



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

**SOLAR AMERICA
CITIES** 

The Solar America Cities logo features a stylized building with solar panels and a sun, with the text "SOLAR AMERICA CITIES" to its left.

Solar America Cities

Project Summaries

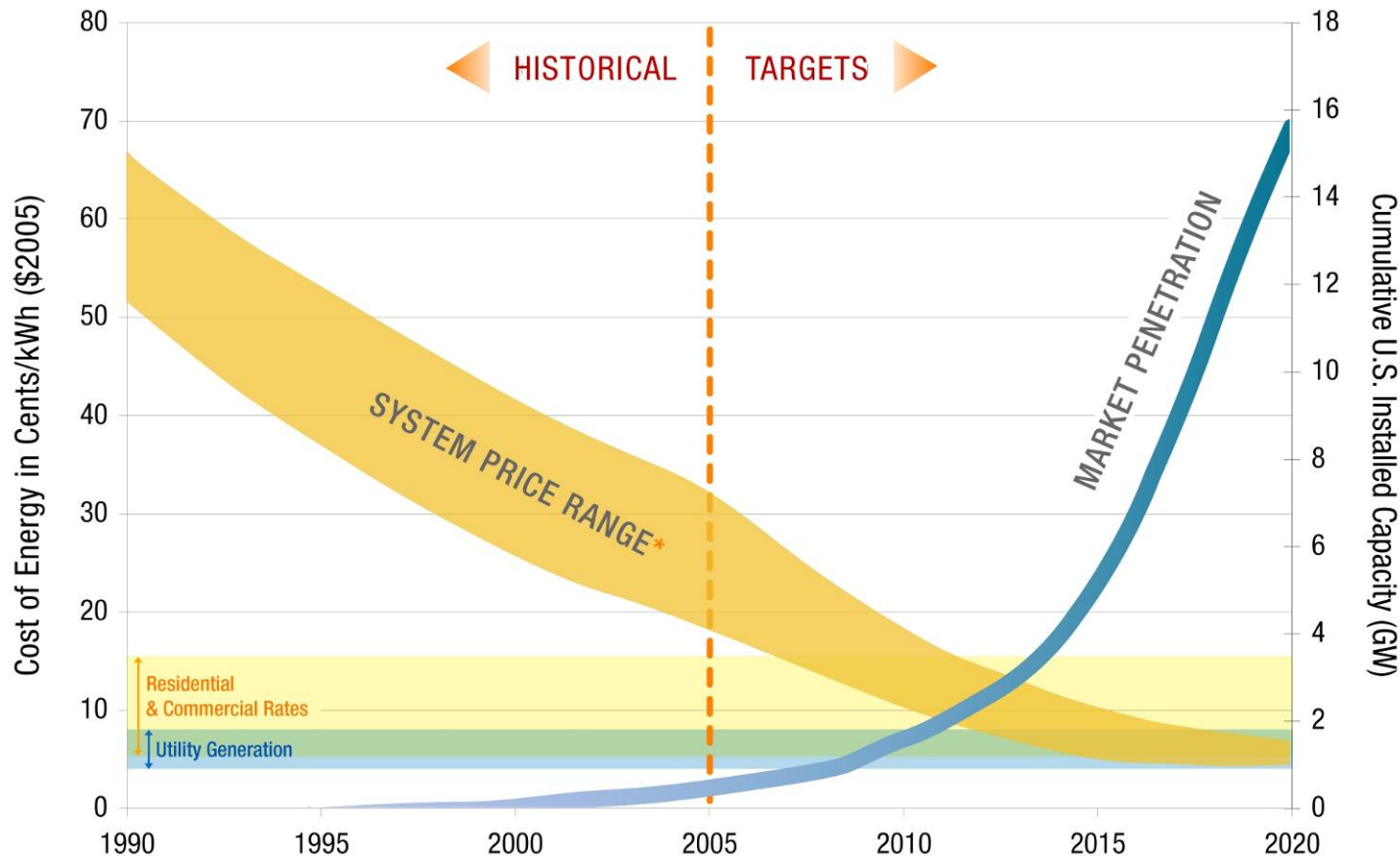
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U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy

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Making Solar Cost Competitive Nationwide by 2015



Market Sector	Current U.S. Market Price Range (¢/kWh)	Cost (¢/kWh) Benchmark 2005	Cost (¢/kWh) Target 2010	Cost (¢/kWh) Target 2015
Residential	5.8-16.7	23-32	13-18	8-10
Commercial	5.4-15.0	16-22	9-12	6-8
Utility	4.0-7.6	13-22	10-15	5-7

Objective

Partner with cities committed to achieving a sustainable solar infrastructure through a comprehensive, city-wide approach to solar technology that facilitates mainstream adoption and provides a model for others.

