

SPARC Phase 2 – Webinar

Potential Opportunities for Renewable Energy in the County

Welcome to the County of San Bernardino SPARC Phase 2 Outreach Webinar

- ◆ Expand outreach and informational exchange
- ◆ Review and expand on the available tools identified to date through County outreach
- ◆ Four speakers currently advising the County on a Benefits and Costs Assessment
- ◆ Five categories of tools: organizational, local system, regulatory, educational, and funding
- ◆ Questions at end of presentation

Webinar Presenters

- ◆ **John Melville – Collaborative Economics**
 - ◆ Principal with extensive experience assisting public and private leaders to bring stakeholders together toward shared goals that help to improve quality of life
- ◆ **Scott Debauche – Aspen Environmental Group**
 - ◆ Board Certified Environmental Professional specializing in energy infrastructure planning, analysis, and development
- ◆ **Emily Capello – Aspen Environmental Group**
 - ◆ Senior energy planner with a focus on renewable energy and transmission infrastructure
- ◆ **Jill Dominguez – Essergy Consulting**
 - ◆ Principal with significant experience in economic development strategies and public/private grant funding

Agenda

Topic	Speaker
◆ Welcome	Linda Mawby/Karen Watkins County of San Bernardino
◆ Agenda/Introductions	John Melville – Collaborative Economics
◆ Presentations	
1. Organizational Tools	
2. Local System Tools	Scott Debauche – Aspen Environmental Group
3. Educational and Regulatory Tools	Emily Capello – Aspen Environmental Group
4. Funding Tools	Jill Dominguez – Essergy Consulting
◆ Questions	Sandra Alarcón-Lopez – Facilitator (Aspen)
◆ Closing	Linda Mawby – County of San Bernardino

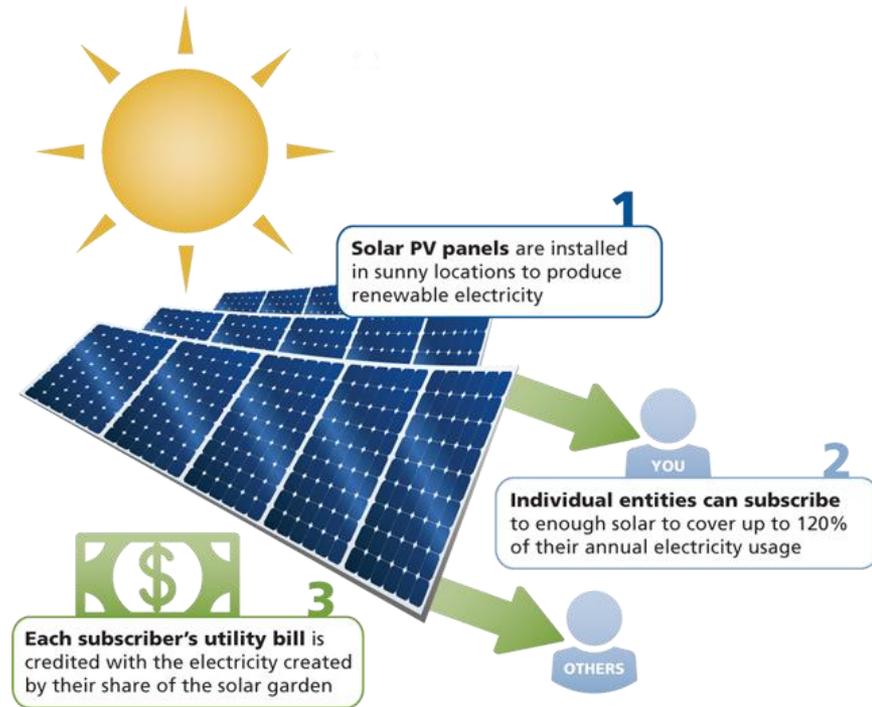
1. Organizational Tool

Cooperative Models (A Wide Variety of Options)

Example: Community Solar Gardens (e.g. Colorado, Minnesota)

What are they?

