

# Maine Solar Energy Rebate Program

## 2007 Annual Report



Saving energy for Maine  
Program of the Maine Public Utilities Commission

## December 1, 2007

Submitted By:

Maine State Energy Program  
Energy Programs Division  
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## **Introduction**

The Maine Public Utilities Commission (Commission) is pleased to present the second Maine Solar Energy Rebate Program Annual Report for the time period July 1, 2005 - June 30, 2007.

The two primary goals of the Maine Solar Energy Rebate Program (Program) are to:

- 1) Increase the use of solar photovoltaic, solar hot water, and solar air systems by Maine residents; and
- 2) Promote the development of trained and certified renewable energy installers throughout the State of Maine.

The Program was established on June 29, 2005 as part of Governor Baldacci's Solar Initiative and enacted into law as "An Act To Encourage the Use of Solar Energy" under 35-A M.R.S.A. §3211-B.<sup>1</sup> The Program is administered by the Commission's Energy Programs Division and implemented under the Commission's Chapter 930 Solar Energy Rebate Program Rule.<sup>2</sup> The Program provides rebates for the installation of solar photovoltaic (PV), solar hot water, and solar air systems for Maine residents.

The Program is funded through revenues raised by a small charge applied to electricity consumers in the State of Maine. The authorizing legislation allocated \$500,000 per year for the Program. The Program originally had a sunset date of December 31, 2008. During the First Regular Session of the 123<sup>rd</sup> Legislature, the Program was extended to December 31, 2010. P.L. 2007, ch. 158. The total allocation cap for the Program is \$2.75 million and current law directs that 25% (\$687,500) of the total funding be allocated to PV systems and 75% (\$2,062,500) be allocated for solar thermal systems.

Section 3211-C (5) requires the Commission to submit annual reports to the Utilities and Energy Committee (Committee) that include a summary of actions taken by the Commission relating to the Program during the prior 12 months. The purpose of this report is to satisfy the reporting requirement in §3211-C (5).

## **Change in Rebate Levels**

Last session, the Legislature enacted PL 2007, Ch. 29. Prior to the enactment of Chapter 29, the incentive levels for rebates under the Program were established in statute. 35-A M.R.S.A. §3211-C. The prior statutory framework directed that PV systems qualify for a rebate of \$3/watt on the first 2,000 watts of installed capacity, and \$1/watt for the next 1,000 watts, for a potential maximum incentive payment of \$7,000. Under the old law, solar hot water and solar air systems (both are considered solar thermal) qualify for a rebate of 25% of total installed cost or \$1,250, whichever is less. Chapter 29 removed the incentive level requirements from §3211-C and authorized the Commission to set the rebate levels for the Program. The new law provides that "[i]n setting rebate levels, the commission may consider market demand for qualified solar energy systems, program implementation experience and other factors relevant to the solar energy rebate program."

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<sup>1</sup> Pursuant to Revisor's Report 2005, Chapter 1, Section 17, §3211-B was re-allocated to 35-A M.R.S.A. §3211-C.

<sup>2</sup> Chapter 930 can be viewed on the Commission's web site at [http://www.maine.gov/mpuc/doing\\_business/rules/part\\_9/chap\\_930.htm](http://www.maine.gov/mpuc/doing_business/rules/part_9/chap_930.htm).

On September 17, 2007, the Commission commenced a rulemaking to amend our rule governing the Program (Chapter 930) to make it consistent with the new requirements in §3211-C.<sup>3</sup> The Commission anticipates adopting new rebate levels for the Program in December 2007. We further anticipate that these new rebate levels will significantly improve the effectiveness of the Program.

### **Summary of Accomplishments to Date**

- Training opportunities were opened up to Architects, Engineers, Boiler Technicians, Refrigeration Technicians
- 207 systems installed which consisted of 152 Thermal Hot Water, 37 PV and 18 Hot Air systems
- 202 solar thermal installers trained by the program
- 45 PV installers received training by Kennebec Valley Community College
- 7 PV installers certified by North American Board of Certified Energy Practitioners (NABCEP).