Overview

The competitively-selected cities receive \$200,000 plus hands-on technical assistance from National Labs and other experts to support their efforts to:

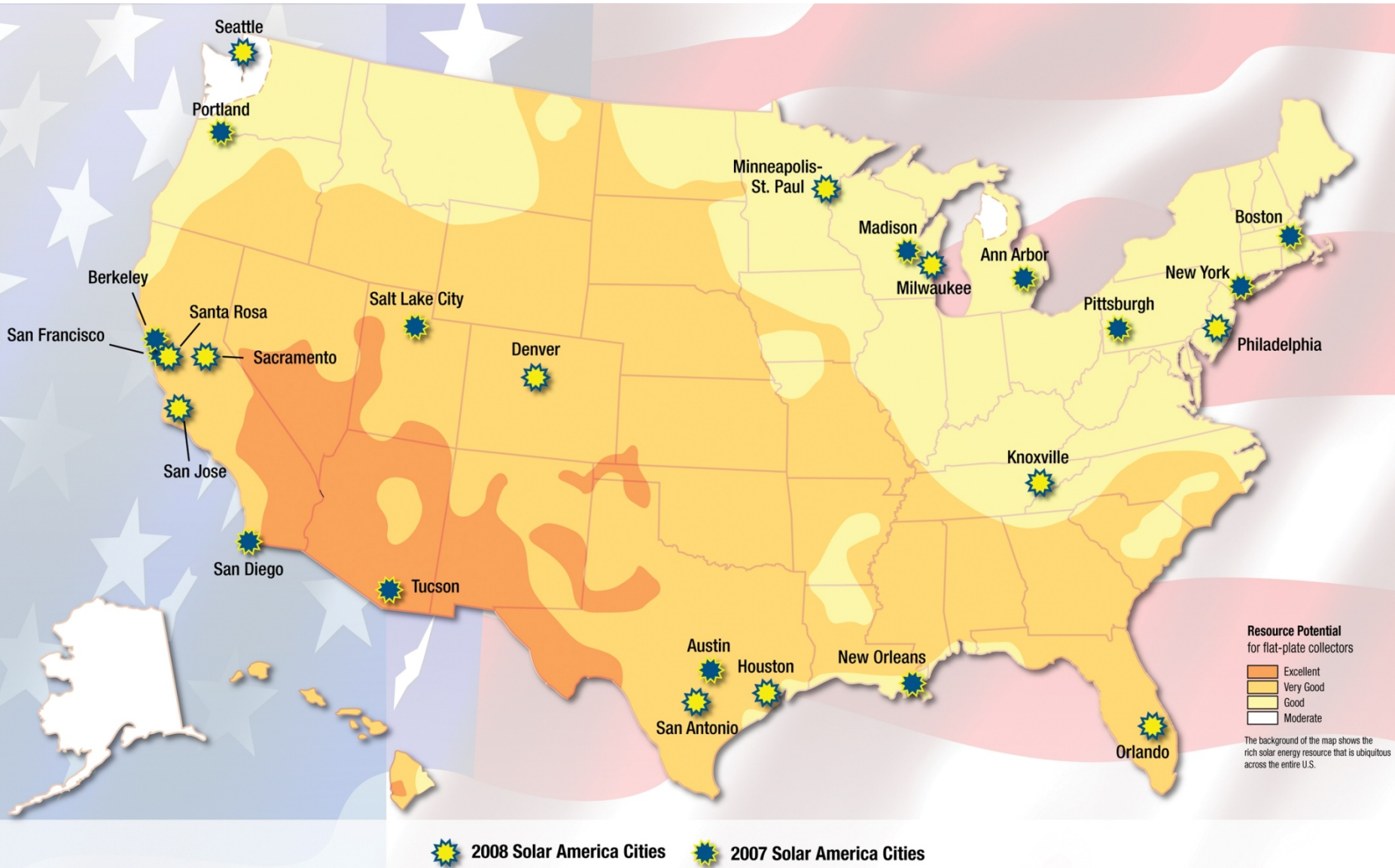
- *Integrate solar technologies into city energy planning, zoning and facilities*
- *Streamline city-level regulations and practices that affect solar adoption by residents and local businesses (e.g. permitting, inspections, local codes)*
- *Promote solar technology among residents and local businesses (e.g., outreach, curriculum development and/or implementation, incentive programs, etc.)*

