

**NEW HAMPSHIRE**  
**RENEWABLE ENERGY FUND**  
**Annual Report**

**October 1, 2011**

**New Hampshire Public Utilities Commission**

**Submitted to:**

**The Legislative Oversight Committee on Electric Utility Restructuring**

**Representative Frank Holden, Chair**  
**Senator Jeb Bradley**  
**Senator Amanda Merrill**  
**Representative James Devine**  
**Representative Robert Introne**  
**Representative Naida Kaen**  
**Representative William Remick**

## ***Overview***

This report provides an overview of the Renewable Energy Fund (REF) established pursuant to RSA 362-F, New Hampshire's Renewable Portfolio Standard (RPS) law and managed by the Public Utilities Commission (Commission), as well as information about renewable energy facilities whose electricity production is "net metered" pursuant to RSA 362-A:9. The report is filed annually as required by RSA 362-F:10, IV. In addition, pursuant to RSA 362-F:5, the Commission is conducting an in-depth review of the RPS program and will report its findings and recommendations to the General Court by November 1, 2011.

The REF is a dedicated, non-lapsing fund whose purpose is to support electrical and thermal renewable energy initiatives. RSA 362-F:10, I. Electricity suppliers must obtain renewable energy certificates (RECs) for set percentages of their electric load, as required by the RPS statute. A REC represents a megawatt-hour (MWh) of electricity generated from a renewable generation source. The REC can be traded separately from the electricity itself in the New England wholesale market.

There are four classes of renewable energy resources; electric suppliers must obtain RECs for each of the four classes. If electricity suppliers do not purchase or obtain sufficient RECs to comply with the RPS law, they make alternative compliance payments (ACPs) to the REF. ACPs are the sole source of funding for the REF. Total ACPs fluctuate from year to year, depending on the price and availability of RECs in the market.

Pursuant to RSA 362-F:10, the Commission funds rebate and grant programs covering a range of thermal and electrical renewable technologies, including solar technologies funded with Class II solar ACPs, in both the residential and non-residential sectors.

The statute mandates one-time incentive payments or rebates for small residential renewable generators, (RSA 362-F:10, V), and an annual RFP for grant awards to renewable projects in the nonresidential sector (RSA 362-F:10, XI). It also authorizes further rebate and grant programs for renewable thermal and electric energy projects (RSA 362-F:10, VIII). For all rebates and grants the project funded must be located in New Hampshire. A description of these programs can be found below in Table 1.

The Commission also administers certain federal ARRA funds provided by the Office of Energy and Planning to provide a stand-alone residential renewable energy rebate program for wood pellet central boilers and furnaces, and to provide a supplemental rebate for the solar thermal REF residential rebate programs.

This report documents REF revenues, expenditures, and program activities.

## ***REF Revenues and Administrative Costs***

ACPs from electric service providers are made annually on or about July 1, in concert with annual RPS compliance reports filed with the Commission. Entities paying ACPs include

the regulated electric utilities, New Hampshire Electric Cooperative, and competitive electric supplier such as TransCanada, Constellation Energy, and Integrys Energy.

ACP REF revenues, by due date, have been:

July 2009 - \$4,483,917  
 July 2010 - \$1,348, 294<sup>1</sup>  
 July 2011 - \$2,625,499  
 Total: \$8,457,710

**TABLE 1 – ACP REVENUE FOR COMPLIANCE (CALENDAR) YEAR 2010**

| Company                      | Total Amount        | Class I          | Class II        | Class III          | Class IV           |
|------------------------------|---------------------|------------------|-----------------|--------------------|--------------------|
| Hannaford/Competitive Energy | \$ 10,303           |                  | \$ 1,760        |                    | \$ 8,543           |
| Unitil                       | \$ 97,615           |                  |                 |                    | \$ 97,615          |
| PSNH                         | \$ 203,564          |                  |                 |                    | \$ 203,564         |
| Integrys Energy              | \$ 334,245          |                  |                 | \$ 276,895         | \$ 57,350          |
| Constellation Energy         | \$ 414,810          | \$ 5,727         | \$ 640          | \$ 133,131         | \$ 275,312         |
| ConEdison Solutions          | \$ 83,392           |                  | \$ 14,721       |                    | \$ 68,671          |
| Glacial Energy               | \$ 224,443          |                  |                 | \$ 128,650         | \$ 95,793          |
| <b>Subtotal</b>              | <b>\$ 1,368,372</b> | <b>\$ 5,727</b>  | <b>\$17,121</b> | <b>\$ 538,676</b>  | <b>\$ 806,848</b>  |
| TransCanada*                 | \$ 1,257,127        | \$ 20,594        | \$41,763        | \$1,000,107        | \$ 194,663         |
| <b>TOTAL</b>                 | <b>\$ 2,625,499</b> | <b>\$ 26,321</b> | <b>\$58,884</b> | <b>\$1,538,783</b> | <b>\$1,001,511</b> |