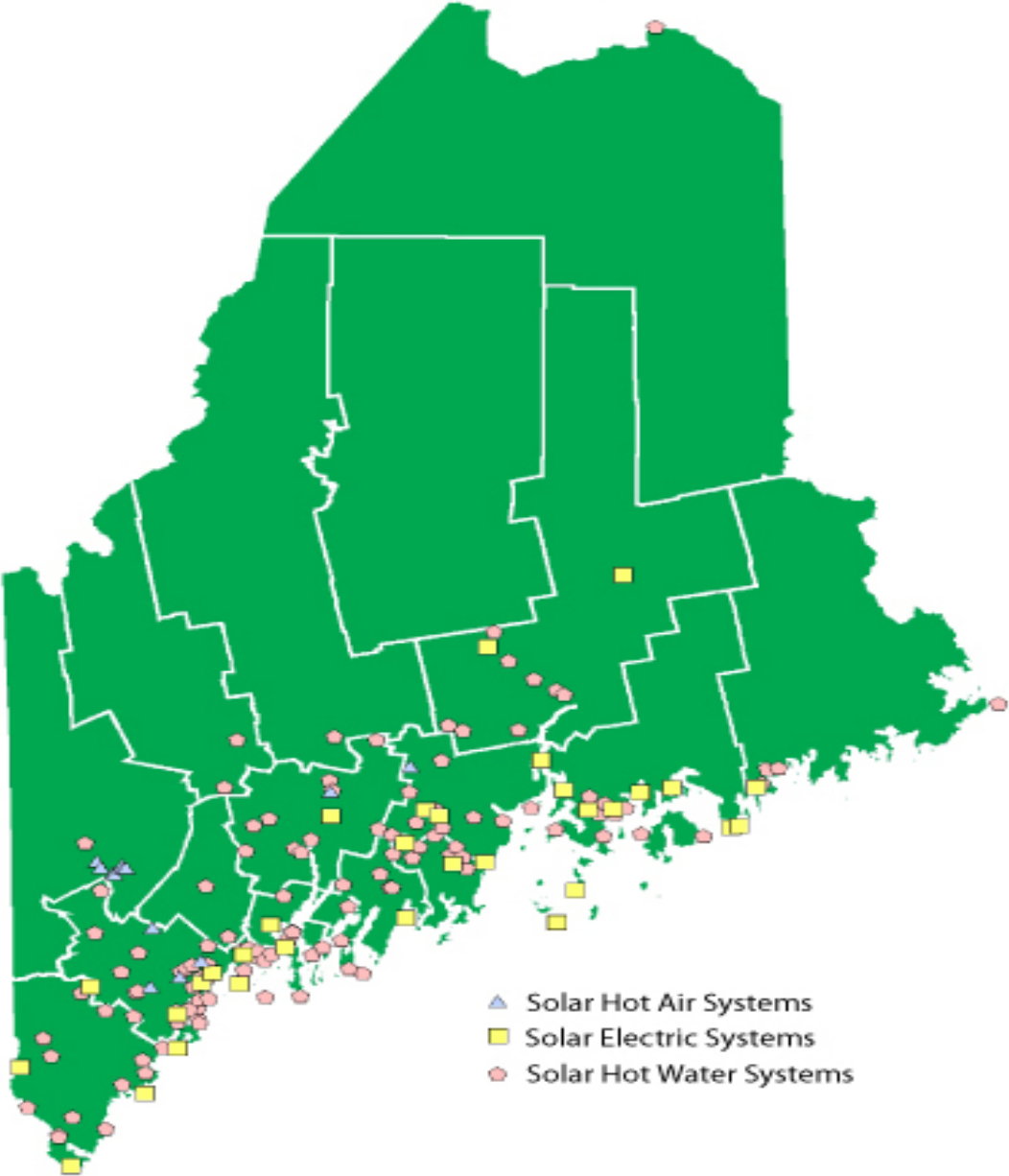
The map on the following page shows the location of installations that have been funded by the Program.

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<sup>3</sup> The rulemaking was assigned Docket No. 2007-460.

# Maine State Energy Program

## Solar Rebate Program



## Financial Report

To date, of the \$1,312,500 allocated for solar thermal systems, \$188,759 was paid out for solar hot water and \$9,550 for solar air leaving a balance of \$1,111,616. PV incentives paid out are \$222,918 leaving a balance of \$69,849.

**Table 1 Maine Solar Incentive Details through 6/30/2007**

System Type	Funding Through 12/31/08	Reserved Rebates	Paid Rebates	Unpaid Rebates	Administrative Cost	Funds Remaining	Number Installed
Solar Photovoltaic	\$437,500	\$367,651	\$222,918	\$144,733	\$11,946	\$69,849	37
Solar Hot Water	\$1,312,500	\$191,128	\$188,759	\$2,369		\$1,111,616	152
Solar Air		\$9,756	\$9,950	(\$194)		18	
<b>TOTAL</b>	<b>\$1,750,000</b>	<b>\$568,535</b>	<b>\$421,627</b>	<b>\$146,908</b>	<b>\$11,946*</b>	<b>\$1,181,465</b>	<b>207</b>

\* As of June 30, 2007, PUC staff time dedicated to Program management has been paid for through a State Energy Program grant, and consequently such time was not billed directly to Solar Rebate Program. There is no guarantee that grant funds will continue to be available to cover the costs of managing the Program and if grant funds are discontinued, administration fees would be charged directly to the rSolar Rebate Program.

During the 2007 year, customers have continued to express significant interest in the availability of incentives for PV systems. Because all of the incentive money projected for the Program was reserved on a first come, first served application process, we have been unable to award additional PV rebates. The extension of the Program will allow us to reserve additional rebates for PV systems for the period December 30, 2008 to December 30, 2010.

Twenty-eight different companies installed solar systems in 2007. This is a three-fold increase from the nine systems installed in 2006. Two of the companies accounted for 49.5 percent of all installations. The following is a breakdown of the ranking of individual companies' completed jobs.

