GUIDE TO

ENERGY EFFICIENCY & RENEWABLE ENERGY FINANCING DISTRICTS

FOR LOCAL GOVERNMENTS

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Acronyms

Berkeley FIRST	Berkeley Financing Initiative for Renewable and Sustainable Technology
BPI	Building Performance Institute
CEAD	Clean Energy Assessment District (ie PACE or Energy Assessment Districts)
PACE	Property-Assessed Clean Energy (ie CEAD or Energy Assessment Districts)
DEER	Database for Energy Efficient Resources
DSIRE	Database of State Incentives for Renewables & Efficiency
EECBG	Energy Efficiency and Conservation Block Grants
EIM	Energy Improvement Mortgage
EIP	Energy Independence Program, City of Palm Desert
FICO	Fair Isaac Corporation (a credit rating agency)
GHG	Greenhouse Gas
HPwES	Home Performance with Energy Star
ICLEI	Local Governments for Sustainability
LEED	Leadership in Energy and Environmental Design
OBF	On-Bill Financing
OEM	Office of Energy Management
PAYS®	Pay As You Save
PV	Photovoltaic
RIC	Retail Installment Contract
TIP	Tariffed Installation Program

Executive Summary

Improving energy efficiency in buildings is central to combating climate change, with more than a third of U.S. greenhouse gas emissions coming from the building sector. Over the past year, there has been a much stronger push from the federal level to fund energy efficiency programs as part of a national agenda to foster a clean energy economy that generates sustainable high-quality jobs and reduces our dependence on imported fossil fuels. Vital to this process is to develop innovative financing solutions that reach broadly across energy efficiency and low-carbon energy options.

Energy Financing Districts (a.k.a Property-Assessed Clean Energy (PACE), Sustainable Energy Financing, Clean Energy Assessment Districts (CEAD), Contractual Assessments, or Special Tax Districts) were first proposed by the City of Berkeley, California in 2007 and have received increasing attention as a mechanism for financing residential or commercial clean energy projects, including energy efficiency, solar photovoltaic, or solar thermal systems. EFD's represent one specific and powerful example of an intellectual innovation that is broadly applicable to fostering a profitable transition to a clean energy economy at the local, regional, national, and global levels.

WHAT IS AN ENERGY FINANCING DISTRICT?

Energy Financing Districts (EFDs) enable local governments to raise money through the issuance of bonds to fund these clean energy projects (though bonds are not the only possible source of funds). The financing is repaid over a set number of years through a "special tax" or "assessment" on the property tax bill of only those property owners who choose to participate in the program. The financing is secured with a lien on the property, and, like other taxes, is paid before other claims against the property in the case of foreclosure. There is little or no up-front cost to the property owner, and if the property is sold before the end of the repayment period, the new owner inherits both the repayment obligation and the financed improvements.

Establishing an EFD requires the following steps:

1. Determine authority for EFDs; pursue enabling legislation if needed
2. Identify lead staff and advisors
3. Design the program to meet specified goals, with input from stakeholders
4. Secure funding
5. Formally create the special tax district or tax assessment district
6. Launch Program

BENEFITS OF ENERGY FINANCING DISTRICTS

Energy Financing Districts offer many advantages to homeowners, including a long repayment period, potentially lower interest rate, tax-deductible interest payments, and an easier application process than applying for a second mortgage or home equity line. Unlike most other financing options, the repayment obligation transfers when the property is sold, allowing homeowners to invest in improvements that will pay back over a longer timeframe than the owner intends to remain in the house.

For local governments, an EFD provides an opportunity to address climate change locally, to support residents' environmentally-friendly building improvements at low cost to government, and to strengthen the local economy in energy efficiency retrofitting and solar installation. Because the loans are secured by property liens, an EFD program provides virtually no risk to the local government's general fund.

HOW TO USE THIS REPORT

This report is designed for local government officials, local government decision-makers, state policymakers, and civil society groups interested in getting an EFD program established in their region. Policymakers interested in understanding what EFD is and its advantages and disadvantages relative to other residential energy financing schemes should focus on the Introduction and Section 3 (Financing Elements). Advocates of establishing an EFD program may wish to focus on Section 4 (Case Studies) to understand how this program has been successful in other locations. Local officials working to implement an EFD program should refer to Section 2 (Getting Started) and Sections 5-10 for an understanding of the process of setting up an EFD program, including administrative, legal, and financial issues. And state-level policymakers may wish to refer to Section 6 (Legal Authority) for suggestions on how statewide enabling legislation could facilitate the establishment of EFD programs locally.

1. Introduction to Energy Financing Districts

Energy Efficiency and Renewable Energy Financing Districts help local government leaders advance their goals of reducing greenhouse gas (GHG) emissions in their communities, furthering energy independence, and stimulating the local economy. This guide is designed to aid local government leaders in establishing Energy Financing Districts with the benefit of the experience from trailblazing communities such as Berkeley and Palm Desert in California; Boulder County, Colorado; and Babylon, New York.

LOCAL GOVERNMENT ACTION

There is a growing awareness that responding to climate change and reducing our dependence on fossil fuels will require actions on all levels – federal, state, municipal, and personal. In many ways, local governments have stepped up as first responders to the climate crisis. Cities and counties have committed to concrete greenhouse gas emission reduction targets, such as the over 900 mayors who signed the U.S. Conference of Mayors Climate Protection Agreement.[1] Municipalities have modernized their building codes to encourage energy efficiency and solar energy, launched public education campaigns, and pursued "greening" their own facilities and procurement supply chains on their own or with the help of groups like ICLEI (Local Governments for Sustainability).[2]

An important arena for the transformation to a more resource-efficient economy is the building sector, which accounts for 72% of electricity use[3] and over 36% of greenhouse gas emissions[4] in the U.S. Improving the resource use of our new and existing buildings is extremely important both to improve the comfort and affordability of homes, and to address climate change and the pollution created by the consumption of conventional energy.

Buildings have many-decade lifetimes, and today's buildings will continue to be a majority of all buildings in 2050. Without a focused effort to reduce energy demand in existing buildings, it will be virtually impossible to meet even the most modest greenhouse gas reduction targets. Reducing energy demand in buildings includes sealing leaks in walls, floors, attics, ducts and windows; upgrading lighting; installing more efficient heating and cooling systems, and other improvements. In addition, we can generate renewable energy onsite with solar thermal and solar electric systems, which reduce demand on our existing energy supplies and avoid emitting GHGs and other pollutants.

BARRIERS TO ACTION

Despite the potential for reducing energy consumption in buildings, a wide range of barriers limit investment in building energy efficiency and solar energy. There are several important economic barriers to improving the resource use of buildings that are important to note for this discussion, including:

Lack of information
Many customers do not know how to implement energy efficiency or solar energy, and may not understand the benefits of a project.

1 Website: http://www.usmayors.org/climateprotection
2 Website: http://www.iclei.org
3 Buildings Energy Data Book September 2007: 1.1 Buildings Sector Energy Consumption.
4 EIA 2006: Emissions of Greenhouse Gases in the United States.

Uncertainty of savings
Homeowners and businesses may not trust that the improvements will save them money or have the other benefits claimed.

Split incentives
Split incentives occur when the decision-maker does not receive many of the benefits of the improvements. An example is the case of rental property owners who lack incentives to invest in building efficiency upgrades when the tenant pays the utility bill.

Transaction costs
The time and effort required to get enough information to make a decision, apply for financing, and arrange for the work to be done may simply not be perceived as worth the return in energy savings and other benefits.

Initial capital investment
The first cost of a project may deter investment, either because the resident or business owner does not have access to capital or they choose to make other higher-priority investments.

Length of paybacks
Homeowners and business owners may not want to invest in comprehensive retrofits if they do not plan to stay in the building long enough to recoup their investment.

Federal, state, and local governments have established a range of programs (e.g. ENERGY STAR, building codes, tax credits) to address some of the barriers to adoption of energy efficiency and renewable energy technologies. As a complement to existing programs, a few local governments have experimented with a new approach – Energy Financing Districts – that primarily address the last two barriers.

HOW ENERGY FINANCING DISTRICTS WORK

Energy Financing Districts (a.k.a Property-Assessed Clean Energy (PACE), Sustainable Energy Financing, Clean Energy Assessment Districts (CEAD), Contractual Assessments, or Special Tax Districts) are one way for a city or county to provide access to capital for their residents' and businesses' clean energy projects, including energy efficiency retrofits and installation of renewables such as solar thermal or solar electric systems. Energy Financing Districts tap into existing mechanisms that local governments are already familiar with, such as special tax districts or assessment districts, and allow these mechanisms to support clean energy projects. Energy Financing Districts enable local governments to raise money through the issuance of bonds to fund these clean energy projects (though bonds are not the only possible source of funds). The financing is repaid over a set number of years through a "special tax" or "assessment" on the property tax bill of only those property owners who choose to participate in the program. The financing is secured with a lien on the property, and, like other taxes, is paid before other claims against the property in the case of foreclosure. There is little or no up-front cost to the property owner, and if the property is sold before the end of the repayment period, the new owner inherits both the repayment obligation and the financed improvements.

Energy Financing Districts have been set up to fund both renewable energy (solar PV and solar thermal) and energy efficiency. From a financing perspective, there is no difference between funding these improvements. However, local governments should be aware that financing an energy efficiency program can require more effort to decide which measures are eligible and how to ensure installations are completed. Solar PV and solar thermal financing programs are often simpler because there is just one basic technology involved, especially in states like California where there are solar rebate programs that have quality assurance systems that are easy to tap into.[5] However, it is important to note that installing solar without also making efficiency improvements is not advisable. Efficiency measures usually have a faster payback than solar, and if efficiency is done after a solar

5 See the California Solar Initiative: http://www.gosolarcalifornia.org

installation, the solar PV or solar thermal system may turn out to be oversized once demand is reduced through efficiency improvements.

BENEFITS OF ENERGY FINANCING DISTRICTS

There are over 150-energy efficiency financing programs in the U.S., often run by utility companies, in addition to the many traditional loan products offered by financial institutions. Limitations of these financing programs often include short repayment periods, high interest rates, stringent credit requirements that do not account for energy savings, lack of options for recent homebuyers who have not built up equity, and limited availability for households most in need, to name a few.[6] Energy Financing Districts have several advantages for participants over other financing options, such as:

Longer repayment period
Energy Financing Districts offer a longer term of up to 20 years, compared to the standard 5 to 7 years of many utilities programs and conventional loans, thus allowing participants to do more comprehensive work and more closely match their payments with the energy savings.

Repayment transfers with ownership
Many property owners do not want to invest in energy efficiency or solar energy improvements if they plan to sell their property in a few years. Energy Financing Districts allow the current owner to invest today, knowing that the repayments and the financed improvements will transfer to the new owner if he or she decides to sell the property.

Information from a trusted source
Trust is a key issue in encouraging residents to act. People are getting information from an overwhelming number of sources. Local governments are an objective source of information, providing tools and resources to enable residents and businesses to take action. For example, local governments can offer a single source of information on how to get started with clean energy upgrades, and many local governments provide educational workshops about the options available to their constituents.

Low interest rates
Low rates may be available due to the lower interest on municipal bonds and other sources of financing available to local governments, although administrative fees may push the cost of an Energy Financing District program up above conventional options such as a home equity loan or second mortgage.

Tax benefits
The interest portion of the repayments are tax deductible, similar to a mortgage. Homeowners are also eligible for the federal income tax credit (FITC), a 30% investment tax credit for residential and commercial solar installations

Reduced transaction costs
Energy Financing Districts often offer an easier process than applying for a home equity line or second mortgage. They are specifically designed to finance clean energy improvements so the steps to adoption are clearly spelled out in program guidelines, avoiding the need for property owners to arrange for financing on their own.

