a Treasury cash grant and 26¢ is depreciation. Tax equity investors investing in projects on which Treasury cash grants will be claimed do not have to use as much scarce tax capacity. Treasury cash grants are expected to start phasing out this year. Will this mean upward pressure on tax equity yields?

MR. EBER: You are always after that yield question.

MR. MARTIN: I know. That's my next question. [Laughter.]

MR. EBER: I think yields have been stable for quite a while, and I think they will probably continue that way. A good marker for what might happen to tax equity yields in the renewable energy market is to pay attention to yields in affordable housing deals. Yields in that market are down considerably. They had bubbled up and were higher than wind yields in 2009 and 2010. Affordable housing yields are down dramatically. At least at this stage, I don't see any upward pressure.

MR. MARTIN: So it sounds like there is *downward* pressure on yields.

MR. SMITH: I think there are some other factors at work in the affordable housing market that / *continued page 30*

IN OTHER NEWS

for the electricity or hot water produced from the investment unit. Each taxpayer used the money collected over time from the other homeowner to pay Mercury Solar the purchase price for the investment unit. Each taxpayer claimed depreciation and presumably also a 30% investment tax credit on the investment unit. The Tax Court denied the benefits in each case. Passive loss rules make it difficult for individuals to use such benefits. The benefits can only be used to shelter income from other passive investments. It appears Mercury may have a number of unhappy customers. The cases are *Wilson v. Commissioner*, *Lum v. Commissioner* and *Uyemura v. Commissioner* . . . A New York tax appeals tribunal said in March that a local gas distribution company cannot claim an investment tax credit on spending on new gas line improvements and other equipment because the credit can only be claimed on property used in manufacturing or processing. The tribunal said there was no processing, even though the gas company used heaters and purifiers on gas moving through its system. The tribunal said the gas company was merely moving gas. The gas company buys gas from interstate pipelines and supplies it to customers. The case is *In Re: Brooklyn Union Gas Co.* (Nos. 822692 and 822693).

— contributed by Keith Martin, David Evans, Sam Kwon and Amanda Forsythe in Washington and Paul White in London.

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make that market a poor indicator of what might happen in wind. Banks have a legal obligation through the Community Redevelopment Act to put money into that market that they do not have in wind. Production tax credits are a harder subsidy to monetize than a Treasury cash grant or even investment tax credit whose amount is fixed at the start of the transaction. Treasury cash grants made it possible to borrow additional construction debt through cash grant bridge loans that companies do not have with investment credits or production tax credits.

MR. MARTIN: So it is a mixed bag. If you believe tax equity yields are a function of demand and supply, then your last point suggests less demand since developers who are not able to use the prospect of a Treasury cash grant to borrow additional construction money may not build as many projects.

MR. SMITH: That's right.

MR. MARTIN: John Eber, you said yields have been steady for quite a while, so I take that to mean they are about 8% to 8.25% for unleveraged partnership flip deals?

MR. EBER: Ask Marty.

MR. PASQUALINI: I think best-in-market execution is slightly less than that. Some mini portfolios were done in the last few months at tax equity yields that were 25 to 50 basis points below the figures you quoted. A developer offering a true portfolio to the market can probably get an additional 10 basis points savings on yield.

MR. MARTIN: What is the yield premium in a partnership flip transaction with debt at the partnership or project level? Five such deals were done last year, according to John Eber. The premium used to be 250 to 300 basis points, but it seemed after the economy collapsed in late 2008 to widen considerably. Where is it today?

MR. PASQUALINI: Closer to 725 basis points.

MR. MARTIN: That's what I was afraid of.

MR. PASQUALINI: The premium has widened for a couple reasons. First, the number of tax equity investors who are willing to do a leveraged transaction is small. Second, there may be 22 active investors early in the year, but as we move through the year, many of them may have exhausted their capacity for 2012.

Deal Structures

MR. MARTIN: John Eber, hasn't there been a slight increase in the number of transactions with partnership- or project-level debt?

MR. EBER: Before the grant, fewer than 10% of deals had leverage. There has been an increase in leverage in deals with Treasury cash grants.

MR. MARTIN: There are three main tax equity structures that have been used in the renewable energy market as a whole. They are partnership flips, sale leasebacks and inverted leases. We have not seen inverted leases used in the wind market. Is there any place for that product in the wind market, and will the product survive in the solar market, where it has seen the greatest use, after expiration of the Treasury cash grant?

MR. REVOCK: The inverted lease is a good product for the rooftop solar market, but I do not see it being used for utility-scale projects, especially for wind farms with production tax credits. The tax code does not permit leases to be used in projects where production tax credits will be claimed, with the exception of power plants that burn biomass.

MR. MARTIN: Then let's focus on partnership flips versus sale leasebacks. Jerry Smith, how should a developer choose which one makes more sense for him?

MR. SMITH: The primary question should be how much money can you raise from one versus another.

MR. MARTIN: You can raise more with a sale leaseback, right?

MR. SMITH: So say some.

MR. MARTIN: A sale leaseback raises 100% of the project cost in theory — the tax equity investor must buy the project for its fair market value — but in practice the structure may raise a little less than the full project cost because the developer is almost always required to prepay part of the rent. What is "market" for rent prepayments?

MR. EBER: What little we have seen is in the 20% range.

MR. MARTIN: So 20% of the market value the tax equity investor pays to buy the project comes back to him as prepaid rent.

MR. PASQUALINI: That tends to be a cap that is imposed by tax counsel.

MR. MARTIN: Almost all tax counsel are comfortable with zero to 20% for a rent prepayment. A number of people are comfortable with 21% to 49%. Do you know anyone who is comfortable with a rent prepayment of 50% or more? Some of the inverted leases in the solar market have been as high as 80%.

MR. PASQUALINI: Yes, but going back to the main point, I agree with Jerry Smith that it is somewhat misleading to say that a sale leaseback will raise more money for the developer than a partnership flip. People are attracted to leasing on the sponsor side because they like the profile in terms of their own accounting. Some sponsors also thought that it was the most efficient way to achieve a big step up in tax basis for calculating tax subsidies. However, it is buyer beware for anyone trying to maximize a basis step up through the financing structure and planning to apply for a Treasury cash grant. There has been significant push back from Treasury on this point. If you don't find the accounting more attractive from the sponsor side, then I think even in a cash grant you would be pushed to a traditional partnership structure.

About 55% of wind farms financed in the tax equity market in 2011 used production tax credits rather than Treasury cash grants.

MR. MARTIN: Why?

MR. PASQUALINI: A deeper pool of investors, for one thing. The market has been doing partnership flip transactions because they work, they are efficient, and there is good depth to the market. These deals are by no means easy, but the regular participants understand the moving parts. The deals are relatively efficient to document and close. Every deal has its issues, and they are always too expensive to execute, but when you do what people would call "plain vanilla" or "center of the fairway" transaction on an unleveraged partnership basis, you get excellent execution in this market.

MR. EBER: Don't forget you cannot monetize production tax credits through a lease, which is why leasing was never popular in wind to begin with.

MR. PASQUALINI: Others were saying that there would be lots of leasing three years ago when Treasury cash grants and investment credits became an option for wind farms. I said we might see a couple handfuls of leasing deals in the wind market. I think we are at nine in total, and I think that the jig is up, so we might not get to the two full handfuls.

MR. CARGAS: The other thing that some sponsors are doing, in addition to looking at the amount of capital they can raise via a lease versus a partnership flip, is they are comparing the net present value cost of the project or their internal rates of return after financing, and they are finding that leases look marginally more attractive or perhaps even significantly more attractive under both metrics.

MR. MARTIN: So the money may be less expensive under a lease.

MR. REVOCK: A lease has a required coverage ratio for rent payments. If that coverage ratio is binding, then it will lead the sponsor to a partnership structure, because he will not have the same constraint with a partnership.

MR. MARTIN: What does it mean to say the coverage ratio is "binding"?

MR. REVOCK: If the tax equity investor requires the project to have at least a 1.5 coverage ratio and the project generates $30X a year, then the project can support rent payments as higher as $20X. The investor may not be able to reach his target yield with rent of $20X a year. This means that the only way to do a lease is for the sponsor to prepay part of the rent. As the prepayment increases, the lease option becomes less attractive to the sponsor and leads him to a partnership flip. There is no required coverage ratio in a flip.

MR. CARGAS: I just wanted to finish my thought before I was interrupted by the guy wearing the Giants cufflinks! As a 49ers' fan, I don't appreciate it. [Laughter.] The slight edge in NPV or IRR benefit you might see in a lease may be attractive, but — we come from a leasing background and do literally $10 billion a year in leases including for solar — we have not done a wind lease and we have heard some cautionary tales from the leases that have been done to date.

MR. MARTIN: You have heard George Revock moaning? [Laughter.]

MR. CARGAS: The caution is the time and cost of getting lease transactions done in wind. I assume */ continued page 32*

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such transactions will become more efficient, but there are some deals that have taken eight, nine or 10 months to close. And the legal expenses have been . . .

MR. MARTIN: Healthy?

MR. CARGAS: Significant. We have not done one of these deals, but we have heard stories of fees running to $3 to $4 million to close a transaction, which wipes out a good share of any NPV benefit the sponsor hoped to receive from the transaction.

MR. MARTIN: Not a good outcome. John Eber, one problem with partnership flips is people have been having absorption problems. It can be hard, because of complicated partnership tax rules, to get all the tax benefits to the tax equity investor. In the recent past, tax equity investors sometimes dealt with this problem by agreeing to deficit restoration obligations; they agreed to contribute capital to the partnership when it liquidates if they have taken out too much value. A tax equity investor in the past might agree to a DRO of 20% of its original investment. However, lately, DROs seem to be in the 1% or 2% range — not 20%. What happened?

MR. EBER: DROs are most common in partnership transactions where the tax equity investor is being asked to claim a depreciation bonus. In that case, a large amount of depreciation is claimed by the investor in year one. This exhausts his capital account, which is a cap on what benefits he can pull out of the partnership. The only way to get more depreciation is to agree to a DRO. We have seen DROs in such transactions of anywhere from 20% to 40%.

MR. MARTIN: So it is not true that DROs have been squeezed down to 1% to 2% in the current market.

MR. EBER: You can find them in that range if the transaction does not involve a depreciation bonus.

Layers of Capital

MR. MARTIN: Jerry Smith said it is illusory to say a sale leaseback raises 100% of the capital if the sponsor must prepay a share of the rent. A sale leaseback may raise 80% of the capital after the prepaid rent is taken into account. What percentage of capital does a partnership flip raise for the developer?

MR. EBER: It is clearly a smaller number, but that may be a benefit in that you are trying to raise only the amount of tax equity you need to optimize the value of the tax benefits in the deal and then find the rest of the capital from a cheaper source.

MR. MARTIN: That cheaper source being true equity?