Number of Companies	Number of Systems	Group Total	Percent of Total
14	1	14	13
5	2	10	9
2	3	6	6
3	4	12	11
1	6	6	6
1	7	7	6
1	14	14	13
1	40	40	37

In terms of market development, a total of 45 PV system installers were trained by Kennebec Valley Community College, and seven are currently certified by the North American Board of Certified Energy Practitioners (NABCEP). As of January 1, 2007, only NABCEP certified installers that are master electricians, or working in partnership with a master electrician, are allowed to participate in the rebate program. Major gains have been made in the training of thermal installers. The number of installers completing Commission-sponsored training has more than doubled from 66 individuals in 2006 to 136

certified in 2007. Thermal installations must be completed by a Master licensed plumber who is also a certified solar thermal installer or working in conjunction with a certified solar thermal installer. In 2007, the Program sponsored four training classes, one in Sanford, one in Houlton and two in Fairfield. To be listed as a qualified installer, individuals must attend one of our training classes and pass a written test.

### Energy Savings in 2006

As detailed in Table 2 below, the 69 installations completed during the first year of the Program off-set consumption of electricity and fossil fuels by conventional systems. Installed PV systems are estimated to save 76.2 MWh annually with lifetime savings of 1,524 MWh. PV systems convert direct sunlight into electricity. Installed solar hot water systems are estimated to save annually 4,020 gallons of fuel oil, 3,141 gallons of propane, and 33.2 MWh of electric hot water consumption. In most of the applications we have observed, solar hot water systems are installed to produce domestic hot water. In fewer cases, the systems have been used to supplement household space heating requirements. Lifetime savings for solar hot water systems are estimated to include 80,406 gallons of fuel oil, 62,826 gallons of propane and 663.2 MWh of electric hot water consumption. All together, the annual carbon dioxide (CO<sub>2</sub>) savings for all of the systems is 123.1 metric tons, with projected lifetime savings of 2,463 metric tons.<sup>4</sup> Hot air systems, an economic substitute for space heating, have been installed only on residential dwellings. We expect that solar hot air systems will soon be seen on commercial and institutional buildings.

<b>Savings by System and Fuel Type Displaced</b>	<b>Number of Systems</b>	<b>Annual Energy Production</b>	<b>Lifetime Energy Production</b>	<b>Annual CO<sub>2</sub> Savings Tons</b>	<b>Lifetime CO<sub>2</sub> Savings Tons)</b>
Solar Photovoltaic (PV) (MWh)	22	76	1,524	36	710
Solar Hot Water (Gallons of Oil Savings)	22	4,020	80,406	48	949
Solar Hot Water (Gallons of Propane Savings)	16	3,141	62,826	18	361
Solar Hot Water (MWh Savings)	5	33	663	15	309
Solar Air (Gallons of Oil Savings)	4	566	11,321	7	134
<b>TOTAL</b>	<b>69</b>	<b>n/a</b>	<b>n/a</b>	<b>123</b>	<b>2,463</b>

### Energy Savings in 2007

Table 2-B details the 138 installations completed during the second year of the Program and the off-set consumption of electricity and fossil fuels by conventional systems. Installed PV systems are estimated to save 51.8 MWh annually with lifetime savings of 1,036 MWh. Installed solar hot water systems are estimated to save annually 10,752 gallons of fuel oil, 7,852 gallons of propane. The 2007 thermal hot water electrical off-set of 71.65 MWh nearly equaled last year's PV installations for electrical savings. Lifetime savings for solar hot water systems are estimated to include 215,040 gallons of fuel oil, 157,048 gallons of propane and 1,433 MWh of electric hot water consumption. Lifetime

<sup>4</sup> We conservatively estimate all PV and thermal systems have a 20 year lifetime.

PV savings provided an additional 1,036 MWhs. All together, the annual CO<sub>2</sub> savings for all of the systems is increased 72 percent over 2006 to 211.7 metric tons, with projected lifetime savings of 3,934 metric tons equivalent to the removing 533 cars from the road for one year.<sup>5</sup>

**Table 2-B: Maine Solar Rebate Program 2007 Savings**

Savings by System and Fuel Type Displaced	Number of Systems	Annual Energy Production	Lifetime Energy Production	Annual CO <sub>2</sub> Savings Tons	Lifetime CO <sub>2</sub> Savings Tons)
Solar Photovoltaic (PV) (MWh)	15	51.8	1,036	24.13	482.6
Solar Hot Water (Gallons of Oil Savings)	48	8,771	175,420	89.0	1,780
Solar Hot Water (Gallons of Propane Savings)	40	7,852	157,048	45.1	902.4
Solar Hot Water (MWh Savings)	21	71.65	1,433	33.37	667
Solar Air (Gallons of Oil Savings)	14	1,981	39,620	20.1	402.2
<b>TOTAL</b>	<b>138</b>	<b>n/a</b>	<b>n/a</b>	<b>211.7</b>	<b>3,934.2</b>

### Photovoltaic Update

During 2007, 15 PV systems were installed with the support of the Program,s detailed in Table 3 below. The increased customer cost per watt before and after the rebate is most likely because of more elaborate equipment being installed such as tracking systems. In terms of estimated kWh production, the average system over the two years is reported to produce 3,251, down 212 kWh from 2006.