- ◆ Local solar array(s) with multiple subscribers, connected to the utility grid
- ◆ Subscribers receive discount or credit toward utility bill
- ◆ Subscribers can be residences, businesses, local governments, non-profits, faith-based organizations, etc.
- ◆ Think community garden, except here you have a "patch of panels" instead of vegetables!



Source: <http://www.cleanenergyresourceteams.org/solargardens>

1. Organizational Tool

Cooperative Models (A Wide Variety of Options)

How do community solar gardens work?

- ◆ “Garden” can be in many places: school, library, house of worship, community center, and more
- ◆ Could be a public or private building, or private land, including parking lots, brownfield sites, and more
- ◆ Needs to meet local zoning requirements and be able to connect to the electric grid
- ◆ Private companies develop and administer the cooperatively-owned systems
- ◆ Variety of financial models, including upfront ownership of panels to longer-term purchase contracts

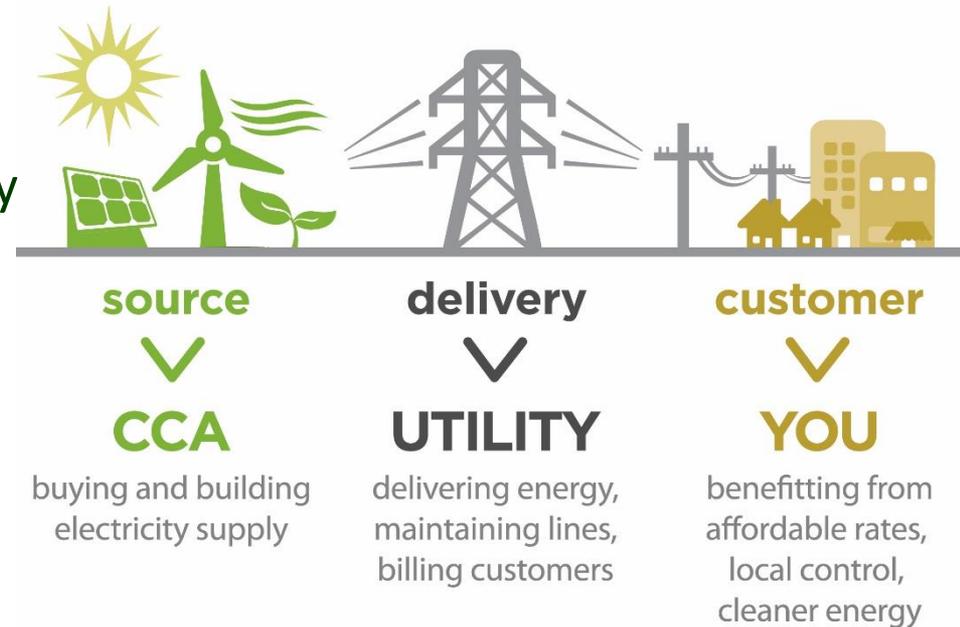
1. Organizational Tool

Community Choice Aggregation (CCA) (Sonoma, CA)

Example: Sonoma Clean Power (SCP)

- ◆ Energy supply tool based on group purchasing model
- ◆ Local governments organize to purchase and/or generate electricity
- ◆ Utility continues to deliver power and provide services
- ◆ **Why do it?** Better rates, cleaner energy, consumer choice/local control, job creation
- ◆ Also, **local delivery channel** for programs to encourage energy efficiency and development

How Local Energy Aggregation Works



Source: <http://www.leanenergyus.org/what-is-cca/>

1. Organizational Tool

Community Choice Aggregation (CCA) (Sonoma, CA)

How does Sonoma Clean Power (SCP) work?