MR. EBER: If you have a sponsor who has a lot of capital, but just cannot use the tax benefits, a partnership flip that raises 50% to 55% of the cost of the equipment is attractive because the sponsor can bring the rest of the capital into the project at a much lower price.

MR. MARTIN: And where does the rest of the capital come from? Is it subordinated debt at the sponsor level?

MR. EBER: The larger wind companies can raise capital most cheaply through their European parents. Some US developers have been using back leverage. Back leverage has evolved. We are seeing sponsor-level debt with terms of up to 10 years, which is much longer than we saw in the past.

The partnership flip really did not evolve as a way to raise the maximum amount of capital against a deal. It evolved as an efficient mechanism for monetizing tax benefits. It was always meant to be married with other sources of capital.

MR. MARTIN: So it is just a layer of capital. If you have leverage in a partnership flip transaction at the partnership or project level, then you will need a forbearance or standstill agreement between the tax equity investor and the lender. What are market terms for such agreements?

MR. EBER: There have been only a few partnership flip transactions done with partnership- or project-level debt. We have seen a variety of forbearance agreements, although typically the lender agrees to some type of forbearance through the period the production tax credits will run. The tax equity investor wants an assurance that he will at least be able to collect the PTCs.

MR. PASQUALINI: I think it also depends on the structure. For example, if it is a partnership flip transaction with production tax credits and a pay-go structure, meaning that the tax equity investor does not put all of his capital in up front but rather puts in part each year as production tax credits are received, then forbearance may even be longer than 10 years.

MR. MARTIN: Why would forbearance have to last longer than 10 years in such a case if the PTCs will have run out within 10 years?

MR. PASQUALINI: The tax equity investor in that situation can be viewed as another power purchaser. It is another source of capital to the project over time that the project can use to service the debt. It is almost like a lender foreclosing on a power purchaser. A lender will not do that because it would cut off the revenue stream needed to service the debt.

Pay-Go Structures

MR. MARTIN: Do you expect to see a return to pay-go structures in a world where sponsors are opting for production tax credits?

MR. EBER: We have done a number of pay-go deals in the last two years. They are most attractive in transactions where the wind farm has already been built, is in service and has some financing in place, and now the sponsor has decided that he needs tax equity. Pay-go tax equity tends to get layered in after the fact.

MR. MARTIN: Must a sponsor using a pay-go structure pay the tax equity investor a commitment fee for keeping money on hand that can be drawn over time?

There are 20 to 22 active tax equity investors.

MR. EBER: No. We don't think of a pay-go deal in those terms. It is more like an annual trade. We have tax capacity, our client has tax benefits he can't use, and we are trying to help him monetize them for profit.

MR. MARTIN: My recollection is that the last time pay go's were popular, say in 2006 or 2007, the tax equity investors bidding different structures would charge the developer more for use of capital in a pay-go structure where the money was put in over time than if it was all put in up front.

MR. EBER: That's true if you look at is target IRR the investor is using for the flip. However, the after-tax book income for the sponsor is about the same.

MR. MARTIN: Jerry Smith, is Credit Suisse doing pay-go transactions?

MR. SMITH: Probably not. We were one of the firms that entered the market in 2009 when most others had abandoned the market. We are focused for now on projects with Treasury cash grants.

MR. MARTIN: Will you remain in the market after the grant goes away?

MR. SMITH: Yes, but it is a battle for another day. We are trying to get as much as we can done this year and then, sometime late this year or early next year, we will move to another structure.

MR. MARTIN: You may prove Marty Pasqualini's point about a possible cliff as the Treasury cash grant fades away.

Projects that go into service this year qualify for a 50% depreciation bonus. Many tax equity investors have turned their noses up at the bonus. Jack Cargas, is Bank of America willing to take the bonus and, if so, do you give developers any value for it?

MR. CARGAS: Hmmm. [Laughter.] We do take the bonus. We do price it in. We would prefer not to do that but competitive pressures from those on my right and my left here [laughter] are forcing tax equity investors to give the sponsor some value for the bonus.

MR. MARTIN: Other views?

MR. EBER: The structure is sometimes a limiting factor. There just may be no room in a partnership flip structure because of capital account limits for the tax equity investor to absorb much of the bonus. We talked about this earlier when we were talking about DROs.

MR. CARGAS: And that problem is exacerbated in deals with a 100% bonus.

MR. EBER: Really exacerbated.

Life After 1603?

MR. MARTIN: There was a lot of talk in conferences in the last six months about what life will be like after the Treasury cash grant. There was always a segment in these conferences called "Post-Section 1603 Financing Structures." I am not sure that I heard anything new in those discussions. What are those structures?

Let the record show that all five panelists are looking around for someone else to answer. [Laughter.] George Revock?

MR. REVOCK: I think we return to a world where flip partnerships are the dominant form of financing for wind farms. I think leasing will continue on the solar side, short of a change in tax law.

MR. MARTIN: Let me make this a little bit harder. What will happen in a post-production tax credit world if the PTC is not extended at the end of this year? What / continued page 34

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will be the financing options? Will we still have tax equity panels at these conferences?

MR. REVOCK: I think at that point you are probably looking at regular leases to get some benefit for the depreciation on the projects.

MR. EBER: Wind farms will be financed in that case in the same way as more conventional power plants. I don't think there will be much demand for tax equity. You will see a lot of debt financing and, unfortunately, the depreciation benefits won't get used because that is what most of the country does right now. There are plenty of industries that have lots of depreciation that does not get used, and they do not use lease financing much any more for it.

MR. MARTIN: You have 5-year depreciation that is worth a considerable amount. Is there no market for tax equity based solely on that depreciation?

MR. EBER: You go back to the old lease-buy analysis. It is cheaper to buy when you have interest rates as low as they are today.

MR. MARTIN: "Buy" means own the asset and borrow rather than finance it through a lease.

Is there an after market today solely for depreciation in partnership flip deals with existing wind firms through some sort of 754 step up or otherwise? Jerry Smith, you are shaking your head no.

MR. SMITH: No. Recent experience suggests there is not enough of a market.

MR. MARTIN: Shed a little more light on the recent experience.

MR. SMITH: We explored a number of ways to increase liquidity in our model, and one of those was to bring to market a portfolio of operating wind farms. We figured investors would consider that profile a lot less risky given that you have a couple years of operating history. It comes down to supply and demand. There is a lot of demand today for tax equity. If an investor has a choice of another deal with full tax benefits and the ability to come in at the start and affect the deal terms, he will come in at the start. Things may change if the front-end option is no longer available.

MR. CARGAS: The only meaningful secondary market trades were in 2009 when tax-advantaged investments were being liquidated out of the AIG and Lehman portfolios. The buyers in those transactions received very significant yield premiums to the original deals. These trades are hard to execute. Tax equity investments, including lease equity, tend to be fairly illiquid investments.

Tax equity yields in partnership flip transactions with big wind developers have fallen a little below 8%.

New Issues in Deals

MR. MARTIN: Have there been any new issues in the tax equity market in the last six months, or are these structures and the issues pretty well settled?

MR. CARGAS: It is hard to say. One of the mistakes that people sometimes make is they believe the last transaction that was completed in the sector is market. Although the basics of the structures are kind of set, as Marty said earlier, there are always "tweaks" and differences, and every transaction is unique and tailored. There are plain vanilla partnerships in theory. The reality is every one is different.

MR. MARTIN: What further evolution do you see in deal structures this year? US Bank, for example, has been trying to shave the amount of cash the tax equity investor keeps to a bare minimum of 2%. There was talk at one time about guaranteed return structures for tax equity investors that mirrored what is being done in the low-income housing market. What issues do you see people trying to address through changes to the existing deal structures? Jerry Smith?

MR. SMITH: If the people around here are like me, you are sitting pat until you figure out what will happen in the future. There is no use in complicating matters right now when there are structures that work both now and in the PTC world going forward.

MR. MARTIN: You are starting to sound like John Eber. He has said the same thing at other conferences. [Laughter.]

MR. PASQUALINI: One recent change is that the sponsor might be distributed a larger share of cash flow for a longer period of time in a partnership flip transaction than in the recent past. That's why we are able to get longer back leverage transactions up to nine or 10 years. Before, the sponsor might get 100% of the cash until it got its capital back and then cash would go 99% to the tax equity investor. There have been multiple examples in the last six months of what we refer as a constant coupon model where the sponsor will get 60% or 70% of the cash all the way through a 10-year period and only if the target IRR has not been reached by that time will a large share of cash shift to the tax equity investor.

MR. MARTIN: Sponsors might prefer a steady amount of cash over time to getting their capital back up front.

MR. PASQUALINI: This is particularly appealing to sponsors backed by private equity funds or sponsors who are set up like an income trust. They are not as attracted to receiving all their capital back over three years and then having a dry spell until year 11.

MR. CARGAS: The sponsor is usually better off on an NPV basis to take cash up front, but taking cash over time puts the sponsor in a position to have steadier book income, which is important to some, or a longer term for any back-leveraged debt, which might improve the overall NPV of the transaction once it has been layered in.

MR. MARTIN: Are there some parts of the country where it is impossible to raise tax equity? For example, it used to be that wind farms in West Texas could not be financed in the tax equity market because of curtailment problems.

MR. EBER: West Texas was a problem for us for a number of years, partly because of poor wind forecasts and partly because of curtailment risk. The curtailment problem seems to have gone away. However, power prices in West Texas are extremely low today. No one can get a financeable power purchase agreement as far as we can tell.

MR. MARTIN: So the entire country is open for tax equity in theory except if power prices are too low to support the return the tax equity investor needs in cash as opposed to tax benefits?

MR. EBER: More or less. We still see some unacceptable curtailment risks in some places. It is a local issue.

MR. MARTIN: Jack Cargas, there was a rush to buy new equipment at the end of last year so that projects put in service this year would still qualify for Treasury cash grants. The equipment will be sprinkled on projects in 2012 and convey eligibility for a Treasury cash grant. If more than 5% of the cost of a project was incurred by the end of last year, then a project qualifies for a grant. The US Treasury in December posted two questions and answers to its website explaining that it is nervous about trafficking in stockpiled equipment but describing what is allowed. Have you seen any issues come up so far in 2012 about projects using stockpiled equipment?

MR. CARGAS: We have not seen any deals with proposed transfers of 2011 equipment yet this year, but we do have a concern. The Treasury pulled back in December on its view of what a sponsor had to do in 2011 to "incur" costs. We are going to have to tread with caution.

MR. MARTIN: Has anybody had any 2012 transfer issues come up in his deals so far this year? George Revock, you are leaning forward.

MR. REVOCK: We have not yet. However, we expect this to become a larger concern in deals as we get farther into the year and there are questions about whether the construction work the sponsor said it started in 2011 was continuous or whether more than 5% of the project cost was incurred in 2011 as the Treasury now defines "incur."

MR. MARTIN: Who bears the risk that construction of the project started by December 2011?

MR. REVOCK: We would expect to see the sponsor take that risk.

MR. MARTIN: Are you aware of any deals that are in audit with the IRS?