<b>Table 3: Solar Photovoltaic Installation Details</b>	<b>6/30/2006</b>	<b>6/30/2007</b>
Number of Systems Installed	22	15
Average System Size (KW)	2.74	2.17
Average Total Cost	\$23,889	\$22,112
Average Rebate	\$6,027	\$6,022
Average Customer Cost After Rebate	\$17,863	\$16,090
Percent of System Cost Paid by Rebate	25%	28%
Installed Customer Cost/Watt Before Rebate	\$8.91	\$10.18
Installed Customer Cost/Watt After Rebate	\$6.35	\$7.41

<sup>5</sup> We conservatively estimate all PV and thermal systems have a 20 year lifetime.



Solar electric system (2.38 kW), Hope ME. Installed by Energyworks of Liberty

### Solar Hot Water Update

To date, 152 solar hot water systems have been installed with the support of the Program. As detailed in Table 4, all indicators of Program size increased during 2007. The 36 percent increase in total costs for year 2007 can be attributed to the higher number of commercial jobs that have been completed that ranged in total customer cost of between \$11,000 and \$98,000. When commercial installations are factored out, costs normalize are in line with 2006 costs.

<b>Table 4: Solar Hot Water Installation Details</b>	<b>6/30/2006</b>	<b>6/30/2007</b>
Number of Systems Installed	43	109
Average System Size (MMBtu/yr.)	16.6	6.75
Average Total Cost	\$8,024	\$12,603*
Average Rebate	\$1,234	\$1,245
Average Customer Cost After Rebate	\$6,790	\$11,357
Percent of System Cost Paid by Rebate	15%	10%
Average System Cost (w/o Commercial)		\$8,612
Average Rebate (w/o Commercial)		\$1,244
Average Customer Cost (w/o Commercial)		\$7,368
Percent of System Cost paid by Rebate (w/o Commercial)		14%

\* Higher Average Total Cost due to 17 Commercial Systems being Installed





## Solar Air Update

The Program experienced a 250 percent increase in solar air systems from 2006 to 2007. Thermal hot air provides the greatest value for the dollar. Solar air systems heat air through the concentrated capture of solar radiation and distribute the heated air through the residence by a fan. As detailed in Table 5, the average system production is estimated at 9.6 MMBtu per year with an average total installed cost of \$2,080.<sup>6</sup> The average rebate was \$552, which covered approximately 25% of the system installed cost.

<b>Table 5: Solar Hot Air Installation Details</b>	<b>6/30/2006</b>	<b>6/30/2007</b>
Number System Installed	4	14
Average System Size (MMBTU/Yr)	10.2	9.6
Average Total Cost	\$1,820	\$2,080
Average Rebate	\$455	\$552
Average Customer Cost After Rebate	\$1,365	\$1,560
Percent of system Cost Paid by Rebate	25%	25%

<sup>6</sup> We estimate the average Maine residential home consumes approximately 100 MMBtu per year for space heating.



Solar thermal hot-air system, South Paris Maine

## **Appendices**

Attached to this report are three appendices detailing the completed installations that have been funded by the Program. Appendix A summarizes PV installations; Appendix B addresses solar hot water systems and Appendix C relates to solar air systems.

## **Conclusion**

On November 14, 2006, the Commission held a solar stakeholder meeting in Augusta with approximately 20 installers and vendors of solar systems. This meeting provided a venue for the solar stakeholder community to provide input on program design and implementation of the Program. As a result of this meeting and our own observations, our Program efforts for 2007 will focus first on increased marketing of the remaining rebates for solar thermal systems and modifications to the application forms. As noted above, the Commission was recently given authority to set Program rebate levels and will soon adopt new incentive levels pursuant to that new authority. The input we get from stakeholders has provided valuable information about how the rebates should be restructured. The Commission will continue the practice of regular stakeholder discussions to improve the effectiveness of Program rebates and to receive business feedback.

It should be noted that this report only covers solar installations in Maine recorded through the Program. We understand there are numerous other non-grid connected installations ineligible to participate in the Program that are owner financed projects and are therefore unreported. The interest in the Program that has been shown by consumers, along with entry into the industry by a number of traditional plumbing and heating companies, indicates that the State of Maine will soon see a dramatic change in the way in which the systems are perceived. We expect the increase in system installations will be dramatic over the course of this Program.

We look forward to working with the Committee on issues relating to the Program and would welcome the opportunity to meet with the Committee to present this report and respond to any questions you may have about the report or the Program.

