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Developing an Implementation Plan for the Rhode Island MSRI Partnership

Workshop Summary – Final Report

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Workshop Summary

Prepared by the
Florida Solar Energy Center and Sandia National Laboratories

September 11, 2000

Workshop Information:

Date: September 5-6, 2000
Time: 8:30 a.m. – 4:30 p.m.
Location: Hyatt Regency Hotel
Newport, Rhode Island

Attendees:

Ed Brady, City of Newport
Julie Capobianco, Rhode Island State Energy Office
Robert Cerio, City of Warwick
Patrick Condon, Rhode Island State Energy Office
Al Contente, Rhode Island Public Utilities Commission
Richard Eidlin, Solar Works
Janice McClanaghan, Rhode Island State Energy Office
Stephen Murray, Town of West Warwick
Robin Read, New Hampshire Governor's Energy Office
Leigh Seddon, Solar Works
Chris Warfel, Entech Engineering
Registered but did not attend:
Doug Hartley, Rhode Island Public Utilities Commission
Richard Hilton, Town of Johnston
Kate Ringe-Welch, Narragansett Electric

U.S. Department of Energy Representative:

Richard Michaud, Boston Regional Office

Instructors:

Hal Post, Sandia National Laboratories
Kevin Lynn, Florida Solar Energy Center
Jerry Ventre, Florida Solar Energy Center

Guest Speakers:

Richard Eidlin, Solar Works
Leigh Seddon, Solar Works

References/Workshop Materials:
1. Workshop manual entitled *Implementing a State or Community Photovoltaic Buildings Program*, Florida Solar Energy Center, March 2000.
2. *Florida Photovoltaic Buildings Program: Status Report, Observations and Lessons Learned*, FSEC-CR-1150-00, prepared for Sandia National Laboratories, Florida Solar Energy Center, Cocoa, Florida, March 1, 2000.

Section 1. Introduction and Basic Premises

Topics Presented:
- See reference 1, section 1, pp. 1-3, and reference 2, p. 7.

Participant Responses:
- The cost of electricity in Rhode Island is approximately 10 cents per kWh, except for Block Island, which has a rate of 29 cents per kWh..
- A need exists for consumer education and greater public awareness of the benefits of solar and renewable technologies.
- An effective communication network needs to be established for the partnership.
- Solar and renewable energy technologies must be viewed as high priorities within the state.

Recommendations:
- The active participation of Rhode Island utilities should be enlisted to facilitate the development of a grid-tied PV buildings market.

Section 2. Basic Partnership Information

1) What are your goals?

The overall partnership goal is to install 500 solar systems by 2010.
To date, approximately 30 new systems have been installed.

2) What are your financial resources?

- System Benefits charge of 2.3 mils/kWh
- $20 million generated
    - $10 million for energy efficiency projects
    - $10 million for buy-down funds for PV

Buy-down rate for PV systems

- In 1998: $1/Watt
- Currently: $1.50/Watt
- In future: $2.00/Watt

Both PV and Solar Thermal

- Sales Tax Exemption (7%)
- State Income Tax Credit
  - 1st year: 25% of total system cost
  - 2nd year: 20% of total system cost
  - 3rd year: 15% of total system cost
  - 4th year: 10% of total system cost
  - 5th year: 5% of total system cost

Adding a renewable energy system will not increase the appraised value of a house (reduces property taxes).

3) Who are the utilities?

- Narragansett Electric (IOU), a National Grid Company
- Pasoag Fire District (Quasi-Municipal, non-profit)

Average cost of electricity in Rhode Island: 10cents per kWh.

4) Do you have partners representing the financial community?

Yes: Washington Trust, Rhode Island Finance Corp. One bank has agreed to expedite the processing of home equity loans for solar installations.

5) Are there any solar industries present in Rhode Island?

- Solar Works
- Ascension Technology
- Powerlight
- RISE Engineering
- (two other small companies approved to install systems)

6) Is the group targeting both solar thermal and PV?

So far, the MSR group and the Collaborative have been focusing on PV only. Block Island has been pursuing both PV and solar thermal.

The buy-down money is available only for PV systems. However, the sales tax exemption and the state income tax credit are available for both PV and solar thermal.

7) Who are your advocates for solar in the state legislature?

No names were given at the meeting, but there is legislative support. Bob Chew (sp?) drafted prior legislation.

8) How many solar systems/applications have been installed so far?

- Nearly 100 kW in RI (grid-tied)
- 20 kW more on Block Island

9) Is there technical support available in Rhode Island?

Yes, Solar Works provides technical support for the group.

10) Does Rhode Island have a uniform interconnection standard?

Yes, and net metering is available. There are problems with interconnection on Block Island, however.

11) Are there licensing/certification requirements in Rhode Island for installers of PV and solar thermal systems?