MR. CARGAS: I am not aware of any.

MR. SMITH: Some deals have been reviewed in the traditional audit cycle, but no issues have been raised as far as I am aware.

MR. MARTIN: The first partnership flip transaction was done when? 2003?

MR. EBER: Yes, 2003.

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Lessons Learned

MR. MARTIN: Jack Benny said life is like trying to learn the violin while on stage. We all learn as we go. John Eber, starting with you and working across the panel, what lessons have you learned by making mistakes yourself or by seeing others make mistakes in wind deals that you are now careful not to make.

MR. EBER: The big thing that has changed in our shop is the way we approach the due diligence. We are a little more skeptical of what the independent engineers say. We spend a little more time looking at the project, thinking about it ourselves, looking at our experience and our portfolio and applying that to the due diligence process.

MR. MARTIN: The last time I asked you about this, you had a considerable portfolio of wind projects that you said were operating on average, at about a P84 level. Is that still the case?

MR. EBER: We were running about 10% below the base case projections for our early deals through 2007. That was probably around a P80 level. Wind forecasting has improved since then. We have been auditing the projections and comparing them to our experience. The newer forecasting methodologies have closed maybe 8% of the 10% gap, according to our latest data.

MR. MARTIN: So you are more careful about how you do diligence. You are paying a lot more attention to the wind forecasts. Are there other areas where experience has taught you to drill more deeply?

MR. EBER: We are looking hard at the O&M projections. We are looking very closely at curtailment projections because we've seen a lot more curtailment than sponsors expected.

MR. MARTIN: What have you learned about O&M? How far off have the developers been in their forecasts on average?

MR. EBER: On average, the O&M has not been significantly more expensive than we thought it would be, but particular types of equipment and certain areas of the country present greater O&M risk. The good news is some parts of the country get 45% capacity factors. The bad news is that the wear on the equipment drives up the cost of maintaining it.

MR. MARTIN: Jack Cargas, tell us what mistakes you have made or seen others make?

MR. CARGAS: What is this, the cultural revolution? I'm open, but engage in self criticism? [Laughter.]

We entered the market in 2007 after there was a fair amount of maturity in the wind tax equity finance market. We were kind of late, but we were lucky in that we were able to learn from the experiences of others. We have learned a heck of a lot in the last five years — no doubt about it — and one of the things that we have learned is that it is very important to do these transactions with quality sponsors, regardless of the size of sponsor. Things happen in these deals, whether they are performance-related, technology-related or contractual arrangements-related. We need to have partners who we feel confident will be able to work through the issues. We are very happy with the sponsors we have in our portfolio.

Tax equity investors require as much as a 700-basis-point yield premium if there is debt at the partnership level.

MR. MARTIN: Jerry Smith, what mistakes have you made or seen others make?

MR. SMITH: We have the benefit of having been in the industry an even shorter period of time than Jack: just three years. We benefited from the path others have blazed. That said, every deal is different, and you learn from each. There are legal provisions that we would have liked in some of our earlier trades that we have gotten in the later trades due to some experience. An interesting consequence of the economic downturn is that what you thought was your proper property tax assessment turns out to have been low as state and local governments look for ways to raise revenue.

MR. MARTIN: George Revock. Mistake?

MR. REVOCK: The rules are a little less certain than we thought surrounding calculation of Treasury cash grants. There

is also a trickle-down effect. You apply for a grant at a certain level and the money comes in less. There is obviously a cash hit to the sponsor, assuming he took basis risk, but there are ramifications well beyond that that may or may not have been addressed fully in the documents. It is impossible to foresee every type of contingency. You can't plan for every type of delay. You can build a certain amount of delay into your expectations but what happens if that gets exceeded? We use the HLBV method to record our investments on our books. The uncertainty about how much benefit the project will receive from government programs and when it will be received spreads to your book accounting.

MR. MARTIN: And perhaps one of the lessons is that if you are careful about documenting the deal and trying to paper all the contingencies, you may find the Treasury reading the deal documents carefully and deciding to draw the line in the same place you indicated in the deal documents you saw a risk.

MR. REVOCK: It is as if we are being penalized for being diligent.

MR. MARTIN: Marty Pasqualini, you get the last word: mistake?

MR. PASQUALINI: Let me approach it from the sponsor side. Over the last four years, the market has changed dramatically and the tax equity investors hold all the cards. In 2006 and 2007 when there was a much frothier market, more sponsors had access to the tax equity market. Since late 2008, there has been a flight to quality. The point is that if you are on the sponsor side, you need to make sure you have every question answered. Tax equity investors are doing much more thorough diligence. There are always risks. When a tax equity investor asks about a risk, the sponsor should say: "Yes, that's the risk. This is how we analyze it. This is how we mitigate it, and this is why we think we stand in front of it and why you should be okay with it." However, if a tax equity investor asks a question of a sponsor and the sponsor hasn't identified the risk and it is a gotcha moment, then that is a really bad place to be. None of these folks will tolerate that any more. Sponsors need to up their games. No one closes over mistakes any more. No one closes over anything any more. Sponsors must fix everything. ◎

UK Green Bank Update

by Julie Scotto, in London

"When I became Prime Minister, I said that Britain would have the greenest government ever. And that is exactly what we have . . . the world's first dedicated green investment bank," said David Cameron, speaking at the world energy ministers climate summit in London in late April. The establishment of the first green investment bank moved a step closer in December 2011 when the UK business secretary, Vince Cable, announced the bank's first priorities through 2016.

Priority Sectors

The bank is designed to accelerate private sector investment in the green economy in the United Kingdom. Offshore wind power generation, commercial and industrial waste processing and recycling, energy from waste generation, non-domestic energy efficiency and support for the "green deal" will be the first priority sectors for the bank. The "green deal" is planned to start in the autumn 2012 and consists of £14 billion of investments funded by the government for home and business energy efficiency upgrades. It is also expected to create more than 65,000 jobs in the insulation and construction industries in the UK by 2015.

A new team, called UK Green Investments or "UKGI," has also been set up within the government's department for business to drive investment in green infrastructure until the green bank is formally established. The government says that at least £110 billion ($174 billion) is required by 2020 to replace aging power plants, to upgrade the grid and build renewable energy projects. The lack of sufficient and appropriate financing may threaten the UK's transition to a low-carbon economy.

Full Borrowing Powers by 2015

The government committed in the 2011 budget to capitalize the bank with £3 billion ($4.77 billion) through 2015. The bank will be fully established following two key phases.

The first phase relates to the government's investments being managed by UKGI from 2012 until the bank receives state aid approval from the European Commission. The government expects to obtain such approval by September 2012, but said it would start making investments in green projects from April 2012. For this purpose, UKGI has been provided with funds by the government (around / continued page 38

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£100 million) to invest in small waste infrastructure projects. It was reported that another £100 million has been made available for investment in the non-domestic energy efficiency sector.

The second phase is the establishment of the green bank as a standalone, fully operational institution following the European Commission's approval, with full borrowing powers from 2015 (subject to public sector net debt falling as a percentage of gross domestic product). Once established, the bank is meant to operate at arm's length from the government despite the government being the sole shareholder.

The UK government is expected to start funding £14 billion in investments in home and business efficiency upgrades this autumn.

Open For Business

The government is investing directly, on an arm's-length basis, ahead of obtaining state aid approval from the European Commission.

Eighty million pounds have been committed to two specialist fund managers who are responsible for generating and managing investments in areas such as waste recycling and reprocessing facilities, pre-treatment projects and energy-from-waste projects. The maximum amount of individual investments is not likely to exceed £15 million, suggesting that the funds are likely to back small- to medium-sized projects rather than large-scale waste-to-energy projects.

An initial fund of £50 million will be managed by Foresight Group, a leading independent alternative asset manager specializing in environmental, infrastructure and private equity investing, and an initial fund of £30 million will be managed by Greensphere Capital, a specialist investment firm focused on sustainable energy and infrastructure.

The government expects the funding to jump start investment in small-scale waste infrastructure projects. Vince Cable commented recently: "These first investments are a landmark moment. They represent a great opportunity to unlock substantial commercial investment in green technologies and infrastructure. The government has committed to setting the UK firmly on course towards a green and growing economy, and today is another important step in that direction."

All investments made by the fund managers on behalf of UKGI will be matched, expected to leverage in at least an additional £80 million to the sector.

KfW as Adviser

The green bank will receive advice from the German state-controlled bank, KfW. KfW announced that it has agreed to exchange ideas about investment in low-carbon energy projects. KfW has confirmed that a memorandum of understanding between the two banks establishing consultation services was signed in Frankfurt on April 12, 2012. KfW's chairman, Ulrich Schroeder, has commented: "As a development bank with long experience in climate and environmental protection, we are happy to support the bank in an advisory role, using our expertise in these promising areas of activity."

He added: "Close bilateral networking between national development banks in Europe is imperative for successful work in environmental and climate financing." KfW has already advised similar institutions on the topic in eastern Europe. Its loan programs include projects in renewable energy generation, energy savings and efficiency measures such as home insulations.

Location

The headquarters of the bank are to be located in Edinburgh, with the bank's main transaction team based in a London office. Edinburgh will provide for the bank's corporate headquarters, asset management and back office functions. London will be the base for the bank's major transactions operation. It is said that the formal recruitment process for appointments to the bank and senior management team will begin shortly, with the appointment of the chair being made in the spring 2012. ◎

US Policy Outlook for Renewable Energy

The outlook for renewable energy in the United States could not have been more promising three years ago when President Obama took office. The Obama administration was determined to reduce US carbon emissions. It saw promoting renewable energy as one of the keys to that effort. Congress quickly passed an ambitious stimulus bill with Treasury cash grants and federal loan guarantees for renewable energy.

In retrospect that was a high water mark. The renewable energy agenda has seemed stalled since then, falling natural gas prices have taken a toll, and against that backdrop Congress failed in 2010 to put a price on carbon. Efforts to adopt a national clean energy standard requiring utilities to supply a certain percentage of their electricity from renewables and to create a clean energy bank have gone nowhere so far.

In 2011, the attention in the United States shifted almost entirely to deficit reduction. The Senate voted in June 2011 to reduce tax subsidies for biofuels. The federal loan guarantee program came under fire in Congress after Solyndra — an early recipient of a large federal loan guarantee — went bankrupt.

That said, there was little real motion in any direction in 2011 as Congress remained gridlocked, and with 2012 promising more of the same as the political parties try to position themselves for the national elections in November 2012.

A group of veteran Washington lobbyists for renewable energy companies spoke by phone in late December about the outlook for renewable energy policy in the United States. Some 1,500 people listened. The panelists are Jon Chase, Washington office head for Vestas-Americas, Richard Glick, vice president for government affairs for Iberdrola Renewables, Scott Hennessey, general counsel and director of legislative affairs for the Solar Energy Industries Association, Joe Mikrut, a partner with Capitol Tax Partners and former tax legislative counsel for the US Treasury under President Clinton, Jaime Steve, Washington office head for the Pattern Energy Group, and Greg Wetstone, Washington office head for Terra-Gen Power. The moderator is Keith Martin with Chadbourne in Washington.