For more information, contact:  
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**APPENDIX A**

**Solar Electric System Installation Details Inception through 6/30/06**

Town	Installed Watts	Total Installed Cost	Rebate	Participant Cost Net of Rebate	Installed cost/Watt Before Rebate	Installed cost/Watt After Rebate
BASS HARBOR	2100	\$19,350	\$6,100	\$13,250	\$9.21	\$6.31
BLUE HILL	2100	\$22,715	\$6,100	\$16,615	\$10.82	\$7.91
BLUE HILL	3690	\$24,192	\$7,000	\$17,192	\$6.56	\$4.66
BRUNSWICK	2100	\$23,200	\$6,100	\$17,100	\$11.05	\$8.14
BUCKSPORT	3690	\$40,392	\$7,000	\$33,392	\$10.95	\$9.05
CAMDEN	10920	\$87,273	\$7,000	\$80,273	\$7.99	\$7.35
CUMBERLAND CENTER	2250	\$19,800	\$6,250	\$13,550	\$8.80	\$6.02
FREEPORT	3150	\$23,400	\$7,000	\$16,400	\$7.43	\$5.21
GOULDSBORO	2100	\$19,400	\$6,100	\$13,300	\$9.24	\$6.33
KENNEBUNKPORT	480	\$5,100	\$1,440	\$3,660	\$10.63	\$7.63
KITTERY	2280	\$22,000	\$6,280	\$15,720	\$9.65	\$6.89
LAMOINE	2310	\$18,325	\$6,310	\$12,015	\$7.93	\$5.20
LEBANON	1980	\$12,669	\$5,940	\$6,729	\$6.40	\$3.40
LIMINGTON	2280	\$20,200	\$6,280	\$13,920	\$8.86	\$6.11
MONTVILLE	2100	\$15,300	\$6,100	\$9,200	\$7.29	\$4.38
NORTH VASSALBORO	480	\$4,150	\$1,440	\$2,710	\$8.65	\$5.65
ORLAND	2100	\$19,000	\$6,100	\$12,900	\$9.05	\$6.14
PORTLAND	3060	\$33,244	\$7,000	\$26,244	\$10.86	\$8.58
STEBEN	3000	\$28,140	\$7,000	\$21,140	\$9.38	\$7.05
TENANTS HARBOR	3060	\$26,178	\$7,000	\$19,178	\$8.56	\$6.27
WASHINGTON	2943	\$23,013	\$6,943	\$16,070	\$7.82	\$5.46
WEST BOWDOIN	2100	\$18,525	\$6,100	\$12,425	\$8.82	\$5.92
<b>AVERAGE</b>	<b>2,740</b>	<b>\$23,889</b>	<b>\$6,027</b>	<b>\$17,863</b>	<b>\$8.91</b>	<b>\$6.35</b>
<b>TOTAL</b>	<b>60,273</b>	<b>\$525,565</b>	<b>\$132,583</b>	<b>\$392,982</b>	<b>n/a</b>	<b>n/a</b>

**Solar Electric System Installation Details 6/30/06 Through 6/30/2007**

Town	Installed Watts	Total Installed Cost	Rebate	Participant Cost Net of Rebate	Installed cost/Watt Before Rebate	Installed cost/Watt After Rebate
VINALHAVEN	1920	\$16,766.00	\$5,760.00	\$11,006.00	\$8.73	\$5.73
SCARBOROUGH	1557	\$20,535.00	\$4,671.00	\$15,864.00	\$13.19	\$10.19
WALDOBORO	1920	\$43,355.00	\$5,760.00	\$37,595.00	\$22.58	\$19.58
YARMOUTH	2076	\$25,683.00	\$6,076.00	\$19,607.00	\$12.37	\$9.44
LINCOLN	2070	\$15,194.16	\$6,070.00	\$9,124.16	\$7.34	\$4.41
CHARLESTON	2250	\$27,300.00	\$6,250.00	\$21,050.00	\$12.13	\$9.36
SPRINGVALE	2800	\$10,520.00	\$6,800.00	\$3,720.00	\$3.76	\$1.33
WALDOBORO	2100	\$17,850.00	\$6,100.00	\$11,750.00	\$8.50	\$5.60
MONTVILLE	2100	\$18,600.00	\$6,100.00	\$12,500.00	\$8.86	\$5.95
HOPE	2380	\$19,500.00	\$6,380.00	\$13,120.00	\$8.19	\$5.51
WINTER HARBOR	2100	\$17,045.47	\$6,100.00	\$10,945.47	\$8.12	\$5.21
BRUNSWICK	2760	\$21,700.00	\$6,760.00	\$14,940.00	\$7.86	\$5.41
KENNEBUNKPORT	2880	\$25,145.40	\$6,880.00	\$18,265.40	\$8.73	\$6.34
STONINGTON	2200	\$29,695.00	\$6,200.00	\$23,495.00	\$13.50	\$10.68
ELLSWORTH	1476	\$22,796.50	\$4,428.00	\$18,368.50	\$15.44	\$12.44
<b>AVERAGE</b>	<b>2,173</b>	<b>\$22,112</b>	<b>\$6,022</b>	<b>\$16,090</b>	<b>\$10.62</b>	<b>\$7.81</b>
<b>TOTAL</b>	<b>32,589</b>	<b>\$331,686</b>	<b>\$90,335</b>	<b>\$241,351</b>	<b>n/a</b>	<b>n/a</b>

