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**City of Berkeley  
Sustainable Energy Financing Plan**

**DRAFT – do not distribute**

**FAQs - Frequently Asked Questions**

**What is the Sustainable Energy Financing Plan?**

The City of Berkeley is planning to launch a program that would pay the up-front costs for energy efficiency improvements and installation of solar energy systems for residential and commercial property within the city limits. The property owner would repay the cost of these installations over 20 years through a special tax on their property tax bill.

This arrangement already exists in a number of cities for home and city improvement projects such as under-grounding transmission and phone lines, and some sewer improvements. In the case of energy efficiency and solar projects, this effectively ‘flips’ the financing from entirely front-loaded to spread out over a period of time closer to that of the services provided. Additionally, in the event that the property is sold, the financing would be transferred to the new owner. This financing structure could bring the cost of energy improvements to a new level lower than that of commercially available fossil-fuel electricity services.

**Why is Berkeley initiating this program?**

The Sustainable Energy Financing Plan is a major component of Berkeley’s effort to reduce local greenhouse gas emissions and to make energy efficiency improvements and a shift to renewable sources of energy more affordable. Energy efficiency improvements, solar photovoltaic and solar hot water systems are already cost effective for many residential and commercial property owners with the existing state and federal subsidies. The Berkeley Plan addresses the two major remaining financial hurdles to solar and energy efficiency installation – the high up-front cost and the possibility that those costs will not be recovered if the property is sold. Under this plan, there is little or no up-front cost to the property owner, and if you sell your property prior to the end of the repayment period, the new owner takes over the assessment payments which will continue on the property’s annual tax bill.

**I am thinking about going solar now. Should I wait for this program?**

If you have a project in mind, you should not wait for the City program. The State solar incentives may be reduced and the Federal Tax Credit may be eliminated before the City’s program is widely available.

**Who would provide the up-front funding for the program?**

The City would provide funding for the program from a bond that is repaid through the incremental assessments on the annual tax bill of participating property owners. The financing mechanism is loosely based on existing “underground utility districts” where the City serves as the financing agent for a neighborhood moving utility poles and wires underground.

**Who would be eligible?**

All private property owners in Berkeley – both residential and commercial – are eligible to participate in the program.

**How much do solar and energy efficiency installations cost?**

A photovoltaic system for a single family house usually costs from \$11,000 - \$15,000 after applicable rebates and tax incentives. Solar hot water systems typically cost less than \$10,000. The cost of the solar systems depends on the amount of electricity and hot water used in the home. The cost for energy efficiency upgrades vary widely - from a few hundred dollars to several thousands of dollars depending on the work undertaken. There are several programs currently available to Berkeley property owners that provide efficiency improvements, such as insulation and lighting improvements.

**How much would my property taxes increase?**

If you participate in the program, you repay only the cost of your project – plus a charge for interest, and a small administrative fee. For example, if the city pays for \$12,000 of energy efficiency and solar projects for your property, the incremental property tax assessment would be approximately \$900 per year.

**How much would I save on my PG&E bill?**

Every property is different, and a few simple calculations - based on your current energy consumption - can estimate the expected reduction in your utility bill. Before investing in solar and efficiency projects, property owners will be able to estimate the amount of savings by using an online calculator provided by the city. Ideally, the savings on your utility bill from solar and efficiency improvements will be the same or greater than the amount of the incremental property taxes. If energy costs continue to increase over the next few years, the savings from lower utility bills over the next 20 years will likely be greater than the amount of the incremental tax assessments over the same period.

**How will this plan affect me if I choose not to participate?**

If you choose not to participate in the program, your property taxes will remain unchanged. Each property owner will pay an incremental assessment only if they “opt-in” and have work done on their property as part of the program.

**What is the interest rate on loans for solar and energy efficiency one generally pays today?**

Currently, the average interest rate for home equity loans for a borrower with a strong credit rating is between 7.5% and 8.0%.

**What will be the interest rate one pays under the Berkeley program?**

The interest rate is expected to be approximately 6.5%, lower than rates for traditional equity lines or mortgage refinancing. The City is able to borrow at low rates because the bond issued to finance the program is well secured and because the City “borrows” the funds in large increments.

**Can I use any contractor for the energy efficiency and solar installation?**

This is not yet determined. It is likely that the city will provide a list of installers that have agreed to the program's terms and conditions. The property owner will contract directly with the qualified private installer.

**Would the City pay the installer directly?**

It is not yet determined whether the City will pay the installer or the contractor directly.

