

OPTIONS FOR MOBILIZING CLEAN ENERGY FINANCE



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Clean energy and energy efficiency technologies are decreasing in cost and demonstrating their reliability as they are deployed around the world. Financial institutions are becoming increasingly willing to offer traditional financial structures and terms for clean energy projects. At the same time, accelerated public and private investment in these technologies is needed to meet national and global greenhouse gas emission reduction targets.

In the United States, numerous federal, state, and local government initiatives provide financial resources for clean energy and energy efficiency projects in the form of grants, tax credits, loans, and other incentives. However, the public sector has limited ability to greatly increase overall assistance due to fiscal constraints. As such, governments and companies are establishing innovative programs to spur additional private investment, maximize the impact of public funds, and strike a strategic balance between public and private sector roles.

Below are examples of financial tools that cities, states, and companies are developing and using to bring more private sector financial resources to the table and accelerate the deployment of clean energy technologies.

CLEAN ENERGY BANKS

A clean energy bank, sometimes called a “green bank,” is a governmental or quasigovernmental organization designed to efficiently use limited public funding to advance deployment of clean energy technologies. While the structure, authority, and mission of a clean energy bank may vary, these organizations typically leverage small amounts of public funding to attract larger amounts of private capital for investment in clean energy. When public investments are repaid, often with interest, that money can be reinvested in subsequent

programs with limited recurring public funding.

Although clean energy banks can provide direct lending like a traditional commercial bank, they have many other tools at their disposal, such as credit enhancements, letters of credit, and loan loss reserves, to unlock private lending and remove other barriers to clean energy deployment. In general, the mission of clean energy banks is to facilitate financing for commercially viable technologies that would have far greater market penetration but for the lack of capital. As markets develop, clean energy banks can scale down their role and achieve greater leverage of their funds as net benefits of clean energy investments become more certain, as the private sector becomes more engaged in deployment and financing, and as barriers to deployment are reduced.

In Action

In 2011, Connecticut established a quasi-governmental Connecticut Green Bank (CGB) that now oversees more than \$100 million in assets.¹ Overseen by a governor-appointed Board of Directors, the CGB’s mission is to bring clean energy deployment to scale by leveraging its limited public funding to attract substantially more private funding.

To date, the CGB has offered a variety of programs and incentives to promote clean energy deployment. These include a Commercial Property Assessed Clean

Energy (C-PACE) energy efficiency financing program, rebates and incentives for residential solar installations, and a joint solar leasing program with local financial institutions.

GREEN BONDS

Similar to other bonds, green bonds allow a company or public sector entity to borrow money for a specific period of time at a variable or fixed interest rate. Green bonds are distinct since they are borrow money for specifically designated clean energy or energy efficiency projects.

Regulatory agencies, laws, or private entities may provide definitions or specify requirements for clean energy or energy efficiency projects to qualify for financing under green bonds.

As capital markets gain familiarity with the operational performance of these projects, they are likely to be more willing to provide debt finance through instruments like green bonds.

In Action

In November 2013, Bank of America issued a \$500 million green bond, which raised capital for the financing of numerous clean energy and energy efficiency projects.² Approximately \$40 million from the sale of the bond will enable the City of Los Angeles to conduct the world's largest streetlight retrofit project.

ENERGY SERVICE COMPANIES (ESCO) AND PERFORMANCE CONTRACTS

An ESCO is typically a business that develops, arranges financing for, and installs projects designed to improve a building's energy efficiency over a certain period of time.

ESCOs reduce barriers to energy efficiency upgrades such as high upfront costs, risk aversion, and lack of information or experience. The services provided for any particular client vary, but the distinguishing characteristic of an ESCO is that its compensation is typically linked to the amount of energy saved through a performance contract. This performance contract reduces the risk of investment by guaranteeing that the upfront cost of investing in energy efficiency measures can be repaid over some number of years through the operational cost savings the project generates.

To date, ESCOs have been most successful working with noncommercial clients such as governments, universities, schools, and hospitals. In comparison to commercial buildings, these entities usually have longer-term payback perspectives and benefit from their size relative to the cost of efficiency measures.

In Action

Since 2009, the city of Knoxville has been paying for energy efficiency upgrades under a 13-year energy performance savings contract with an ESCO.³ Under the contract, energy efficiency measures, including more efficient lighting, water conservation tools, weatherization, and upgraded building heating and cooling systems, are being deployed at all city buildings and outdoor parks and athletic facilities. Each year, Knoxville pays the ESCO a fee based on expected savings from adopting the broad suite of efficiency measures.

WAREHOUSING

Warehousing facilitates the development of a secondary market for loans or other financial products, including securities backed by clean energy projects. After providing one or several loans to clean energy projects in a primary market, a bank or other lender may become capital constrained unless it can sell off the loans that it originates in a secondary market. The lender can then use the proceeds from selling its original loans to provide new loans.

Through warehousing, a third party, most likely another bank, buys and holds loans or other financial products, providing a primary lender with a secondary market and additional capital to make new loans. The warehousing party will then sell the loans it buys either directly or together with other loans in an asset-backed security. For a security to be created and sold, a relatively large pool of loans or leases is needed. However, in an immature market, the number of loans may be limited, but the warehousing party can wait until such a time when there are sufficient loans for incorporation into a security.

While loans are being warehoused, their history of repayment can build, a process known as seasoning. Seasoning debt instruments gives the loans time to reveal the credit quality of the borrowers, which reduces uncertainty for both primary lenders and secondary market buyers.

In Action

In 2006, the Pennsylvania Treasury created the Keystone Home Energy Loan Program (HELP) to provide low-rate loans to homeowners wishing to make energy efficiency upgrades. To date, HELP has provided more than \$70 million to more than 10,000 households.⁴ Anticipating demand for such loans to exceed the state’s commitment of funding for HELP, state leaders sought private sector capital to enable HELP expansion.

