

Appendix F: Financing and Fees

Introduction

A theme that emerged during the development of Sonoma County's 2008 Community Climate Action Plan was the importance of financing. Without it, expecting to implement solutions of any significance is like expecting to eat at a restaurant with no money to buy items on the menu.

Key Recommendations:

	Recommendation	Communities Employing Recommendation	Sonoma County Status and Applicability
6.1	Use proven and develop new financing mechanisms to accelerate implementation of recommended measures	Arcata, Boulder, Milwaukee, San Francisco, Santa Clara County, Seattle	Three financing solutions are being implemented in Sonoma County: Property-Assessed Clean Energy (Sonoma County Energy Independence Program), Pay As You Save, and Community Choice Aggregation. More financing tools are needed.

6.1 Use proven and develop new financing mechanisms to accelerate implementation of recommended measures

Background

Three financing solutions were highlighted in the 2008 Climate Action Plan: AB811 – Property-Assessed Clean Energy (known locally as Sonoma County Energy Independence Program), Pay As You Save®, and Community Choice Aggregation. All three are being implemented in Sonoma County. In addition, Sonoma County is currently in the beginning stages of implementing the Sonoma County Efficiency Fund, another innovative financing solution for building energy efficiency.¹ While these solutions are promising, they are insufficient. Sonoma County must keep seeking and developing financing tools to help transform the marketplace and reduce emissions.

Strategies to Consider:

- A. *Put a Carbon Tax on Electricity*
- B. *Create a Carbon Fund*
- C. *Use Crowd-Funding*
- D. *Employ Collaborative Procurement*
- E. *Use a Revolving Fund Mechanism with Collaborative Procurement*
- F. *Use a Solar Group Purchase Model*

¹ <http://www.scwa.ca.gov/scef/>

A. Put a Carbon Tax on electricity

While a carbon tax has never been considered publicly in Sonoma County, several communities have implemented them with successful results.

City of Arcata voters in November 2012 passed Measure I to levy a tax on excessive electricity use in residential households. Passing with a vote of 68 percent to 32 percent, the measure assesses a 45 percent tax on residential household meters that use more than 600 percent of baseline electricity or more than an average of 3 residential households from 1 meter. The goal of the tax is to assist the City in meeting its adopted greenhouse gas emission reduction goals, to align the City of Arcata with emerging California energy policy, and to create a disincentive for excessive energy use in residential neighborhoods. In 2006, the City passed the Community Greenhouse Gas Reduction Plan, which established an emission reduction target of 20 percent below year 2000 levels by 2012. The excessive electricity use in the residential sector poses a serious challenge to the City's efforts to decrease the amount of locally-generated greenhouse gas emissions.²

In the **City of Boulder**, residents and businesses are taxed based on the amount of electricity they consume. The City Council has the authority to set the rate for each user type within an approved range. Since July 2009, the rates have been set at the maximum allowable level. The CAP tax generated approximately \$1.8 million in 2010. The CAP tax was renewed by voters on November 6, 2012.³ The tax revenue is used to fund climate protection efforts, despite having little effect on greenhouse gases.⁴

B. Create a Carbon Fund

Since July 2009, the **City and County of San Francisco** have levied a carbon fee on municipal airline travel. Revenue generated supports the San Francisco Carbon Fund (SF Carbon Fund), which is administered by SF Environment for projects that mitigate carbon emissions. The SF Carbon Fund awards grants and contracts to businesses, community-based organizations, and neighborhood schools for projects that mitigate carbon and ultimately improve San Francisco's natural infrastructure and enhance the quality of the living environment. In prior funding cycles the SF Carbon Fund has made awards for biodiesel and urban forest pilot projects. The primary goal of the 2013 SF Carbon Fund grant cycle is to mitigate carbon by increasing the number of healthy trees, expanding locally appropriate habitats, and decreasing the energy needed to treat the City's wastewater by reducing storm water runoff from sidewalks and streets. Co-benefits of funded projects include contributing to health and well-being by reducing urban heat island impacts, flooding risks, expanding the production of locally grown food, increasing the walkability of San Francisco neighborhoods, providing equitable access to green space, and restoring biodiversity. Incorporating green infrastructure in local neighborhoods is an investment in current and future generations of San Franciscans.⁵

Flights to and from Sonoma County's airport produce significant emissions. Charging passengers a carbon fee could generate income that could fund carbon mitigation projects. The County could opt to make the fee voluntary or mandatory. If voluntary, the carbon fund would require substantial marketing to encourage travelers to purchase local "carbon offsets."