- Solar Thermal: yes
- PV: A master electrician must sign off on PV installations, but no formal licensing or certification requirements exist.

12) Do you have a widespread public information program for solar?

Not really.

13) Is there a solar curriculum available for schools?

- Not specifically for solar in Rhode Island.
- New Hampshire has put together something from a variety of resources, including:
    - Interstate Renewable Energy Council (IREC)
    - Florida Solar Energy Center (FSEC)

14) Does the MSR Partnership or the Collaborative have a web site?

It is under development.

15) Are major state-based corporations participating?

Yes.

Section 3. Setting Goals

Topics Presented:

- See reference 1, section 1, pp. 3-4, 36-37, and reference 2, pp. 7-8.

Participant Responses:

- Rhode Island has established an MSRI goal of 500 system installations by 2010.
- Installed system prices for grid-tied PV systems in Rhode Island (and New England in general) are approximately $10/watt -- higher for systems with battery backup.
- Other goals of the Rhode Island MSRI Partnership are: increased public awareness and more aggressive marketing of solar and renewable energy technologies, solar demonstrations on public buildings and facilities, active utility support for and participation in the partnership, an active solar for schools program, interactive and interpretative displays for systems on schools and public facilities, and a state network of stakeholders and partners.

Recommendations:

- Establish a realistic, achievable goal for solar installations over the next two to three years (say 40 - 100 systems) as a near-term focus for the partnership.
- Actively pursue an expanded solar for schools program, with assistance from local school districts, the Rhode Island State Energy Office and the Rhode Island Department of Education.
- Identify and increase awareness of existing solar systems throughout the state.
- Develop strategically located solar showcase projects on government and/or public buildings to demonstrate government leadership in promoting solar applications.

Section 4. Identifying Applications and Potential End Users

Topics Presented:

- See reference 1, section 1, pp. 7-25, and reference 2, pp. 2-3, 8–14.

Participant Responses:

- Applications identified included uninterruptible building power systems, schools, government buildings and facilities, and model homes.
- Suggested end users for solar applications included utilities, schools, government agencies (federal, state, local), and builders.

Recommendations:

- Rhode Island should pursue applications involving solar on schools because of the high visibility and because of the value added by the curriculum component that can be introduced into the classroom. Utilities and private industries in other states have been receptive to supporting these applications. Curricula, teaching materials, and teacher training opportunities are readily available.
- Rhode Island and local government agencies should take the lead in pursuing solar installations on public buildings and facilities. This sends a clear message to the public of the importance and high priority associated with pursuing clean, renewable energy.
- Application should be made for FEMP funds for solar installations on federal buildings and facilities. The DOE Boston Regional Office can offer assistance in this area.
- Utilities should be strongly encouraged to buy, install, operate and maintain PV systems on buildings as part of distributed generation experiments.

Section 5. Overcoming Barriers

Topics Presented:

- See reference 1, section 1, pp. 9-11, 36-37, section 3 (entire), and reference 2, pp. 4-5, 17.

Participant Responses:

- The following issues and barriers were discussed: installed system prices, interconnection requirements, standards and codes, liability insurance, billing and metering, utility acceptance and participation, mobility of homeowners, lack of confidence in solar technologies, reluctance to change, codes, covenants and restrictions, and the need for public education and marketing of solar applications.

Recommendations:

- Because of the excellent financial incentives and strong technical support available in Rhode Island, emphasis should be placed on aggressively promoting solar applications using monthly bill stuffers, regular advertisements in the newspaper, and use of the mass media (radio and television).

Section 6. Ensuring and Improving Quality

Topics Presented:

- See reference 1, section 1, pp. 26-28, sections 4, 5, 6, 7 and 9 (entire), and reference 2, pp. 5-6, 17-19.

Participant Responses:

- Quality measures discussed included: module testing and rating, system design review and approval, installer training and certification, acceptance testing, code official training, site

surveys and analyses, technical specifications for procurement, and system inspection and troubleshooting.

Recommendations:

- The Rhode Island partnership should establish quality requirements consistent with those being implemented in other states and viewed favorably by the national laboratories.
- Rhode Island should take advantage of system approvals being performed by other states for packaged PV systems.

Section 7. Collecting Information, Sharing and Improving

Topics Presented:

- See reference 1, section 1, pp. 29-37, sections 8 and 10 (entire), and reference 2, pp. 6-7, 19-21.

Participant Response:

- Topics discussed included monitoring performance and collecting reliability and cost data. Also discussed was the use of databases, web pages and the Internet to make information more readily accessible and usable to larger audiences.

