Berkeley Lab and the Clean Energy Group

CASE STUDIES OF STATE SUPPORT FOR RENEWABLE ENERGY

Use of Low-Interest, Subordinated Debt to Finance a Wind Project in Pennsylvania

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CASE SUMMARY

Case Description

Four Pennsylvania funds have teamed up to offer $3.6 million in low-interest, subordinated debt to a 9 MW wind project. This offering represents the first use of low-cost debt by a state clean energy fund to support a large-scale wind project in the U.S., and marks a significant departure from standard grant-based project support. This case describes the structure of the incentive and how it has impacted the project, and identifies several caveats to keep in mind.

Innovative Features

Several innovative features of this investment deserve note:

- The subordinated debt reportedly provided a similar amount of value to the project as would have a production incentive that had previously been offered in Pennsylvania. Unlike production incentives, however, subordinated debt allows the Pennsylvania funds to recoup their collective investment (*and* earn a 5% return) over 10 years.
- Because the debt is subordinate to any senior financing, it does not interfere with the project owner's ability to arrange senior financing. Existence of a senior lender experienced in project finance will provide considerable cost savings to the Pennsylvania funds, which intend to piggyback on the senior lender's due diligence and mimic the structure of the senior loan agreement.
- The syndication of Pennsylvania funds allowed each fund to participate at a level with which it is comfortable, while drawing on the financial expertise of the syndicate leader and the senior lender.

Results

- The project came on line in 2001, but has yet to tap into the subordinated debt. This is because the project does not yet have a permanent owner, and the current owners (the development team) have sufficient cash reserves to own and operate the project without financing in the interim.

- It is clear, however, that the existence of the financing played a positive role in the negotiation of a 20-year power purchase agreement with Exelon (the wholesale buyer).
- While these promising early results seem to indicate that the use of subordinated debt to finance large-scale projects could be a model worth emulating, several factors, including implications for the federal production tax credit, must also be considered.

CASE STUDY DETAILS

To date, production incentives have been the most common form of support that clean energy funds in the United States have offered to large-scale renewable energy projects (e.g., wind farms). While they are an improvement over capital grants in encouraging project performance, production incentives do have one potential shortcoming: once the funds have been awarded, they are "gone" forever and unavailable to support future projects. In an attempt to provide incentives on a more sustainable basis, the four clean energy funds in Pennsylvania have joined together in a syndicated offering of $3.6 million in subordinated debt to the 9 MW Somerset wind project in Pennsylvania. The project began commercial operations in October 2001. This offering represents the first use of low-cost debt to support a large-scale wind project in the U.S. by a state clean energy fund.

Structure

The Sustainable Development Fund (in PECO's service territory) leads the syndication with a $1.5 million contribution, and acts as agent on behalf of the other three clean energy funds in Pennsylvania: The Sustainable Energy Fund of Central Eastern Pennsylvania ($1.15 million), the GPU Sustainable Energy Fund ($0.65 million), and the West Penn Power Sustainable Energy Fund ($0.30 million). The 5% debt, offered for a 10-year term, is intended to be subordinate to any senior financing (i.e., the senior debt provider will have first lien on the project's assets), thereby not interfering with the project owner's ability to raise senior debt.

Status

While the terms of the deal were structured and a commitment letter conditionally awarded in the second quarter of 2001, the Somerset project has yet to tap into the subordinated debt. The developer of the project is unable to take advantage of the federal production tax credit (PTC) itself, and so has been negotiating with prospective purchasers who can. A proposed sale of the project to Entergy was abandoned in December 2001 due to concerns regarding the unclear future of the equipment supplier (Enron Wind). As the developer has sufficient cash reserves to own and operate the project until a buyer is found, no permanent financing (including the Pennsylvania funds' subordinated debt) is needed at this time.

Benefits

It is clear, however, that the existence of the financing played a role in the negotiation of a 20-year power purchase agreement (PPA) with Exelon (the wholesale buyer). The PPA reportedly indicates that the subordinated debt financing reduces the power purchase price by 0.6¢/kWh, and provides a similar amount of value to the project as would a $1 million grant. A $1 million grant equates to about a 1¢/kWh 5-year production incentive offered as a lump sum upon commercial operation (i.e., the structure described for Pennsylvania in a separate case study on production incentive auctions). In other words, the use of subordinated debt provides price reductions on par with a production incentive, yet allows the Pennsylvania funds to recoup their collective investment (*and* earn a 5% return) over 10 years, to be recycled in support of new projects.

Furthermore, despite its novelty, the use of subordinated debt does not appear to be significantly more administratively burdensome than a standard production incentive. The

Somerset deal is contingent upon the eventual existence of a senior lender, whom the Pennsylvania funds are counting on to carry much of the burden. Specifically, a senior lender experienced in project finance will perform rigorous due diligence well beyond the capabilities of the Pennsylvania funds; if at the end of this process the senior lender is satisfied, so will be the Pennsylvania funds. Likewise, the funds are hoping to closely mimic the loan agreement negotiated between the senior lender and project owner, potentially changing only the interest rate and term. These features make the use of subordinated debt more feasible than one might otherwise think.

Finally, the syndication enables each fund – which range in total size (i.e., including energy efficiency funds) from $2 million to $4 million per year – to participate at a level with which it is comfortable, while drawing on the financial expertise of the Sustainable Development Fund (the syndicate leader) and, as noted above, the senior lender.