C. Use Crowd-Funding

Crowd-funding is a newly emerging mechanism that allows early-stage companies or projects to be financed from many small sources over the Internet. Bloomberg estimates that if even one percent of the retail investment market is captured the opportunity is worth \$90 billion. Crowd-funding is ideal for small start-ups because it offers financing that traditional institutions have thus far failed to provide. Mosaic is an example of a new and relatively successful

² <http://www.cityofarcata.org/node/1645>

³ <https://bouldercolorado.gov/pages/climate>

⁴ Survey. More information on the tax: <https://www-static.bouldercolorado.gov/docs/community-takes-charge-boulders-carbon-tax-1-201305081136.pdf>

⁵ SF Environment: <http://www.sfenvironment.org/article/climate-change/san-francisco-carbon-fund>

online crowd-funding hub that specifically finances solar projects.⁶ Sonoma Clean Power could either partner with an existing operation or model a similar program in-house.

D. Employ Collaborative Procurement

Sonoma County could employ a public-private procurement partnership to finance renewable energy projects on publicly owned facilities such as community centers, city halls, fire stations, police stations, office buildings, senior centers, libraries, and clinics.

In the **County of Santa Clara**, the Silicon Valley Collaborative Renewable Energy Procurement Project (SV-REP) is endeavoring to support the public sector adoption of renewable energy and reduce transaction costs. Joint Venture and the members of the Public Sector Climate Task Force have partnered with the County of Santa Clara, as lead agency, on a regional collaborative procurement. Through a collaborative and transparent process, the SV-REP addressed the informational barriers and limited resource capacities that are barriers to adoption of renewable energy and non-traditional financing approaches. This method conserved funds and accelerated the financing process and deployment of renewable energy technologies to achieve climate protection goals while supporting local economic development.⁷

Phase I of the SV-REP Project is currently the largest multi-agency procurement of renewable energy in the United States. It involves 70 sites at 43 locations, and collaboration across 9 public agencies (County of Santa Clara, cities of Milpitas, Cupertino, Morgan Hill, Pacifica, and Mountain View, Town of Los Gatos, Santa Clara Valley Transportation Authority, and the South Bayside Waste Management Authority). The carport, rooftop, and ground-mounted systems will be located at community centers, city halls, fire stations, police stations, office buildings, senior centers, libraries, clinics, and other publicly owned facilities. Some examples include South Bayside Waste Management Authority's new recycling and waste transfer facility in San Carlos, Cupertino's corporate yard, and the Santa Clara Valley Transportation Authority's bus depots. Vendor selection for Phase I was finalized in early September 2010, and the selected vendors include SunPower Corporation (for the large system bundle), Borrego Solar (medium system bundle), and EcoPlexus (small combined and small rooftop bundles). In September 2011, Joint Venture, Alameda County, and the Contra Costa Economic Partnership entered into a partnership – the Regional Renewable Energy Procurement Project (R-REP) – which is open to all public agencies in Santa Clara, San Mateo, Alameda, and Contra Costa Counties.⁸

Joint Venture partnered with Optony and the World Resources Institute on a Public/Private Sector Best Practices Guide for collaborative procurement of solar power.⁹

The U.S. Environmental Protection Agency Green Power Partnership launched an effort based on the SV-REP model in the metropolitan Washington, D.C. area.¹⁰

More information about the Clean Energy Collaborative Procurement can be found at www.epa.gov/cecp.

E. Use a Revolving Fund Mechanism with Collaborative Procurement

Sonoma County could also increase its use of a revolving fund public-private partnership with collaborative procurement to fund renewable energy projects in the region.¹¹

In **Santa Clara County**, the Sustainable Energy and Economic Development (SEED) Program has established a public-private revolving fund. SEI, in partnership with Optony Inc., is piloting a public solar PV procurement business model. The Sustainable Energy & Economic Development Fund (SEED Fund) initiative, funded by the California Solar Initiative's Research Design & Development Program, aims to demonstrate an innovative public-

6 <https://joinmosaic.com/blog/90-billion-opportunity-crowdfunding-clean-energy#.UnZxpSTFb9M>