\*TransCanada is still settling Q1 2011 RECs

REF administrative costs to date have been well under state budget appropriations:

FY10: budgeted - \$376,735      actual - \$217,581  
 FY11 budgeted - \$360,326      actual - \$226,042  
 FY12 budgeted - \$237,594

***REF Rebate and Grant Programs***

In order to meet the mandates of RSA 362-F:10, the Commission administers two residential renewable energy rebate programs, a commercial and industrial renewable energy rebate program, and a competitive grant program for commercial-scale renewable energy projects.

<sup>1</sup> This amount was previously reported as \$1,344,188, which excluded a \$4,105.17 ACP made by Devonshire Energy LLC that had previously been assumed to have been made in error and was anticipated to be refunded. Subsequent to the 10/1/10 Annual REF Report, the Commission determined that the payment was properly made and that no refund was due.

**Renewable Energy Rebate Programs**

Rebate programs funded by the REF are described below in Table 2.

**TABLE 2 – SUMMARY OF RENEWABLE ENERGY REBATE PROGRAMS**

| <b>REF REBATE PROGRAMS</b>                            | <b>Eligible Technologies and capacity limits</b>   | <b>Incentive Levels</b>   | <b>Authority, date of inception</b>    |
|---|--|---|--|
| Residential electrical renewable energy rebate        | Solar electric panels (PV systems), wind turbines, and other renewable electric generation under 5 kilowatts in capacity | \$1.25 per watt up to a maximum of \$4,500 or 50% of the total cost of the facility, whichever is less  | RSA 362-F:10, V<br><br>July 2009       |
| Residential thermal renewable energy – Level I rebate | Solar water heating systems w/ capacity of 5.5 MMBtu’s or greater  | \$1,500, \$1,700, or \$1,900 depending on system capacity*  | RSA 362-F:10, VIII<br><br>April 2010   |
| Commercial & Industrial Solar Technologies rebate     | PV systems and solar water heating systems up to 100 kW or thermal equivalent  | \$1.00 per watt (A/C) for solar electric systems and \$0.07/rated or modeled kBtu/year for solar thermal systems capped at \$50,000 or 25% of the total cost of the facility, whichever is less | RSA 362-F:10, VIII<br><br>October 2010 |

\* At the inception of the solar thermal rebate program, Level 1 rebate amounts were set at \$600, \$750, or \$900 depending on system capacity. A majority of applicants were also eligible for an ARRA-funded Level 2 rebate of \$750, which later was increased to \$2,000 pursuant to an MOA with the Office of Energy and Planning. With virtually all of the ARRA funds paid out or reserved for projects that had already applied for rebates, the Commission increased Level 1 rebate levels to \$1,500, \$1,700 or \$1,900, on a prospective basis to partially offset the loss of Level 2 rebates. See Order No. 25,258, July 29, 2011.

The Commission augments these programs with \$1,016,000 in federal ARRA funds provided by the Office of Energy and Planning (OEP). These funds are allocated to the Commission through two Memoranda of Agreement (MOAs), providing the Commission with \$500,000 to develop and administer a rebate program for residential wood pellet boilers/furnaces, and \$516,000 to provide a supplemental rebate for participants in the REF residential solar water heating program. The MOAs, which were approved by the Governor and Executive Council, limit the use of the ARRA funds to these rebate programs.

Programs supported with ARRA funding are described below in Table 3.

**TABLE 3 – ARRA FUNDED REBATE PROGRAMS**

| ARRA FUNDED REBATE PROGRAMS                            | Eligible Technologies   | Incentive Levels   | Authority, date of inception  |
|--|---|--|---|
| Residential wood pellet rebate program                 | Bulk-fed wood pellet central furnaces/boilers                     | 30% of the system cost and installation, or \$6,000, whichever is less | MOA with Office of Energy and Planning, approved by Governor and Council April 2010 |
| Residential thermal renewable energy – Level II Rebate | Solar water heating systems w/ capacity of 5.5 MMBtu's or greater | \$2,000*   | MOA with Office of Energy and Planning, approved by Governor and Council April 2010 |

\* Funding for the Level II rebate was initially set at \$750 but later increased to \$2,000 pursuant to an MOA with the Office of Energy and Planning. As of early September, all ARRA funds for this program had been expended or obligated. Consequently, the Level II rebate is no longer available to new applicants.