- ◆ Set up as non-profit to manage effort (8 cities, \$100m in revenues, almost 500,000 subscribers)
- ◆ **How it works:** city signs on, subscriber gets choice of basic or all-renewables plan or opt-out, utility delivers
- ◆ **History:** public engagement process, joint powers authority, citizens/environmental/business groups support and promote
- ◆ **Measurable benefits:** customer savings, fewer emissions, more local renewable energy generation

2. Local-System Tool

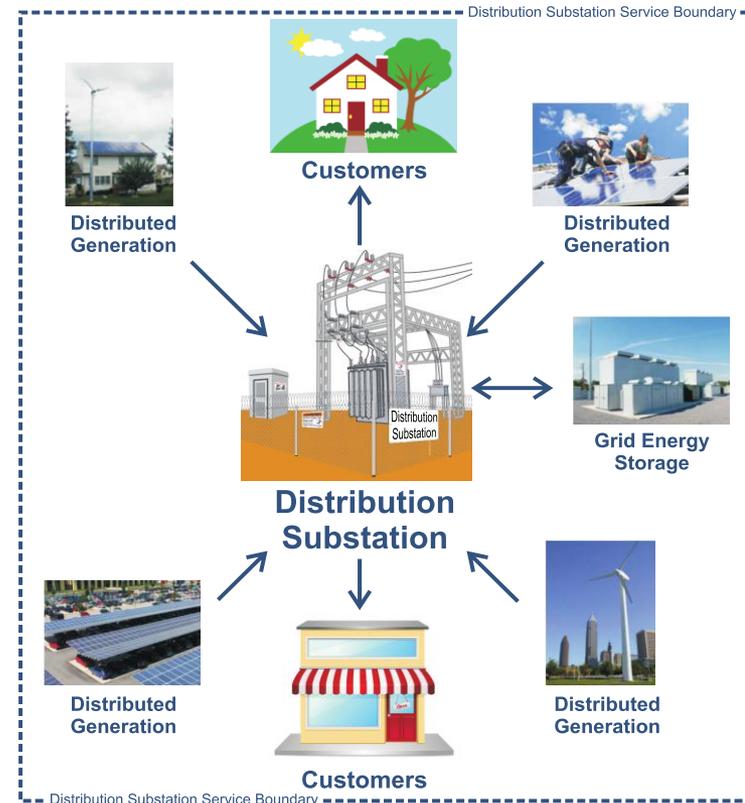
Community Localized Power Grid (Microgrid)

Description:

- ◆ Supports distribution substations with many local renewable energy sources
- ◆ Distributed generation refers to renewable energy sources close to where it is consumed
- ◆ Requires grid interconnection

Goals:

- ◆ Integrate a high level of distributed generation renewable energy sources into a local power grid



2. Local-System Tool Community Localized Power Grid (Microgrid)

Community Benefits:

- ◆ Aligns the needs and interests of local community, utilities, and other stakeholders through local distributed generation sources providing power locally
- ◆ Significant numbers of distributed generation projects results in direct and indirect employment and spending in the local community
- ◆ Reduces need for conventional power generation and potential environmental impacts from such generation

2. Local-System Tool Example

Hunters Point Community Microgrid (San Francisco, CA)

Description:

- ◆ Clean Coalition (nonprofit organization) is collaborating with PG&E and private solar developers to develop this microgrid
- ◆ Hunters Point Distribution Substation serves approximately ~35,000 customers
- ◆ Project will integrate 30 MW of new solar PV on commercial and residential rooftops and parking lots into distribution substation
- ◆ Once completed, the renewable energy sources will provide 40% of the power feeding the distribution substation

Funding:

- ◆ Various federal and State grants and tax incentives

Community Benefits:

- ◆ Improved environmental conditions within a disadvantaged community by reducing ty power generation within the area
- ◆ Expected to bring \$100 million in local wages to community, while reducing greenhouse gas emissions by 1.5 billion pounds over the next 20 years



Source: Clean Coalition (http://www.clean-coalition.org/site/wp-content/uploads/2015/12/Hunters-Point-39_jv-15-Dec-2015.pdf)

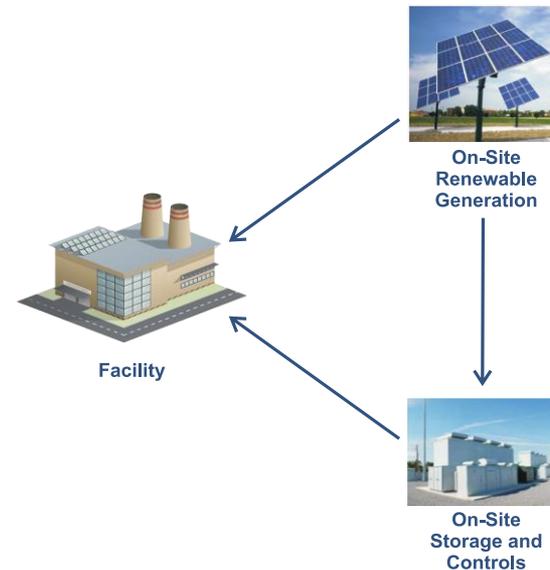
2. Local-System Tool Facility-Specific Microgrid System