6 Further analysis and specific case studies of existing financing programs can be found in "Enabling Investments in Energy Efficiency: A study of energy efficiency programs that reduce first-cost barriers in the residential sector" (Fuller 2008), available online: http://ciee.ucop.edu/energyeff/documents/CA_ResiFinancing.pdf

From the point of view of local governments, Energy Financing Districts offer the following advantages:

Direct support for constituents' actions
Energy Financing Districts are a way for local governments to support climate and environment-friendly building improvements with very little direct cost to government.

Job creation
This new economic activity stimulates the local economy and creates new jobs as the solar energy and energy efficiency sectors grow.

Positive publicity
The local governments that have been involved with Energy Financing Districts thus far have received positive attention from the media and local civic groups.

Safe and efficient security mechanism
This financing mechanism is extremely secure due to the priority lien on the property, and delinquent special taxes and assessments are repaid before private liens in the case of foreclosure; risk to the local government's general fund is minimal.

LIMITATIONS OF ENERGY FINANCING DISTRICTS

These advantages make Energy Financing Districts an attractive option for property owners, but there are certain limitations local governments should recognize. First, this program is available only to property owners; renters cannot access this program directly. The main issue is split incentives – the owner would need to invest in the improvements but tenants generally pay the utility bills. In some cities a significant percentage of the residents and commercial businesses are renters. Residential renters also tend to disproportionally have low or moderate incomes, meaning that those most in need often will not be able to access this program. Local governments may need other targeted policies and incentives for rental properties in addition to the existing low-income weatherization programs. However, it is possible that the advantages of this mechanism may still attract rental property owners who see the value of investing in their property in order to capture higher rents (subject to rent control laws) and better retention of tenants; it is too early to tell how rental property owners will respond.

Another limitation is that the expected life of the installed improvements must be at least as long as the repayment period and be attached to the property. Thus, when a property changes hands, the new owner will continue receiving energy generation or savings. The program cannot finance portable items such as efficient light bulbs and refrigerators because they can be easily removed when the current owner leaves. Local governments must find other ways to encourage these valuable upgrades.

A final limitation is that setting up and administering an Energy Financing District requires staff time on the part of local governments. Local governments with existing Energy Financing Districts have dedicated staff with the time and motivation to pursue new ideas in this arena, combined with support from their local mayors, council members, and other government officials. Now that there are several working models, replicating the program will be easier. There are also opportunities to pool resources to create countywide or regional programs; Boulder County is an example of this. Still, the concerted effort needed to pass state-wide enabling legislation where it is lacking, get local approval, as well as design and administer the program should not be underestimated.

Additionally, Berkeley has found that the pilot program has some built in limitations stemming from the limited time period for its operation and its relatively small scale. Due to its small scale and being new conceptually, access to financing was limited, particularly in the current economic environment. Thus, the financing Berkeley obtained was made available for a limited time period of 270 days so that all projects had to be completed within that time period; and the interest rate is higher than some other sources of funding, such as home equity

loans. Therefore, as some owners who made reservations later dropped out, it was not possible to add new participants from others who had expressed an interest.

WHAT THIS GUIDE INCLUDES

The next section walks through the basic steps to getting a program up and running. Section 3 provides background information on how financing works and the elements that should be considered in any financing program. We then present case studies in Section 4 of four communities that have launched variations of Energy Financing Districts – Berkeley, California; Palm Desert, California; Boulder County, Colorado; and Babylon, New York. This guide draws most heavily upon the experience of Berkeley, but lessons from the three other communities are included throughout the guide. Section 5 describes how Berkeley assessed the need for this program and solicited feedback from stakeholders. Section 6 describes the legal process for enabling Energy Financing Districts, including some general guidance on pursuing enabling legislation in other states. Section 7 describes how the Berkeley program's financing is structured, and provides guidance on how to set up funding for the program. Section 8 describes the administrative requirements of the program, including some estimates of program costs based on experience to date. Section 9 describes how existing programs have defined eligible clean energy projects. Section 10 provides ideas for promotion and outreach. We include a final section with resource documents from existing programs and other useful information; such as sample Request for Proposals, financing agreements, council resolutions, etc – with the links to the full documents online available here: http://rael.berkeley.edu/financing/resources and described in recent journal publications.[7]

HOW TO USE THIS REPORT

This report is designed for local government officials, local government decision makers, state policymakers, and civil society groups interested in getting an EFD program established in their region. Policymakers interested in understanding what EFD is and its advantages and disadvantages relative to other residential energy financing schemes should focus on this Introduction and Section 3 (Introduction to Financing). Advocates of establishing an EFD program may wish to focus on Section 4 (Case Studies) to understand how this program has been successful in other locations. Local officials working to implement an EFD program should refer to Sections 5-10 for an understanding of the process of setting up an EFD program, including administrative, legal, and financial issues. And state-level policymakers may wish to refer to Section 6 (Legal Authority) for suggestions on how statewide enabling legislation could facilitate the establishment of EFD programs locally.

We hope this information will help get you started!

7 Fuller, M, Portis, S. and Kammen, D. M. (2009) "Towards a low-carbon economy: municipal financing for energy efficiency and solar power", Environment, 51 (1), 22 – 32.

2. Getting Started

We estimate that the process for developing an Energy Financing District to the point of launch should take 6 to 12 months once there is enabling legislation, depending on approval schedules and the amount of resources a local government is able to direct towards this effort. Drawn from the experience of existing programs, these are the steps to create a program:

➔ DETERMINE AUTHORITY FOR ENERGY FINANCING DISTRICTS; PURSUE ENABLING LEGISLATION IF NEEDED

Most communities will require authorization from the state legislature to allow local governments to collect a special tax or assessment to pay for energy efficiency or renewable energy improvements on private property. In California, local governments already have this authority under Chapter 29 of the 1911 Assessment Act through AB 811 and through Mello-Roos (for charter cities currently and, for other local agencies if pending amendments are signed into law). Colorado, Louisiana, Maryland, Nevada, New Mexico, Ohio, Oklahoma, Oregon, Texas, Vermont, Virginia, and Wisconsin also have existing legislation providing local authority, with several more states soon to follow. The Database of State Incentives for Renewables and Efficiency (DSIRE) created a new policy category called "Property Tax Financing Authorization" for this type of financing, and information on these state laws and any new ones that are adopted can be found at http://www.dsireusa.org. We provide guidance and additional resources for enabling legislation in Section 6 on page 22.

➔ IDENTIFY KEY STAFF AND ADVISORS

The local government should evaluate whether capacity exists in-house to manage this program or whether it will need to engage financial or administrative partners. Partnerships can range from a turnkey administrative and financial partner that handles all the processing and bond purchasing to the targeted use of outside expertise. Important team members for planning and implementation include:

- Senior Managers and analysts from the City Manager's office, the County Administrator's office, and the department that will be administering the program
- Legal counsel representing the jurisdiction and/or Bond Counsel
- Finance/Auditor-Controller Department representative and/or a financial consultant
- Climate, energy, or sustainability program staff person (if available)
- Staff from energy efficiency and renewable energy programs operated by government, utility, or local nonprofit
- Staff from the County Recorder and/or Tax Collectors offices

Guidance on the administrative requirements and programs costs can be found in Section 8 on page 31.

➔ DESIGN THE PROGRAM TO MEET SPECIFIED GOALS, WITH INPUT FROM STAKEHOLDERS

The planning for this program should integrate the local government's greenhouse gas reduction targets or economic development and workforce development goals. To ensure success, it is important to engage local stakeholders and potential partners to assist in determining program goals, key program design elements, and criteria for eligible improvements. Guidance on program planning is available in Section 5 on page 20, and suggestions for defining eligible projects are in Section 9 on page 36. We also provide program design and planning documents from existing programs in Section 12 on page 41.

➔ SECURE FUNDING

The ability to fund these types of districts is perhaps the biggest hurdle for many local agencies. Local governments with large reserves may benefit from the financing as one of their investment portfolio strategies. The ability to attract major lenders to this type of program is just now being tested in the market. There are several efforts in California and Colorado to line up financing that will provide an investment with low risk and an interest rate that results in long-term savings for program participants. The design of the Berkeley FIRST program relies on investment entirely from a financial firm working with a commercial line of credit from a local bank. The firm purchases the City's bonds through an agreement with the City. Alternatively, Palm Desert and Sonoma County are utilizing unallocated reserves to issue loans. One possible source of funds are Energy Efficiency and Conservation Block Grants (EECBG), a portion of which can be used to support the creation of Energy Financing Districts. For more details on securing funding, see Section 7 on page 26.

➔ FORMALLY CREATE THE SPECIAL TAX DISTRICT OR TAX ASSESSMENT DISTRICT

This step is likely to require several actions by the City Council or County Board of Supervisors for various approvals. There are two ways to do this in California, through *assessments* (contractual assessments under amendments to the 1911 Improvement Act made by Assembly Bill 811) and through *special taxes* (currently available only to charter cities, although an amendment to the Mello-Roos Community Facilities Act of 1982 is pending). These processes are described in Section 6 on page 22. Processes for the creation of the financing district will vary from state to state, and county to county.

➔ LAUNCH PROGRAM

Once the legislative actions are completed, program marketing and outreach should focus on education about both the energy benefits such as saving money and reducing greenhouse gas emissions, and also the non-energy benefits such as improving occupants' health and improving home and office comfort that result from energy efficiency and renewable energy improvements. Residents should be advised on the expected costs and savings if they install efficiency measures or renewable energy under the program. The program should be rolled out with as much detail as possible about the cost of financing and availability of funds. Local governments should be careful not to set up expectations for the public too early, especially since anticipation of a program may delay some consumers from making improvements. For more details on promotion and outreach, see Section 10 on page 38.

3. Financing Elements

The purpose of this section is to familiarize local government leaders with the common elements of financing products. The table below offers a chart with the program elements organized by categories discussed in this section with the most common elements of Energy Financing Districts highlighted.

FINANCING PROGRAM ELEMENTS

SOURCES OF CAPITAL	FINANCING MECHANISM	COLLECTION MECHANISM	ENHANCE-MENTS	ELIGIBLE MEASURES	UNDERWRIT-ING CRITERIA	SECURITY INTERESTS
Banks	Personal loan (secured or unsecured)	Amortized payment bill	Reduced interest rates	Energy efficiency	Debt to income ratio	Unsecured
Public benefit charge or added to rate base	Mortgage / home equity (secured to real estate)	Lease payment	Stretched underwriting criteria	Renewables	FICO score	UCC fixture filing
Utility general funds	Line of credit (secured or unsecured)	On utility bill	Guarantees	Other home improvements	Utility bill payment history	Mechanics lien
Federal, state or local govt funds	Lease	On property tax bill	Loan loss or late payment reserves		Tax payment history	Other lien on real estate
Municipal bonds	Retail installment contract	Performance contract bills	Rebates		Other	Lien on other property (car, boat, etc)
Manufacturers	Special tax or assessment levied	Buy kWh or therms	Tax credits			Disconnection for non-payment
Pension funds	Tariffed installation program		Subsidized transaction costs			
Housing or economic dev finance agency	Performance contract		Aggregation			
Qualified energy conservation bonds	Power purchase agreement		Environmental or carbon credits			
Other 3rd party						

SOURCES OF CAPITAL

There are many possible sources of capital for a financing program. For most existing energy efficiency financing programs, capital has been provided by banks or utility general funds, and is often supplemented by utility-collected funds from a public benefit charge or an addition to the rate base to provide lower than market rates of interest. Other sources include manufacturers who help finance their own equipment, leasing companies, municipal bonds, state treasuries and pension funds, and housing and economic development agencies. Energy Financing Districts generally issue municipal bonds, although Palm Desert started its program with the city's general revenue funds and Babylon uses its municipal solid waste fund as a revolving pool of capital.