Program results for the REF rebate programs are summarized below in Table 4. Data is cumulative from the inception of each program through September 30, 2011.

**TABLE 4 – SUMMARY OF REF REBATE PROGRAM RESULTS**

| REF Programs                                     | # of applications | # of rebates awarded | Rebate funds disbursed | Rebate funds reserved or in process | Average rebate award | Aggregate applicant investment |
|--|-------------------|----------------------|------------------------|-------------------------------------|----------------------|--------------------------------|
| Residential PV or wind                           | 603               | 521                  | \$2,891,175            | \$275,639                           | \$5,549              | \$9,087,666                    |
| Residential solar water heating - Level 1 rebate | 293               | 210                  | \$138,950              | \$72,850                            | \$662                | \$2,813,847                    |
| C & I solar electric and solar thermal rebates   | 49                | 12                   | \$150,984              | \$479,411                           | \$12,582             | \$3,449,883                    |
| Totals   | 947               | 743                  | \$3,181,109            | \$827,900                           | \$4,281              | \$15,351,396                   |

Program results for the ARRA-funded programs are summarized in Table 5. Data is cumulative from the inception of each program through September 30, 2011.

**TABLE 5 – SUMMARY OF ARRA REBATE PROGRAM RESULTS**

| ARRA Programs                                    | # of applications | # of rebates awarded | Rebates funds disbursed | Rebates funds reserved or in process | Aggregate applicant investment |
|--|-------------------|----------------------|-------------------------|--------------------------------------|--------------------------------|
| Residential wood pellet                          | 29                | 27                   | \$23,799                | \$136,061                            | \$358,716                      |
| Residential solar water heating – Level 2 rebate | 248               | 193                  | \$392,000               | \$104,000                            | \$2,046,992                    |
| Totals   | 277               | 220                  | \$415,799               | \$240,061                            | \$2,565,568                    |

### **Commercial & Industrial Competitive Grant Program**

In 2010, the Legislature amended RSA 362-F:10 to require the Commission to issue a Request for Proposals (RFP) no later than March 1, 2011 and annually thereafter for non-residential renewable energy projects that are not eligible to participate in incentive and rebate programs developed under RSA 362-F:10, V and RSA 362-F:10, VIII.

The Commission issued an RFP for renewable energy projects on February 25, 2011, with total available funding of up to \$1 million. Eighteen grant proposals requesting a total of \$6.38 million were submitted to the Commission. An initial review team consisting of Commission staff and representatives of the Department of Environmental Services and the Office of Energy and Planning reviewed and screened each proposal and interviewed nine applicants. The review team then scored all proposals based on fourteen criteria enumerated in the RFP, which were based on criteria in Puc 2507.03, and furnished the PUC Commissioners with recommendations as to which projects to fund. The PUC Commissioners conducted their own independent review and awarded funds to the five applicants with the highest overall scores, subject to the approval of the Governor and Executive Council. Funding for these proposals totaled \$968,000. Four of the five grant awards were presented to the Executive Council on September 14, 2011. (The fifth contract was not ready for submission at that time.) The Executive Council voted 3-2 not to approve the grant contracts. The Commission is presently considering the options available to it to fulfill its statutory responsibilities.

The five PUC selected projects are summarized below:

1. Mascenic Regional School District - \$51,850. Purpose: To install new, high efficiency wood pellet boiler at Greenville Elementary School. Total project cost: \$86,883.
2. Monadnock Paper Mills - \$151,040. Purpose: To refurbish hydroelectric facility to increase generation capacity by 145 kilowatts. Total project cost: \$151,040.
3. Revolution Energy - \$100,000. Purpose: To install 140 kilowatt photovoltaic array at Favorite Foods, Inc. in Somersworth. Total project cost: \$728,000.
4. Spaulding Ave. Industrial Complex - \$165,000. Purpose: To increase generation capacity of Spaulding Pond hydroelectric facility in Rochester by 45 kilowatts. Total project cost: \$315,000.
5. Carbon Harvest - \$500,000. Purpose: To develop a methane gas to energy (combined heat and power) project at the City of Lebanon landfill. Total project cost: \$6.5 million.