**APPENDIX B**

**Solar Hot Water System Installation Details through 6/30/06**

<b>Town</b>	<b>Estimated Output (MMBtu/yr)</b>	<b>Total Installed Cost</b>	<b>Rebate</b>	<b>Participant Cost Net of Rebate</b>
APPLETON	6.1	\$10,975	\$1,250	\$9,725
ARROWSIC	30.0	\$6,400	\$1,250	\$5,150
AUGUSTA	21.6	\$5,711	\$1,250	\$4,461
BANGOR	9.3	\$7,600	\$1,250	\$6,350
BAR HARBOR	9.3	\$4,200	\$1,050	\$3,150
BLUE HILL	6.9	\$5,054	\$1,250	\$3,804
BROOKSVILLE	28.9	\$10,420	\$1,250	\$9,170
BROOKSVILLE	22.0	\$14,828	\$1,250	\$13,578
BROOKSVILLE	8.8	\$15,400	\$1,250	\$14,150
BROOKSVILLE	8.8	\$8,400	\$1,250	\$7,150
BRUNSWICK	16.0	\$8,000	\$1,250	\$6,750
CANAAN	18.6	\$5,600	\$1,250	\$4,350
CLINTON	18.6	\$6,300	\$1,250	\$5,050
CUMBERLAND FORESIDE	70.0	\$22,682	\$1,250	\$21,432
DIXMONT	7.9	\$4,945	\$1,250	\$3,695
FREEDOM	9.3	\$6,800	\$1,250	\$5,550
FREEPORT	6.1	\$8,250	\$1,250	\$7,000
GORHAM	19.7	\$5,385	\$1,250	\$4,135
GOULDSBORO	10.5	\$5,666	\$1,250	\$4,416
HOPE	55.5	\$16,225	\$1,250	\$14,975
HOPE	28.0	\$6,860	\$1,250	\$5,610
KENNEBUNK	10.0	\$6,623	\$1,250	\$5,373
KENNEBUNKPORT	19.7	\$9,471	\$1,250	\$8,221
KENNEBUNKPORT	19.7	\$9,018	\$1,250	\$7,768
LEWISTON	9.3	\$6,500	\$1,250	\$5,250
LIMINGTON	8.0	\$5,734	\$1,250	\$4,484
MONTVILLE	9.3	\$6,500	\$1,250	\$5,250
MOUNT DESERT	6.1	\$8,700	\$1,250	\$7,450
OLD ORCHARD BEACH	8.0	\$6,452	\$1,250	\$5,202
PORTLAND	20.0	\$6,463	\$1,250	\$5,213
RAYMOND	12.9	\$4,226	\$1,056	\$3,169
SARGENTVILLE	6.0	\$3,800	\$950	\$2,850
SKOWHEGAN	18.6	\$6,850	\$1,250	\$5,600
SOUTH HARPSWELL	20.0	\$11,615	\$1,250	\$10,365
SOUTH PORTLAND	8.0	\$6,534	\$1,250	\$5,284
STEBEN	20.8	\$9,600	\$1,250	\$8,350
THORNDIKE	9.3	\$6,500	\$1,250	\$5,250
VINALHAVEN	6.1	\$8,200	\$1,250	\$6,950
WALDOBORO	21.4	\$6,666	\$1,250	\$5,416
WASHINGTON	6.9	\$5,275	\$1,250	\$4,025
WEST BUXTON	22.0	\$6,666	\$1,250	\$5,416
WOOLWICH	9.3	\$6,000	\$1,250	\$4,750
YARMOUTH	32.0	\$11,949	\$1,250	\$10,699
<b>AVERAGE</b>	<b>16.6</b>	<b>\$8,024</b>	<b>\$1,234</b>	<b>\$6,790</b>
<b>TOTAL</b>	<b>715.3</b>	<b>\$345,043</b>	<b>\$53,056</b>	<b>\$291,986</b>