The 12 Solar America Cities selected in 2008 are:

- **Denver, CO**
- **Houston, TX**
- **Knoxville, TN**
- **Minneapolis/St Paul, MN**
- **Milwaukee, WI**
- **Orlando, FL**
- **Philadelphia, PA**
- **Sacramento, CA**
- **San Antonio, TX**
- **San Jose, CA**
- **Santa Rosa, CA**
- **Seattle, WA**

**There are now 25 Solar America Cities, located in 16 states.
Six are among the largest 10 cities in the U.S.**

Solar America Cities



Goals

- Fundamentally change the energy market in the City by establishing solar as a mainstream energy resource option

Project Highlights

- Address the two largest barriers to residential solar installation, upfront capital cost and a lack of the awareness of the benefits of solar technologies
- Remove cost barriers through such strategies as citywide tax rebates and creating a municipal solar fund to reimburse initial costs
- Develop policies, design standards, regulations, and finance mechanisms to increase the utility of parking lots by incorporating solar installations



Mayor	John Hickenlooper
Population (2000)	554,636
Participants	Greenprint Denver , Environment Colorado, the Governor’s Energy Office, Xcel Energy, Colorado Renewable Energy Society, E-Star Colorado, Int’l Brotherhood of Electrical Workers, Lowry Energy Initiative

Goals

- Develop a plan to make solar energy cost-competitive by 2015 through advancement of current and new technologies in partnership with the University of Houston
- Achieve a sustainable solar infrastructure in the City



Project Highlights

- Develop and implement significant market changing activities including Houston-specific solar energy advancement policies, regulations and legislation that promote cost-effective solar energy utilization.
- Identify high visibility locations identify focused locations for demonstration sites and implement programs to install solar energy systems
- Work with schools to integrate solar education into the curriculum



Mayor	Annise Parker
Population (2000)	1,953,631
Participants	The City of Houston , Houston Advanced Research Center, CenterPoint, Texas State Energy Conservation Office, BP America, Discovery Green Conservancy, Clinton Climate Initiative, University of Houston, U.S Green Building Council, etc.

Knoxville, Tennessee

“Knoxville Solar Cities Program”

Goals

- Achieve a sustainable solar infrastructure through a comprehensive, city-wide approach that facilitates mainstream adoption of solar power
- Reduce energy consumption and integrate sustainable practices into city facilities, operations, and outreach



Project Highlights

- Install two highly visible solar systems in strategic locations - one on the new LEED-certified downtown transit station and one on a zero-energy home in the South Waterfront Redevelopment District
- Workforce development training programs for solar installers, building and utility inspectors, and codes officials to facilitate quality installations and safe and timely inspections and approvals
- Coordinate a publicity campaign about available incentives through the development of a clearinghouse website and marketing



Mayor	Bill Haslam
Population (2000)	173,890
Participants	The City of Knoxville , TN Valley Authority, Knoxville Utilities Board, Southern Alliance for Clean Energy, TN Dept. of Economic and Community Development, Knoxville Area Transit, Ijams Nature Center

Goals

- Engage industry, utility, business, policy, and regulatory stakeholders to create favorable conditions for rapidly expanding the use of solar technologies in the near term with the goal of large scale implementation by 2015
- Build a solar infrastructure leading to a quintupling of market penetration of solar capacity in the Twin Cities by 2010



Project Highlights

- Install a 500+ kW photovoltaic (PV) system and 20-30 solar projects using an innovative leasing model
- Promote market expansion of solar technologies through deployment of solar systems in visible locations within the city, market identification, and technical outreach
- Increase the number of qualified solar installers by supporting education & training such as the development technical college solar education curriculum and PV training lab

Mayors	Christopher B. Coleman, City of Saint Paul R.T. Rybak, City of Minneapolis
Population (2000)	2,968,806
Participants	The Cities of Minneapolis and Saint Paul, Xcel Energy, MN Dept. of Commerce, MN Renewable Energy Society, Green Institute, freener-g, Int'l Brotherhood of Electrical Workers, Century College, etc.