### ***REF Program Budgets, Expenditures and Current Balance***

The Commission's REF budget for Fiscal Year 2011 (July 1, 2010 – June 30, 2011) was \$3,827,020.<sup>2</sup> In addition, the Commission set aside \$250,000 in funds available in FY11 for use

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<sup>2</sup> The REF had a balance of \$2,732,832 on 6/30/10. In July, 2010 the fund received ACP revenue of \$1,344,188, resulting in a balance forward for FY11 and beyond of \$4,077,020. After deducting \$360,326 for budgeted

in FY12 to provide the requisite state match for the ARRA funded residential solar thermal program.<sup>3</sup> Funds for rebate and grant programs, and for administrative expenses, were budgeted and expended as follows:

**TABLE 6 – REF PROGRAM SUMMARY FOR FY11**

| REF PROGRAM                                    | FY11 Program Budget | FY11 Program Expenditures | Program Balances as of June 30, 2011 |
|--|---------------------|---------------------------|--------------------------------------|
| Residential PV/wind                            | \$1,173,145         | \$1,119,493               | \$53,652                             |
| Residential solar hot water – Level 1 rebate   | \$248,200           | \$91,650                  | \$156,550                            |
| C & I Solar (photovoltaic and solar hot water) | \$1,045,349         | \$53,109                  | \$992,240                            |
| C & I RFP                                      | \$1,000,000         | \$0 <sup>4</sup>          | \$1,000,000                          |
| Administrative                                 | \$360,326           | \$226,042                 | \$134,284                            |
| Totals   | \$3,827,020         | \$1,490,294               | \$2,336,726                          |

In FY 2012 (July 1, 2011 – June 30, 2012) the REF received ACP revenue of \$2,625,499. These new funds were apportioned between residential and C&I programs as follows:

**TABLE 7 – APPORTIONMENT OF FUNDS FOR FY12**

|             |   |
|-------------|---|
| \$ 134,284  | Unspent administrative funds carried forward from FY11          |
| \$ 8,189    | Interest paid on fund balance in FY11                           |
| \$ 4,105    | Additional FY11 ACP for CY 2009 (see FN 1 on p. 3 above)        |
| \$2,625,499 | ACP revenue for CY10 received on or about July 2011             |
| (\$237,594) | Administrative costs (budgeted)                                 |
| (\$112,620) | Contingencies/future allocation                                 |
| \$2,421,863 | FY12 funds available for REF program budgets                    |
| \$1,428,899 | Portion available for C & I programs (59% of \$2,421,863)       |
| \$992,964   | Portion available for residential programs (41% of \$2,421,863) |

In September, 2011, the Commission reviewed the remaining balance of unspent funds carried forward from FY11 and, taking into account new funds available for FY12, as shown in the above table, created an allocation for REF programs and administrative costs in FY12. This allocation, approved by the Commission in a Secretarial Letter issued September 30, 2011, is presented below.

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administrative costs and \$250,000 to be used in FY12 for the residential solar water heating program, \$3,827,020 remained for use in FY11.

<sup>3</sup> Subsequently, the ARRA funded Level II solar thermal rebate was increased from \$750 per system to \$2,000 per system, so the portion of set-aside for FY12 is not needed for the ARRA match but can be used for a solely REF-funded rebate.

<sup>4</sup> Grants to five applicants, totaling \$968,000, require Executive Council approval, as noted on page 6.

**TABLE 8 – ALLOCATION OF FUNDS TO PROGRAMS FOR FY12**

| REF PROGRAM                                    | REF FUNDS CARRIED FORWARD FROM FY11 (as of 6/30/11) | PROPOSED FY12 REF FUNDING | TOTAL PROGRAM BUDGETS THROUGH JUNE 30, 2012 |
|--|---|---------------------------|---|
| Residential PV/wind                            | \$53,652  | \$ 927,964                | \$981,616                                   |
| Residential solar hot water                    | \$406,550*  | \$ 65,000                 | \$471,550*                                  |
| SUBTOTAL Residential                           |   | \$ 992,964                |   |
| C & I Solar (photovoltaic and solar hot water) | \$992,240   | \$ 428,899                | \$1,421,139                                 |
| C & I RFP                                      | \$1,000,000   | \$1,000,000               | \$2,000,000                                 |
| SUBTOTAL C&I                                   |   | \$1,428,899               |   |
| Totals   | \$2,452,442*  | \$2,421,863               | \$4,874,305                                 |

\* This figure includes \$250,000 in REF funds that was set aside in FY10 for use in FY12.