Description:

- ◆ Site-controlled grid that operates while connected to main grid but can break off and operate on its own
- ◆ On-site renewable energy installation designed as the primary electricity supply
- ◆ Renewable energy source could be solar, wind, or biofuel
- ◆ Supplement with on-site energy storage and microgrid controls
- ◆ Grid interconnection likely, but not required

Goals:

- ◆ Facility to operate energy neutral, becoming a closed-loop system
- ◆ Minimize need for interconnection and import/export of grid power



2. Local-System Tool Facility-Specific Microgrid System

Community Benefits:

- ◆ Sites renewable energy installation within facility boundary
- ◆ Reduces need for conventional power generation and potential environmental impacts from such generation
- ◆ Depending on the type of facility, cost savings could potentially be passed on to local customers (water/ wastewater provider, commercial business with solar carport, etc.)



Source: Urban Land Institute (<https://blogs.lt.vt.edu/cocojoco/2012/12/11/83/>)

2. Local-System Tool Example

Victor Valley Wastewater Reclamation Authority Treatment Plant

Description:

- ◆ Utilize a retrofitted anaerobic digester at main treatment plant (Shay Road Plant)
- ◆ Wastewater treatment provides biogas (methane) to a pair of on-site 800 kWh generators
- ◆ Electricity produced by generators used to power treatment plant
- ◆ On-site energy storage and micro-grid controls proposed to protect system from outages



Source: Water Environmental Federation (<http://news.wef.org/victor-valley-sets-its-sights-on-energy-neutrality/>)

Funding:

- ◆ California Energy Commission's EPIC grant funding for Large Scale Demonstrations to Achieve Energy and Water Savings

Community Benefits:

- ◆ Shay Plant operates virtually energy neutral, requiring little or no conventional power generation supply
- ◆ Reduction in energy cost allows facility to pass savings to customers

3a. Educational Tools

Renewable Energy Data and Information

Key tools include:

- ◆ **Spatial mapping tools** – many web-based mapping tools are currently used in California for energy planning
 - ◆ DOE PVMapper
 - ◆ Data Basin
- ◆ **Websites** with funding sources or scientific articles
 - ◆ Inyo County Energy Reduction and Renewable Energy webpage
 - ◆ Provides list of Energy Reduction Conservation tools
- ◆ **Forums or webinars** geared to renewable energy or conservation
 - ◆ Energy Commission, DOE, and other agency webinars