The Pennsylvania Treasury, working with a team of private sector and federal and state government partners, launched the Warehouse for Energy Efficiency Loans (WHEEL) to generate more capital for residential energy efficiency loan programs like HELP.⁵ WHEEL facilitates the aggregation of individual loans provided by states for energy efficiency. WHEEL partners will issue a bond based on loan repayments, and the capital raised by selling the bonds will be used to grant additional residential energy efficiency loans.

ALTERNATIVE COLLATERALIZATION AND REPAYMENT PROGRAMS

The development of clean energy financing programs that provide alternatives to typical collateral types and repayment mechanisms can expand credit access to a broader set of borrowers and provide some protection against the risk of non-payment.

Loans are often secured against the assets that are financed using the loan, such as a car or a real estate property. Using clean energy technology investments themselves as collateral is impractical because it is too difficult for banks to repossess and resell these technologies. Providing an alternative collateralization mechanism can help reduce interest rates and lengthen loan terms, avoiding costlier unsecured loans.

Two such examples of alternative collateralization include property assessed clean energy (PACE) programs and on-bill financing.

RESIDENTIAL/COMMERCIAL PROPERTY ASSESSED CLEAN ENERGY (PACE)

Under a Commercial PACE program, a local government provides a commercial property owner with low-cost financing for building energy efficiency, renewable energy, or water conservation upgrades. The property

owner repays the local government through property tax bills. To provide collateral, the building owner legally encumbers the property until the debt is repaid, by placing a tax lien on the property. A project must be deemed cost-effective to qualify. Commercial PACE financing typically also requires the consent of the existing property mortgage owner.

In Action

Approximately 30 states and the District of Columbia have enacted legislation to enable PACE at local levels.⁶

ON-BILL FINANCING

Under an on-bill financing program, loans for qualifying clean energy projects could be repaid through utility bills. On-bill financing decreases overhead costs of loan servicing and may lower the risk of nonpayment because the loan is repaid through an existing, familiar channel with a long repayment history. Under an on-bill financing program, customers would select from available private financing options or, if available, dedicated public financing programs. Projects participating in an on-bill financing program would not be financed by utility ratepayers. Similar to Commercial PACE, projects would be required to generate net monthly savings in order to qualify.

In Action

Five states (California, Connecticut, Hawaii, Massachusetts, and New York) have adopted legislation requiring utilities to offer an on-bill financing program. Additional states have instituted pilot programs or removed barriers to potential on-bill financing programs. Certain utilities have voluntarily created on-bill financing programs as means for reducing peak loads and the need for potential investment in new electricity generation assets.⁷

CREDIT ENHANCEMENTS

Credit enhancements are tools that help private investors offer more attractive financial products by lowering the exposure to risk of late payment or default in immature markets. Credit enhancements can encourage private investment in clean energy projects in two ways:

1. Expanding access to private capital in relatively immature markets by enabling private investors to

relax underwriting criteria; and/or

2. Making financing products more attractive to borrowers by enabling private investors to offer lower interest rates, longer terms, or otherwise more favorable terms.

Several types of credit enhancements are commonly used by public financing programs, including contributing capital to project equity, willingness to subordinate lending in case of default, the creation of loan loss reserves and loan guarantees, or the establishment of debt service reserve funds.

In Action

Launched in 2014, the state-sponsored New York Green Bank's (NYGB) initial product offerings include several types of credit enhancements for clean energy projects, including loan loss reserves and letters of credit.⁸ Through its offered credit enhancements and in exchange for a certain fee, the NYGB would compensate private sector lenders for some portion of losses on loans to clean energy projects that may occur, thus increasing a private sector lender's willingness to lend.

ENDNOTES

1 "2014 Annual Report Innovating, Educating and Activating to Accelerate Clean Energy," Connecticut Green Bank, last accessed June 22, 2015, http://www.ctcleanenergy.com/Portals/0/AnnualReport_FINAL_5.4.15-SinglePages.pdf.

2 "Bank of America issues \$600 million 'Green Bond,'" Bank of America, last accessed June 23, 2015, http://about.bankofamerica.com/en-us/green-bond-overview.html#fbid=zP_t6WgfG8C/hashlink=LA.

3 Susanna Sutherland, "Knoxville Saves \$1+ Million/Yr With Energy Performance Contract," ICLEI USA, last accessed June 22, 2015, <http://www.icleiusa.org/blog/knoxville-tn-saves-more-than-1-million-per-year-with-energy-service-performance-contract>.

4 "Programs," Warehouse for Energy Efficiency Loans, last accessed June 22, 2015, <https://wheel.renewfund.com/programs>.

5 "About WHEEL," Warehouse for Energy Efficiency Loans, last accessed June 22, 2015, <https://wheel.renewfund.com/about>.

6 "Property Assessed Clean Energy (PACE)," Center for Climate and Energy Solutions, last accessed June 22, 2015, <http://www.c2es.org/us-states-regions/policy-maps/property-assessed-clean-energy>.

7 "On-Bill Financing," Center for Climate and Energy Solutions, last accessed June 22, 2015, <http://www.c2es.org/us-states-regions/policy-maps/on-bill-financing>.

8 "New York Green Bank Business Plan Case 13-M-0412." New York Green Bank, last accessed June 22, 2015, <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B3BCF6C87-33FB-49FA-B264-8669055DD6E5%7D>.



The Center for Climate and Energy Solutions (C2ES) is an independent nonprofit organization working to promote practical, effective policies and actions to address the twin challenges of energy and climate change.