



## Solar Salt Lake Project

U.S. DOE Solar America Cities (Market Transformation)

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## Timeline & Budget

| PHASE I  | PHASE II   |
|--|--|
| <p><b>Timeline:</b><br/>October 2007 –<br/>September 2009<br/><i>(granted 1-year extension through<br/>Sept. 2010)</i></p> | <p><b>Timeline:</b><br/>January 2010 –<br/>December 2012<br/><i>(Pre-award from 11/3/09 for cost sharing)</i></p>                                    |
| <p><b>Total Project Funding:</b><br/>Federal Share: \$197,286<br/>Cost Share: \$197,286</p>                                | <p><b>Total Project Funding:</b><br/>Federal Share: \$267,700<br/>Cost Share: \$112,318</p>  |
| <p><b>Funding received in FY09:</b><br/>Federal Share: \$92,918<br/>Cost Share: \$107,884</p>                              | <p><b>Funding received in FY09:</b><br/>Federal Share: \$0<br/>Cost Share: \$0</p>   |
| <p><b>Funding for FY10:</b><br/>Federal Share: \$6,884<br/>Cost Share: \$5,539</p>   | <p><b>Funding for FY10:</b><br/>Federal Share: \$14,564<br/>Cost Share: \$32,950<br/><i>(Reimbursement request not<br/>yet submitted to DOE)</i></p> |
| <p><b>Percent Complete:</b><br/>98%</p>  | <p><b>Percent Complete:</b><br/>20%</p>  |

## Barriers

Market Transformation, Regulatory,  
Financial, Educational

## Partners

### Phase I Partners (2007-2009)

Salt Lake City (Lead), Utah Clean Energy (Facilitator),  
Salt Lake County, Kennecott Land, Rocky Mountain  
Power

### Phase II Partners (2010-2012)

Salt Lake City (Lead), Utah Clean Energy (Facilitator),  
Salt Lake County, Ballard Spahr, LLC,  
Interstate Renewable Energy Council,  
Utah Governor’s Office of Economic Development,  
Utah State Energy Program, Kennecott Land

**Collaborations:** Sandia Lab, NREL, CH2MHill/  
Critigen, Utah Solar Energy Association, Utah Solar  
Working Group, home builders, U.S. DOE Building  
America Initiative, Consol, University of Utah

**Barriers:** Salt Lake City and Salt Lake County are home to 40% of Utah's population and growing rapidly. We have tremendous solar resource potential, but significant market barriers have stymied our solar market growth. At the onset of our Solar America Cities project, we faced the following principal barriers:

- **Regulatory:** poor net metering and interconnection rules, no state RPS, third party PPA issues
- **Financial:** ineffective pilot utility rebate, state tax credit too small for commercial systems, limited financing options for commercial and residential solar; historically low utility costs (but growing energy demand)
- **Educational:** lack of education about solar among building community, utilities, code officials, real estate and appraisal community, city zoning officials, historic district commissions, and the general public

## Opening the Door to Solar with the Solar America Cities Solar Salt Lake Project

- Utah has comparatively low energy prices, the electricity generation mix in the state is over 90% coal, and decision-makers have little to no experience or understanding of solar energy. This project has been critical to changing the energy paradigm and advancing solar energy to the mainstream.
- Through the U.S. Department of Energy Solar America Program Solar Salt Lake Project, we are actively driving solar market transformation in Salt Lake City, Salt Lake County, Utah, and the West.
- Our demonstrated successes in Phase I with net metering, interconnection, and solar on new homes, and third-party financing in early Phase II highlight the effectiveness of the Solar America Cities Initiative in removing barriers.
- With the removal of these barriers, Solar Salt Lake Project expects to create roughly \$60,000,000 of new solar investment opportunity and over 220 new solar manufacturing, installation, and maintenance jobs in Utah.

## Objectives (Phase I and II)

- Increase the installed capacity of solar energy in Salt Lake City and Salt Lake County to 10 MW or 10,000 installations by 2015, while creating a paradigm shift towards greater adoption of solar technologies statewide (Phase I and II);
- Identify and reduce/eliminate the barriers to solar deployment (Phase I);
- Develop an implementation plan for Salt Lake City and Salt Lake County that establishes a long-term commitment to solar deployment and facilitates solar adoption in all sectors (Phase I);
- Work with land developers and home builders to integrate solar technology into their residential and commercial developments. (Phase I)
- Remove key financial and regulatory barriers to widespread, large-scale solar development in the Salt Lake City and County:
  - Net metering and Interconnection (completed in Phase I)
  - Expansion of Solar-PV Utility Incentive Programs (Phase II)
  - Third Party Power Purchase Agreements (PPA's) (Phase II);
- Implement replicable alternative financing structures (Phase II);
- Outreach and education to local governments, nonprofits, churches, schools, and businesses on Solar Salt Lake efforts and best practices (Phase I and II).