**What happens if I sell my property?**

The tax assessment would be transferable between owners. If you sell your property prior to the end of the 20 year assessment period, the new owner takes over the assessment as part of the taxes on the property. The energy systems are part of the property and ownership of the solar system will transfer to the new owner at the close of the real estate sale. The program thus builds the energy efficiency and solar energy investment into your home equity.

**Do I still get California solar rebates?**

Yes, participation in this financing plan does not reduce rebates available through the California Solar Initiative ("CSI") program. More information on the CSI can be found at:  
<http://www.gosolarcalifornia.ca.gov/>

**Do I get the federal tax credit?**

This is not yet clear. The federal tax credit may not be available to those who participate in this program.

**What other program requirements will there be?**

The City may require that certain efficiency measures be installed in order to be eligible. This is to ensure that the most cost-effective clean energy measures are installed before using solar. The types of efficiency work required will be modeled after the City of Berkeley's Residential Energy Conservation Ordinance ("RECO"). The types of work required may include: weather-stripping, insulation, heating ductwork improvements, and water heater blankets. For more information on RECO, see  
<http://www.ci.berkeley.ca.us/sustainable/residents/ResSidebar/RECO.html>

**Do I get other energy efficiency rebates and incentives?**

Yes, all energy efficiency rebates available from EBMUD, PG&E, and the State of California remain unchanged.

**When will this program go into effect?**

The Sustainable Energy Financing Program is anticipated to commence in the summer of 2008.

**How can I sign up?**

Property owners interested to participate in the program are invited to register online at <http://www.ci.berkeley.ca.us/sustainable/financing.html> or by calling the city at 510.981.5434. Property owners who register are not making a commitment to participate – you are simply indicating interest and will receive additional information as available.

**I don't live in Berkeley; how can my city initiate a similar program?**

Contact your mayor or city council representative. Additional details on the more technical aspects of the municipal financing mechanism can be found at: <http://rael.berkeley.edu/projects>.

**RAEL Project Team:**

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**Sample Residential Energy Model Results:**

**Assumptions:**

- 2kw solar PV system installed
- Energy efficiency improvements reduce electricity use by 20% and have 3 year payback
- Original home energy use is 7500 kwh per year
- Homeowner pays nothing upfront, and repayments are made over 20 years
- The cost of energy increases at 3% a year
- Discount rate for NPV calculation is 8%

**Residential Pro Forma - 6.5% Interest**

Year	1	2	3	4	5	6	7	8	9	10
<b>Loan Down Payment</b>										
<b>Fed Tax Credit</b>	\$ 2,000									
<b>Savings from Energy Efficiency</b>	\$ 421	\$ 433	\$ 446	\$ 460	\$ 474	\$ 488	\$ 503	\$ 518	\$ 533	\$ 549
<b>Savings from Solar PV</b>	\$ 539	\$ 555	\$ 572	\$ 589	\$ 607	\$ 625	\$ 643	\$ 663	\$ 683	\$ 703
<b>Loan Payments</b>	\$(1,059)	\$(1,059)	\$(1,059)	\$(1,059)	\$(1,059)	\$(1,059)	\$(1,059)	\$(1,059)	\$(1,059)	\$(1,059)
<b>Yearly Cash Flow</b>	\$ 1,901	\$ (70)	\$ (41)	\$ (10)	\$ 22	\$ 54	\$ 87	\$ 122	\$ 157	\$ 194

NPV = \$ 3,343

**Residential Pro Forma - 5.5% Interest**

Year	1	2	3	4	5	6	7	8	9	10
<b>Loan Down Payment</b>										
<b>Fed Tax Credit</b>	\$ 2,000									
<b>Savings from Energy Efficiency</b>	\$ 421	\$ 433	\$ 446	\$ 460	\$ 474	\$ 488	\$ 503	\$ 518	\$ 533	\$ 549
<b>Savings from Solar PV</b>	\$ 539	\$ 555	\$ 572	\$ 589	\$ 607	\$ 625	\$ 643	\$ 663	\$ 683	\$ 703
<b>Loan Payments</b>	\$(976)	\$(976)	\$(976)	\$(976)	\$(976)	\$(976)	\$(976)	\$(976)	\$(976)	\$(976)
<b>Yearly Cash Flow</b>	\$ 1,984	\$ 12	\$ 42	\$ 73	\$ 104	\$ 136	\$ 170	\$ 204	\$ 240	\$ 276

NPV = \$ 4,154

**\*\* this is a draft -- do not cite -- material not finalized \*\***