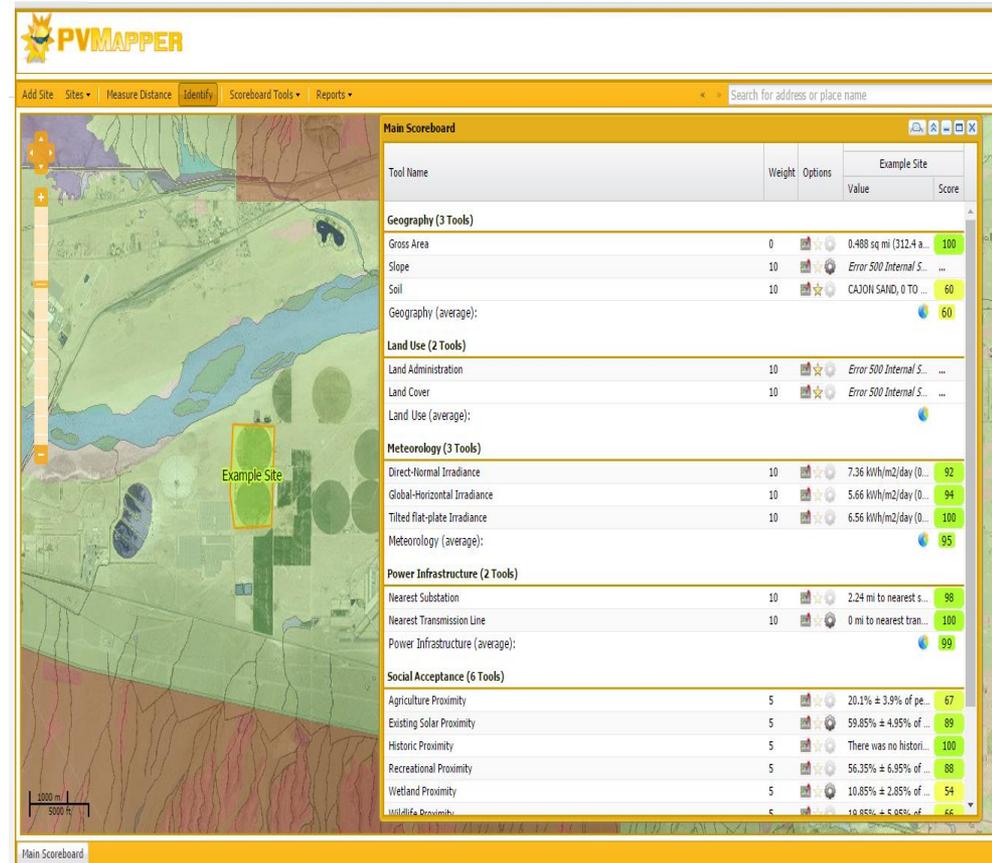
The screenshot shows the Inyo County Planning Department website. The main content area is titled "Energy Reduction" and "Renewable Energy". Under "Energy Reduction", there is a section titled "What can you do at home to save energy?" with sub-sections for "Evaluate" and "Weatherize". The "Evaluate" section lists: "Tips and Tools at Energy.Gov", "Home Energy Yardstick at EPA.Gov", "Home Energy Saver Energy Calculator", and "Southern California Edison (SCE) Home Energy Audit". The "Weatherize" section lists: "Sealing Air Leaks", "Insulate", "Insulation (crawl space) calculator", "Insulation (attic) calculator", "Weatherstripping", "Doors", "Windows", and "Heating and Cooling Systems". Under "Renewable Energy", there is a section titled "ATTENTION: Federal Solar Incentives Extended Through 2021" and a section titled "Residential and Commercial Solar" with a link to "Inyo County's Expedited Permit Process for Photovoltaic Systems Guide".

Source: Inyo County Planning Department (<http://www.inyoplanning.org/ERRE.htm>), 2016.