Production Tax Credits

MR. MARTIN: There are two tax subsidies for renewable energy projects in the United States. There is accelerated depreciation, which is permanent, although people had the option in 2011 to deduct as much as 100% of the project cost as a "depreciation bonus" and they will have the option in 2012 to deduct as much as 50% as a depreciation bonus. There is also a tax credit or a Treasury cash grant that runs only through 2012 for wind, 2013 for biomass and geothermal and landfill gas, and 2016 for solar and fuel cell projects.

What are the odds of the production tax credit being extended? And if so will it be the four-year extension for which the renewable energy trade associations have been pressing?

MR. MIKRUT: There is a very good chance that the production tax credit for wind will be extended. The real question is when will there be a vehicle to which the extension can be attached?

You will not see a bill that extends just the production tax credit or even a small handful of the energy tax credits. That is not how Congress works. In the past, the extension has been part of either an omnibus energy bill or a large tax extenders bill. An energy bill looks unlikely in 2012. Therefore, the more likely vehicle is a tax extenders bill.

A number of very popular tax provisions like the research credit expired at the end of 2011. This makes it more likely that the production tax credit will be extended.

Congress has usually extended these provisions for a year or two at a time. Even though a four-year production tax credit for wind would be ideal, we are probably looking at a shorter extension given how the extenders debate is likely to play out.

MR. MARTIN: The proposal that the trade associations have been pushing is for a four-year extension for production tax credits. Is that four years for all renewables that benefit currently from production tax credits, or just for wind?

MR. MIKRUT: The proposal would extend production tax credits though 2016 for all renewables so that the expiration dates line up for all of them. The investment tax credit for solar projects runs currently through 2016.

MR. MARTIN: Jon Chase, I assume you have been on the Hill pushing for an extension. What do you think are the odds and when do you see this happening?

MR. CHASE: It comes down to finding a tax vehicle that is moving. I think the wind industry has done a good job of creating a sense of urgency for extending the production tax credit. I can tell you that as a manufacturer that has been making turbine sales in the US for a long time, it has */ continued page 40*

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only been in the last three years that we really made a significant investment in manufacturing facilities in the United States. We did that primarily because we had a window from 2009 through 2012 when we knew the production tax credit would remain in place.

Vestas has built four factories in the US since 2008. A long-term production tax credit is so important. Businesses need a long runway to plan. Our factories have created jobs with good benefits and salaries.

Corporate Tax Reform

MR. MARTIN: Many people think that broad corporate tax reform is coming as early as 2013 or 2014. Both political parties have said they want to reduce the corporate tax rate.

The only way to do that really is to strip a lot of incentives from the tax code. At some point this begins to look like a hurricane off the Atlantic coast. As the hurricane approaches — as we get closer to 2013 — it will begin to affect the weather pattern and the ability to add more incentives and perhaps even to extend existing incentives. Have you seen any effect of this hurricane yet, and do you view it as a hurricane?

MR. MIKRUT: "Storm warning" is probably a better description. The prospect of tax reform permeates a lot of discussions with the staff. I think we will see a kind of mini-test pattern with respect to these items during the extenders debate.

Many tax provisions are expiring. For budgetary reasons, that list has grown immensely over the years. At one time, there were about a dozen "extenders" that had to be renewed regularly. Now we are up to about $35 billion of them. The staff will start scrubbing them with an eye toward which are worthwhile and which are not, which could be improved and which should be made permanent. That may not be what Congress ultimately does with these provisions in 2012, but the process is underway.

The process will be the same in tax reform. In order to lower the rate, Congress will have to broaden the base or find a different revenue source. That will involve scrubbing all the so-called tax expenditures and asking which are valuable and needed and which can be eliminated or modified to raise revenue.

MR. MARTIN: Is it fair to assume that anybody who has entered into a binding contract before tax reform takes hold would be grandfathered from any change in the incentives?

MR. MIKRUT: That is how Congress has usually handled the transition issues. But often when you talk to the staff and especially the economists, they wonder whether transition is appropriate. Although it may seem the fairest approach, there are economic efficiency arguments for moving rapidly to the new system without transition relief. They might even go further and repeal some of the tax benefits for investments already made, on the theory that the lower tax rate will apply to income from those investments, so it is fair to take away the remaining incentive.

However, when you finally get down to legislation, the fairness argument usually wins out. Traditionally, existing investments as well as projects to which the taxpayer has already made some sort of financial or binding commitment usually get grandfathered.

MR. MARTIN: So at some point when this hurricane becomes visible — and that's not in 2012 but the year after — you would expect to see a lot of talk about what is a binding contract and what companies need to do before this storm moves in. Is anybody seeing any evidence of corporate tax reform affecting the debate today on extending energy tax incentives?

MR. HENNESSEY: I can say that in our conversations at the end of 2011 with the tax committee staffs, everyone has understood that tax reform is already on the horizon. Tax reform is not expected in 2012, but the conversations have already begun. Every incentive will be up for review, and people will have to justify any exception and incentive and show a return on the government investment. We have already begun that process in the solar industry.

Master Limited Partnerships

MR. MARTIN: The renewable energy trade associations have been pushing on the Hill to allow renewable energy companies to operate basically as large partnerships whose units can be traded on stock exchanges. There would be no tax at the company level. All the income a company earns would be taxed directly to the shareholders. This will open the door to cheaper capital. A number of you on this call are on the Hill talking about renewable energy partnerships to staff members. What reaction are you getting?

MR. GLICK: There are potentially two benefits from use of MLPs in the renewable energy industry. One is they will open a new pool of equity capital. The other is they will create another way for the industry to barter the tax incentives on renewable energy projects for capital to build the projects. The last step

will help developers keep a larger share of the tax incentives for use in projects.

The changes in law we are seeking would allow us to transfer tax benefits to individual investors, assuming that the wind, solar or biomass companies cannot use the incentives themselves, which is the current situation.

We have been running into a tremendous amount of opposition on Capitol Hill with regard to amending the law to permit companies to transfer tax credits to individual investors in master limited partnerships. I don't really see in the near term much change in the attitude on Capitol Hill.

That doesn't mean there might not be support for the general concept of master limited partnerships and allowing renewable energy developers to use them, but there is little support for amending the passive loss and at-risk rules that currently impair our ability to pass on the tax credits.

This year is a dead zone for new energy legislation as the political parties posture in advance of the November elections.

Election Outlook

MR. MARTIN: There are national elections in November 2012. The political parties seem to be posturing to try to put themselves in good positions before they go before the voters. Does that mean that we could have some forward motion on the renewable energy agenda? Do you see any risk of backtracking? Or is 2012 basically a dead zone apart from these possible extensions?

MR. MIKRUT: It looks like a dead zone. You have the expiring provisions that have to be addressed, but it is very difficult to do major tax legislation in an election year. On the other hand, my bookshelf is full of committee reports from even numbered years, which indicates that sometimes we actually do substantive tax legislation in election years.

The Bush tax cuts expire at the end of the year. If things play out as they normally do, then those will be addressed after the election, but we will have a lot of discussion about them before the election. Although action on tax reform is not expected in 2012, the tax reform effort will move into the next stage where the tax committees will hold more detailed hearings and start releasing more draft language for comment. All of those activities will still make it a busy year for tax professionals on the Hill as industries begin to position themselves in the tax reform debate.

MR. STEVE: These things are all inter-related: tax credit extensions, the upcoming tax reform debate and the election. The production tax credit extension that we are seeking is a long enough extension that should get us a seat at the tax reform table.

When we get to that debate, we have to view it as an opportunity. The wind industry has always wanted a long-term, stable policy; we have never gotten it out of the tax code. This is an opportunity to do that. As Bill Clinton used to say, "Make change your friend." We have to make change our friend because change is coming and it is an opportunity for us to get the longer-term policy that we have always been looking for by refashioning the production credit.

MR. HENNESSEY: There are also regulatory opportunities in 2012, even if Congress does little on the legislative front. A solar programmatic environmental impact statement is expected in late 2012 from the US Department of the Interior. Action is expected by the Federal Energy Regulatory Commission on wholesale distributed generation policy.

MR. WETSTONE: We are living in a volatile political environment. We have seen broad swings in public opinion put pressure on Congress to move in opposite directions within a relatively short period of time. It is not easy to predict where that pressure will be next year.

The expectation is we will see extensions around the periphery in the tax area and nothing big and sweeping. But you never know what the new political environment might be in three months or six months, and it may be that Congress finds a need politically, particularly in the House, / continued page 42

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to show an ability to legislate and to govern a little less acrimoniously. That kind of environment might develop in a way that gives us more opportunities than we see today.

MR. MARTIN: The good news about the American political system is gridlock preserves the status quo, which isn't so bad at the moment if you have a Treasury cash grant still available for projects that start construction by December 2011 and tax credits that still run through 2012, 2013 or 2016, depending on the technology. We are not backtracking.

Let's look a little farther ahead. You have national elections in November 2012. Most of us on this call have been watching the Republican presidential debates with great interest. Many people say the most likely outcome of the elections will be a Republican takeover of the Senate — Republicans already control the House — with control of the White House harder to predict. What likely scenarios do you see coming out of the 2012 elections that would be good for renewable energy or is there any scenario that is good for it?

MR. GLICK: It's difficult to predict who will win the presidential election this far out, but one thing on which I think we can all agree is that Congress has not been very productive the last two years and while it is true that there has been no backtracking, the gridlock has also prevented action on items that we desperately need.

The hope is that after the 2012 elections maybe the two parties can get back to working together and actually produce not only tax legislation but also energy legislation that has been on hold for a number of years now.

MR. MARTIN: So you hope the message Congress will take to heart from voters is: "We don't like this gridlock; we want you to get along."

MR. HENNESSEY: We have seen successful federal policy come out of Republican administrations; for example, we got a solar investment credit in the Energy Policy Act of 2005. The end of any administration is a tough time to get anything done. We can present concrete evidence of job creation resulting from innovation in our industry. Any incoming administration or any administration moving to its second term will have the benefit of embracing new growing industries.

The wind industry is hoping that a tax credit for wind will be extended in a "lame-duck session" after the election.

MR. WETSTONE: Let's not forget that Congress sometimes comes back for a short period after the election before the new Congress takes office for a "lame duck" session. That may provide an opportunity next year to make some progress. If the Republicans win control of the Senate, then it may be tougher to do anything in a lame duck session. They will want to wait until the new Congress when they are in full control. If the Republicans do less well than they are expecting, then that may open the door to action late in the year on anything we weren't able to do earlier in 2012.

MR. MARTIN: For those of you outside the United States, the national elections will be in early November 2012. That will leave a month and a half until the end of the year when the old Congress, some of whose members will have lost office, can still meet and pass bills. Any such meeting would be called a "lame duck" session. Sometimes people vote with a little more political courage during such a session than they might before the election.