## The Solar Salt Lake Project will yield numerous positive impacts:

- Improved utility regulatory framework to facilitate greater solar adoption in the City, County, and State;
- Solar financing options for residents, businesses, and local governments proven viable and implemented broadly;
- Increased adoption of residential solar and demonstrated value of solar;
- Local government solar projects lead by example and provide best practices;
- Increased solar education and awareness among building community, utilities, code officials, real estate and appraisal community, city zoning, historic district commissions, and the general public facilitates greater acceptance and adoption of solar;
- Other communities across the state model Solar Salt Lake successes;
- Expanding the Utah solar market will attracting solar industries, grow the supply chain for solar, increase market penetration of solar, and help drive costs down further.

- **Utah Solar Workshops (3 total) with key stakeholders and diverse partners** to solicit community participation and identify solar barriers and solutions.;
- **Collaboration** with solar industry, state government, and business community;
- **Participation and Stakeholder Engagement in Key Solar Regulatory Proceedings (with legal analysis and support from IREC and Ballard Spahr):** utility resource planning, utility solar rebate, net metering, interconnection, third-party financing;
- **Conduct and Utilize Targeted Technical Analyses to Address Barriers:**
  - Salt Lake County Solar on Municipal Bldgs. Feasibility Study (GSBS Architects)
  - Salt Lake County Solar Financing Studies for Govt. Facilities and Residential Solar (Ballard Spahr, Zions Bank Public Finance)
  - Salt Lake City Solar Access Codes and Ordinances Report (Clarion Associates)
  - Analysis of PV and Battery Storage as Means to Delay and Defer Substation Upgrades (Sandia National Lab);
- **Develop and disseminate best practices** and draw from national best practices;
- **Partnerships with land developers and production builders** to explore solar as a viable and valuable asset in the residential market and provide technical assistance;
- **Targeted education and trainings** for building community, utilities, code officials, real estate and appraisal community, city zoning, historic district commissions, and the general public.

- **Phase I Partners (2007-2009):** Salt Lake City, Utah Clean Energy, Salt Lake County, Kennecott Land, Rocky Mountain Power
- **Phase II Partners (2010-2012):** Salt Lake City, Utah Clean Energy, Salt Lake County, Ballard Spahr, LLC, Interstate Renewable Energy Council, Utah Governor's Office of Economic Development, Utah State Energy Program
- **Other Partners and Collaborations**
  - Kennecott Solar and High Performance Homes:
    - Garbett Homes, Gold Medallion Homes, Rainey Homes
    - U.S. Department of Energy Building America Initiative and Consol
    - University of Utah
  - Solar PV, Storage and Distribution Study
    - Sandia National Laboratory and Rocky Mountain Power
  - Technical Assistance
    - National Renewable Energy Laboratory
    - CH2MHill/ Critigen (solar website, data & tracking, installer surveys)
  - Solar Education and Awareness
    - Utah Solar Energy Association
    - Utah Solar Working Group



# Accomplishments/Progress/Results (Phase I March '09 – Dec '09)

| Accomplishments, Progress, Results  | Milestone, Barrier, Objective Addressed              |
|---|--|
| <p>Utah net metering grade went from 'F' in 2007 to 'A' in 2009 Freeing the Grid Report (Solar Salt Lake Team awarded 'SAC Barrier Buster Award' for efforts to improve net metering); improved interconnection standards adopted; <b>number of net metered solar projects in Utah have more than doubled since 2008.</b></p> | <p>Regulatory, Financial, Progress to 10 MW goal</p> |
| <p>Prominent, award-winning production builder offering solar as a standard option (a first in Utah); 19 of the solar homes were 'pre-sold' during the recession; plans to build 100 Solar Homes at Kennecott Land Daybreak</p>   | <p>Financial, Market Transformation, Education</p>   |
| <p>Technical and legal analyses used to inform decision-makers and next steps for Solar Salt Lake Partners, along with state and other local governments, policy-makers, regulators, and key stakeholders</p>   | <p>Education</p>                                     |
| <p>Salt Lake County and Salt Lake City actively incorporating solar into facilities and working to improve solar codes to streamline permitting process</p>   | <p>Market Transformation, Education</p>              |
| <p>Solar PV capacity installed in Salt Lake County/Salt Lake City has tripled since 2007; plans for 1 MW on County facilities;</p>  | <p>Progress to 10 MW goal</p>                        |