FINANCING MECHANISMS

An Energy Financing District uses a special tax or assessment levied through the property tax bill. There are several other options for financing energy improvements. Some of the financing mechanisms are fairly standard – a direct consumer loan can be unsecured or secured to an asset such as a car or the improvement itself; a mortgage or home equity loan is secured by the property; and a secured or unsecured line of credit allows the borrower to draw down funds as needed instead of as a lump sum. A retail installment contract (RIC), used by a few existing efficiency financing programs, is one type of unsecured consumer loan that is often used to purchase new cars.[8]

These more traditional options may offer rates lower than those offered by Energy Financing Districts. For example, mortgage and home equity loan rates are currently 4% to 7%. However, the lower rates are available only to those with higher credit scores, and, unlike Energy Financing Districts, these forms of debt would have to be paid off by the borrower even if the property (and the improvement) were transferred to a new owner.

There are also variations on a traditional mortgage product that are relevant to energy improvements. An Energy Improvement Mortgage (EIM)[9] allows a new home buyer to get additional financing rolled into the first mortgage to cover the cost of energy improvements. Vermont Energy Investment Corporation (VEIC) conducted a pilot of this mechanism more than a decade ago, but it has rarely been used, largely due to the already-challenging process of closing a home; the hassle of figuring out the EIM on top of the initial mortgage is usually prohibitive[10] – though EIMs may become useful if combined with public policy that encourages improvements at the time-of-sale. New programs have recently been launched in Colorado, Maine, and New York.

Another option is a tariffed installation program (TIP), which uses a utility's billing system to collect a charge that has been attached to the meter as a special tariff. A local government could do this through their municipal utility or water district. TIPs provide a mechanism for residents and businesses to install improvements that may outlast their tenure. Because the payment is tied to the meter, not the property owner, TIPs allow for the current occupant to move, with the next occupant responsible for repayment. Typically, the monthly charge must be less than the expected savings from the efficiency improvements and charged for a period less than the life of the efficiency measure being installed. Failure to pay can result in utility disconnection for most TIP programs. TIPs may offer a useful mechanism for rented properties where the split incentives between property owners and tenants chronically lead to underinvestment in energy efficiency. The Pay As You Save® (PAYS) system is a proscribed TIP design.[11] Its features include independent verification of savings estimates to assure savings, a requirement that the expected annual payment be less than the estimated annual savings, and that the term of repayments be less than the life of the measure. All participants in programs based on the PAYS system are assured that if measures fail, they will be fixed or the payment obligation will end, that repair costs will not

8 U.S. Environmental Protection Agency, "Financing Guidebook for Energy Efficiency Program Sponsors" (December 2007).
9 An EIM, which allows the buyer to borrow more money to invest in efficiency improvements, is different than a Energy Efficiency Mortgage (EEM), which gives an efficient home a more favorable mortgage interest rate.
10 Faesy, Richard, "Understanding and Overcoming the Energy Mortgage Barrier," ACEEE Summer Study on Energy Efficiency in Buildings (2000).
11 More information contact the Energy Efficiency Institute: http://www.eeivt.com

increase the monthly payment amount, and that bonding and contractor certification will ensure post inspection and warranty problems will be satisfactorily resolved. The developers of PAYS believe these features are integral to achieving widespread savings, availability of capital, and substantial program participation. As a tariff, TIPs require the support of implementing utilities and approval from the utility regulators.

COLLECTION MECHANISMS

Most financing models, such as credit cards, collect payments with a separate monthly bill. However, there is growing interest in putting the payment on the utility bill (i.e. on-bill financing) or property tax bill, to make repayment easier and more reliable. Energy Financing Districts usually collect repayments through the property tax bill.

ENHANCEMENTS

This category is a catch-all for the ways that programs have "enhanced" their product by making it more appealing or accessible than what is available in the market. Enhancements can include the following:

Reduced Interest Rates
Often programs offer below-market interest rates, or offer buy downs of a certain percentage; this is usually funded through a public benefit charge or through a lower-interest source of capital that borrowers do not have access to outside of the program.

Guarantees and Reserves
Guaranteeing loans or pre-funding reserves (funds set aside to cover defaults) enable lenders to offer loans to a wider group of borrowers, and also allow lenders to offer lower interest rates because of security provided by the guarantee. There are efforts currently underway to secure federal credit enhancement of Energy Financing District bonds.

The City of Berkeley funds a debt service reserve fund at 6.5% of the total outstanding principal amount to cover bond debt service in the case of late payments by the property owners – bond investors typically expect a debt service reserve fund. It should be noted that the City of Berkeley funded this reserve fund from its general fund rather than asking property owners to bear the cost, which most local agencies will not be willing to do.

In addition, because the City did not wish to initiate early foreclosure on delinquent properties (which is a typical feature of land-secured bonds in California), the City agreed to pay delinquent special taxes with "available surplus funds"; again many local agencies probably may not be willing to provide this type of credit enhancement.[12]

Rebates for Efficiency and Solar
A common way to enhance a financing program is by providing a direct payment for implementing certain measures to offset some of the project cost. These exist for both efficiency and solar energy in many states, and can be used to make the project more attractive.

Subsidized Transaction Costs
Some programs offer free audits or cover the costs of "handholding" a customer through the process to reduce transaction costs.

12 Under the Alternative Method of Distribution of Tax Levies and Collections and of Tax Sale Proceeds (the "Teeter Plan"), a county may guarantee the payment of special taxes and assessments, and, in return, the county collects and retains all penalties and interest which accrue on the delinquent special taxes and assessments. There are also programs in which tax delinquencies are sold to third parties who assume the "Teeter" role typically played by counties.

Including Energy Costs and Savings in the Underwriting Criteria
One credit enhancement is for the lenders to include the energy savings on the income side when they are evaluating a borrower's credit using a debt-to-income ratio.

There are a few other enhancements that so far have rarely been used, but that may have potential. One possibility is to aggregate the projects to the extent that a group of projects can get lower rates for products and services. Another idea is to sell the environmental or renewable energy benefits of the project into a market that values them to lower the project cost for participants. This could be a renewable energy credit (REC) market or an energy efficiency market; REC markets exist in many states (including some that require specific amounts of solar energy – see the DSIRE website for states with these programs - http://www.dsireusa.org) and markets for "energy saving credits" have been developed recently in a few countries in Europe.[13] To get economies of scale, residential projects would need to be aggregated and sold to these markets in substantially larger units than one house at a time. Of course, by selling off these attributes of the project, participants and cities forfeit the right to claim these attributes towards their own goals.

Another option that may be possible is for a municipality to arrange for a third party to pay for and own the installed measures during the repayment period. Ownership would transfer to the building owner at the end of the payment period. If the repayment was structured so that the IRS characterized the arrangement as a rental arrangement (i.e., the investor rents the equipment to the consumer) then the investor may be eligible for one of the renewable tax credits (if there is a business credit available). Such a structure could enable tax advantaged investors to monetize the value of available tax credits.

UNDERWRITING CRITERIA

Underwriting is the process of determining whether an applicant is credit worthy enough to receive financing. The traditional measures for evaluation are the applicant's debt-to-income ratio and FICO[14] score, which is a score used by the credit rating industry to represent credit worthiness based on bill payment histories, current debt, and other criteria. Proxies for credit such as a utility bill or a property tax bill payment history can also be used. Although the underwriting criteria for Energy Financing Districts are still evolving, clean property title records and tax records ultimately may be determined to be sufficient.

SECURITY INTERESTS

Many financing program offer unsecured loans, which are not attached to any of the borrower's assets and have higher interest rates. Other programs, especially those with higher loan limits, tend to use some type of lien for security. A lien is a security interest in an item of property to secure the payment of a debt or some other obligation. A lien on the real estate itself is a mortgage. A Uniform Commercial Code[15] fixture filing is a lien attached to the "fixtures" installed that is recorded with the property title and must be paid in the event of the foreclosure or sale of the home. A lien can also be placed on other valuable assets such as a car or boat. In addition to these traditional methods of acquiring a security interest, some programs use the ability to disconnect power for nonpayment for added security. Energy Financing Districts use a lien attached to the property.

13 Vine, E. and J. Hamrin, "Energy savings certificates: A market-based tool for reducing greenhouse gas emissions." Energy Policy, 2008. 36(1): p. 467-476.
14 FICO scores are commonly used evaluate the credit worthiness of an individual. They are calculated using a method developed by the Fair Isaac Corporation.
15 The Uniform Commercial Code is a body of recommended laws regarding sales and commercial transaction that are meant to harmonize the laws in various states. Form to create a UCC fixture filing available at: http://www.sos.ca.gov/business/ucc/ra_9_ucc-1.pdf

4. Case Studies

The four most established Energy Financing Districts in the United States are in Berkeley, CA; Palm Desert, CA; Boulder County, CO; and Babylon, NY. These programs have all taken slightly different approaches to dealing with the challenges and program design issues presented in sections 4-9. For ease of comparison, a summary chart is provided after the case studies.

BERKELEY FIRST, BERKELEY, CALIFORNIA

In November 2006, 81% of Berkeley voters endorsed ballot Measure G, which established an aggressive greenhouse gas (GHG) reduction target of 80% by 2050 and directed the City to develop a plan for achieving that target. As part of the effort to reduce emissions, Berkeley city staff developed the concept for the Berkeley Financing Initiative for Renewable and Solar Technology (FIRST) to enable residents and businesses to finance energy improvements to their buildings.

The pilot launched in November 2008 and Berkeley property owners reserved the $1 million of initial funding within 10 minutes of opening the application website. This included 38 residential projects with an average project value of $28,000. Funding comes from issuing “micro” bonds for each project that are purchased by the city’s financial partner. Each bond is secured by all of the special taxes paid by participating property owners. Only solar PV was allowed for the pilot round, though basic energy efficiency improvements were required before installing solar. The City is currently evaluating the pilot and assessing the potential to launch a full program that would include energy efficiency and solar energy projects and the merits of proceeding individually or jointly with other governments. For the evaluation phase, the City received permission from participants to use utility bill data and information on the measures installed by each household to track the energy savings from the program and savings per dollar invested.

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http://www.berkeleyfirst.renewfund.com

ENERGY INDEPENDENCE PROGRAM (EIP), PALM DESERT, CALIFORNIA

The City of Palm Desert’s Office of Energy Management (OEM), founded in January 2007, has a city-wide goal of reducing energy use by 30% in five years. To achieve this goal, the city created its Set to Save program, which provides incentives for energy efficiency in partnership with Southern California Gas Company and Southern California Edison. The OEM saw a need for financing energy projects, which led to the creation of their financing program. The EIP funds energy efficiency and solar energy projects for residential, commercial, and industrial properties under the authority provided by California’s AB 811. The City keeps track of what measures are funded, and energy savings are estimated based on the California Energy Commission’s Database for Energy Efficient Resources (DEER) values for energy efficiency improvements. For privacy reasons, the City has

chosen not to try to gain access to utility bills. However, they do have a few select properties whose energy consumption they track in real time.

The EIP committed $7.5 million in its first two phases. The first $2.5 million from the city's general fund for Phase I was committed within 3 weeks; Phase II funding of $5 million from a bond issued by the city's Redevelopment Agency was committed in just over 5 weeks. There were 206 project applications for Phase I and Phase II, an average of $36,000 per project and all but three were residential projects. Only one solar thermal project was funded. Most of the energy efficiency projects were for high performance air conditioning, pool pumps, roof insulation, and windows. Solar PV projects accounted for only 98 of the projects but almost 70% of the funding. For Phase III, the City plans to set aside a portion of the financing for energy efficiency to ensure that there is sufficient money to finance energy efficiency upgrades, which are often more cost effective than solar PV.