## APPENDIX B CONTINUED

**Appendix B: Solar Hot Water System Installation Details Year Two to 6/30/07**

<b>Town</b>	<b>Estimated Output (MMBtu/yr)</b>	<b>Total Installed Cost</b>	<b>Rebate</b>	<b>Participant Cost Net of Rebate</b>
YARMOUTH	37	\$10,376	\$1,250	\$9,126
MILBRIDGE	6.5	\$6,495	\$1,250	\$5,245
PHIPPSBURG	22.4	\$8,616	\$1,250	\$7,366
MILBRIDGE	9	\$6,300	\$1,250	\$5,050
BAR HARBOR	6.1	\$8,300	\$1,250	\$7,050
PLYMOUTH	18.6	\$5,900	\$1,250	\$4,650
READFIELD	18.5	\$6,357	\$1,250	\$5,107
HALLOWELL	45	\$80,000	\$1,250	\$78,750
SOUTH HARPSWELL	6.1	\$7,800	\$1,250	\$6,550
MONMOUTH	6	\$7,500	\$1,250	\$6,250
BLUE HILL	6.1	\$7,800	\$1,250	\$6,550
BRUNSWICK	6	\$7,096	\$1,250	\$5,846
BERWICK	8.1	\$4,460	\$1,115	\$3,345
WOOLWICH	0	\$3,352	\$838	\$2,514
ARROWSIC	6.26	\$7,868	\$1,250	\$6,618
WATERVILLE	19	\$12,800	\$1,250	\$11,550
PHIPPSBURG	61	\$19,000	\$1,250	\$17,750
JEFFERSON	50.5	\$13,019	\$1,250	\$11,769
POWELL	8.48	\$6,485	\$1,250	\$5,235
ORONO	5.11	\$8,616	\$1,250	\$7,366
CHARLESTON	11	\$12,900	\$1,250	\$11,650
TENANTS HARBOR	6	\$7,800	\$1,250	\$6,550
BIDDEFORD	11	\$5,500	\$1,250	\$4,250
NORTH YARMOUTH	18.1	\$13,487	\$1,250	\$12,237
BAR HARBOR	74	\$14,000	\$1,250	\$12,750
BRUNSWICK	12	\$6,100	\$1,250	\$4,850
BRUNSWICK	14	\$8,500	\$1,250	\$7,250
EAST BLUE HILL	6	\$7,100	\$1,250	\$5,850
BELFAST	18	\$12,700	\$1,250	\$11,450
MADAWASKA	25	\$10,739	\$1,250	\$9,489
SOUTH CHINA	6	\$9,800	\$1,250	\$8,550
WEST BUXTON	23	\$7,591	\$1,250	\$6,341
DURHAM	20	\$6,567	\$1,250	\$5,317
HAMPDEN	11	\$6,530	\$1,250	\$5,280
WALDOBORO	46	\$12,495	\$1,250	\$11,245
WALDOBORO	35	\$9,739	\$1,250	\$8,489
TENANTS HARBOR	23	\$7,595	\$1,250	\$6,345
PALERMO	18.5	\$5,644	\$1,250	\$4,394
WASHINGTON	20	\$11,321	\$1,250	\$10,071
BLUE HILL	73	\$34,000	\$1,250	\$32,750
SACO	10.95	\$10,400	\$1,250	\$9,150

## APPENDIX B CONTINUED

**Appendix B: Solar Hot Water System Installation Details Year Two to 6/30/07**

Town	Estimated Output (MMBtu/yr)	Total Installed Cost	Rebate	Participant Cost Net of Rebate
BOOTHBAY HARBOR	19	\$6,077	\$1,250	\$4,827
NOBLEBORO	31	\$20,500	\$1,250	\$19,250
NOBLEBORO	31	\$20,500	\$1,250	\$19,250
SEARSMONT	23	\$8,338	\$1,250	\$7,088
GLENBURN	42	\$13,126	\$1,250	\$11,876
FALMOUTH	24	\$5,830	\$1,250	\$4,580
SHAPLEIGH	8.58	\$5,000	\$1,250	\$3,750
WASHINGTON	9	\$12,000	\$1,250	\$10,750
JAY	14	\$9,000	\$1,250	\$7,750
SOUTH BRISTOL	21.91	\$15,304	\$1,250	\$14,054
READFIELD	9	\$9,200	\$1,250	\$7,950
BROOKSVILLE	7.86	\$5,759	\$1,250	\$4,509
CORINTH	12	\$15,900	\$1,250	\$14,650
FALMOUTH	735	\$10,621	\$1,250	\$9,371
PORTLAND	8.03	\$5,279	\$1,250	\$4,029
RICHMOND	11	\$9,200	\$1,250	\$7,950
SHAPLEIGH	13.93	\$8,000	\$1,250	\$6,750
GORHAM	12.2	\$6,500	\$1,250	\$5,250
MOUNT DESERT	21.9	\$20,246	\$1,250	\$18,996
LIBERTY	6.1	\$6,800	\$1,250	\$5,550
NAPLES	0	\$8,000	\$1,250	\$6,750
STANDISH	10	\$8,890	\$1,250	\$7,640
SOUTH BERWICK	9.6	\$5,798	\$1,250	\$4,548
SOUTH BERWICK	7.357	\$8,625	\$1,250	\$7,375
HALLOWELL	12	\$11,000	\$1,250	\$9,750
FREEPORT	6	\$7,147	\$1,250	\$5,897
BELMONT	12	\$8,800	\$1,250	\$7,550
FARMINGTON	12	\$9,100	\$1,250	\$7,850
BLUE HILL	68.18	\$27,885	\$1,250	\$26,635
NORTH YARMOUTH	7.48	\$8,265	\$1,250	\$7,015
KENNEBUNK	28.6	\$25,800	\$1,250	\$24,550
BATH	11.58	\$6,000	\$1,250	\$4,750
PORTLAND	8.95	\$12,750	\$1,250	\$11,500
SOUTH BERWICK	11.3	\$8,095	\$1,250	\$6,845
BATH	8.94	\$8,750	\$1,250	\$7,500
SOUTH HARPSWELL	12.2	\$6,400	\$1,250	\$5,150
CUMBERLAND CENTE	36.75	\$24,000	\$1,250	\$22,750
SACO	17.5	\$17,103	\$1,250	\$15,853
CAPE ELIZABETH	90	\$50,200	\$1,250	\$48,950
CAMDEN	13.8	\$11,000	\$1,250	\$9,750
HOPE	9	\$8,000	\$1,250	\$6,750