Recommendations:

- To provide utilities, businesses and the general public with data they need to plan and make prudent decisions, the Rhode Island partnership should include a simple approach to performance monitoring in their program plan. For example, installing simple watt-hour meters on the ac output of the inverters provides information needed to assess the value of the PV system over time.
- Data from other states may be used to complement the data collected from Rhode Island installations. Together, the data should be useful to prospective buyers, end users and investors.
- Rhode Island should continue with plans to develop a web site for the partnership to facilitate networking and sharing information and lessons learned.
- In the interim, information and data from web sites such as those for the federal Million Solar Roofs Initiative (**www.eren.doe.gov/millionroofs),** Sandia National Laboratories (**www.sandia.gov**), the National Renewable Energy Laboratory (**www.nrel.gov**), the Interstate Renewable Energy Council (**www.irecusa.org**), the Florida Solar Energy Center (**www.fsec.ucf.edu**), and other solar energy research and education institutions may prove useful to the partnership.

Section 8. Action Items

Topics Presented:

- See reference 1, section 1, pp. 4-7, 36-37, section 2 (entire), and reference 2, pp. 3-4, 14-17.

Recommendations:

- The Boston Regional Office of DOE should be consulted about opportunities for receiving FEMP funds for solar projects on government buildings and in national parks.
- The Rhode Island Energy Office should pursue state funds to buy down a portion of the costs of solar systems. This will help to kick start the program.
- Representatives of the Rhode Island partnership should attend one of the DOE-sponsored financing workshops.
- The solar industry in Rhode Island should play an active and organized role in marketing the MSRI partnership.

1) Increase awareness of the state solar initiatives.

Several topics were addressed under this heading, including the makeup of the "Collaborative."

- It was determined that there were 18 individuals that made up the "Collaborative," which controls the buy-down money. Those 18 individuals represented the following groups:

  Rhode Island Public Utilities Commission (RIPUC)
  Public Utilities Division
  Tech RI - represent the largest energy users in the state
  Conservation Law Foundation (CLF)
  RAV Association
  New England Power Service (Six members)
  Pascoag Fire District
  Rhode Island State Energy Office

- Install demonstration projects at visible locations (like universities) that people could go to see.
- Three homes in Rhode Island are solar powered and have been available for tours. Use these homes to demonstrate how solar works to those interested in the program.
- Hold workshops for stakeholders.
- Involve the solar industry since their livelihood depends on statewide acceptance of solar.
- Get a list of all our natural allies (e.g., environmental groups) and have them help market the program.
- Rhode Island should take advantage of the large number of materials that have been developed by various organizations to help educate the public about solar energy and market solar thermal and electric systems.

2) Develop a statewide marketing plan and advertise solar option.

- Involve major industries.
- Utilize the Rhode Island Solar Association (not very active).
- Use newspaper adds, say on a weekly basis.
- Use radio (and possibly TV) announcements to promote the program.
- Develop a web site focusing on introducing solar technology to the public, showing the state incentives that are available, and providing contact information.
- Push the idea of increasing interest in solar as a way of enhancing economic development and industry growth.

3) Implement consumer solar education program

- Questions to answer:
  - Why use solar?
  - What are the benefits?

- Focus on an environmental message.
- Apply for a grant from the Collaborative to educate the public on solar.
- Make sure that people understand that solar is part of the energy solution, not the whole solution.

4) Modify construction building codes to encourage solar.

- Promote legislation prohibiting restrictive codes, covenants and restrictions that inhibit the use of solar equipment on homes.
- Respect historic districts and their restrictions.

5) Add solar thermal to partnership goals and plans.

- Tie funds set aside for the demand-side management program (the other $10 million) to be used for solar thermal projects.

6) Develop solar installer licensing program.

- Review licensing efforts in other states and use them to establish an appropriate licensing option for PV installers.

7) Expand the solar for schools program.

- Use buy-down funds to put at least one system in every school district in the State. The Collaborative could put out an RFP for such a project.
- Get volunteers from technical societies (such as the American Society of Mechanical Engineers,

the Institute of Electrical and Electronic Engineers, etc.) to help teachers understand and demonstrate solar technology.

8) Establish two- to three-year goals to focus on early successes.

- Incorporating solar on schools may be a good place to start.

9) Incorporate quality measures.

- Quality measures are mentioned throughout the workshop manual. The two most appropriate for Rhode Island are:
  - Design review and approval
  - Acceptance testing

10) Establish a process to distribute buy-down funds and verify compliance with incentives programs.

- All participants in the Rhode Island Million Solar Roofs Partnership should understand this process.

11) Develop an implementation plan.

- As an outgrowth of this workshop, develop a succinct and workable implementation plan that is acceptable to the Collaborative. Because of the tremendous financial incentives available in Rhode Island, and because of appropriate interconnection requirements in place throughout most of the State, emphasis should be placed on education, advertising, marketing and simple procedures for potential end users to participate in the program.