Given the apparent success of subordinated debt financing in reducing the cost of the Somerset project and sustaining the capital base of the Pennsylvania funds, the Sustainable Development Fund is offering, among other financing options, subordinated debt in Phase III ($6 million) of its dedicated wind program funded by the PECO/Unicom merger. There have even been discussions with other funds (e.g., Connecticut) that are interested in participating in future syndications.

Caveats

While these promising early results seem to indicate that the use of subordinated debt to finance large-scale projects could be a model worth emulating, there are several considerations to keep in mind:

- **Attractiveness of Debt-Based Incentives:** First, subordinated debt financing may only be useful to a project if the ultimate project owner requires debt financing. As more and more large corporations diversify into wind project ownership (e.g., FPL, Shell, AEP, Entergy, Cinergy), balance sheet financing – with no external debt requirements – may become more common than project financing. This will diminish the value of debt-based incentives to project owners. Furthermore, without a senior lender, the "piggybacking" strategy adopted by the Pennsylvania funds does not work.

- **Tying Up Project Funds:** Second, under a debt arrangement, funds would be tied-up in a project for some time, only to be returned slowly throughout the debt term (in this case 10 years) via capital and interest repayment. While such repayment could ultimately be expected to result in more MW of renewable electricity installed over time than a one-time production incentive, a state fund with a fixed budget and time horizon will be able to leverage more renewables capacity in year one with a production incentive than with low-interest debt. This is because only a portion of low-interest debt – the portion that is below market – subsidizes the project, whereas a production incentive is pure subsidy. Thus, for a given amount of capacity, it takes a greater amount of low-interest debt to provide the same level of support as a production incentive. Likewise, for a given amount of funds, a production incentive can support a greater amount of capacity than can low-interest debt.

- **Interaction with the PTC:** Third, when funding a wind or closed-loop biomass project, one must consider the effect of the incentive on the PTC. The tax code states that the value of the PTC is reduced by "the aggregate amount of subsidized energy financing provided (directly or indirectly) under a Federal, State, or local program provided in connection with the project," relative to the project's capital cost. While the terms of the subordinated debt offered to the Somerset project – 5% debt for 10 years – could quite easily be construed as "below-market" or "subsidized" given where interest rates have been trading, the tax code does not offer specific guidance on how to determine whether or not financing is subsidized, and neither the Pennsylvania

funds nor the project developers have requested an IRS ruling on this or other matters relating to this project.

Furthermore, it is not clear whether system-benefits charge funds are considered "State" programs. In a private letter ruling, the IRS determined that a production incentive offered by the Sustainable Development Fund to the Waymart project did not constitute a State program. The specific funds in question, however, came from a utility merger settlement (i.e., private capital), as opposed to a system-benefits charge mechanism.[1] To our knowledge, the IRS has not ruled on whether system-benefits charge funds are considered to be public or private funds. If interested in offering below-market subordinated debt, state clean energy funds would be wise to seek advice from the IRS on whether or not system-benefits-charge-derived funds are considered public (i.e., State) or private funds.[2]

Otherwise, if PTC offsets are ultimately triggered, the financial impact of the incentive will be partially or wholly offset by a corresponding reduction in the value of the PTC. For example, if one assumes that the Somerset project was installed at a cost of $1,000/kW, then $3.6 million in subordinated debt represents 40% of total capital costs. If below-market subordinated debt were to trigger PTC offsets, then the value of the subordinated debt to the Somerset project – revealed in the PPA to be 0.6¢/kWh – will be more-than-offset by a 40% reduction in the value of the PTC (commonly considered to be worth 1.5-2¢/kWh in its entirety). In other words, an incentive worth 0.6¢/kWh could trigger a reduction in the PTC of up to 0.8¢/kWh, leaving the project worse off than it was without the incentive.

[1] Note that the subordinated debt offered to Somerset was not funded out of the PECO/Unicom merger settlement, but rather through each fund's regular system-benefits charge funding.

[2] Ed Ing's recent NYSERDA-sponsored analysis of PTC offsets indicates that the source of funds may not even matter if the fund administrator is clearly a State entity (as is NYSERDA): Ing concludes that if NYSERDA were to offer subsidized energy financing, it would definitely offset the value of the PTC, no matter whether the funds were public or private.

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About this Case Study Series

A number of U.S. states have recently established clean energy funds to support renewable and clean forms of electricity production. This represents a new trend towards aggressive state support for clean energy, but few efforts have been made to report and share the early experiences of these funds.

This paper is part of a series of clean energy fund case studies prepared by Lawrence Berkeley National Laboratory and the Clean Energy Group, under the auspices of the Clean Energy Funds Network. The primary purpose of this case study series is to report on the innovative programs and administrative practices of state (and some international) clean energy funds, to highlight additional sources of information, and to identify contacts. Our hope is that these brief case studies will be useful for clean energy funds and other stakeholders that are interested in learning about the pioneering renewable energy efforts of newly established clean energy funds.

Twenty-one total case studies have now been completed. Additional case studies will be distributed in the future. For copies of all of the case studies, see:
http://eetd.lbl.gov/ea/ems/cases/ or http://www.cleanenergyfunds.org/

About the Clean Energy Funds Network

The Clean Energy Funds Network (CEFN) is a foundation-funded, non-profit initiative to support the state clean energy funds. CEFN collects and disseminates information and analysis, conducts original research, and helps to coordinate activities of the state funds. The main purpose of CEFN is to help states increase the quality and quantity of clean energy investments and to expand the clean energy market. The Clean Energy Group manages CEFN, while Berkeley Lab provides CEFN analytic support.

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