Jon Chase, you report to a company based in Denmark; what do you tell it about the long-term prognosis for renewable energy policy in the United States?

MR. CHASE: Long-term stability is critical to us as a manufacturer. We have been subject to short-term policies here in the United States for quite some time. That is likely to continue for at least another year.

Other Agenda Items

MR. MARTIN: Let's just tick off what on the renewable energy agenda has been held in limbo and assess the prospects, starting with a government clean energy bank. Do you any you see such a bank being created if not in 2012, then in 2013 or 2014?

MR. STEVE: We don't hear much about it any more. It was a very popular item among members of Congress for a while — they were very high on this concept — even though many of us in the industry told them, "It's a nice idea but it doesn't do a lot for us. What we really need is focus on long-term tax credits." I think the prospects have probably dimmed on that where they looked very bright for a while.

MR. MARTIN: Related to that is the Solyndra investigation; has it all just been noise or is there some substance behind the furor?

MR. HENNESSEY: It is a political opportunity for Republicans and so they will keep riding it. As we respond, we continue to treat it as an opportunity to broaden the discussion from an individual company to the larger solar industry. Most people do not know that there are 100,000 American jobs and 5,000 companies involved in the US industry. That said, we understand Solyndra will be used as a political football through the election.

MR. MARTIN: A national clean energy standard or a renewable portfolio standard that requires utilities to supply a certain percentage of their electricity from renewables is not likely in 2012; do you see it coming back to life in 2013?

MR. GLICK: It is an idea whose time may have come and gone. Its prospects are difficult to assess. However, after President Obama was elected and the Democrats took control of Congress in 2008, there was a lot of support for a national renewable portfolio standard. The concept morphed into a broader clean energy standard early this year. President Obama called on Congress again to enact it in his State of the Union address in early 2011, but the opposition from the House Republicans has been pretty strong.

The Senate Energy Committee Chairman, Jeff Bingaman, plans to reintroduce the proposal shortly. Hearings are expected, but it is very difficult to see it coming back to life in the current political climate.

MR. MARTIN: Placing a price on carbon — it seems like the United States has backtracked from the strong position the Obama Administration took when it first took office. Now we are fighting with Europeans over carbon charges for US airlines. Greg Wetstone, where do you see the US carbon debate headed ultimately?

MR. WETSTONE: It is hard to see the United States adopting a cap-and-trade program to limit carbon emissions or putting a price on carbon in the near term. It is not beyond possibility to see proposals emerging to address the budget deficit through a carbon tax, but I am not aware of anyone currently promoting the idea.

Cap and trade has become a very difficult issue because it has been caught in the partisan crossfire, as has the climate issue more broadly. So I think prospects are probably better for energy-related measures like a clean or renewable energy standard than for a direct carbon tax or cap and trade bill, at least for the foreseeable future.

MR. MARTIN: Another bit of the renewable's agenda is transmission policy. Jon Weisgall with MidAmerican Energy Holdings, who couldn't be on the call today, often says, "You can't love renewables without also loving transmission," because renewables are so distant from population centers that transmission lines are an essential adjunct. Where do you see action to make it easier to build transmission lines going?

MR. GLICK: The action has shifted to the Federal Energy Regulatory Commission. People have given up on Congress as a forum to address these issues. FERC just issued a major rulemaking notice called Order No. 1000, which essentially facilitates regional transmission planning, but even much more importantly, it provides for cost allocation on a regional basis that appropriately allocates the cost across the region when a transmission line is built that benefits an entire region. We believe this will help facilitate significantly more investments over the long term in transmission.

We expect no action from Congress because there is no agreement between the parties about how best to handle transmission issues. There was talk about legislation to give the federal government a greater say in siting of new transmission lines, but that proved too controversial.

MR. MARTIN: The environmental protection agency is expected to release final utility MACT — or "most achievable control technology" — rules for controlling air pollutants later this week that will require coal- and oil-fired power plants to install expensive new pollution control by 2015. The new rules are expected to cause about 10,000 megawatts of US generating capacity to be retired. Is the President or Congress likely to put off this deadline?

MR. WETSTONE: There has been a lot of talk about shifting the deadline. A small delay is possible, but a major delay seems unlikely to me, although there will certainly */ continued page 44*

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be efforts in Congress to force a delay. This seems to be one area where the administration is prepared to hang tough. I would be surprised if the President would sign legislation or if a bill could get through the Senate that makes a major change in the date. It really depends what else is attached to it and how hard fought the battle is, but my expectation is that these rules will go into place.

MR. MARTIN: When Republicans gained ground at the state level in the November 2010 elections, many people worried that there would be backtracking in renewable portfolio standards, tax and other incentives at the state level that have been helping drive renewable energy in this country. Yet this does not appear to have happened. California increased its RPS target. New Jersey backtracked somewhat by dropping out of a regional carbon control initiative called "RGGI." Is this a fair summary of the state of play at the state level? And what do you see ahead?

MR. CHASE: That is a fair summary. There is a lot of activity at the state level. The industry has traditionally turned to the states at times when forward progress has been stymied at the national level. We have been vigilant about deflecting efforts at the state level to roll back incentives since the last election. We have seen some such efforts, but most have been deflected. We have strong state regional groups working on these issues and a lot of the companies are very active in the states.

State RPS programs are critical because they provide the markets that we need to continue to develop renewables. We made important progress in California this year. Indiana set a goal last year; we would like to try to strengthen that. The November 2012 elections obviously have the potential to affect the renewable energy agenda at the national level, but let's not lose sight of the potentially even more important effect at the state level.

MR. STEVE: The federal production tax credit is related directly to a lot of these state RPS programs because the renewable targets adjust downward in some states if the federal government isn't also helping promote renewable energy through a production tax credit. The states don't want to carry the full cost of promoting renewable energy on their own. That is a crucial point and another reason why we must get this credit extended. ◎

Road PPPs in Turkey

by Magnus Rodrigues, in London, and Ekin Inal and Turgut Cankorel, in Istanbul

The Turkish government has embarked on an ambitious program of large landmark pathfinder projects done as public-private partnerships, and it is especially keen to encourage foreign sponsor and foreign lender participation. Turkey is one of the most exciting high growth markets. Over the last two years, it has had the highest real growth in gross domestic product of any OECD country and, by 2018, it is projected to be the world's second fastest growing economy. It faces a substantial and increasing need for roads and other infrastructure. Turkey does not have an existing track record in road public-private partnerships or PPPs, but based on its economic fundamentals, its demand for infrastructure, its government's support for such projects, and its current road PPP program, Turkey is a market with many potential opportunities.

This article describes the road PPP regulatory framework in Turkey.

Statutory Framework

Article 47 of the Turkish constitution allows the use of public-private partnerships. It allows the government to enter contracts with the private sector to carry out certain public services (including undertaking road PPP projects).

A number of laws apply potentially to road PPP projects. Two key ones are Law no. 3465 of June 2, 1988 regarding the construction, maintenance and operation of highways by entities other than the General Directorate of Highways, and Law no. 3996 of June 13, 1994 regarding the realization of certain infrastructure and public services with the build-operate-transfer model. In the 1990s, there were legal challenges to certain parts of this legislative framework, but the challenges are now only of historical relevance.

Law no. 3465 importantly removed the monopoly of the General Directorate of Highways on undertaking road projects.

Law no. 3996 is a kind of "general BOT law" that covers various specified parts of the infrastructure and energy sectors. The current greenfield road PPP projects are being developed under Law no. 3996. However, the highway privatization is being undertaken pursuant to a third statute, as well — Law no. 4046 of November 27, 1994 relating to privatizations — as the core of such a

transaction is the sale of the main existing highway network and the two existing Bosphorus bridges.

As a result of the somewhat "piecemeal" manner in which the various legislation relating to PPP projects has developed, there have been (and currently are) attempts by the government to consolidate the three statutes. Draft PPP legislation has been prepared. However, it is not anticipated that this will be passed in the near future.

Awards

There are three options as to the manner in which road PPP projects can be awarded. These are sealed bids among all bidders, sealed bids among at least three bidders and a negotiated procedure.

Similar to other countries, the negotiated procedure may only be used if the other options could not work. Nevertheless, in the case of large greenfield road PPP projects, the process is likely to be a mixed one of sealed bids and negotiations.

A number of parts of the government will be either directly or indirectly involved in any road PPP project. However, the three key government entities that will have a role will be the Supreme Planning Board (that is a committee made up of the prime minister and eight other ministers), the General Directorate of Highways (that is part of the Ministry of Transportation, Maritime Affairs and Communication), and the Under-secretariat of the Treasury. On a day-to-day basis, road PPP projects will be managed by the General Directorate of Highways. The Supreme Planning Board will be involved in a limited number of decisions of fundamental importance. The Under-secretariat of the Treasury will participate in certain decisions with financial implications.

Turkey is keen to encourage foreign participation in PPPs for large infrastructure projects.

Terms of Implementation Agreements

Some of the terms of road PPP project implementation agreements are controlled under the road PPP project regulatory framework. The important constraints are as follows.

The implementation agreement addresses the manner in which the project company will be remunerated. The project company revenue may be structured on the basis of a cost-plus formula or a capped price formula.

With respect to any state subsidy to be provided to the project company (and thereby built into its revenue structure), there are three options as to how the state may structure such a subsidy. These are a demand guarantee, a guarantee of the debts owed to the road PPP project's lenders (domestic and foreign –- until recently this guarantee was restricted to foreign lenders), and a grant. There are various restrictions on offering grants: for example, they can only be offered in "exceptional" circumstances, so they can only be given if it is demonstrated that the road PPP project could not be undertaken without such a guarantee. A demand guarantee, meaning a guarantee that there will be at least a minimum traffic level on the new road, provides the project company a limited guarantee as to the level of its revenue: for instance, it is understood that for the third Bosphorus bridge project, the government will guarantee that there will be basically 135,000 cars per day and provide certain minimum guarantees as to the tolls that traffic would generate.

The private sector concession over a road PPP project may be up to 49 years. However, in practice it may be considerably shorter.

At the end of the term, the road PPP project must be transferred back to the government in good working condition, at nil cost and without any encumbrances.

The government is able to secure for a project company the land that it would need for a road PPP project. In doing so, the government would most likely need to pay compensation to those affected. However, the implementation agreement may require the project company to reimburse the government for some or all of such compensation and other costs that */ continued page 46*

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the government incurs. Further, the project company may have restricted rights over the land, which will most likely include or result in restrictions on its ability to grant security in it.

There are statutory exemptions from value added tax for road PPP projects. Further, the actual deal documents are exempted from stamp duty and fees.

The project company will be strictly liable for any damage caused by the road project. However, presumably it would cover this risk by passing it on to its subcontractors and insurance.

The project company will need to provide a bid bond of 1% of the total investment required to undertake the road PPP project when the implementation agreement is signed.