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http://www.cityofpalmdesert.org/Index.aspx?page=484

CLIMATESMART LOAN PROGRAM, BOULDER COUNTY, COLORADO

Boulder County created the ClimateSmart Loan Program to support Boulder County's goal of achieving Kyoto Protocol targets and long-term carbon neutrality. The statewide enabling legislation HB 08-1350 passed in May 2008, Boulder County voters passed Ballot Measure 1A to authorize $40 million in bonding capacity for the ClimateSmart Loan Program in November 2008, and the program began accepting applications in April 2009. The program is available to the unincorporated county residents and nine of the county's ten municipalities. Eligible improvements include: air sealing and ventilation, insulation, space heating and cooling, water heating, lighting retrofits, daylighting, windows doors and skylights, reflective roofs, pool equipment, landscaping (e.g. planting trees on south side of house), solar hot water, solar PV, small wind, and wood/pellet stoves.

Before the program launch, 1,700 people attended the required participant workshops and over 130 contractors attended briefings about the program. The program is set up so that applications are taken before the county issues the bonds. The first application period in April 2009 closed with 393 applications for over $7.5 million in financing. The projects include a wide range of energy efficiency and renewable energy measures, in fact Boulder County is the most ambitious to date in terms of eligible project scope. The county then issued a bond to cover this amount of funding. For the evaluation phase, the County will use utility bill data and information on the measures installed by each household to track the energy savings from the program and savings per dollar invested. The County will have access to utility bill data because they require each participant in the program to sign a utility bill release. They will also be able to track people who have participated in other County programs, such those who have completed a home energy audit but have not followed through with getting energy efficiency projects; thus, there is an opportunity for more targeted outreach.

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http://www.climatesmartloanprogram.org

LONG ISLAND GREEN HOMES PROGRAM, BABYLON, NEW YORK

The Long Island Green Homes Program supports a broad set of policies to encourage energy efficiency in Babylon, a town on the south shore of Long Island. In 2006, Babylon developed a comprehensive green building code and became the first Long Island town to adopt aggressive energy efficiency standards consistent with the ENERGY STAR New Homes performance standards for new home construction and to require LEED-certification for all new commercial buildings over 4,000 sq ft. The Town also adopted the 12X12 Initiative to Combat Global Warming (a program of the Sierra Club), committing Babylon to reducing its greenhouse gas emissions 12% by 2012.

To implement their financing program, the definition of solid waste was expanded to include CO2 so that $2.5 million of the Town's solid waste reserve fund could be used to finance energy retrofits. The program funds cost-effective energy efficiency measures such as air sealing, insulation, caulking, and replacing space heating and hot water systems. The program can also finance solar energy improvements, but only if the home already meets the Energy Star standard for new home construction. Thus far, 169 homeowners have submitted applications for approximately $1.2 million in funding. The average project costs $7,100 and is expected to save 28% of the home's energy use.

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CASE STUDY COMPARISON CHART

	PROGRAM LAUNCHED	POPULATION DENSITY HOUSING UNITS % RENTAL UNITS	MEDIAN FAMILY INCOME	SOURCE OF CAPITAL	FINANCING MECHANISM	COLLECTION MECHANISM	ELIGIBLE MEASURES	CREDIT REQUIREMENTS	SECURITY	RATE TERM MAX AMT	WHO PROCESSES APPLICATION?	LOCAL GOVT STAFF	RESULTS AS OF AUGUST 2009
BERKELEY, CALIFORNIA	Nov 2008	110,000 pp 9,800 pp/sqmi 46,600 units 54% rental units	$86K	"Micro" bond sold to financial partner	Special tax (Mello-Roos)	Property tax bill	Solar PV (pilot)	Clear title & good property tax payment history	Senior lien on property	7.75% 20 years $37,500	Third party	1.25 FTE	38 projects $28,000 ave/ per $1M committed
PALM DESERT, CALIFORNIA	Oct 2008	51,000 pp 1,600 pp/sqmi 33,500 units 34% rental units	$70K	City's general fund for Phase I, then Redevelopment Agency bonds, now seeking a financing partner for Phase III	Assessment (AB 811)	Property tax bill	Energy efficiency, solar thermal, solar PV	Clear title & good property tax payment history	Senior lien on property	7% up to 20 years No max	City staff	1.5 FTE	206 projects $36,000 ave/ per $7.5M committed
BOULDER COUNTY, COLORADO	April 2009	300,000 pp 400 pp/sqmi 123,000 units 34% rental units	$84K	County issues bonds	Assessment (HB 08-1350)	Property tax bill	Energy efficiency and variety of renewables	Clear title & good property tax payment history	Senior lien on property	Varies (6.68% for 1st round) 15 years $50,000	County staff with third party support	1-2 FTE	393 projects $19,000 ave/ per $7.5M committed
BABYLON, NEW YORK	August 2008	220,000 pp 4,100 pp/sqmi 74,000 units 20% rental units	$84K	Municipal solid waste revolving fund	Assessment (amended solid waste code)	Separate bill, transfers to property tax bill if delinquent	Energy efficiency, solar thermal, solar PV	Clear title & good property tax payment history	Senior lien on property	3% term varies $12,000	City staff	3 FTE	169 projects $7,100 ave/ per $1.2M committed

5. Identifying the Demand in Your Community

Municipalities initially looking into Energy Financing Districts often ask: "How many people will participate?" The answer to this question will vary widely based on the demographics of the population, the benefits that can be expected given the local climate and quality of the building stock, other financing options and incentives available, the way participant risk is addressed, and the effectiveness of the program's outreach and marketing efforts, as discussed in Section 10. In general, programs become much less expensive with economies of scale that spread fixed program costs over a large number of participants. To begin to get a handle on the potential for the program, it will be useful to understand the following factors:

➔ DEMOGRAPHICS

Important information includes the number, age and condition of single and multi-family homes, and the composition of the commercial building stock. The number of rental properties where the tenants are responsible for the utility bills is also an important factor. Social factors such as the level of interest in and knowledge about energy options will also be important to gauge how much education is needed to spark interest in the program. The City of Berkeley conducted an initial web survey of city residents to explore these more qualitative factors, which is included in the resource list found in Section 12.

➔ EXPECTED BENEFITS

The benefits of the program will vary with climate, the quality and age of buildings, energy prices, and other factors. For example, the benefits of solar PV will be greater in places with a lot of sun, high electricity rates, higher midday rates, high energy demand, net metering laws, and a high prevalence of south-facing roofs with few obstructions (such as trees). Energy efficiency opportunities will be greater in communities with heavy heating and/or cooling loads, high electricity and gas rates, and buildings that have many opportunities for low-cost efficiency upgrades. Talking to local solar installers and energy efficiency contractors will be important to gauge the potential value of savings to property owners.

➔ PERCEIVED BARRIERS

It will be important to assess what the perceived barriers are for potential customers. Why are they not pursuing this now? Is lack of financing an important issue, or are there a number of other barriers such as lack of interest or information that are the real barriers to adoption? These additional barriers will need to be addressed or the program will experience low demand despite eliminating the barrier of first cost.

➔ OTHER FINANCING AND INCENTIVES AVAILABLE

It is important to do an assessment of other financing options currently available. These include products available from local banks, credit unions, community development financial institutions (CDFIs), or the local utility. Contact the banking association in your state and ask about rates for secured and unsecured loans, and also their level of demand for financing for efficiency and renewables. Ask local contractors if they currently offer any financing products to their customers. Also check with the local utility to see what incentives are available, including annual limits on funding, whether such funds are currently being fully utilized by their customers each year, and what the penetration rates have been for existing programs. A key resource to check the availability of state and local financing programs and other incentives is DSIRE: http://www.dsireusa.org.

➔ OPPORTUNITIES FOR OUTREACH AND EDUCATION

Outreach efforts will play an important role in the success of the program. Low levels of understanding about climate change or lack of information about clean energy options will make the task of marketing the program more difficult. Identifying existing means within the community to disseminate public information is a first step. It is vital to connect with local community organizations, such as neighborhood associations, small business councils, local nonprofits, rotary clubs, religious groups, and other organizations. These groups can become ambassadors for the program.

It is also important to identify and engage the local solar installers and energy efficiency contractors – these businesses will be on the front lines of educating customers about clean energy improvements, and many successful programs use the contractors as the primary marketing force. You may want to do a survey and/or focus groups to collect more information from these groups. The City of Berkeley conducted four focus groups with solar PV contractors, energy efficiency contractors, solar thermal (hot water and space heating) contractors, and solar equipment suppliers. These sessions were extremely helpful both to engage these stakeholders, and also to get feedback on how to design the program. The script for the focus group and a summary of the finding are available through the link to resources in Section 12.

6. Legal Authority

The creation of an Energy Financing District will likely require state statutory authorization as well as approval by the local government entity (e.g. city council or county board of supervisors), though laws vary from state to state. In California, state law enables this type of financing through two options: a special tax financing (which is an option that is currently available only to charter cities, although amendments to the Mello-Roos Community Facilities Act of 1982 for this purpose are pending) or a contractual assessment financing (authorized by amendments to the 1911 Improvement Act by AB 811).

This section first describes the state statutory authority in California, and then provides guidance for amending laws in other states to provide for the creation of Energy Financing Districts. The legal requirements vary greatly from state to state. Links to the text of the existing enabling legislation and other relevant documents from California, Colorado, and New Mexico are provided in Section 12, along with a link to additional legal guidance for Arizona, Florida, Hawai'i, Michigan, Nevada, New Jersey, New Mexico, New York, Oregon, Texas, and Washington. The legislation for all states with legal authority for this type of financing can be found at http://www.dsireusa.org under the policy category called "Property Tax Financing Authorization".

CALIFORNIA ENERGY FINANCING DISTRICTS: SPECIAL TAXES AND ASSESSMENTS

As explained above, Chapter 29 of the 1911 Improvement Act, as amended by AB 811 in 2008, gives cities and counties authority to levy contractual assessments to finance renewable energy and energy improvements on private property. The City of Palm Desert used this contractual assessment method.

The City of Berkeley, as a charter city with legal authority over "municipal affairs", adopted a special tax financing ordinance based on the Mello-Roos Community Facilities District Act of 1982 (the "Mello-Roos Act"), which authorizes local agencies in California to create community facilities districts, issue bonds, and levy special taxes to finance public facilities, public services and certain improvements to private property. Berkeley used its charter powers because the Mello-Roos Act does not currently authorize local agencies to finance energy projects for private property, although amendments (Senate Bill 279) are currently pending for that purpose. Any charter city[16] in California can adopt its own special tax financing law to adapt Mello-Roos for this purpose.

To set up an AB 811 financing program, the legislative body of the city or county must adopt a resolution of intention, direct a city official to prepare a report, hold a public hearing on the matters covered by the report, then approve the report and a contractual assessment financing program. The report must include a map of the territory within which contractual assessments are proposed, a draft contract between a property owner and the city, city policies concerning contractual assessments, a plan for raising capital to finance the improvements, and the amount of fees that will be charged to the city or county for incorporating the assessments into the general tax assessments for the city or county. Municipalities will need to consider how California Constitution Article XIIID, which was enacted by Proposition 218, impacts the contractual assessment process; we recommend consulting with your city attorney, county counsel or bond counsel to review this issue.

Under California's Mello-Roos-based financing law, the process for authorizing the levy of special taxes and issuance of bonds requires four phases. In the first phase, the City Council of a charter city must adopt a special tax code that authorizes the Energy Financing District; this step will be eliminated if the Mello-Roos Act is amended for this purpose. In the second phase, following a public hearing, the City Council creates a special tax district and authorizes the levy of special taxes on properties that vote in favor of being taxed. In the third phase, property owners vote in favor of the levy of special taxes on their property and the issuance of bonds. In

16 Outside of California "charter" cities are also referred to "home rule" cities and towns. As explained above, charter cities in California have authority over "municipal affairs" subject to constitutional limitations.

the fourth phase, which will be repeated with every round of funding, the City Council authorizes the issuance of the bonds payable from special taxes. A pending bill in the California legislature, SB 279, would, if passed, extend the ability to use special tax districts to all local agencies (including non-charter cities, counties, water districts, public utilities, etc.) and would reduce the steps required for the process to authorize the levy of special taxes by eliminating the "first phase" described above.