3a. Educational Tool Example

DOE PVMapper

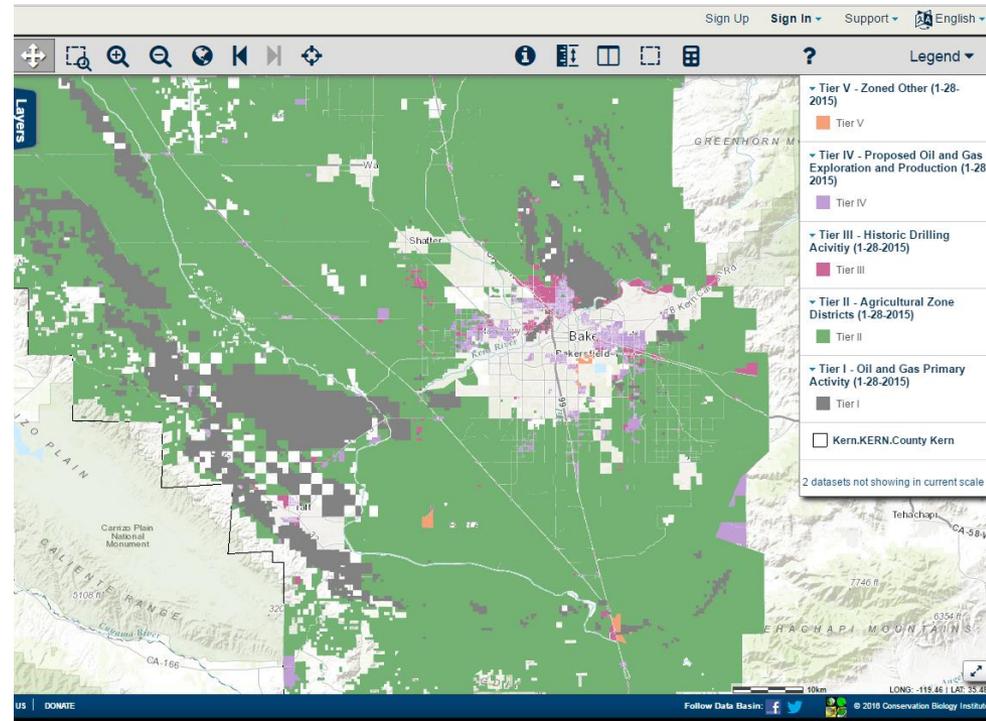
- ◆ **SunShot PVMapper**
(<http://pvmapper.org/index.html>)
 - ◆ Allows user to zoom into different locations to look for appropriate sites
 - ◆ Allows for a side-by-side comparison of multiple sites
 - ◆ Data from multiple sources is used to generate detailed reports about a site
- ◆ **Department of Energy SunShot initiative manages the tool**
 - ◆ Funded through the SunShot initiative with support from various universities and the Idaho National Laboratory



Source: DOE PVMapper (<https://pvmapper.apphb.com/App>), 2016

3a. Educational Tool Example Data Basin (www.databasin.org)

- ◆ **Web-based** spatial data-sharing
- ◆ **Includes Gateways** – unique sites with organized data
- ◆ **Manages over 22,000 datasets**
 - ◆ Includes many federal and State publicly available datasets (Critical habitat, linkages, soils, etc.)
 - ◆ DRECP data for San Bernardino
 - ◆ Counties have uploaded own data
- ◆ **Managed by Conservation Biology Institute**
 - ◆ A non-profit organization
 - ◆ Individualized websites have a start-up fee and an annual maintenance fee
 - ◆ Can pay additional fees for more specialized applications



Source: Data Basin (<https://databasin.org/maps/new#>), 2016.

3b. Regulatory Tools

Land Use Plans and Ordinances

- ◆ Used to **guide, plan, or regulate** how land under a certain jurisdiction can be used
- ◆ **Tools include:**
 - ◆ Land Use Plans
 - ◆ Zoning Ordinance
 - ◆ Permits/Permit Streamlining
 - ◆ Tax incentives
 - ◆ Development fees
- ◆ **Examples include:** Los Angeles County Zoning Ordinance, San Diego Wind Ordinance, Santa Clara Solar Ordinance

3b. Regulatory Tool Example Zoning Ordinances

- ◆ **Los Angeles County Zoning Ordinance** - directs projects away from sensitive areas
 - ◆ Encourages small-scale projects
 - ◆ Provides regulations for utility-scale projects
 - ◆ Limits utility-scale projects and directs them away from county's most sensitive areas (zones/ESAs)
- ◆ **San Diego County Wind Zoning Ordinance** – establishing requirements for wind projects of multiple sizes
 - ◆ Establishes zoning guidelines for wind turbines of varying sizes
 - ◆ All turbines must abide by Noise Abatement and Control laws
 - ◆ Small wind turbine system: defined as no more than 3 wind turbines with cumulative capacity of 50 kilowatts or less
 - ◆ Large wind turbine system: one or more turbines on a parcel of at least 5 acres, requires a Major Use Permit
 - ◆ Both small and large turbines have setback requirements from property lines

3b. Regulatory Tool Examples

Zoning Ordinances

◆ **Santa Clara Zoning for solar energy conversion systems**

Commercial – includes a number of requirements to reduce impacts from non-residential projects