The equity part of the financing that the project company obtains should be at least 20% of the expected fixed costs of the project.

The project company may only assign its rights or transfer its obligations under the implementation agreement upon an affirmative opinion from the Ministry of Transportation, Maritime Affairs and Communication, and with the prior consent of the minister.

If the project company fails, the government has certain rights to step into the project, including to take over certain contractual arrangements that the project company has put in place.

The governing law for the implementation agreement will be Turkish law.

The dispute resolution mechanism under the implementation agreement can be either arbitration (which can be international arbitration if there is a foreign element — foreign arbitration awards are recognized in Turkey as it is a signatory to the New York Convention) or the courts. As road PPP projects are governed by private (not administrative) law, the relevant courts are the judicial and not the administrative ones.

Other Issues

Various consents are required to undertake a road PPP project, such as planning permission and obtaining environmental clearances.

Obtaining planning permission includes having the relevant zoning plan amended (the zoning plan for an area includes details of any planned construction), and obtaining the consents required for certain types of land. Amending the zoning plan can be a challenge. For example, there were 1,514 objections to changing the Istanbul Metropolitan Municipality zoning plan for the third Bosphorus bridge project, and litigation arising from this is ongoing. Even if changes to the zoning plan are approved by the relevant municipality (and by the Ministry of Environment and Urbanization, as the case may be), the approval is open to challenges in the courts. As a general rule, challenges to administrative actions and decisions (such as municipality approval) do not interfere with implementation, as long as no stay of execution has been secured.

Any new highway or road with more than four lanes requires an environmental impact assessment. An opinion will also be required from the Ministry of Environment and Urbanization that any negative environmental impact of the project is acceptable.

The double taxation agreement and bilateral investment treaties to which Turkey is party provide certain additional limited protection to foreign sponsors and foreign lenders involved in road PPP projects.

Such projects will be affected in other ways by the road PPP project regulatory framework. For instance, reflecting Turkey's history, the Ministry of Culture and Tourism has the right to direct that action may be taken by a project company to protect antiquities: this may include suspending work at a site while the antiquities are removed. ◎

Solar War Stories: From the Financial Front Lines

Two CEOs and three CFOs of solar companies shared lessons learned from closing recent financings at the Infocast solar finance and investment summit in San Diego in late February. The panelists are André-Jacques Auberton-Hervé, chairman and CEO of Soitec, Edward Fenster, CEO of SunRun Homes, Matthew McGovern, chief financial officer of Gerlicher Solar America Corp., Michael Metzner, chief financial officer of Recurrent Energy, and Michael Whalen, chief financial officer of SolarReserve. The moderator is Keith Martin with Chadbourne in Washington.

MR. MARTIN: Michael Whalen, what have you financed recently and how were the financings structured?

MR. WHALEN: In September last year we completed the financing of our inaugural solar thermal project called Crescent Dunes in Tonopah, Nevada. It is a 110-megawatt facility that will generate electricity using a power tower. The financing involved raising both debt and equity. The debt was a $737 million loan guarantee from the US Department of Energy. The equity came from ACS Cobra, which is also our construction contractor, and from Banco Santander. This was the culmination of a considerable amount of work. SolarReserve itself is a major investor in the transaction.

MR. MARTIN: How long did it take to close the financing from start to finish?

MR. WHALEN: It was two years of activity from when we applied to the Department of Energy. The Department of Energy spent more than a year evaluating the tenders it received and on preliminary activity. We agreed to the final term sheet in January 2011 and completed the financing in September 2011.

MR. MARTIN: You have some other projects that you are about to finance in South Africa?

MR. WHALEN: That is correct. We were awarded, as part of the renewable energy IPP procurement program in South Africa, two 75-megawatt photovoltaic projects in the first bidding round, and we are working with South African banks to finance the projects by June 2012.

MR. MARTIN: Michael Metzner, what has Recurrent Energy financed recently?

MR. METZNER: In fact, if you allow me some license for double counting by treating construction debt and term debt that will replace it as separate financings, we raised close to $1 billion in the last year and a half. In the most recent transaction, we raised both debt and equity for a roughly 90-megawatt portfolio of five solar PV projects with the Sacramento Municipal Utility District as the offtaker. The construction debt came from a consortium of banks and had a term debt option. The equity was a partnership that was formed among KKR, Google and us. There was both tax equity and cash equity.

MR. MARTIN: Google was a tax equity investor and KKR the true equity?

MR. METZNER: We have been a little mum on some of the details, but you can probably figure it out. We also closed a construction revolver with Mizuho for $250 million to finance construction of about 20 individual solar PV projects in Ontario that will benefit from the feed-in tariff program there.

MR. MARTIN: How is financing different in Canada than the United States?

MR. METZNER: It is not nearly as tax driven and not as complicated.

MR. MARTIN: Returning to the US, how long did it take from start to finish to close the financing for the US project in which KKR and Google invested?

MR. METZNER: Start to finish was four months.

MR. MARTIN: Matthew McGovern, what has Gerlicher financed recently?

MR. McGOVERN: We have been focused primarily on commercial-scale distributed generation projects. At the end of the fourth quarter, we closed on three sites for a cold storage facility in southern New Jersey. We worked with a family office that stepped in to take full ownership, including the tax equity position. We also have an internal credit line that we arranged in Europe through a syndicated loan facility. The credit line was led by a BayernLB and is about €180 million.

MR. MARTIN: Focusing on the New Jersey projects, which I think you told me are a total of 18 megawatts, how long did the financing take from start to finish?

MR. McGOVERN: It was probably six months. It was with a group that probably did 40 megawatts last year, so the group was familiar and relatively comfortable with the process.

MR. MARTIN: What form did the transaction take with the family office?

MR. McGOVERN: It was a sale leaseback

MR. MARTIN: Ed Fenster, you are a / continued page 48

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financing machine. What have you done in the last six to eight months?

MR. FENSTER: Unlike the larger-scale developers here, we have a constant flow of projects. In 2011, we represented at least a third of the California residential market and we think about the same percentage of the national market. We are always originating new customers and placing new rooftop solar systems in service, and this leads to a steady stream of financings. Most of our transactions involved around $100 million in tax equity commitments. In September, we closed a tax equity transaction where the investor took the Treasury cash grants and we retained the depreciation. Hopefully in the next couple of days, we will be closing another transaction in which we will be keeping most of the depreciation, but the tax equity investor will be sharing in it as well. We are through committee on a partnership flip transaction that involves investment credits rather than Treasury cash grants. In December, we added a working capital facility of about $25 million to fund construction. Our construction turns very quickly, but there is a lot of it, which leads to a need for working capital.

MR. MARTIN: These are portfolios of residential solar installations. The first and second transactions you described sound like inverted leases, and you say you are working on a partnership flip transaction. How long do these deals take from start to finish?

MR. FENSTER: It was probably 18 to 24 months for the September closing measured from the initial investor contact. The one that we are closing now was a two to three month process. Discussions about the partnership flip transaction on which we are now through committee started in 2008.

MR. MARTIN: I am certain you set the record for the longest negotiation. André Auberton-Hervé, your most recent financing was a project in South Africa. How is the financing structured?

MR. HERVÉ: It is a 50-megawatt project. We launched on it last November. The project was underwritten by Investec Bank in South Africa. One had to have the financing in place in order to bid into the government RFP.

MR. MARTIN: Let me ask both André Auberton-Hervé and Michael Whalen, since you both have projects in South Africa, how does the cost of capital in South Africa compare to the US and Europe?

MR. WHALEN: The program in South Africa is very much focused on rand denominated financings. In terms of raw numbers, the cost of capital is certainly higher than you would see in the US, reflecting the inflationary environment in South Africa. Because of restrictions within the South African market on capital and on currency movement, there is a fairly small but pretty deep and liquid market.

MR. MARTIN: I imagine there is a political risk element as well?

MR. WHALEN: Whenever you look at emerging markets, that is obviously something you take into consideration. Political risks are sometimes underestimated even in our home market in California. [Laughter.]

MR. MARTIN: Permit me one tangent. Ed Fenster, Michael Whalen, what is it about the solar industry that causes companies to spell their names as a single word: SunRun, SolarCity, SolarReserve? Why?

MR. WHALEN: It turns out that space is very expensive so we are just trying to economize. [Laughter.]

Lessons Learned

MR. MARTIN: Ever vigilant when it comes to costs! Our panel discussion today is about war stories from the financial front lines. Starting with Ed Fenster, tell me what lesson you took away from your most recent financings.

MR. FENSTER: We work with homeowners and turn around and deal with project finance investors who are less used to the demands of dealing with residential customers. The amount of time a developer like us must spend on operational efficiency and compliance is significant. We need considerable infrastructure to marshal inventory, oversee installation, monitor performance, and handle 25,000 customer service calls. We have fault tolerant metering systems, multiple cellular networks, multiple technologies. We can move meters from one system to another. We are PCI compliant when it comes to handling credit cards and appropriately licensed with everyone in the state of California. We comply with an array of consumer protection rules and regulations. We take data security measures to protect customer specific information.

Regulatory awareness is our business.

It is enormously time consuming to find suitable installers. We reject 40 to 50 installers for every one that we take into our system. We run training and quality assurance programs.

These are all things we have to have in place before we can raise the first dollar of financing. For us, financing is less about

the financial terms of a transaction and more about ensuring that we have the operating business in place to manage thousands or tens of thousands of homeowners.

MR. MARTIN: Your business has more in common with the cable television business than with a power company. You are wiring lots of houses, and you need lots of people to monitor the systems. Michael Metzner, what lessons did you take away from your recent financings?

MR. METZNER: We are always trying to achieve the right balance between optimization and simplicity in order to get the deal done.

The leveraged partnership flip transaction we did recently to raise both debt and tax equity had a syndicate of four lenders and a separate tax equity investor, each with its own demands. This meant we had to move to the least common denominator on debt terms and pricing. We were negotiating in the midst of volatile capital markets with various global crisis unfolding.

The single biggest lesson is to know when to stop trying to optimize every little piece of it and focus on getting it done.

Set it up ahead of time with an optimal structure, but things are going to change and be willing to roll with the punches. Keep it simple and know when you might have to leave a few basis points on the table in order to ensure a higher probability of getting across the finish line. As an old boss, John Rowe at Exelon, used to say: "Pigs get slaughtered." Know when to fold your hand.

MR. MARTIN: Don't behave like you belong in the Tea Party movement. Don't be ideologically pure. This is like government. You have to compromise to get something done. Another lesson, you told me before this, is to anticipate that the tax equity investor will want a forbearance agreement in a deal in which there is also project-level debt.

The most important lesson in solar financings is when to stop optimizing and focus on just getting the deal done.

Mr. METZNER: Yes, that's exactly right. You need to have a good idea at the start of the process what each of the parties will require. Line up the whole deal the best you can before you start. Another obvious lesson is discipline your process. When you have seven or eight parties, four banks, two equity partners, not to mention all your contractors, keeping the momentum going becomes key in keeping everybody on the reservation. That is a huge challenge.