MELLO-ROOS VS. AB 811

Many believe that the public finance community in California must eventually agree on whether to use assessment financing or special tax financing. In the meantime, assessment financing is available to all cities and counties while special tax financing is available only to charter cities. There are a few important differences between the two options:

- The Mello-Roos adaptation is currently only available to charter cities, as a result, the implementation process is considerably more involved than the AB 811 process; however, if SB 279 passes it will be available to all local agencies and the implementation process will be simplified
- AB 811 is only available to cities and counties (not other local agencies)
- AB 811 may be subject to the requirements of Article XIIID of the California Constitution (please consult with your city attorney, county counsel or bond counsel on this issue)
- SB 279 would allow for third-party ownership and lease financing
- AB 811 is not available for "parcels which are undergoing development" e.g. residential and commercial new construction (although it is possible that this distinction may be eliminated during the legislative process for SB 279)
- Neither would allow financing of power purchase agreements (PPAs)

Again, we recommend consulting with your city attorney, county counsel or bond counsel to review whether you should utilize AB 811 or Mello-Roos for an Energy Financing District in your community.

IMPLICATIONS FOR NEW CONSTRUCTION & THIRD PARTY OWNERSHIP

> *An Energy Financing District could support the development of new "zero-energy" homes and commercial properties with many of the energy efficiency and renewable energy features funded through the program. This would reduce the considerable misalignment of interests between the builder and the initial buyer of a new property.*

The limitations of AB 811 Assessment Districts for new construction may be an important issue for local governments to consider, particularly in regions that expect new construction to be a significant element of the future housing stock. An Energy Financing District could support the development of new "zero-energy" homes and commercial properties with many of the energy efficiency and renewable energy features funded through the program. This would reduce the considerable misalignment of interests between the builder and the initial buyer of a new property. Enabling builders to add energy efficiency and renewable energy features during the construction process will also significantly reduce the cost of these measures.

Third party ownership (only allowed under SB 279, if passed), where an investor retains ownership for tax purposes, is also an interesting situation to consider. Presently, the initial owner takes the federal income tax credit (ITC) for solar or efficiency up front, but subsequent owners will pay higher (than necessary) special taxes as a result because they do not get a share of the ITC. A third party owner could take the tax credits up front

and reduce the total amount financed through the Energy Financing District, thus reducing the payments of future property owners.

BOULDER COUNTY

The state of Colorado passed House Bill 08-1350 in May 2008, led by Boulder County and local delegate Representative Alice Madden. This bill allows counties and other local government entities to provide below-market financing for renewable energy and energy efficiency improvements on their properties via a "Clean Energy Options Local Improvement District." The bill allows for the use of tax-exempt bonds and taxable bonds to finance projects. Boulder County's district was established under Ballot Measure 1A, approved by voters in November 2008. Additional regional and statewide programs, based on Boulder County's ClimateSmart Loan Program model, are currently being considered.

BABYLON

Babylon uses a different mechanism than the other programs. In Babylon, residents already pay a biannual benefit assessment fee to the Town for removing solid waste. To implement their financing program, the definition of solid waste was expanded to include energy waste in the form of CO2, so that the Town's solid waste reserve fund could be used to finance energy retrofits. This required the Town Board to approve a resolution amending the Town's Solid Waste Code. This mechanism should be feasible for other towns where residents already pay a similar benefit assessment. In fact, both houses of the New York legislature just affirmed the "carbon as waste" rationale, thus enabling any municipality in the state to set up a waste district for this purpose. Enabling legislation may be necessary in other states.

GUIDANCE FOR OTHER STATES[17]

Most states in the U.S. have some form of local government special assessment district authority that enables municipalities to collect assessments on the property tax bill from property owners within their jurisdiction to finance improvements that benefit such property owners, and to finance the up-front costs of such improvements by issuing bonds. Generally, the simplest method of creating authority is to use this existing assessment district authority, and, if necessary, to amend the relevant section of the state code to expressly provide for the key features of a financing program.[18]

The key features that often must be added to existing state law to enable Energy Financing Districts include the following:

Authority to Finance Improvements on Private Property
In some states, the statutes authorizing local governments to create assessment districts specify that the

17 This section was kindly prepared by Sheridan Pauker at Wilson Sonsini Goodrich and Rosati.
18 A memorandum prepared for the Vote Solar Initiative by Wilson Sonsini Goodrich and Rosati, PC, that describes the assessment district authority in various states and amendments to state law necessary to implement Energy Financing Districts, can be found at: http://www.votesolar.org/linked-docs/key_states_memo.pdf

improvements to be financed by such assessments must serve a "public purpose." It is therefore sometimes necessary to amend the state code to provide that renewable energy and energy efficiency improvements on private property are a valid public purpose. This can be done using express language and via legislative findings. If state law must be amended in any way to provide the authority for creating an Energy Financing District, we recommend using both language stating that renewable energy and energy efficiency improvements to private property may be financed through the assessment district, and also findings of the governing body to the effect that the financing of such improvements serves a valid public purpose (such as reducing greenhouse gas emissions and improving air quality).[19] Other states expressly prohibit the use of assessment districts to develop private property. In such states, the code sections authorizing assessment districts must be amended to authorize the financing of renewable energy and energy efficiency improvements on private property. Again, if the state statute must be amended for any reason to create this authority, it is generally a good idea to include such language to clarify the local government's intent and prevent later misunderstandings.

Authority to Finance Renewable Energy and Energy Efficiency Improvements
State law authorizing the creation of assessment districts often limits the authority of local governments to financing only certain enumerated types of improvements, such as sidewalks, parks, sewers, and the like. In such states, to enable the authority to create Energy Financing Districts, it is necessary to expand this list to specifically include renewable energy and energy efficiency improvements.

Opt-In Feature
In most states, when assessment districts are created by the governing body of a municipality, the governing body must designate the geographic boundaries of the district, and all parcels of property on the tax roll for such designated area are included in the district. In the Energy Financing Districts model, a particular parcel of property is not assessed unless that property owner "opts-in" and applies to participate in the program. To create the legal authority for this "opt-in" mechanism, the code section authorizing assessment districts must usually be amended to provide that, when creating an Energy Financing District, the governing body of the municipality may initially designate a geographic area comprised solely of properties proposed for annexation into the district. Then, once the district is created, properties only join the Energy Financing District (and thereby become eligible for financing of the improvements and subject to special assessments) when all of the owners of a particular property voluntarily decide to annex their property into the district.

The particular amendments necessary to provide local governments with the authority to implement an Energy Financing District will depend on the law of the specific state at issue. In some states such as Michigan, for example, the authority to create assessment districts is scattered among different sections of the state code that apply to different types of local government entities (i.e. towns, cities, counties, etc.). In these circumstances, or where the general authority to create assessment is overly complex and incongruous with the Energy Financing District model, it may be necessary to implement "stand alone" authority that creates a new code section specifically geared toward Energy Financing Districts. An example of such "stand alone" legislation (as opposed to models that build on and amend existing assessment district authority) is HB 1391, proposed by Texas Representative Mark Strama.

19 AB 811 provides a good example of such legislative findings. See California Streets and Highways Code section 5898.14.

7. The Financing Mechanism

There are two factors that differentiate Energy Financing Districts from other types of financing for privately-owned renewable energy/energy efficiency improvements: 1) the addition of an assessment or special tax on the property tax bill, backed up by a lien on the property, which makes the investment extremely secure, and 2) the attachment of the repayment responsibility to the property instead of the individual.

There are two factors that differentiate Energy Financing Districts from other types of financing for privately-owned renewable energy/energy efficiency improvements: 1) the addition of an assessment or special tax on the property tax bill, backed up by a lien on the property, which makes the investment extremely secure, and 2) the attachment of the repayment responsibility to the property instead of the individual, which encourages the owner to invest in energy upgrades even if he or she is going to sell the property before recouping his or her full investment. This section describes how the financing mechanism works for Berkeley along with examples from the other cases, the process that Berkeley uses to arrange the financing, and the use of financing partners.

THE CALIFORNIA MODEL

Energy Financing Districts allow property owners to "opt in" to the program, whether an assessment district or a special tax district to fund improvements to their property. Participants repay the costs of the improvements through a special tax or assessment added to their property tax bill. To initiate the financing, the property owner executes a single document (a Unanimous Approval under Berkeley's program; a contract under AB 811 programs) and the local government records a notice of the special tax or assessment in the real property records as a lien against the property (a Notice of Special Tax lien under Berkeley's program; a Notice of Assessment under AB 811 programs). These actions combine to impose a senior lien to secure the obligation to pay special taxes or assessments, and delinquent special taxes or assessments are paid before a property's first mortgage in the case of foreclosure. The fact that special taxes and assessments are paid first means that bonds secured by special taxes or assessments are extremely secure.

Berkeley's special tax financing law (which is based on the Mello-Roos Act) and AB 811 programs give interested parties two opportunities to challenge the special tax or assessment lien: during the initial public hearing and within a period of time after recordation of the notice of the lien, which is called the statute of limitations. In California, the statute of limitations in AB 811 proceedings runs for 30 days after recordation of the Notice of Assessment. The statute of limitations under the proposed SB 279 would similarly be tied to recordation of the Notice of Special Tax Lien.

Existing lenders on commercial and residential property are likely to be concerned about Energy Financing Districts because of the senior nature of the lien, particularly in markets with declining property values. In those markets, it may be advisable to wait until home prices have stabilized somewhat, or to require a minimum loan-to-value ratio. Because many deeds of trust securing purchase money loans on properties in California may give lenders certain rights in the event a senior tax or assessment lien is placed on a property, local agencies may also want to encourage or even require property owners to secure an acknowledgement from their lenders that participation in the Energy Financing District will not result in the exercise of remedies under the deed of trust. This is another matter on which you should consult with your city attorney, county counsel or bond counsel.

Most property owners who fail to pay their taxes once or twice end up paying them back before their home is foreclosed (or, if the lender is simultaneously foreclosing on a delinquent purchase money loan, the lender may pay delinquent taxes and assessments in order to preserve its junior lien), so allowing some leeway for late

payments is advisable to reduce costs, although the land-secured bond market typically demands an early-foreclosure covenant from local government issuers. When a local government issues bonds, investors will typically require a debt service reserve fund that can be used to pay debt service in the event of special tax or assessment delinquencies. The reserve fund is replenished when the delinquent special taxes or assessments are ultimately collected. The City of Berkeley established a reserve fund equal to 6.5% of the outstanding principal amount of its bonds, which it funded from its general fund. In addition, as described above, because the City of Berkeley did not want to agree to an early-foreclosure covenant (instead, the City preferred to allow foreclosure to be initiated by the County after five years of delinquencies), it agreed to pay delinquent special taxes from "available surplus funds". Many cities will not be willing to fund a debt service reserve fund from their general fund and may not be willing to pay delinquent special taxes. As a result, these important security issues are still evolving.

If the property is sold prior to the end of the repayment period, the new owner takes over the remaining special tax payments as part of the property's regular tax bill. New owners are notified of the repayment obligation before they purchase the property as a result of recordation of the Notice of Special Tax Lien; a title search will reveal the rate schedule for the repayments. The local government should also keep more detailed records about the improvements made in case the new owner requests this information. The long repayment period and transferability of the payments allows property owners to invest in comprehensive energy savings and renewable energy projects that pay back over a longer time frame than many existing financing options allow.

The interest component of special taxes and assessments are tax deductible at the federal level, similar to interest paid on a home mortgage, which is a significant financial benefit to the property owner. To help property owners identify the interest component of their special tax payments, the City of Berkeley creates a schedule of special tax payments that separately identifies the interest, principal and administrative expense component of each payment. The interest rate will vary between programs depending on the source of funding and how much of the program's administrative cost is built in to the interest rate.