- ◆ Not allowed in all zoning districts
- ◆ Requirements to protect agriculture lands and prohibit development on Williamson Act lands
- ◆ Not allowed on lands that fall within certain viewsheds
- ◆ Includes a minimum setback (30 feet)
- ◆ Designed to include wildlife passage to the extent feasible
- ◆ Designed to minimize soil disturbances
- ◆ Requires a Closure and Rehabilitation Plan prior to issuing any building permits

4. Funding Tool SunShot Initiative

- ◆ **Description:** U.S. Department of Energy Solar Energy Technologies Office
 - ◆ Funding for photovoltaics solar projects
- ◆ **Eligibility:** Competitive solicitation program open to universities, national laboratories, government and non-government agencies and advocacy groups
- ◆ **Sample Use of Funds:** infrastructure, financial and technical assistance such as cooperative research and development of new projects by private companies
 - ◆ Project must demonstrate it can reduce cost to \$0.06 per kilowatt-hour or \$1 per watt (not including incentives)
 - ◆ **Example:** TetraSun received \$3 million in funding for a PV solar project

4. Funding Tool

Single Family Affordable Solar Housing (SASH)

- ◆ **Description:** California Public Utilities Commission; administered by GRID Alternatives, a non-profit organization
 - ◆ Provides incentives to qualified low-income homeowners to offset the costs of a solar electric system
 - ◆ Provides services through community-based organizations, volunteers and job trainees to implement solar power and energy efficiency for low-income families
- ◆ **Eligibility:** Applicants must:
 - ◆ Receive service from Pacific Gas & Electric, Southern California Edison, or San Diego Gas & Electric
 - ◆ Own and live in their home
 - ◆ Household income - 80% or below area median income based on previous year's tax return
- ◆ **Sample Use of Funds:** upfront rebates for qualifying low-income homeowners to defray costs of installing a solar electric system

Family Size	80% Income Limits
1	\$35,800
2	\$40,900
3	\$46,000
4	\$51,100
5	\$55,200
6	\$59,300
7	\$63,400
8	\$67,500

4. Funding Tool

SB 535 – Greenhouse Gas Reduction Fund

- ◆ **Description:** Disadvantaged communities in California are specifically targeted for investment of proceeds from the State's cap-and-trade program; 25% of fund proceeds must *benefit* disadvantaged communities
- ◆ **Eligibility:** 10% of funds must be for projects *located* within disadvantaged communities; projects must improve public health, quality of life and economic opportunity through energy efficient projects
- ◆ **Sample Use of Funds:**
 - ◆ **Affordable housing project** near transit with a clean car-sharing program for residents
 - ◆ **Transportation**–related projects that reduce emissions
 - ◆ **Waste Diversion and Utilization:** diversion of waste from landfills or agricultural operations
 - ◆ Increase **energy efficiency** or renewable energy **generation**
 - ◆ **Example:** Public Fleet Pilot Project - public agencies can receive up to \$15,000 in rebates for purchase of new, eligible zero-emission and plug-in hybrid light-duty vehicles

Sample of participating agencies: Strategic Growth Councils (SGC), Caltrans/Local Transit Agencies, Community Services and Development Departments

4. Funding Tool

CalEPA Environmental Justice Grant Opportunities

- ◆ **Description:** \$1 million in grant funds was available for 2016 grant cycle; maximum grant amount - \$50,000; grant term - 12 months
- ◆ **Eligibility:** non-profit entities or federally recognized Tribal governments; service communities affected by pollution due to socio-economic factors
- ◆ **Sample Use of Funds:** competitive projects must meet one or more goals:
 - ◆ Improve access to safe and clean water
 - ◆ Address climate change impacts through community-led solutions
 - ◆ Reduce exposure to pesticides and toxic chemicals before they are generated
 - ◆ Promote community-capacity building
 - ◆ Promote development of community-based research that protects and enhances public health and the environment
 - ◆ Supports strong collaboration between community-based organizations and local government to impact environmental justice issues

4. Funding Tool

Energy Savings Performance Contracting (ESPC)