Goals

- Make solar a truly viable option for the City and its residents by reducing barriers to solar installation
- Install 100 solar electric and 50 solar thermal systems, with a total capacity of 1 megawatt by the year 2012

Project Highlights

- Increase the number of local installers through assistance in training and preparation for the certification process
- Support new solar manufacturing businesses by working with existing manufacturers and by encouraging new business to locate in the city
- Examine market segments to determine which are most viable for various incentive-based business models as well as incorporate non-financial benefits into solar projects



Mayor	Tom Barrett
Population (2000)	596,974
Participants	The City of Milwaukee , We Energies, Focus on Energy, Midwest Renewable Energy Association, Johnson Controls, Inc., University of Wisconsin, Milwaukee Area Technical College, Wisconsin Green Building Alliance and Metropolitan Builders Association of Great Milwaukee

Goals

- Achieve a streamlined approach to installing five megawatts of solar by 2008, ten megawatts by 2010 and 15 megawatts by 2015 within Metro Orlando
- Create the foundation for a long-term sustainable development policy through appropriate, coordinated energy planning and strategies that will help support the development of a sustainable solar infrastructure



Project Highlights

- Conduct a GIS-based solar resource analysis to assist in identifying existing solar and potential solar sites and work with local economic development groups to conduct market analysis on barriers
- Create a portfolio of community solar education and training workshops targeting building code officials and inspectors, government officials and local legislators, solar business development, building energy managers and building owners

Mayor	Buddy Dyer
Population (2000)	185,951
Participants	The City of Orlando , Orlando Utilities Commission, Orange County Government

Philadelphia, Pennsylvania

“Philadelphia Solar City Partnership”

Goals

- To generate enough solar power within the city to contribute its proportional share of the Commonwealth’s goal - a total of 2.3 MW to be installed by 2011 and 57.8 MW to be installed by 2021
- To transform the city into a regional and national leader in clean energy development



Project Highlights

- Develop and adopt a plan that is replicable and fully integrated with updated citywide plans and institutional processes for guiding decisions on land use, economic development and infrastructure investment
- Identify and implement cost-effective tools to overcome market barriers to the adoption of solar technologies in Philadelphia and its partnering communities including a “Solar Developer’s Guide to Solar Philadelphia”
- Prioritize for development and initiate planning for solar energy installations that can cost-effectively achieve the city’s goals

Mayor	Michael Nutter
Population (2000)	1,517,550
Participants	The City of Philadelphia , AE Polysilicon Corp., AFC First Financial Corp., AKF Engineers, Delaware Valley Green Building Council, PECO Energy, Philadelphia Energy Development Authority, Sustainable Development Fund, SunTechnics, School District of Philadelphia, etc.

Goals

- Install up to 5 megawatts of solar on municipal buildings by 2010
- To further widespread adoption of solar by addressing current market barriers and preparing the infrastructure that will optimize solar production in the future



Project Highlights

- Prepare and issue a Request for Qualification to procure 5 MW of solar electricity through a Power Purchase Agreement
- Procure the City’s solar electricity excess and credit it to city residents and businesses as part of the SMUD’s surrogate-roof program
- Establish a Clean/Green Incentive Zone and work with the SMUD utility and the local community college to develop a solar technician certification program
- Create a solar self assessment website to examine their home’s solar potential and the economics of installing solar

Mayor	Kevin Johnson
Population (2000)	407,018
Participants	The City of Sacramento, Sacramento Municipal Utility District (SMUD), Valley Vision, Solar Depot, CleanStart, Sacramento Tree Foundation, Build It Green

Goals

- Link this grant with current Green Vision program to achieve the ultimate goal of 100% of the city’s electricity needs meet with renewable energy
- A 15% increase in solar installation in the city, a 50% increase in awareness and knowledge of solar opportunities in the city and more opportunities to purchase or invest in green power in the city by 2010