PROTECTION OF LOCAL GOVERNMENT GENERAL FUNDS

In general, local governments are concerned about any risk to their general funds. Berkeley chose to use special tax revenue bonds that are payable only from special taxes and the proceeds of foreclosure in the event of delinquency. The City of Berkeley's bonds are not a "general obligation" of the City – the debt does not count against the city's debt limit, nor does it impact Berkeley's credit rating or otherwise create a direct liability to the city's general fund. Similarly, assessment bonds issued by a California city or county to finance renewable energy and energy efficiency improvements will typically be payable only from contractual assessments levied under AB 811.

THE SOURCE OF FUNDING

In its pilot program, Berkeley issues bonds with an interest rate equal to 3.25% above the 10-year U.S. Treasury Note or 6.75%, whichever is greater. Each property owner may finance up to $37,500 of improvements in the pilot program. Initial and on-going administrative fees are built into the special taxes paid by the property owners and add approximately 1% to the effective interest rate paid by the property owner, which is currently at 7.75%. In the pilot phase Berkeley committed over $1 million in funds for solar PV projects. Berkeley issues a "micro" bond for each project so that it can guarantee available funding at a set interest rate on demand. One of the issues with funding many small projects is that issuing many small bonds can be extremely expensive. Berkeley has contracted with a third party, Renewable Funding, to buy the "micro" bonds that are issued for each project. Renewable Funding has the right to aggregate the bonds and resell them in the market. These bonds are taxable to the investor at the federal level, but exempt from state income taxes in California. Several municipalities are advocating for changes to the federal tax code to allow tax-exempt bonds to be used for these programs.

The Appendix contains language from the American Clean Energy and Security Act of 2009, passed by the House of Representatives in June 2009, that would allow the federal government to provide credit support, including the commitment to purchase bonds, for municipalities implementing Energy Financing Districts.

FINANCING PARTNERS AND PROCESS

Depending on the capacity and expertise of the local government, it may be helpful to engage financial and service partners to provide support. The Requests for Proposals and the partner contracts from Berkeley for these services are in Section 12. Most cities will want the bonds to be purchased by a third party, although Palm Desert and Sonoma provided initial financing for their programs. In addition, cities may want a third party to help with the "front end" administration of a program, including interaction with applicants and review of the city's credit criteria for funding. And cities may want a third party to help with the "back end" administration, including placing the special tax or assessment levy on the county property tax roll, interaction with delinquent property owners, etc.

The process and actors involved in the pilot phase of Berkeley's financing arrangement are shown in the table below. Berkeley works with Renewable Funding in two separate roles: as the program administrator and as the bond purchaser. Jones Hall is the City's bond counsel, and The Bank of New York Mellon is the City's fiscal agent/trustee. The basic process is as follows:

1. The participant applies for financing.
2. Renewable Funding, in its role as a service provider to the City, reviews and approves the application according to standards established by the City.
3. The property owner contracts with an installer and installs the improvements.
4. The participant requests funding for the installed improvements, which includes execution of a Unanimous Approval by which the property owner votes in favor of the levy of special taxes on its property and the issuance of bonds
5. The City records the Notice of Special Tax Lien and issues a bond to fund the individual project.
6. Renewable Funding, as the bond investor for the pilot program, buys the bond.
7. The City issues a check to the property owner and adds the special tax to the property tax rolls.
8. The County levies special taxes, collects the special tax payments and pays the special taxes to the City.
9. The City's fiscal agent, The Bank of New York Mellon, makes the bond interest and principal payments with special tax revenues received by the City.

BERKELEY FIRST SUMMARY OF CLOSING AND TRANSFER PROCEDURES

CATEGORY		ACTIONS	RESPONSIBILITY	DOCUMENTS
FUNDING REQUEST				
Document Preparation	1	Property owner requests funding on-line	Property Owner	
	2	RF notifies City and Financial Advisor of request	RF	
	3	RF and Financial Advisor prepare FIRST documents	RF and Financial Advisor	FIRST docs and Payment Schedule
	4	RF delivers FIRST documents to property owner via email and mail	RF	Unsigned FIRST docs
	5	Property owner signs, notarizes and return FIRST documents	RF	Signed FIRST docs
Document Review and Delivery	6	RF notifies City of document receipt	RF	
	7	RF reviews documents to ensure completeness	RF	
	8	RF delivers documents to City & JH (by PDF)	RF	Notice of Special Tax Lien, Unanimous Consent, all original docs
BOND CLOSING				
Document Prepartion and Bond Issue	9	Recordation of Notice of Special Tax Lien	City	Notice of Special Tax Lien
	10	Issue, execution and authentication of Bond by City and BNY	City, Jones Hall & BNY	Executed and authenticated Bond
	11	Delivery of Bond executed by City and authenticated by BNY	Jones Hall	Executed and authenticated Bond
	12	Delivery of Bond Counsel Opinion	Jones Hall	Bond Counsel Opinion
	13	Delivery of certified Resolutions and Ordinances	City	Resolutions and Ordinances
	14	Delivery of Property Related/FIRST documents	City	FIRST Docs
	15	Delivery of City Closing Certificate	City and Jones Hall	City Closing Certificate (Exhibit B BPA)
	16	Delivery of Fiscal Agent Certificate	BNY and Jones Hall	FA Closing Certificate (Exhibit C BPA)
	17	Deposit into Reserve Fund	City	Deposit equivalent 6.5% of project
Bond Purchase	18	Delivery of RF Closing Certificate	RF	RF Closing Certificate (Exhibit D BPA)
	19	Delivery of Request for Authorization to Withdraw Funds	RF	Request for Authorization to Withdraw Funds (Exhibit A of Control Agreement)
	20	Delivery of Purchase Price via wire/check to City	RF	Wire Transfer
Check Delivery	21	Prepare & submit FN024 for check Issuance	City	FN024
	22	Delivery of Check to Property Owner	City	Check
	23	Delivery of Autorization to Withdraw Funds from Control Account	City	Authorization to Withdraw Funds
Payables Process	24	Hand billing 1st interest payment for financings before 6/15/09	City	City Tax Bill
	25	Transfer debt service payment to Special Tax Fund at BNY	City	Wire Transfer
	26	Special Tax Levy	City	Transmit new roll to County
	27	Bond Interest payment	BNY	Transmit to RF

RF = Renewable Funding (financing and admin partner)
JH = Jones Hall (city's bond counsel)
BNY = Bank of New York (city's fiscal agent)

PALM DESERT

Palm Desert has committed $7.5 million in the first two phases of its program. The initial capital of $2.5 million for phase I was provided by the city's general fund. An additional $5 million was provided for phase II of the program via bonds issued by the city's Redevelopment Agency, which the Agency continues to hold. Phase III funding is expected to be finalized by April 2009. In phases I and II, residents paid 7% interest over a term of up to 20 years. The minimum amount is $5,000; there is no maximum, although projects greater than $60,000 require approval from the City Manager and projects greater than $200,000 require approval from the City Council.

BOULDER COUNTY

The Boulder County program offers two types of funds. The first is funding through a limited amount of tax-exempt Private Activity bonds, which have a lower interest rate, may only be applied to primary residences, and will require applicants to show they make 115% or less of the area median income. The maximum amount that a property owner can obtain through these funds is $15,000. The second is funding through taxable bonds, which do not have income restrictions, and will fund up to $50,000 or 20% of the property's statutory actual value, whichever is less. Boulder County aggregates applications before issuing bonds. The term is 15 years and the interest rate will depend on the interest rate the County gets by selling bonds, but with a maximum of 8.75%. For the first round of funding, the rates were 5.2% for the income–qualified funds and 6.68% for the unrestricted funds. The program closed its first round of funding in April 2009 with 393 applications for a total of $7.5 million in financing.

BABYLON

Babylon reclassified CO2 as solid waste and tapped into the town's growing solid waste fund, $2.5 million of which it can now use as a revolving pool of funds for clean energy projects. The financing is tied to the property as a benefit assessment. Residents already receive a bi-annual bill for their solid waste benefit assessment; the energy benefit assessment is billed separately on a monthly basis. If the property owner is delinquent in paying this bill, the benefit assessment is transferred to the property tax bill. The interest rate is 3%, which covers administrative costs. The term and monthly payment amount of the benefit assessment fee is determined based on projected energy savings from the energy efficiency improvements; the term is chosen to match savings with the payments. To date the program has committed approximately $1.2 million to fund 169 projects.

8. Administration & Program Costs

Administration of the program is required on several levels. There need to be local government staff members that are ultimately responsible for the program – who oversee its development, manage the parties involved, and report progress to the City Council or other government body, the mayor, the city manager, or other supervisors. There is also a need for program marketing and a source of information if potential participants or the media have questions. Applications must be processed and approved, which should include checking the property title, tax records and any other requirements. Finally, there are financial functions such as preparing the property tax roll, making payments to participants, and debt service management. In summary, the main ongoing administrative areas are:

- General management, oversight, and coordination
- Marketing the program and responding to public requests for information
- Processing and approving applications
- Collecting appropriate documents and recording the tax liens
- Bond issuance
- Property Tax Administration- levying special tax or assessment
- Customer service and assistance
- Program evaluation

These roles can be filled by one person or several depending on the size and scope of the program. Some of these roles, such as the application processing, can also be subcontracted to a partner organization. The decision of how to manage the administration will be unique to the existing capacity and preference of each local government. To give a sense of some of the options, the administrative arrangements of our four case studies are described below. It is important to note that many of these functions require the same amount of staff time whether there are 50 applications or 500 – economies of scale are important for lowering costs. We also provide a hypothetical program budget to show how the costs for a program might break down, and which expenses are start up costs, initial costs per project, and ongoing costs.

BERKELEY

Berkeley does general program management with in-house staff, but contracts out many of the key activities to a third party organization, Renewable Funding. Renewable Funding hosts a website, the online application system, provides information for customers, checks the title, provides documentation, provides customer support and guidance throughout process, and collects the needed paper work to approve the application before the City issues a bond and financing. Specific roles for the administrative portion of the financing process are included in Section 7.

Berkeley's administrative budget for the first two years is $227,000, which covers many of the startup costs and the additional work required to develop a new concept. It also covers "extras" such as developing this guide. Grants cover $190,000 of this initial budget. Berkeley estimates that the $25 application fee plus an addition to the interest rate of approximately 1% (included in the 7.75% rate) will cover the ongoing administrative costs of this program.

PALM DESERT

The program is administered through the Office of Energy Management (OEM). About 1.5 full-time equivalents are needed to run the program, and approximately $90,000 from the OEM's annual budget is devoted to the financing program administration. Administration includes energy surveys, solar site checks, advising property owners, processing applications, managing and tracking funds, monitoring energy conservation, and integrating the program with the Set to Save program, Palm Desert's larger energy efficiency initiative. Energy surveys and solar site checks are free and optional consultations done by the OEM to assist property owners in determining how to most effectively participate in the program and how to weigh their energy options.

Residents must receive bids from at least one contractor before applying for funding. The City then orders the title report for verification of owners and liens, and reviews the proposed improvements, contractors' license, and proposed costs of the improvements. After the application is approved and the documentation signed, the work may start. The city records a lien on the property for the amount of the assessment. For large projects that need a partial payment before completion there is a separate contract form and the City checks that the equipment is onsite and secured. After work is completed, the OEM schedules an inspection. After the inspection and approval, the applicant receives the funds needed to pay for the project cost within approximately three weeks.

BOULDER COUNTY

Boulder County does much of its coordination, marketing, and other administration in-house, but it contracts out the financing origination and parts of the application processing to two private entities. Administrative costs are covered by application and processing fees and potentially by interest on the assessment. The application fee is $75, and the processing fee is 1.07% of the total assessment value. Most of this funding will support a program administrator/accountant position in the Finance Division of Boulder County. This person, with support from a third party organization, will be responsible for reviewing all applications; working with the financial advisor to size and sell the bonds; and working with the Assessor's and Treasurer's Offices to ensure that all applicants' properties are included, all liens are filed in time to meet legal deadlines, and certificates of taxes due are prepared and distributed to the appropriate property owners. Once the property owner has acknowledged that work has been completed, the County, through one of the originators, will pay the contractor directly based on the final invoice. This means that the contractor does not receive any upfront deposit or progress payments from the County, but receives the final payment directly as opposed to having funds pass through the property owner.