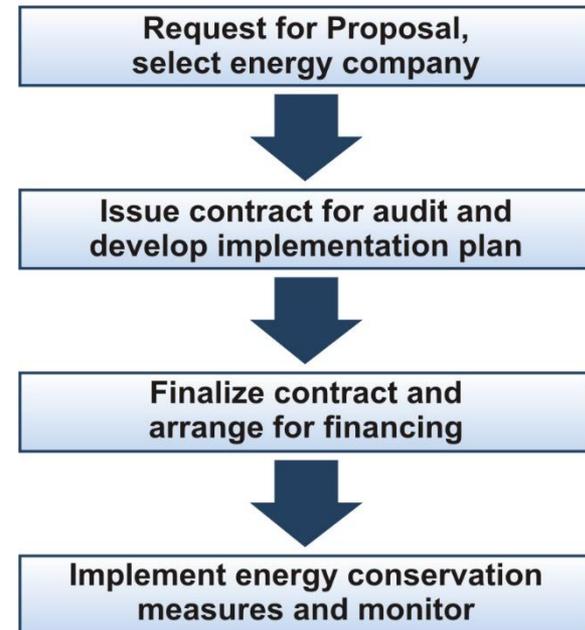
Description:

- ◆ Mechanism to maximize and leverage financing energy conservation measures without upfront capital costs
- ◆ Partnership between a facility owner and an energy service company (ESCO) for completing comprehensive energy upgrades
- ◆ Financed through Tax-Exempt Lease Purchase Agreements, Capital Leases or General Obligation Bonds

Eligibility:

- ◆ Large commercial office buildings, multi-family buildings, and government facilities

Typical ESPC Process



Source: Adapted from U.S. Dept. of Energy Efficiency and Renewable Energy handout

4. Funding Tool

Department of Commerce Economic Development Administration

- ◆ **Eligibility:** non-profits, cities, counties, states and institutions of higher education
- ◆ **Types of Grants**
 - ◆ **Public Works:** Commonly referred to as the “bricks and mortar” grant; use to build infrastructure such as skill-training facilities, energy efficient infrastructure, brownfields redevelopment and land purchases
 - ◆ **Economic Adjustment Assistance:** EDA’s most flexible program; fund market and environmental studies, construction grants, capitalize or recapitalize revolving loan funds and *Planning, Strategy and Implementation Grants*
 - ◆ Special requirement for EDA grants:
 - ◆ Project location must be in or serve an economically distressed community
 - ◆ Long-term job creation required
 - ◆ 1:1 dollar match of non-federal money

4. Funding Tools

Visit These Websites For More Information

- ◆ **State and Local Solution Center Resources:** <http://energy.gov/eere/slsc/all-state-local-solution-center-resources>
- ◆ **Financing Structures:**
 - ◆ Energy Efficient Mortgages: <http://energy.gov/eere/slsc/energy-efficient-mortgages>
 - ◆ Energy Savings Performance Contracting (ESPC): <http://energy.gov/eere/slsc/energy-savings-performance-contracting>
 - ◆ Leasing Arrangements: <http://energy.gov/eere/slsc/leasing-arrangements>
 - ◆ Loan Loss Reserves and Credit Enhancements: <http://energy.gov/eere/slsc/loan-loss-reserve-funds-and-other-credit-enhancements>
 - ◆ On-Bill Finance and Repayment: <http://energy.gov/eere/slsc/bill-financing-and-repayment-programs>
 - ◆ Property-Assessed Clean Energy (PACE): <http://energy.gov/eere/slsc/property-assessed-clean-energy-programs>
 - ◆ Revolving Loan Funds: <http://energy.gov/eere/slsc/revolving-loan-funds>
- ◆ **SB 535:** <http://www.calepa.ca.gov/EnvJustice/GHGInvest/>
- ◆ **CalEPA:** Environmental Justice Small Grants and Funding Opportunities: <http://www.calepa.ca.gov/EnvJustice/Funding/>
- ◆ **Economic Development Administration:** www.eda.gov
- ◆ **How to Finance ESPC:** <http://energy.gov/eere/slsc/downloads/energy-savings-performance-contracting-espcc-how-finance-espcc>

Clearinghouse

Private

Public and
Private

Questions

Thank you for participating in the Webinar

For more information visit:

www.SparcForum.org

Or contact:

Linda.Mawby@lus.sbcounty.gov