MR. MARTIN: Matthew McGovern, a lesson you took away from your financings?

MR. McGOVERN: I think the key takeaway for us was the need to understand where risk tolerances lie among the various parties. Financing is a process of identifying risks and allocating each to the party best able to manage it. For example, one risk we ended up having to take as the sponsor was credit risk of the customers and, at times, even the REC or renewable energy credit value.

MR. MARTIN: Part of the risk allocation is driven by which financing structure you choose. You chose a sale leaseback which really puts most of the risk on the developer as lessee.

MR. McGOVERN: Correct.

MR. MARTIN: André Auberton-Hervé, what lesson did you take away from your experience in South Africa?

MR. AUBERTON-HERVÉ: The key to all financings is to be transparent, get started early and cultivate a long-term relationship with the banks. You need to be transparent, you need to work early enough and have long-term relationships with the banks. Having an ongoing dialogue with the financial community is part of our DNA.

MR. MARTIN: Michael Whalen, what lessons did you take away from your recent experience to the Tonopah project?

Mr. WHALEN: To a certain extent, it was a unique activity because it was part of a program that had a definite end date associated with it. At times, as we slogged through the process, I thought a little bit about the Shakespearian expression, "Neither a borrower or a lender be" or its modern equivalent, "He who goes a borrowing goes a sorrowing," but I am happy to say that it ultimately led to a good result. Something we learned in the process is that, / continued page 50

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despite the high profile of the DOE loan guarantee program, it is not about politics; it is the process and ultimately all about the project and whether the economics were strong enough and the risks allocated in a manner to satisfy each of the financiers from whom we were asking for support.

A 100 basis point increase in the cost of capital adds about $15 per mWh to the electricity price.

MR. MARTIN: Will we hear you testify to that effect before one of the Congressional panels that is investigating the program?

MR. WHALEN: I certainly hope it does not come to that. Another lesson is I disagree with the popular advice book: Do sweat the small stuff. There were a lot of details as part of that process that may have seemed small early in the development phase, but that proved to be very, very challenging to deal with later when one is dealing with a finite date to close. Work with all elements of your team to keep on top of the details. Finally, a financing is not just a closing but also a long-term relationship that requires considerable maintenance. Reaching the first draw after closing was as much of a concerted effort as the execution of the financing documents,and successive draws will be as well.

MR. MARTIN: Are there any other lessons anyone wants to add from recent financings?

MR. METZNER: This is a nod to our general counsel, Judy Hall, who reminds us that the seller of a project has maximum leverage during the bidding process. Get a markup of the purchase and sale agreement and get as much detail as possible, because your negotiating leverage is only going to diminish from that time forward.

MR. MARTIN: That is especially true if you have a deadline when you have to close.

MR. McGOVERN: Exactly. It is easy to focus too much on the headline numbers or terms and not really focus on some of the key things that will cost you down the road when you will not have time to find an alternative.

Section 1603 Program

MR. MARTIN: Ed Fenster, you have been dealing with the Treasury Department on cash grants. They are the basis for some of your financings. How has that experience been? Has it been what you expected?

MR. FENSTER: Yes. The Treasury Department is getting increasingly sophisticated in how to think about these transactions. We have now received a large number in grants, none of which has ever been adjusted, and we have a reasonably good ongoing dialogue with the Treasury. We have never submitted an appraisal that assumes an unrealistically low cost of capital. The Treasury sees such appraisals occasionally — for example, with a 6.5% capital cost assumption — and takes issue with them. I think the program has been working well. We have been able to submit applications 15 days after our rooftop systems are placed in service. As we move into 2012, I suspect there will be additional scrutiny of valuations in transactions involving related parties. The focus that the Treasury is putting on this is welcome and hopefully will lead to some sort of standardization inside the industry.

MR. MARTIN: The Treasury posted to its website on June 30, 2011 benchmarks of $4 to $7 a watt indicating what it thinks are reasonable values for solar projects. Where you are on this range depends on the size of the project. The smaller projects are at the upper end of the range. In your experience, are the grants being paid today still within this range?

MR. FENSTER: Yes. We think we do well on those dimensions in the marketplace.

MR. MARTIN: Michael Whalen, given that it took you two years to get through the DOE loan guarantee process, was it worth it? If the program is renewed in the form of a clean energy bank by a new Congress, would you line up again for such financing?

MR. WHALEN: Our solar thermal projects in the United States tend to be concentrated in the western United States, so we must deal with federal land issues as a matter of course. Therefore, some of the qualms that other developers may have had with entering into a federal process did not apply to us. We were already engaged in that process. Our site is on federal land. I think that it was absolutely worth it. We were able to secure long-term financing at a price that is very beneficial for the project and ultimately for the ratepayers in Nevada. Our sense is that the outside world looks at the Department of Energy diligence and scrutiny as positive and as a sign of support for the technology.

Cost of Capital

MR. MARTIN: How important is a low cost of capital? Is there a way to quantify how much a 100 basis point reduction in cost of capital reduces the electricity price you can offer?

MR. METZNER: Every 100 basis point increase would add $15 or so to the electricity price.

MR. MARTIN: So a 100 basis point reduction in cost of capital means you can reduce the PPA price by $15 a mWh.

MR. METZNER: Roughly. Different projects vary within a range, but the cost of capital translates directly into the clearing price for power in these bidding processes. That is why it is so important to continue to find lower costs for capital to be competitive.

MR. MARTIN: Financing is a search for lowest cost capital. CFOs draw capital from six different sources. The cheapest capital is a Treasury cash grant that covers 30% of the capital cost and is free money. Next cheapest is federally-guaranteed debt, then straight debt, then tax equity, then subordinated debt and then true equity. The government is pulling away the two cheapest tiers. The Treasury cash grants are phasing out, and government-guaranteed debt is largely gone except under a US Department of Agriculture program for projects in rural areas and possibly guaranteed debt from export credit agencies.

What direction do you expect to move in your search for lowest cost capital now that the bottom two tiers are being pulled away?

MR. WHALEN: The lowest cost of capital is obviously one of the criteria that we look for, but we also take into account other things like how quickly we will be able to secure it and whether we are using the next financing as a launch pad to achieve other financings.

There will clearly be an impact in the cost of capital with the expiration of the section 1603 and 1705 programs. I am not sure I view the section 1603 program as free money. It is the cash equivalent of an investment tax credit that was already on the statute books. The government was concerned after the economy collapsed about the ability of developers to get value for the investment credit. I think to that extent it was extremely effective.

MR. MARTIN: Let's assume the section 1603 program will not be extended. Where will you look to replace the capital in the two cheapest tiers?

MR. METZNER: There are short-term and long-term answers to that question. Each answer is specific to the kind of developer you are, the technology you are using, and your particular situation. It is hard to replace something like the Treasury cash grant. But the investment credit is still there. There is still a huge untapped amount of tax capacity that is on corporate balance sheets. I know that traditional tax equity providers like to say, "It's hard to unlock that," but it has never been easy to raise financing in this business, and I think developers will have to try to unlock some of that.

MR. MARTIN: So unlock additional tax capacity.

MR. METZNER: Then there are production tax credits. Our friends in the wind market know that the production tax credit for wind is expiring, and there is tax capacity that is currently being absorbed by the wind market that might be freed up for solar.

MR. MARTIN: So wind failure leads to tax equity bonanza for solar.

MR. METZNER: Maybe there isn't a great replacement, so it just puts more pressure on having better projects: better quality PPAs, better quality construction and equipment contracts and essentially driving down the perception of risk among investors so that you can make up for that lost grant. I think that is really the long-run answer.

MR. MARTIN: Let me reframe the question slightly. European banks are having capital adequacy problems. Many are withdrawing from the project finance market. What does one do in the face of this to find low cost capital?

MR. FENSTER: First, I would say we never found the DOE loan guarantee program to be a low cost form of capital.

Expiration of the grant program will push people to tax equity transactions using investment tax credits. We are already moving in that direction, and have not necessarily seen any meaningful change in cost of capital. */ continued page 52*

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The universe of buyers is slightly smaller. One new direction in which are moving is we are waist deep in an asset securitization program where we will be selling publicly-rated debt. That is a new source of capital that gets you out of the bank market. US banks are not really equipped to hold assets for more than five to 10 years. The people who are more likely to do that buy publicly-traded bonds. Asset managers, pension funds and life insurance companies, plus stripping the projects down to send the cash in that direction and the tax benefits in another direction are where I see the market headed over the next couple of years.

MR. MARTIN: So ABS or securitization structures may be your future. Anybody else? Where else do you think you will look for low cost capital in the future?

MR. McGOVERN: We will be trying to increase efficiency and strip out layers. In the past with the section 1603 program, you could draw capital from multiple sources. Now for us the Holy Grail is to find a participant who is all-in-one. It can take all the tax benefits and lend part of the capital cost or put in equity. That is the most efficient.

Overcapacity

MR. MARTIN: The current solar company earnings reports in Photon, a magazine that does a good job of covering the solar industry, make rather unsatisfying reading. Many of the large solar companies have been reporting disappointing earnings in the last few issues. Is this just a problem with equipment manufacturers with over capacity or does it also infect the developer side of the business? Are developers better off with the travails on the equipment manufacturing side?

MR. WHALEN: The real question is to whether there will be meaningful consolidation of manufacturers upstream. Some consolidation is already occurring, and you should begin to see that represented in the profit and loss statements of the manufacturers. However, the real price setters in the market are the Chinese.

MR. MARTIN: André Auberton-Hervé, do you feel this pressure to consolidate as a manufacturer?

MR. AUBERTON-HERVÉ: I think there are two markets. There is one that is driven mainly by the policy in Europe. Eighty percent of PV is installed in regions where the sun is really not the strongest. There is a new market that is emerging, which is one of utility-scale projects in higher radiance areas. I have been in the industry for 30 years. It is a very dynamic one. The renewable energy today is moving geographically. Solar is moving south. Wind is moving north in Europe. I see two different markets, and one is in the sunbelt where people are investing in large-scale utility projects.

MR. MARTIN: Ed Fenster, there is a trade complaint pending in the United States against Chinese solar cell manufacturers. There is a possibility of large duties being imposed retroactively up to 90 days before a preliminary determination. The first preliminary determination is due in late March. How is the threat of duties affecting financing?

MR. FENSTER: We were very concerned about this in December and ended up placing a large order with a Korean manufacturer as a hedge against it. What we have seen happen in the marketplace is that the large Chinese manufacturers have developed enough capacity outside of mainland China that even if an enormous tariff is imposed, costs to purchase those panels may not go up by more than a few cents because the solar cells will just be resourced to Taiwan or Malaysia. It is an interesting process. Certainly, it is very important for a US developer not to be the importer of record. I am not sure what the true economic incentive of the plaintiff was, but at this point, I do not see the threat of tariffs as a risk to US development.