BABYLON

Babylon expects most of the administrative costs, excluding the salaries of existing staff members that spend part of their time on this project, to be covered by the 3% annual interest rate included in the monthly payments. There are three full-time staff working on processing applications, program administration, and measurement and verification. In addition, the Energy Director of Babylon spends a significant amount of time working on administration, policy, and outreach for the program. Start-up costs included purchase of measurement and verification equipment, including blower door equipment and an infrared camera, at a cost of $10,000.

SAMPLE PROGRAM BUDGET[20]

We provide a hypothetical budget based loosely on existing programs to give a sense of the types and scale of income and expenses that a local government considering this program might expect. The sample budget assumes 800 projects financed in a year with an average project cost of $15,000 for a total of $12 million in funding. These are just estimates, but should give local government leaders who are planning the details of an Energy Financing District a place to start.

The costs are separated into set-up costs, initial expenses that tend to be linked to volume (though some of these categories will see economies of scale, such as marketing), and ongoing costs that are based on volume (these are costs related to the annual processing of payments). The possible sources of cost recovery can vary. Funds can come from 1) application fees, 2) additions to the initial financed amount (essentially a fee tacked on to the project cost), 3) increasing the interest rate, and 4) other sources such as the local government's general fund, grants, and federal stimulus funds. Funds generated from 2 and 3 are basically interchangeable from a financial view point, but having the program costs blended into a set interest rate (as opposed to an additional fee) may be more appealing from the customer's perspective.

20 This budget is adapted from projections provided by Renewable Funding, LLC.

SAMPLE PROGRAM BUDGET

PROGRAM ASSUMPTIONS	
Average Project Cost Less Rebates	$15,000
Number of Projects	800
TOTAL FUNDING REQUIRED	**$12,000,000**

PROGRAM DESIGN AND PREPARATION FOR LAUNCH									
SERVICE		**RESPONSIBILITY**	**AVERAGE COST OR % PER PROJECT IN YEAR 1**	**ONE-TIME SETUP COSTS**	**INITIAL FIXED COSTS**	**INITIAL COST BASED ON VOLUME**	**ANNUAL FIXED COSTS**	**ANNUAL COSTS BASED ON VOLUME**	**TOTAL**
A	**Program design & manage local govt approval process**	Local Govt Staff or Partner	$25	$20,000					$20,000
B	**Application processing system setup**	Local Govt Staff or Partner	$13	$10,000					$10,000
ESTIMATED DESIGN AND PREPARATION FOR LAUNCH TOTAL				**$30,000**					**$30,000**

ADMINISTRATION SERVICES									
SERVICE		**RESPONSIBILITY**	**AVERAGE COST OR % PER PROJECT IN YEAR 1**	**ONE-TIME SETUP COSTS**	**INITIAL FIXED COSTS**	**INITIAL COST BASED ON VOLUME**	**ANNUAL FIXED COSTS**	**ANNUAL COSTS BASED ON VOLUME**	**TOTAL**
A	**Education & Marketing**	Local Govt Staff or Partner	$50				$40,000		$40,000
B	**Customer Service**	Local Govt Staff or Partner	$30		$20,000	$4,000			$24,000
C	**Review Application and Project**	Local Govt Staff or Partner	$100		$20,000	$60,000			$80,000
D	**Printing, Reproduction & Shipping**	Local Govt Staff or Partner	$20			$16,000			$16,000
ESTIMATED ADMINISTRATION TOTAL					**$40,000**	**$80,000**	**$40,000**		**$160,000**

SAMPLE PROGRAM BUDGET (CONTINUED)

FINANCE SERVICES									
SERVICE		RESPONSIBILITY	AVERAGE COST OR % PER PROJECT IN YEAR 1	ONE-TIME SETUP COSTS	INITIAL FIXED COSTS	INITIAL COST BASED ON VOLUME	ANNUAL FIXED COSTS	ANNUAL COSTS BASED ON VOLUME	TOTAL
A	**Legal and Financing Expenses:** • Bond Underwriting & Placement • Legal Counsel • Financial Modeling and Payment Schedule • District Formation & Tax Administration	Bond Underwriter Bond & Disclosure Counsel Financial Advisor Special Tax Administrator	2.13%	$60,000		$180,000		$15,000	$255,000
B	**Lien Recordation**	Local Govt Staff	$75			$60,000			$60,000
C	**Bond Paying and Transfer Agent**	Fiscal Agent	0.21%	$10,000				$15,000	$25,000
D	**Tax Collection**	County Tax Collector	0.25%					$30,000	$30,000
ESTIMATED FINANCE TOTAL				**$70,000**		**$240,000**		**$60,000**	**$370,000**
ESTIMATED ADMINISTRATION, FINANCE, & OTHER TOTAL				**$100,000**	**$40,000**	**$320,000**	**$40,000**	**$60,000**	**$560,000**

SAMPLE PROGRAM BUDGET (CONTINUED)

POSSIBLE SOURCES OF COST RECOVERY									
SERVICE		RESPONSIBILITY	AVERAGE COST OR % PER PROJECT	FUNDS ONE-TIME SETUP COSTS	INITIAL FIXED COSTS	FUNDS INITIAL COST BASED ON VOLUME	FUNDS ANNUAL FIXED COSTS	FUNDS ANNUAL COSTS BASED ON VOLUME	TOTAL
A	**Application Fee**	Property Owner	$100 (one time)			$80,000			$80,000
B	**Capitalized Expense** (can be recovered through interest rate or added to financed amt)	Property Owner	$400 (one time)		$40,000	$240,000	$40,000		$320,000
C	**Interest Rate in Excess of Debt Service** (added to base interest rate)	Property Owner	0.5% (annual)					$60,000	$60,000
D	**Local Govt Set Up Costs** (can also be recovered through interest rate)	Local Govt		$100,000					$100,000
ESTIMATED SOURCE TOTAL				**$100,000**	**$40,000**	**$320,000**	**$40,000**	**$60,000**	**$560,000**

9. Defining Eligible Projects & Getting Results

Local governments will need to carefully define what projects are eligible for financing and decide how to verify compliance with the eligibility standards. The basics are set by the enabling legislation; in most cases this limits financing to energy efficiency and renewable energy measures that are "attached" to the property. But there are many details to think through within these broad categories. There are three key questions to address: 1) What are the requirements for participating installers and contractors?, 2) What specific measures are eligible?, and 3) What is the approval process, including any quality assurance? The table below describes how the four cases address these questions.

PROJECT ELIGIBILITY CASE COMPARISON

	REQUIREMENTS FOR PARTICIPATING INSTALLERS AND CONTRACTORS	ELIGIBLE MEASURES	APPROVAL AND QUALITY ASSURANCE PROCESS
BERKELEY, CALIFORNIA	Standard licensing and permitting requirements. Also must be on the list provided by the state-sponsored California Solar Initiative, which has its own set of requirements.	Solar PV (pilot)	The state reviews the solar projects and provides a rebate reservation letter as part of the state solar rebate program. Berkeley's program administrator checks the documentation.
PALM DESERT, CALIFORNIA	Standard licensing and permitting requirements.	Energy efficiency and solar energy projects allowed. Energy efficiency improvements must be more efficient than the minimum required by state efficiency standards for new construction (Title 24).	Program staff reviews the project scope to check for eligibility and reasonable cost. Site inspection of all projects to ensure quality and compliance.
BOULDER COUNTY, COLORADO	Standard licensing and permitting requirements.	Wide range of renewable energy and energy efficiency projects allowed. Specific requirements for each measure included in the eligible measures list (see Section 12).	Program staff reviews the project scope to check for eligibility. Spot checks of some projects to ensure quality and compliance, though many projects already require a building permit and inspection.
BABYLON, NEW YORK	Standard licensing and permitting requirements, plus certification in Building Performance Institute (BPI) standards.	Energy efficiency measures such as air sealing, insulation, caulking, and replacing space heating and hot water systems. The program also finances solar energy if the home already meets ENERGY STAR standards for new homes.	Program staff reviews the project scope to check for eligibility compliance and reasonable cost. Performance testing is required. Also, BPI contractors in New York have third party quality assurance as part of their certification.

GETTING RESULTS

Energy Financing Districts should be designed to get the biggest impact (both financial and environmental) possible from the measures installed. Local governments can provide hands-on support and project guidance, as in the cases of Babylon and Palm Desert, which both provide free audits and advice to property owners. The staff in Babylon particularly tries to make sure that the energy savings are greater than the repayments for the improvements. However, this level of support requires expertise on the part of program staff and funding for staff time. The assurance given to customers will likely lead to a more successful program in the long run, but not all communities have the resources required for this level of service. Local governments that cannot provide this type of service can try to fund this work through programs fees, can look to their local utilities or other partners for support, or can simply have more basic project standards.

Another way to increase quality is to require specific training for the contractors. For example, home performance contractors trained according to Building Performance Institute (BPI) standards are required for energy efficiency financing programs in Vermont and New York. These training programs generally have a third party quality assurance component at least for a contractor's first few retrofits, with spot checks after an initial period. Energy Financing Districts can also use third party verifiers trained by the Residential Energy Services Network[21] (RESNET) to check completed work. Financial benefits to the property owner can be increased by requiring that cost-effective energy efficiency measures be done before installing a more expensive solar PV system. The City of Berkeley, for example, requires that participants installing solar meet the City's time-of-sale Residential Energy Conservation Ordinance requirements for energy and water saving measures. Babylon requires that homes meet the ENERGY STAR performance standard for new homes before installing solar.

MEASURING SUCCESS

Measuring the actual impact of a program will also be important to improving the design over time and justifying its continuation. Program staff should keep a database of statistics with the number of projects, types of projects, and projected energy savings (if available). We also recommend asking participants to sign a utility bill information release form. Both Berkeley and Boulder County do this, which allows them to access the property's utility bill information from before and after the installation to get a sense of the actual energy savings from the project. Surveying the participants to get feedback to improve the program design is also important; Babylon does this on a regular basis and has been able to continuously improve their program as a result.

21 Website: http://www.natresnet.org

10. Education & Outreach

There is an enormous opportunity for education through the availability of an Energy Financing District. Information – understanding the benefits of clean energy improvements and how to get the work done – is key barrier to action. Research has shown that larger incentives may increase participation in loan programs, but marketing and implementation may be even more important than the size of the incentive. In one study, program participation varied tenfold between programs offering identical financial incentives. The more successful programs were operated by trusted organizations and marketed by word of mouth and other aggressive, direct methods.[22] Local governments have the opportunity to be this trusted source of information and to work with local partners to engage the community. Many utilities are already engaged in market transformation efforts, so it is vital to check in with the local utility to make sure marketing efforts are complementary where possible.

One interesting model for increasing outreach is Houston's Power to People program. This program offers free weatherization (so no financing is necessary) to low-income residents, but the outreach techniques may be applicable to programs designs that do use financing. The City of Houston targets a neighborhood and sends a letter to every household; this effort results in an approximate sign-up rate of 10% of the residents. Then the city connects with community leaders, the city council member from the community, church groups, neighborhood associations, and others to get the word out. These community groups organize volunteers to do "block walks," where they go door to door, talking to their neighbors about the program. They follow that with a block party featuring food and music to attract more participants. These techniques are relatively inexpensive because they rely on volunteer support, but they have resulted in 40% to 80% participation rates, depending on the neighborhood. If a financing program used these techniques and achieved even a fraction of that – say, just 5% participation – that would constitute a breakthrough in participation rates for financing programs.[23]

Another vital channel for outreach is through contractors and installers. These are the people who will be talking directly with customers on a regular basis. The financing program must fit their needs, and they must understand it well enough to use it effectively as a sales tool. This requires engaging contractors early on, soliciting regular feedback throughout the program development process, and providing workshops to help them understand all aspects of the program.