Allocation of funding between residential and non-residential sectors

In 2010, the New Hampshire legislature enacted [HB1270](#), which took effect July 6, 2010, and required the Commission, *inter alia*, to reasonably balance REF expenditures between the residential and non-residential sectors over each two-year period beginning July 1, 2010, in proportion to each sector's share of total retail electricity sales. Since the enactment of this legislation, retail electricity sales for the residential sector have accounted for 41% of total retail sales, while the non-residential (Commercial & Industrial) sector has accounted for 59%.

The Commission indicated in its report to the legislature on October 1, 2010<sup>5</sup>, that the REF funds available for fiscal year 2011, as of July 1, 2010, totaled \$3,466,694 (net of budgeted administrative expenses and funds previously allocated for the residential solar hot water rebate program, launched in April 2010). In accordance with RSA 362-F:10, VI, 59% of these funds, or \$2,045,349, was allocated for commercial and industrial incentive programs, while 41% of the funds, or \$1,421,345, was allocated for residential incentive programs.

In July, 2011, new ACP revenue totaling \$2,625,499 was deposited into the REF. There was also a carry-forward of \$134,284 from unexpended and unallocated administrative expenses, \$8,189 of interest paid on fund balances in FY11, and a previously unallocated ACP payment of \$4,105 for a total of \$2,772,077 in unallocated funds at the start of FY12. After allocating \$237,594 for budgeted administrative expenses, and \$112,620 for contingencies, there remained a balance of \$2,421,863 for FY12 REF program budgets. In a Secretarial Letter issued September 30, 2011, the Commission authorized an FY12 budget allocating 59%, or \$1,428,899, to Commercial & Industrial programs, and 41%, or \$992,964 to residential programs. As a

<sup>5</sup> [October 1, 2010 New Hampshire Renewable Energy Fund Annual Report, submitted to the Legislative Oversight Committee on Electric Utility Restructuring](#)



result, the REF allocations for the two year period ending June 30, 2012, should result in expenditures that comply with RSA 362-F:10, X.

Funding cap for residential renewable electricity program

RSA 362-F:10, VI also places a cap on spending for the residential renewable electricity rebate program. No more than 40% of the REF can be allocated to the residential rebate program, measured over two-year periods commencing July 1, 2010.

In FY 2011, the REF budget for this program was \$1,173,145.<sup>6</sup> This figure represents 33.8% of the \$3,466,694 in REF program funding for FY 2011. The FY12 budget for this program, \$927,964, represents 38.3% of the \$2,421,863 in REF program funding for FY12. The combined FY11-FY12 budget for this program amounts to \$2,101,109, or 35.7% of all REF program funds budgeted for FY11 and FY12, within the 40% cap.

Use of Class II revenues for solar technology incentives

RSA 362-F:10, I requires that “Class II moneys shall only be used to support solar energy technologies in New Hampshire.” This obligation is mirrored in Puc 2507.03(d). 2010 is the first calendar year in which Class II REC requirements were in effect. ACPs for Class II were received in the amount of \$58,884. These funds are being tracked separately from ACP revenue from other Classes, and will be used solely for solar energy rebate program expenditures.

***Net Metered Facilities and Allowed Net Metered Capacity***

Each utility’s total capacity of net metered facilities is listed in Table 9. The amounts of energy net-metered by each utility are well below the allowed net metered capacity per utility as set forth in RSA 362-A:9, I, with the total installed net metered capacity less than 6% of the allowed capacity.

**Table 9 – Total Net Metered Facilities, as of December 31, 2010**

|   | # of<br>Installs | Total<br>Capacity<br>(MW-<br>DC) | Peak Load<br>(MW)* | Allowed Net<br>Metered<br>Capacity<br>(MW)* |
|---|------------------|----------------------------------|--------------------|---|
| <b>Granite State Electric Company d/b/a<br/>National Grid</b> | 44               | 0.145                            | 189                | 4.12  |
| <b>New Hampshire Electric Cooperative</b>                     | 179              | 0.733                            | 124                | 3.16  |
| <b>Public Service Company of NH</b>                           | 365              | 1.857                            | 1,588              | 36.55                                       |
| <b>Unitil Energy Systems, Inc.</b>                            | 36               | 0.258                            | 268                | 6.17  |
| <b>NH Total</b>   | <b>624</b>       | <b>2.993</b>                     | <b>2,169</b>       | <b>50</b>                                   |

\*Based on the share of 2010 peak load pursuant to Puc 900 and RSA 362-A:9

<sup>6</sup> Actual program expenditures were \$1,119,493.