# Accomplishments, Progress, Results (Phase II Jan '10 – May '10)

| Accomplishments, Progress, Results  | Milestone, Barrier, Objective Addressed         |
|---|---|
| Utah Public Service Commission initiated PPA investigative docket   | Regulatory                                      |
| Utah Legislature passed law to allow third party financing for government, churches, and school facilities  | Market Transformation, Education, and Financial |
| Salt Lake County to issue RFP for PPA for 1 MW (doubling Utah's solar installation); University of Utah's Utah Museum of Natural History investigating PPA option for new solar facility  | Market Transformation, Education, Financial     |
| Salt Lake City host for Solar America Cities Annual Meeting 2010  | Education                                       |
| Church of Jesus Christ of Latter Day Saints (LDS) builds 'solar meeting' house, prominent media attention on their 'green' and 'solar' efforts; LDS Church exploring PPA and third-party financing options as a result of new law | Progress to 10 MW goal; Education               |

# Budget Status and Potential for Expansion

- Phase I grant is on budget for both hours and dollars. The grant extension was requested/awarded through September 2010 to accommodate the final phase of project. As of 3/31/2010, the City has expensed \$155,969.86 of Federal dollars and \$182,817 cost share.
- Phase II grant was awarded Jan 1, 2010. Contracts have been negotiated and are in place with work proceeding as planned. Project is on budget for both hours and dollars with (\$14,564 of federal funding and \$32,950 of cost share have been expensed by the City, but a reimbursement request has not yet been submitted to DOE.) No variances or modifications have been necessary or made.

## **PHASE II – SOLAR SALT LAKE PROJECT**

### **TOTAL PROJECT BUDGET: \$380,018**

FEDERAL SHARE: \$267,700

COST SHARE: \$112,318

|   |                            |
|---|----------------------------|
| Salt Lake City                            | \$24,470: In-Kind Services |
| Kennecott Land                            | \$ 5,000: In-Kind Services |
| Salt Lake County                          | \$42,855: In-Kind Services |
| Utah Clean Energy                         | \$35,000: In-Kind Services |
| Governor's Office of Economic Development | \$ 5,000: In-Kind Services |

- Potential for Expansion:
  - Support and technical analysis for utility resource planning and solar modeling as part of the Integrated Resource Planning process
  - Training for building community, appraisers, real estate agents, etc. on property value of solar
  - Solar PV valuation analyses for utilities and/or state
  - Continued removal of market barriers and development of innovative financing models
  - Replicate production builder 'solar as standard' success story
  - Explore collaboration with LDS Church to support solar and efficiency efforts

- Distribute Solar Salt Lake Implementation Plan to stakeholders and other local governments;
- Salt Lake County works towards 10 MW of solar installations on County facilities;
- Other governments, churches, and schools replicate Salt Lake County's innovative financing structure using third-party financing;
- Implement replicable financing structures for local governments, residential, and commercial sectors, including PACE, community solar, and/or solar leasing models
  - Work with local financial institutions, NREL, DOE, and other partners to address the concerns from the financial and lending community regarding PACE;
- Work with utility and stakeholders to expand existing utility pilot solar PV incentive program and explore other incentive programs;
- Outreach and education to targeted stakeholders and building community to continue to remove barriers and increase awareness of the value of solar energy to Utah;
- Serve as a model for other cities and jurisdictions in Utah and nationwide that wish to address financial and regulatory barriers to solar deployment.

- ❖ Salt Lake City and County are home to 40% of Utah's population and are both growing rapidly. We have tremendous solar resource potential but face(d) significant solar market barriers, including regulatory, educational, and financial barriers.
- ❖ Salt Lake City, Salt Lake County, and their partners are committed to resolving the existing financial and regulatory barriers in an effort to dramatically propel Salt Lake City and Salt Lake County toward the shared long-term solar goal of increasing solar installations to at least 10 MW by 2015 and spur greater market adoption of solar statewide.
- ❖ With the removal of these barriers, Solar Salt Lake Project-Phase II expects to create roughly \$60,000,000 of new solar investment opportunity and over 220 new solar manufacturing, installation, and maintenance jobs in Utah.
- ❖ Expanding the solar market in Salt Lake City and Salt Lake County's will have a ripple effect across the state, opening up a new market in the West and help make solar more affordable.
- ❖ Our demonstrated success stories with net metering, interconnection, solar on new homes, and third-party financing highlight the effectiveness of the U.S. Department of Energy Solar America Program, Solar America Cities Initiative. With this project, we are actively creating a solar market transformation in Salt Lake City, Salt Lake County, and the West.
- ❖ We couldn't do this exciting work without the support of the DOE Solar America Cities Program! Thank you for your support.