MR. MARTIN: Here is my final question. What do you feel is missing among financing options on offer today in the market?

MR. WHALEN: I am surprised there has not been a combined debt-tax equity alignment.

MR. MARTIN: The tax equity investor should also be the lender?

MR. WHALEN: I am surprised nobody has married the two in some sort of combined offering. We end up in debates about forbearance agreements. I am surprised this hasn't been packaged better.

MR. MARTIN: I have a feeling we will hear from people right after this panel because there are several tax equity investors who do both in the same deal.

MR. WHALEN: Sometimes two groups within the same institution are farther apart than separate institutions.

MR. MARTIN: Spoken like a former banker. You know the inside story. ◎

Environmental Update

The US Environmental Protection Agency issued its first proposed limits on carbon dioxide emissions in March.

The proposed rule would limit emissions from new fossil fuel-fired power plants to 1,000 pounds of carbon dioxide or CO_2 per megawatt hour. The proposed standards would apply to new fossil fuel-fired power plants of greater than 25 megawatts in size. They would not apply to existing fossil-fuel power plants.

EPA believes that the proposed rule would have only a limited impact because the low price of natural gas has already pushed most developers who are not using renewable energy to choose natural gas over coal and oil. Most natural gas plants in the US already meet the proposed standard. Coal-fired power plants could meet them by installing carbon capture and sequestration technology.

Proposed environmental regulations would limit CO_2 emissions from new power plants to 1,000 pounds per mWh.

The proposed rule exempts some coal-fired projects that already have construction permits, provided that they commence construction within one year. The proposed rule also allows for some flexibility by judging compliance with the rule over a time frame of 30 years and providing an initial exemption for highly efficient coal-burning plants for the first decade of operation before requiring them to reduce their CO_2 emissions. This alternate compliance plan would allow new coal-fired power plants to come on line without carbon capture and sequestration technology if the plant commits to an enforceable limit of 1,000 pounds averaged over a 30-year time frame. This means that although a new coal plant could begin operating without carbon capture technology, it would be required to add it within the first 10 years of operation.

In a March 27, 2012 conference call, EPA Administrator Lisa Jackson said the agency has no current plan to issue a rule limiting CO_2 emissions from existing fossil fuel-fired plants, though some speculate that such a proposal could come after the November election. Jackson also said the proposed rule does not apply to existing power plants that undergo major modifications, even if those modifications increase CO_2 emissions. Comments to the proposed rule must be received on or before June 12, 2012. Lawsuits have already been filed challenging it.

Fracking

Federal regulators are continuing to focus on the potential environmental effects of hydraulic fracturing, also known as fracking. Fracking is used to extract natural gas trapped in shale rock formations. Such gas could account for more than 20% of the US gas supply by 2020, according to EPA.

Fracking refers to the process by which fluids (water and chemical additives and sand or similar materials) are injected under high pressure down a very deep well. These fluids force existing fractures in the subsurface to open wider while a propping agent (sometimes sand) holds the fractures open as natural gas is released and extracted. This process uses tremendous amounts of water, up to two to five million gallons for a horizontal well, which then leads to concern about the availability of that much water.

The states largely regulate the process of fracking. Federal underground injection control program regulations only cover fracking related to oil, gas or geothermal energy production if diesel fuel is used as a propping agent. In addition, oil and gas wells are exempted from a requirement under the federal Emergency Planning and Community Right to Know Act to report the amounts of toxic chemicals released, stored or transferred each year.

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In early May, EPA issued guidance implementing permitting regulations that includes a definition of "diesel fuel" to make it clearer which substances trigger permitting requirements. Under the proposal, diesel fuel and diesel fuel containing one of six constituents trigger permitting under the underground injection control program. Comments are due by July 9, 2012.

However, this was after announcing in April that proposed air emissions standards for fracking operations are being delayed until 2015. The regulations will require fracking operations to use air emissions control devices aimed at reducing the emissions of methane, volatile organic compounds and hazardous air pollutants. EPA delayed the implementation of the rules until 2015 to make sure that the required air emissions equipment is available. The regulations require use of emissions control equipment called "green completions." Industry sources say that about 300 sets of equipment are available, but another 1,000 sets would be needed to comply with the rule.

The federal Bureau of Land Management proposed changes to 30-year old regulations governing fracking on federal land. The BLM estimates that roughly 90% of wells currently drilled on BLM-managed lands are stimulated using hydraulic fracturing techniques. The proposed rule changes impose additional reporting and approval requirements, including a requirement for the BLM to approve all well stimulation activities, confirm that precautions are taken to prevent the migration of fluids into usable water sources and use pressure tests of wells to confirm well integrity every five years or after significant new information is revealed.

The BLM also explained that the proposed rule requires that fracking operations be isolated from all "usable water" (that containing up to 10,000 parts per million of dissolved solids). According to the BLM, this is not a new standard and simply eliminates confusion in interpreting the prior regulations that apply to onshore operations that refer to "fresh water" (that containing 5,000 parts per million or less of dissolved solids). Operators will also have to certify that they have complied with all federal, state, tribal and local rules and regulations, disclose the identity of the chemicals used in the fracking fluids, report on the management and disposal of fluids in the fracking process and store recovered fluids in tanks or lined pits. BLM says the rule change is consistent with existing industry practice and American Petroleum Institute recommendations for handling such fluids.

Although the industry expressed concern that the proposed rule will lead to delays in fracking on federal land, BLM is determined to provide the required authorizations in a timely manner. Comments to this rule are due within 60 days after publication in the Federal Register.

Methane Hydrate

The extraction of natural gas from methane hydrate could lead to a 30% reduction in natural gas prices by 2025, according to the US energy secretary, and some surveys estimate that the natural gas extracted from methane hydrate reserves could power the US for the next 1,000 years.

Methane hydrate exists in Alaska and offshore in continental shelf lands all over the world. Methane hydrate is a three-dimensional lattice ice structure loaded with trapped methane. Methane is the primary component of natural gas. In April, researchers from the US Department of Energy, ConocoPhillips and Japan Oil Gas & Metals National Corporation demonstrated a method to unlock this natural gas by injecting CO2 and nitrogen into methane hydrate reserves in Alaska. According to the DOE, one cubic meter of methane hydrate can release 164 cubic meters of natural gas.

The technology is not economically viable today, but the same could have been said for commercial-scale fracking just a few years ago. The DOE is funding research on the extraction of this potential vast source of natural gas and examining the potential environmental impacts of such extraction.

Utility MACT Rule

The Environmental Protection Agency issued its final "utility MACT rule" last December setting standards for air toxics — which can include mercury, arsenic, chromium, dioxins, lead, formaldehyde and other substances — and establishing requirements for the use of "maximum achievable control technology" or "MACT" to control such emissions from power plants larger than 25 megawatts that burn coal or oil.

The rule fills a regulatory hole that Congress left for air toxics from power plants when Congress amended the Clean Air Act in 1990.

EPA met a court-ordered deadline for issuing the new rule to which it agreed in a settlement with environmental and

health advocacy groups in *American Nurses Association v. Jackson*. The rule does not apply to natural gas-fired power plants unless the fuel used is produced by gasifying coal or oil.

EPA says it has no current plans to limit CO_2 emissions from existing power plants, but that could change after the November election.

The final rule retains the strict mercury limits contained in an earlier proposed version of the rule, but offers some flexibility to utilities that need more than the three years that the Clean Air Act allows for installing the required air emissions control technology. The first year of compliance is 2015, but a presidential memorandum clarifies that regulators can allow a one-year extension if companies can demonstrate that extra time is needed. EPA can also use its enforcement discretion to grant a fifth year to comply by issuing an administrative order or entering into a consent decree with the respective facility. The EPA office of enforcement and compliance assurance released a memorandum outlining how utilities could obtain compliance extensions.

Critics of the new emissions control requirements urged a delay on grounds that it would reduce the cost of compliance by allowing retirements and retrofits to take place in a more sequential manner and providing time to address potential grid reliability issues while still achieving the EPA's objectives. Critics also argued against consent decrees and administrative orders as a means of obtaining extensions to the deadline for compliance both because those companies might be seen as being in violation of the law and because entering into consent decrees could put them at risk of citizen suits for noncompliance.

The rule also revises new source performance standards for new coal and oil-fired power plants and sets standards for emissions of particulate matter, SO_2 and NO_x.

Combined Impact of New Rules

The impact of the utility MACT rule must be viewed in combination with a separate cross-state air pollution rule called "CSAPR" and pronounced "Casper." CSAPR was scheduled to take effect January 1, 2012 with reductions to begin in 2014, but was delayed by a US appeals court pending resolution of legal challenges. In the meantime, a predecessor rule, the Clean Air Interstate Rule or CAIR, remains in effect.

Utility MACT sets standards for mercury and other toxic pollutant emissions from power plants. The rule mainly affects coal-fired power plants, and the impact will be greatest in the midwest and in the coal belt, especially in Kentucky, West Virginia and Virginia.

CSAPR sets emissions caps that will require reductions in SO2 and NOx emissions from existing power plants in 28 states, mostly east of the Mississippi River, but as far west as Texas. CSAPR addresses the interstate transport of SO2 and NOx from upwind states to those downwind. CAIR does largely the same thing.

Utility MACT and CSAPR together are expected to cut mercury emissions from power plants by more than 90%, SO2 by more than 70% and NOx emissions by approximately 50%. EPA says the reductions in these emissions will prevent more than 120,000 asthma attacks and more than 11,000 heart attacks annually by 2016, translating into somewhere between $37 billion and $90 billion in savings.

The new rules may also to lead to the retirement of generating capacity sufficient to power more than 11 million homes, or 14.7 gigawatts, by 2015. In addition to the closures, EPA estimates that the rules may cost utilities $9.6 billion by 2016 for installation of new control equipment.

A recent Associated Press survey estimates that the combined rules could speed the closure of more than 8% of the nation's coal-fired generating capacity, with the combined total number of plants in jeopardy capable of generating enough electricity to power more than 22 million homes. In addition, about 500 or more / *continued page 56*

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coal-fired units will need to be idled temporarily in the next few years during installation of pollution controls. The average age of the plants in jeopardy is more than 50 years.

Utility MACT is projected to increase the cost of electricity nationwide by 3%.

Opponents Down But Not Out

Thirty lawsuits have now been filed challenging the utility MACT standards for power plants, including lawsuits by 24 states and various industry groups.

EPA sets limits for each individual pollutant under utility MACT based on the performance of the 12% of US facilities that emit the smallest quantity of the particular pollutant. Critics argue that no single power plant can meet MACT standards set in this way because the standards do not represent the actual emissions reductions achieved by any real plant. In other words, the rule uses a pollutant-by-pollutant approach on a shifting group of best-performing units. Previous efforts to challenge MACT applications in other industries were thrown out on procedural grounds. ◎

— *contributed by Sue Cowell and Andrew Skroback in Washington.*

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