7 http://www.jointventure.org/index.php?option=com_content&view=article&id=189&Itemid=287

8 Ibid

9 www.wri.org/buying-solar

10 http://www.jointventure.org/index.php?option=com_content&view=article&id=189&Itemid=287

11 <http://www.solarroadmap.com/regional-initiatives/north-bay/>

private revolving fund to create a durable mechanism for enabling public participants to overcome adoption barriers with technical support that delivers significant reductions to overall project, transaction and administration costs. The SEED Fund initiative seeks to greatly extend the market potential of the collaborative procurement model by launching a revolving fund mechanism that will defer upfront costs for public partners and provide expert technical support, and in the process attract private investment to support this model in an ongoing manner, greatly expanding the scope of the initial investment by CSI and deployment of distributed solar in California. A \$300,000 initial CSI grant, matched by \$250,000 in private funding and supported by \$91,150 of in-kind match, is designed to enable 10 or more public partners with up to 50 potential sites to identify and contract upwards of 5MW of solar contracts, a net increase of 75 percent over total regional public non-utility installed PV. This project aims to demonstrate that a 1-2 percent upfront investment in collaboration results in better pricing (10-12 percent total project cost savings), lower project risks with higher returns, reduced transaction costs, and reduced administrative effort (resulting in 50-70 percent administrative cost savings for participants).¹²

Green Bank in **New York** is a nascent entity that may also hold promise. New York is not as far along in the process as communities in California, but the Green Bank may have some lessons to offer for collaborative procurement. This description from the Governor's website provides some detail: *The Green Bank could assist in financing commercial and industrial solar projects through aggregation, credit enhancement and securitization. The Bank – potentially in partnership with one or more private financial institutions – could purchase loans from intermediaries and warehouse those loans until the pool attained a volume that is of interest to the capital markets. To reduce the perceived risk of marginal investment grade counter parties, the bank could provide credit enhancement for the loan portfolio in the form of a loan loss reserve fund or a subordinated debt instrument. To address the long loan tenors, the Bank could execute a debt securitization through which investors interested in holding long term debt, such as pension funds, could invest in longer term securities, while those banks preferring shorter loan terms would be able to exit their investments earlier. Access to the debt capital markets will allow clean energy projects to obtain financing at a lower cost of capital. The Green Bank is a key tool that the state will employ to facilitate a transition away from an unsustainable subsidy-dependent market toward a scaled and functional private market with waning dependence on government support. New York State entities spend approximately \$1.4 billion annually to incentivize clean energy. Despite this level of spending, the State is not realizing its clean energy goals. One reason for this is that approximately 80 percent of this amount is disbursed in one-time-use subsidies to help individual projects.*¹³

F. Use a Solar Group Purchase Model

The local jurisdictions of Sonoma County should consider ways to use solar group purchase models to increase solar installations in the county. They can learn from several burgeoning group solar purchase models and determine the best ways to improve on them and support such efforts locally.

The **Milwaukee** Power Pack was a pilot program in 2012 that made solar more affordable for Milwaukee area customers. The program offered quality solar products from Milwaukee companies, installed by local certified professionals, at a low cost for customers. The Milwaukee Power Pack system included solar panels from Milwaukee's own Helios Solar Works and an inverter from Ingeteam, both companies headquartered in the Menomonee Valley. Local Milwaukee solar companies provided a special limited-time pricing for the Milwaukee Power Pack program. The cost was also lower because installers bought product directly from the manufacturer with no shipping or handling fees.¹⁴

In the **City of San Francisco**, Solar@Work is a group purchasing program for small- and medium-sized commercial properties in the San Francisco Bay Area. In July 2013, the City of San Francisco launched Solar@Work, a program that offers solar energy systems to businesses in the Bay Area through a group purchase model. The program makes it possible for small- and mid-sized businesses and commercial property owners to pay less for solar power than they pay for electricity from the grid without local rebates. This can allow some business owners to save hundreds of thousands of dollars over the lifetimes of these solar power systems. It was estimated that Solar@Work would bring together interested participants to buy more than 2 Megawatts (MW) of solar power over 6 months. The Solar@Work model was developed by the City and County of San Francisco's Department of the Environment (SF