Project Highlights

- Develop and pilot local and regional financing, incentive and regulatory strategies to ensure that all elements of the community have effective opportunities to manufacture and install solar technologies
- Develop and implement a coordinated outreach and education strategy to ensure that the community has the tools, resources and workforce needed to increase the use of renewable energy
- Identify strategies, opportunities and challenges that must be surmounted for the City to achieve the Green Vision goal of 100% electricity from renewable sources



Mayor	Julián Castro
Population (2000)	1,144,646
Participants	The City of San Antonio , Metropolitan Partnership for Energy, CSP Energy, State Energy Conservation Office, Alamo Area Council of Governments and Local Colleges and Universities

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Mayor	Chuck Reed
Population (2000)	894,943
Participants	The City of San Jose, Office of Economic Development, Redevelopment Agency, General Services Dept., Transportation Dept., Dept of Planning, Building and Code Enforcement

Goals

- Increase the amount of municipal, residential, and commercial solar installations in the County by 25 megawatts by 2011 and reduce the County’s CO2 emissions by 8,500 tons annually
- Significantly and sustainably reduce the financial, regulatory, and educational market barriers to the installation of solar photovoltaic and/or solar thermal energy systems



Project Highlights

- Create financial incentives to address market barriers such as using a tax assessment district to amortize the costs, and/or partnering with the Green Energy Loan Program
- Improve the energy efficiency of existing housing by assisting residents with energy audits, conservation and efficiency measures
- Recommend a standardization of the planning and building permitting processes, adoption of ordinances for solar, and the use of energy conservation elements in General Plans for cities and the County

Mayor	Susan Gorin
Population (2000)	147,595
Participants	The City of Santa Rosa , the cities of Sebastopol, Petaluma, Windsor, Sonoma, Cotati, Cloverdale, Rohnert Park, and Healdsburg, the County of Sonoma and Int’l Brotherhood of Electrical Workers

Goals

- Dramatically increase residential, commercial, City-owned, and community-scale solar energy use
- Ensure solar energy plays a key role in addressing the City’s growing energy needs and demands

Project Highlights

- Implement innovative financing mechanisms and ownership models to address the economic barriers to solar energy with a special focus on community-scale solar
- Evaluate and overcome barriers to interconnection in Seattle
- Conduct mapping and site visits to identify the most appropriate solar sites within the City and target outreach accordingly
- Develop and implement widespread education and outreach programs to Seattle City Light customers



Mayor	Mike McGinn
Population (2000)	563,374
Participants	The City of Seattle , Seattle City Light, Dept. of Planning and Development, Northwest Sustainable Energy for Economic Development, Washington State, Bonneville Environmental Foundation

The 13 Solar America Cities selected in 2007 are:

- **Ann Arbor, MI**
- **Austin, TX**
- **Berkeley, CA**
- **Boston, MA**
- **Madison, WI**
- **New Orleans, LA**
- **New York, NY**
- **Pittsburgh, PA**
- **Portland, OR**
- **Salt Lake City, UT**
- **San Diego, CA**
- **San Francisco, CA**
- **Tucson, AZ**

**Eight are among the largest 50 cities in the U.S.
The 2007 Solar America Cities are located in 11 states.**

Goals

- Help the city reach its goal of 20% renewable energy by 2015 by utilizing a wide range of community partners and resources to remove market barriers to the adoption of solar energy.
- Help local solar manufactures and contractors to increase business



Project Highlights

- Develop a comprehensive solar plan for the city.
- Hold solar informational workshops for consumers and installers.
- Implement a community-based marketing campaign
- Offer city incentives and rebates for installations.



Mayor	John Hieftje
Population (2000)	114,024
Participants	City of Ann Arbor Energy Office, Michigan Energy Office, Great Lakes Renewable Energy Association

Goals

- Educate the city’s teachers and youth about the benefits of solar energy.
- Reduce information barriers that prevent participation in the city’s renewable energy and energy conservation programs.
- Increase solar installation visibility
- Establish benchmarks for distributed and central solar to be integrated into Austin Energy’s generation plan



Project Highlights

- Install solar energy systems in local schools and develop curricular materials to accompany these systems.
- Work with local non-profits to promote and cross-market the solar, energy efficiency and green building programs of Austin Energy.
- Assess the rooftop area suitable for solar development.
- Assess the potential for hybrid solar/wind installations.