BERKELEY

Building on the publicity from a voter passed mandate to adopt a climate action plan, the City of Berkeley developed and promoted the pilot program through web sites, focus groups of solar contractors and suppliers, an initial web survey of city residents, an advisory group of influential experts, and workshops for installers and contractors and for the public. The three public workshops consisted of presentations from the City along with Renewable Funding (the processing administrator), and the California Solar Initiative (Pacific Gas and Electric). Well over 300 Berkeley property owners attended the public workshops, and over a dozen solar installers were present to provide information about their services before and after the sessions. Promotional materials for the workshops were distributed at libraries, the City's Permit Service Center, neighborhood associations and to a large database collected over the past year of persons interested in the program. The program also received extensive publicity in the local and national media and interest groups' newsletters. Enough subscriptions to fill all forty available funding slots were made in less than 10 minutes through an on-line enrollment process.

22 Stern, Paul C., Elliot Aronson, John M. Darley, Daniel H. Hill, Eric Hirst, Willett Kempton and Thomas J. Wilbanks, "The Effectiveness of Incentives for Residential Energy Conservation," Evaluation Review (April 1985, Volume 10, Number 2).
23 Fuller 2008 (excerpt).

PALM DESERT

The program is promoted through numerous community meetings, the City's website, articles in the local paper, and the monthly newsletter that the City distributes to the approximately 32,000 households in the City. Many people were aware of the program when it started because there was a lot of publicity surrounding the passage of AB 811. The most effective method of promotion has been through solar and air conditioning installers. The City has quarterly meetings with contractors about the program to update them on the status of the program and to educate them about the application process.

BOULDER COUNTY

Outreach is done through the ClimateSmart Loan Program website, public workshops, contractors, and other methods. Marketing costs are estimated at $20,000 to $30,000 per year. The County entered into a partnership with a local non-profit to provide trainings and workshops. More than 130 contractors have attended County-sponsored briefings about the program, and many are actively promoting the program to their clients. The public workshops guide people through the application process and explain the value of an energy audit, describe eligible measures, and encourage implementation of other measures, such as compact florescent lights (CFLs) and ENERGY STAR appliances that cannot be covered by the program. Attendance at a workshop is mandatory for potential applicants and over 1,700 people attended workshops before the first round of funding.

BABYLON

Babylon has publicized the program to all 65,000 detached homes in Babylon. In August 2008, all residents received a free compact fluorescent light bulb, an energy tips booklet, and an announcement of the Green Homes Program. The cost of this promotional event was covered by a public-private partnership, so there was no out-of-pocket expense for the Town. In February 2009, the Green Homes program was featured on the cover of a recycling calendar sent to each home, and the program has been covered widely by other media such as the New York Times and Newsday. Program staff and city officials also raise awareness of the program by speaking with community groups, schools, and other organizations.

11. Conclusion

With new programs being announced weekly and over ten states pursuing enabling legislation, Energy Financing Districts have the potential to make a significant impact on the adoption of energy efficiency and renewable energy. Local governments must create robust programs that provide valuable financing services while also looking for ways to address other barriers such as lack of information, transaction costs, and the uncertainty of savings. Local government leaders can be major catalysts for change, but they must remember that their potential for impact does not end when the program is launched – success will come through educating both citizens and clean energy providers over time, and by developing community and business partnerships that transform the market for clean energy services.

Scale is the next big challenge for Energy Financing Districts. Cities and counties across the country will need to experiment and share best practices for encouraging participation. These innovations may be effective outreach and education techniques, or they may be ways of pooling risk and assuring savings for individual property owners. Creating financing programs on a town-by-town basis can also be a slow process. It will be important for local government leaders to experiment with new models that speed up the adoption process and allow this type of financing to scale up more quickly. This may be through a countywide approach as in the case of Boulder County, or it may be through statewide support for these programs, or some other yet-to-be-developed mechanism. Additional support can also come from the billions of dollars designated for State Energy Programs, Energy Efficiency and Conservation Block Grants, and Qualified Energy Conservation Bonds through the stimulus package. An Energy Financing District *is* a stimulus program – it creates jobs, saves energy, protects the climate, and invigorates local economies.

12. Resources

The links to all of these resources can be found at: http://rael.berkeley.edu/financing/resources and additional resources from the City of Berkeley can be found at http://cityofberkeley.info\sustainable

STATE ENABLING LEGISLATION

Guidance from Vote Solar / Wilson Sonsini Goodrich and Rosati
A memorandum prepared for the Vote Solar Initiative by Wilson Sonsini Goodrich and Rosati that describes the assessment district authority in various states and amendments to state law necessary to implement Energy Financing Districts. The states reviewed are Arizona, Florida, Hawai'i, Michigan, Nevada, New Jersey, New Mexico, New York, Oregon, Texas, and Washington. The legislation for all states with legal authority for this type of financing can also be found at http://www.dsireusa.org under the policy category called "Property Tax Financing Authorization".

California – Assembly Bill 811

Colorado – House Bill 08-1350

New Mexico – Senate Bill 647

Virginia – Senate Bill 1212

Maryland – House Bill 1567

Vermont – House Bill 446

BERKELEY, CA

Participant Info
This document provides general information for potential participants, including a program overview, participation deadlines, screen shots of the program website, etc.

Program Terms
This document describes the program terms for the participant, including how the program functions, the participant's responsibilities, and clarifications about what the municipalities will not be responsible for (such as the performance of the solar PV system).

Contractor Focus Group Script
Berkeley ran four separate focus groups with solar installers, energy efficiency contractors, solar thermal contractors, and equipment vendors. These sessions were intended to both educate these stakeholders, and also get feedback that could help shape the program. This script was used by Research Into Action, the organization contracted to run the focus groups.

Contractor Focus Group Findings
This document summarizes the findings from the focus groups, which were used to shape the Berkeley FIRSTpilot program. Opinions expressed by the participants include enthusiasm for the basic concept, resistance to requiring energy efficiency measures before other measures, opposition to the city aggregating customers or bulk purchasing equipment and supplies, and some concern about needing to wait until the final approval of the installed measures before receiving payment.

Market Research
Results from a web survey of over 200 Berkeley residents to assess their potential interest in the Berkeley FIRST program.

Approval of Concept for Financing District
The initial request for the City Council to approve the concept of exploring the development of a municipal financing program (November 6, 2007).

Intent to Establish Revenue and Contracts
This resolution approves the acceptance of the grants awarded to Berkeley to fund the program's start up costs (April 22, 2008).

Amendment to Municipal Code to Establish Special Tax Financing Law
This document requests a first reading of the ordinance to amend the Municipal Code to Establish Special Tax Financing Law; includes text of the law (April 22, 2008).

Intent to Establish Financing District and Amend Local Goals and Policies
This document request Council resolutions to (1) set forth the City Council's intention to establish a Sustainable Energy Financing District; (2) set forth the City Council's intention to incur bonded indebtedness; and (3) approve Amended and Restated Local Goals and Policies for Community Facilities Districts and Special Tax Districts (July 22, 2008).

Public Hearing to Establish Financing District
This document includes the Resolution of Formation of the Sustainable Energy Financing District, the Resolution of Necessity to Incur Bonded Indebtedness, the Ordinance Ordering Levy of Special Taxes, the Method of Apportionment description, and a Rate Supplement example (September 16, 2008).

Bond Purchase Contract
This legal document describes how and under what terms the city will issue the bonds and then sell them to the bond purchaser (Renewable Funding).

Fiscal Agent Agreement
The Fiscal Agent Agreement addresses the execution of the bonds and the method of funding for the debt service, administrative fees, and reserve funds.

Closing and Transfer Procedures
The spreadsheet shows the process flow for the actions that are required to issue the bonds and pay debt service.

Special Tax Consultant's Scope of Work
Berkeley contracted with a special tax consultant to provide guidance and also develop the Method of Apportionment and Rate Supplement.

Professional Services Contract with Renewable Funding
This document describes the administrative services provided to the city by Renewable Funding LLC.

Approval of Bond Purchase and Administration Agreements
This document includes the council resolutions to approve the Bond Purchase Agreement and the Administration Agreement with Renewable Funding.

PALM DESERT, CA

Program Talking Points
Concise Q&A about the Palm Desert program and the role of AB 811.

Loan Process
This document reviews the entire loan process for the Palm Desert program, include the loan application criteria and the administrative responsibilities of the city.

Program Report and Administrative Guidelines
Detailed report describing how the program functions, eligibility, requirements, etc.

BOULDER COUNTY, CO

Resolution Establishing the Local Improvement District
Formal resolution to set up the county-wide district.

List of Eligible Measures
Boulder County's list of eligible measures, requirements, and available rebates and tax credits.

Homeowner Workshop Presentation
Boulder County requires all of the participants to attend a public educational workshop. This is the presentation given at that workshop.

BABYLON, NY

Self-Check Home Inventory Form
Babylon starts off the assessment of energy savings potential with this "self-check" form to get key information.

Sample Homeowner Contract
Sample contract between the Town of Babylon and the homeowner.

Sample Contractor Contract
Sample contract between the Town of Babylon and the contractors performing the retrofit work.

Defense of the Program's "Public Purpose"
In response to a local challenge about the "public purpose" being performed by the LIGH financing program, LIGH staff drafted this memo

Appendix

The following excerpt from the proposed American Clean Energy and Security Act of 2009, as passed by the House of Representatives on June 26, 2009, would provide credit support for Energy Financing Districts at the federal level.

TITLE 1, SUBTITLE I

SEC. 188. INDIRECT SUPPORT.

(a) IN GENERAL.—For the purpose of enhancing the availability of private financing for clean energy technology deployment, the Administration may—

(1) provide credit support to portfolios of taxable debt obligations originated by state, local, and private sector entities that enable owners and users of buildings and industrial facilities to—

(A) significantly increase the energy efficiency of such buildings or facilities; or

(B) install systems that individually generate electricity from renewable energy resources and have a capacity of no more than 2 megawatts;

(2) facilitate financing transactions in tax equity markets and long-term purchasing of clean energy by state, local, and non-governmental not-for-profit entities, to the degree and extent that the Administration determines such financing activity is appropriate and consistent with carrying out the purposes described in Section 182 of this Act; and

(3) provide credit support to portfolios of taxable debt obligations originated by state, local, and private sector entities that enable the deployment of energy storage applications for electric drive vehicles, stationary applications, and electricity transmission and distribution.

(b) DEFINITIONS.—For purposes of the section:

(1) CREDIT SUPPORT.—The term ‘‘credit support’’ means—

(A) direct loans, letters of credit, loan guarantees, and insurance products; and

(B) the purchase or commitment to purchase, or the sale or commitment to sell, debt instruments (including subordinated securities).

(2) RENEWABLE ENERGY RESOURCE.—The term ‘‘renewable energy resource’’ shall have the meaning given that term in section 610 of the Public Utility Regulatory Policies Act of 1978 (as added by 2 section 101 of this Act).

(c) TRANSPARENCY.—The Administration shall seek to foster through its credit support activities—

(1) the development and consistent application of standard contractual terms, transparent underwriting standards and consistent measurement and verification protocols, as applicable; and

(2) the creation of performance data that promotes effective underwriting and risk management to support lending markets and stimulate the development of private investment markets.

(d) EXEMPT SECURITIES.—All securities insured or guaranteed by the Administration shall, to the same extent as securities that are direct obligations of or obligations guaranteed as to the principal or interest by the United States, be considered to be exempt securities within the meaning of the laws administered by the Securities and Exchange Commission.

Renewable
and Appropriate
Energy Laboratory
UC Berkeley

University of
California
Berkeley