¹² <http://www.seiinc.org/index.php/programs/sustainable-communities/item/568-sustainable-energy-economic-development-fund-seed-fund>

¹³ Page 2 of Green Bank's Background Document: <http://www.governor.ny.gov/assets/documents/GBBackgrounder91013.pdf>

¹⁴ <http://city.milwaukee.gov/milwaukee shines/Homeowner/Milwaukee-Power-Pack.htm>

Environment), in collaboration with the National Renewable Energy Laboratory (NREL) and Optony. SF Environment found that the main barriers keeping San Francisco businesses and commercial property owners from purchasing solar energy were upfront costs and lack of access to affordable financing. With American Recovery and Reinvestment Act funding from the U.S. Department of Energy's Solar America Cities program and support from U.S. DOE's SunShot Initiative, SF Environment proposed the Solar@Work "aggregation" approach, which combines multiple participants into one solar purchasing group, along with a standardized solar equipment lease. To help make this a reality, the program's stakeholder group, led by the World Resources Institute (WRI), negotiated with solar vendors who could address the unique needs of businesses and property owners in San Francisco, and selected winning vendor SolarCity.¹⁵

Overall the project engaged directly with 70 potential buyers (the original target was 20-50) across three counties including San Francisco, Alameda and Santa Clara, which were interested in the program and submitted their facilities for evaluation and potential participation in the program. About half of those were screened out for various reasons, primarily due to unsuitable facilities (roofing or shading concerns), or not enough support from internal stakeholders to move forward. There was interest from some businesses in the financial district, however their rooftops were very limited and highly impacted by neighboring buildings. While in the industrial areas, older roofs were not sufficient for the added weight of solar PV given seismic concerns or were in need of replacement due to deferred maintenance. Currently, nine potential buyers are still under consideration, which could boost the total impact to nearly 1MW (1,000 kW). Lessons learned: solar projects with great economics still compete with core business priorities and operational challenges; long-term concerns persist in the uncertain economic climate; program participants have an existing social or sustainability focus; and the vendor community frequently treats this sector with a mass-market approach to sales.¹⁶

The **City of San Francisco's** Solar@School program is a commercial solar group purchasing program designed to provide non-profit private schools in San Francisco with access to tax-related benefits and integrated purchasing options. SF Environment developed the model and the program was implemented by San Francisco Friends School with technical assistance from Optony that was made possible by funding from the Solar America Cities program. The program was the culmination of a year's work with private schools to incentivize them to invest in solar, which included a solar financing workshop, a solar monitoring system grant, and a non-profit group purchase (Solar@School). The initial pool of more than 100 candidate schools was obtained from SFE's School Ed team. SF Environment staff conducted outreach to schools via letters, emails, and phone calls to each school. In general, the schools found the process to be an informative learning experience and were appreciative of the City's effort to make it happen. All schools stated that the savings were not very compelling from the first round of bids. However, Sonoma County could explore ways to create such a program and make it more attractive.¹⁷

San Francisco's SunShares is an employee solar discount program offered by the San Francisco Department of the Environment and the Business Council on Climate Change. The City and County of SF, Blue Shield of CA, Genentech, PG&E, UCSF, and eBay, Inc. are participating in SunShares to help employees living throughout the Bay Area and greater Sacramento metro area pool their buying power to secure significant discounts and a range of financing options that make installing solar on residents' homes simple and affordable.¹⁸

Seattle's City Light Community Solar project sold all of the 1,800 Community Solar units available for purchase by their customers in a few weeks. They did not anticipate the overwhelming and fast response, which they believe is due to a few of the following factors. Based on customer feedback from the first project at Jefferson Park, they lowered the price of each unit from \$600 to \$150. Declining costs of solar technology and installation, minimal structural costs, and better than expected solar production at Jefferson Park allowed them to project a potential payback for Community Solar at the Aquarium. Lastly, Seattle has an affinity for its Aquarium and the preservation of their coastal environment.¹⁹

15 <http://www.solarcity.com/pressreleases/96/san-francisco-launches-solar-work--innovative-model-creates-breakthrough-in-solar-affordability-for-small-businesses.aspx>

16 <http://www.sfenvironment.org/article/solar/solar-financing-options>

17 Ibid

18 <http://mygroupenergy.com/group/sfsunshares>

19 <http://www.seattle.gov/light/solar/community.asp>