Mayor	Lee Leffingwell
Population (2000)	690,252
Participants	Austin Energy , Texas Solar Energy Society, Clean Energy Associates, and local school districts

Berkeley, California

“Smart Solar Program: A Partnership to Serve the East Bay”

Goals

- Increase the market share of solar energy technologies in the residential and small and medium commercial sectors in the East Bay.
- Build local capacity by working with local suppliers, installers, trade associations and financiers



Project Highlights

- Develop and implement a pilot turn-key program to install 142 kW of PV installations at 10 residential and 5 commercial sites, and 10 large solar hot water and air heating systems.
- Launch a partnership with PG&E East Bay Energy Watch to expand the scope and depth of utility services provided in the region.
 - Annually install 800 kW of PV and 24,000 therms of thermal projects

Mayor	Tom Bates
Population (2000)	102,743
Participants	Berkeley Office of Energy and Sustainable Development, PG&E East Bay Energy Watch, Community Services Corporation, Build It Green, Sustainable Berkeley, The City of Oakland, UCB Renewable and Appropriate Energy Laboratory

Boston, Massachusetts

“Solar Boston”

Goals

- Examine barriers to widespread solar deployment and develop a strategy for installing solar throughout Boston.
- Coordinate resources and best practices of Boston with DOE, the Commonwealth of Massachusetts, utilities, electrical workers’ unions, industry and others.
- Create a non-profit organization to accomplish the goals of the solar partnership members

Project Highlights

- Map feasible locations for solar installations
- Market solar energy to prime sites
- Prepare a project-labor agreement
- Plan city-wide bulk purchase, financing and installation of solar technology



Mayor	Thomas M. Menino
Population (2000)	596,638
Participants	The City of Boston , Massachusetts Technology Collaborative, Commonwealth of Massachusetts, NSTAR Electric and Gas, KeySpan Energy Delivery, International Brotherhood of Electrical Workers, Boston Community Capital, Solar Energy Business Association of New England, Local Governments for Sustainability, Massachusetts Energy Consumers Alliance, Green Roundtable, New Ecology, Inc.

Madison, Wisconsin

“Midwest Solar City Model (MadiSUN)”

Goals

- Coordinate and galvanize substantial local and state resources to showcase how a Midwest city can dramatically increase the use of solar energy.
- Establish a two-year program, MadiSUN, to provide an ongoing commitment to sustainability.



Project Highlights

- Double solar energy utilization in Madison over the two year period by helping building owners buy solar by lowering transaction costs
- Review and modify the City’s procedures and policies for solar permitting and installation to make them more supportive of solar systems.



Mayor	Dave Cieslewicz
Population (2000)	221,551
Participants	The City of Madison , Focus on Energy, University of Wisconsin-Extension, Madison Gas & Electric Co., Madison Area Technical College, Sustain Dane, Environmental Action Teams, Midwest Renewable Energy Association

New Orleans, Louisiana

“Solar Cities Initiative”

Goals

- Accelerate the adoption of solar technology in New Orleans by partnering with DOE
- Include solar technology in the construction and renovation of new homes and businesses wherever applicable and economically feasible



Project Highlights

- Implement a publicity and outreach plan to increase demand for private solar
- Evaluate and modify city regulations hindering the use of solar technologies
- Installation solar on city government properties
- Develop incentives that support solar technology in residential developments
- Conduct outreach to develop a solar supply base in New Orleans



Mayor	Ray Nagin
Population (2000)	484,674
Participants	Office of Recovery Management , Global Green, FutureProof, Alliance for Affordable Energy

New York, New York

“Solar City Strategic Partnership: NYC Solar”

Goals

- Achieve large-scale solar energy market growth in New York City that compliments long-term sustainability planning efforts and the City’s greenhouse gas reduction goals



Project Highlights

- Develop a long-term solar energy plan
- Conduct a feasibility study of real-time pricing for PV net metering
- Evaluate how to integrate solar into emergency planning and demand reduction programs
- Create new municipal solar energy incentives
- Address interconnection and code barriers through a collaborative stakeholder process



Mayor	Michael Bloomberg
Population (2000)	8,143,198
Participants	New York City Economic Development Corporation , the Mayor’s Office of Long-Term Planning and Sustainability, City University of New York, New Your State Energy Research and Development Authority, state and city stakeholders

Pittsburgh, Pennsylvania

“The Pittsburgh Solar Initiative”

Goals

- Build on Pittsburgh’s reputation as a national leader in green practices by developing a distributed approach to solar adoption, as a model for other northern cities.