## APPENDIX B CONTINUED

**Appendix B: Solar Hot Water System Installation Details Year Two to 6/30/07**

<b>Town</b>	<b>Estimated Output (MMBtu/yr)</b>	<b>Total Installed Cost</b>	<b>Rebate</b>	<b>Participant Cost Net of Rebate</b>
BROOKLIN	7.59	\$8,181	\$1,250	\$6,931
LAMOINE	7.1	\$6,848	\$1,250	\$5,598
SEARSPORT	18	\$8,900	\$1,250	\$7,650
ALBANY TWP	11	\$6,216	\$1,250	\$4,966
BROOKSVILLE	3.86	\$6,737	\$1,250	\$5,487
ALNA	10.4	\$8,897	\$1,250	\$7,647
LUBEC	63.5	\$5,394	\$1,250	\$4,144
FREEPORT	12.2	\$10,750	\$1,250	\$9,500
HARRISON	30	\$96,111	\$1,250	\$94,861
NORTH EDGECOMB	7.4	\$7,773	\$1,250	\$6,523
BRUNSWICK	9	\$8,370	\$1,250	\$7,120
OAKLAND	18	\$12,800	\$1,250	\$11,550
NORTH WHITEFIELD	30	\$10,700	\$1,250	\$9,450
FALMOUTH	73	\$47,038	\$1,250	\$45,788
SOUTH PORTLAND	6.1	\$5,675	\$1,250	\$4,425
BATH	6.1	\$10,000	\$1,250	\$8,750
YARMOUTH	9	\$9,850	\$1,250	\$8,600
LUBEC	6.3	\$18,429	\$1,250	\$17,179
LUBEC	6.35	\$6,143	\$1,250	\$4,893
LUBEC	6.35	\$6,143	\$1,250	\$4,893
OGUNQUIT	20	\$6,579	\$1,250	\$5,329
BRUNSWICK	24	\$31,345	\$1,250	\$30,095
WOOLWICH	12.2	\$10,114	\$1,250	\$8,864
BRUNSWICK	12.2	\$8,469	\$1,250	\$7,219
SCARBOROUGH	12.2	\$11,800	\$1,250	\$10,550
FREEPORT	37	\$28,628	\$1,250	\$27,378
NORTH YARMOUTH	12.2	\$22,350	\$1,250	\$21,100
<b>AVERAGE</b>	<b>2752.1</b>	<b>\$12,603</b>	<b>\$1,245</b>	<b>\$11,358</b>
<b>TOTAL</b>	<b>25.25</b>	<b>\$1,373,677</b>	<b>\$135,703</b>	<b>\$1,237,974</b>



**APPENDIX C**

**Solar Air System Installation Details through 6/30/06**

<b>Town</b>	<b>Estimated Output (MMBtu/yr)</b>	<b>Total Installed Cost</b>	<b>Rebate</b>	<b>Participant Cost Net of Rebate</b>
KITTERY POINT	9	\$1,649	\$412	\$1,237
RAYMOND	22.8	\$2,670	\$668	\$2,003
SIDNEY	3.8	\$1,480	\$370	\$1,110
WINDHAM	5	\$1,480	\$370	\$1,110
<b>AVERAGE</b>	<b>10.15</b>	<b>\$1,820</b>	<b>\$455</b>	<b>\$1,365</b>
<b>TOTAL</b>	<b>40.6</b>	<b>\$7,279</b>	<b>\$1,820</b>	<b>\$5,459</b>

**Solar Air System Installation Details 6/30/06 through 6/30/2007**

<b>Town</b>	<b>Estimated Output (MMBtu/yr)</b>	<b>Total Installed Cost</b>	<b>Rebate</b>	<b>Participant Cost Net of Rebate</b>
NORWAY	3	\$1,778	\$445	\$1,334
NORWAY	3	\$1,778	\$445	\$1,334
NORWAY	3	\$1,778	\$445	\$1,334
NORWAY	3	\$1,778	\$445	\$1,334
NORWAY	3	\$1,778	\$445	\$1,334
NORWAY	3	\$1,778	\$445	\$1,334
SOUTH PARIS	3	\$1,778	\$445	\$1,333
SOUTH PARIS	3	\$1,778	\$445	\$1,333
SOUTH PARIS	3	\$1,778	\$445	\$1,333
SOUTH PARIS	3	\$1,778	\$445	\$1,333
NORWAY	3	\$1,778	\$445	\$1,333
CUMBERLAND CENTER	3.8	\$1,357	\$339	\$1,018
NORTH YARMOUTH	8	\$5,135	\$1,250	\$3,885
UNITY	9	\$3,065	\$1,250	\$1,815
<b>AVERAGE</b>	<b>3.84</b>	<b>\$2,080</b>	<b>\$552</b>	<b>\$1,528</b>
<b>TOTAL</b>	<b>53.8</b>	<b>\$29,118</b>	<b>\$7,732</b>	<b>\$21,386</b>