Project Highlights

- Power traffic lights along main roads with solar power to eliminate their consumption of brown power and ensure they remain operational during a blackout
- Incorporate solar on new construction in two city parks
- Sponsor Carnegie Mellon’s entry into the Solar Decathlon



Mayor	Luke Ravenstahl
Population (2000)	316,718
Participants	The City of Pittsburgh, Carnegie Mellon University, the Green Building Alliance, Duquesne Light

Portland, Oregon

“Solar Now!”

Goals

- Build on its longstanding commitment to renewable energy by launching a robust program to facilitate the widespread adoption of solar technology and establish Portland as a leader in solar energy



Project Highlights

- Develop a solar marketing plan to assist property owners with the technical process of implementing solar technologies and applying financial incentives to make solar more affordable
- Align City policies to promote solar technology by examining how to power municipal operations with solar energy, removing regulatory barriers and adopting policies to encourage the use of solar technology



Mayor	Sam Adams
Population (2000)	562,690
Participants	City of Portland Office of Sustainable Development , Solar Oregon, Energy Trust of Oregon, Oregon Department of Energy, Oregon Solar Energy Industries Association

Salt Lake City, Utah

“Solar Salt Lake”

Goals

- Develop a fully-scoped city and county-level implementation plan to facilitate an additional 10 MW of solar PV installations by 2015 and serve as a model for other cities integrating solar into their policy, planning and processes.

Project Highlights

- Identify and reduce barriers to solar deployment in Salt Lake City and County
- Implement a comprehensive plan for Salt Lake City and County that establishes a long-term commitment to solar deployment
- Partner with private entities, including land developers, to advance residential solar installations in new housing developments



Mayor	Ralph E. Becker
Population (2000)	181,743
Participants	Salt Lake City Corporation , Salt Lake County, Utah Clean Energy, Rocky Mountain Power, Kennecott Land, the Daybreak ENERGY STAR housing development

San Diego, California

“Sustainable Energy 2050 Plan”

Goals

- Provide a blueprint for the nation through their plan to create an energy infrastructure that is diversified, reliable, and as self-contained as possible, as they advance the Solar America Initiative

Project Highlights

- Update GIS analysis of solar installations and potential sites
- Conduct performance analysis of approximately 12 MW of existing PV
- Produce outreach materials to stimulate a robust project pipeline in the city
- Develop a Citywide solar implementation plan
- Study the impact of solar on property value/resale
- Develop 3 case studies to explain solar energy systems from design to use



Mayor	Jerry Sanders
Population (2000)	1,256,509
Participants	City of San Diego , San Diego Regional Energy Office

San Francisco, California

“Solar San Francisco”

Goals

- Realize the City’s ambitious renewable energy goals established in its Electricity Resource Plan by targeting barriers facing solar technology market penetration.

Project Highlights

- Develop a program to group commercial customers into one or more large, aggregated purchasing pools to be marketed to different types of perspective solar installers
- Identify sites for large installations and marketing the prospects to building owners
- Develop a plan to tackle problems with installing solar on multi-tenant buildings



Mayor	Gavin Newsom
Population (2000)	744,041
Participants	Department of Environment for the City and County of San Francisco

Tucson, Arizona

“Tucson Solar Initiative”

Goals

- Expand the Tucson solar energy market through accelerated investments and establish a mechanism for sustainable solar energy integration for the next ten years
- Transform knowledge and financing market barriers into opportunities for solar installations



Project Highlights

- Implement a City of Tucson Solar Energy Integration Plan and a Greater Tucson Solar Energy Development Plan
- Enhance financing techniques for large-scale solar energy installations
- Develop and disseminate solar best practices and other outreach

Mayor	Bob Walkup
Population (2000)	515,526
Participants	The City of Tucson , Tucson Electric Power, Greater Tucson Coalition for Solar Energy, Tucson-Pima Metropolitan Energy Commission, the Arizona State Department of Commerce Energy Office