



OFFERING A LIFELONG ALLIANCE TO PEOPLE
WITH DISABILITIES

CROTCHED MOUNTAIN

March 23, 2009

Mr. Jack Ruderman, Director
Sustainable Energy Division
Public Utilities Commission
21 South Fruit Street, Ste 10
Concord, NH 03301

Dear Mr. Ruderman,

We are pleased to submit Crotched Mountain's proposal for funding through the Greenhouse Gas Emissions Reduction Fund for the Bromley Building Heat Distribution Upgrade.

We propose to upgrade the heating distribution and control system of a building whose occupants are nearly entirely low income. This program would leverage benefits from another mechanical upgrade in an adjacent rehabilitation hospital which would allow the Bromley building to tie into the two year-old central biomass district heating system with no additional expenditures.

Implementation of this program will result in a decrease in 252.26 metric tons CO₂ per year which, over the conservative estimate of its lifespan of 20 years, yields a net avoidance of 5,045.2 metric tons of CO₂. In addition, the projected energy savings in oil usage is calculated to be 24,832 gallons annually.

We appreciate the opportunity to submit this proposal and look forward to your response.

Sincerely,

Donald Shumway, President and CEO
Crotched Mountain Foundation

TAX ID NUMBER
020222168

PROPOSAL TO THE
NEW HAMPSHIRE GREENHOUSE GAS EMISSION FUND

1.1 Program Title

Bromley Building Heat Distribution Upgrade

1.2 Program Type

We believe our proposed program is described by:

#8 – Programs to improve the electric and thermal efficiency of new and existing residences and commercial buildings – and by

#9 – Programs to foster the development and retrofitting of highly efficient and affordable housing.

1.3 Program Summary

Our program is a wholesale replacement of the failed heating distribution and control system of a building which houses low-income occupants. The building is located at our Rehabilitation Center in Greenfield, NH. This program would leverage benefits from another mechanical upgrade in an adjacent rehabilitation hospital which would allow the Bromley building to tie into the 2 year old central biomass district heating system with no additional expenditures.

1.4 Low Income Residential Customer Qualification

Of the thirteen residences in Bromley, currently six (46%) house low income residents.

1.5 Identification of Applicant Organization

Crotched Mountain Rehabilitation Center is a 501 C(3) entity recognized by the state of New Hampshire. Founded in 1953, Crotched Mountain has as its mission to serve people of all ages with disabilities and their families by embracing personal choice and development and building communities of mutual support. Crotched provides specialized education, rehabilitation, community and residential support services for more than 2,000 people at our 1400-acre Greenfield campus and throughout New Hampshire, and in selected locations in Massachusetts, Maine and New York.

1.6 Identification of Subcontractors and Partners

Eckhardt & Johnson, Inc., a New Hampshire based mechanical contractor, has designed the proposed heat distribution system replacement and submitted a contract price.

1.7 Authorized Negotiator(s)

1. Donald Shumway, President & CEO, 603-547-3311, ext 1600;

dshumway@crotchedmountain.org

2. Michael Terrian, COO, 547-3311, ext 1616; mterrian@crotchedmountain.org

1.8 Projected Energy Savings

The projected energy savings is due entirely to a savings in oil usage which is calculated to be 24,832 gallons annually. Electricity consumption will be comparable to the current usage.

1.9 Projected Greenhouse Gas Reductions

Implementation of this program will result in a decrease in 252.26 metric tons CO₂/yr, which over the conservative estimate of its lifespan of 20 years, yields a net avoidance of 5045.2 metric tons of CO₂.

1.10 Length of Program

The initial construction period, which must happen in the non-heating season, will take about 4 months from start to completion. Once completed the system should last a conservative estimate of 20 years. The funding is needed only for the initial 4 months with the benefits lasting the remaining 19 2/3 years.

1.11 Total Program Costs

\$274,821.

1.12 GHGER Funds Requested

Crotched Mountain Rehabilitation Center is requesting \$176,531 of a project total of \$274,821.

2) Executive Summary

Crotched Mountain Rehabilitation Center proposes to leverage GHGER funds for a total replacement of an original heating distribution system in a 45 year-old building named Bromley which is located in Greenfield, NH. This building houses offices on the lowest floor and residences for staff and clients on the upper two floors. The building is currently served by a steam heat distribution system supplied by a pair of older oil-fired boilers (10 yrs+). The steam piping is corroded throughout and especially problematic as it passes through inaccessible places making repairs difficult to impossible. The pneumatic controls are repair-plagued, partially functioning and obsolete.

The consequence of the poorly-controlled, leak-ridden system is a building that it consumes copious amounts of fuel oil producing heat far in excess of what is needed to adequately heat the building. The residents have made accommodations by leaving windows open all winter with some even fitting their windows with A/C units running in cold weather.

As with similar campuses, sub-metering of utilities at each building is not possible as the entire campus has only one electric meter. Bromley is, however, supplied by boilers and oil storage tanks that supply no other appliances or DHW and thus they portray an accurate reading of the fuel used for space heating.

Replacing the heat distribution system in Bromley would result in a substantial reduction in heat production as room temperature could be modulated by each occupant and windows would stay closed during the heating season with no A/C running in the heating season. All pumps will be variable frequency drive reporting to a SCADA energy management system.

To estimate the net savings of a heating distribution replacement, we compare the BTU usage per square foot of Bromley with the BTU usage per square foot of similarly constructed buildings supplied by our district heating system. Bromley uses 341,118 BTU/SF; the campus at large uses about 72,709 BTU/SF. This shows a net reduction of

78% of fuel use per square foot or a reduction from 31,640 gals to 6,808 gals per year. This translates into a reduction in 252.26 metric tons of CO₂ GHG emissions per year.

The Bromley building is attached to a wing of our rehabilitation hospital, named Hayden, which is supplied with hot water for both DHW and space heating by our district hot water distribution loop connected to our central biomass boilers. Bromley currently is supplied DHW from this district loop. The district heating loop and central biomass boilers are 2 years old and highly efficient.

The Hayden hospital has a potentially funded capital upgrade to its DHW system at a cost of \$77,864 by Crotched Mountain Foundation. This project includes an upgrade of the DHW heating and storage for both the Hayden rehabilitation hospital and Bromley. This DHW upgrade includes the addition of the ancillary pumps and connections to the district heat exchanger that are a necessary precursor to tying the Bromley space heating to our district heating system. Supplying Bromley with heat from the district heating system has multiple benefits. It allows Bromley to be heated with local wood biomass that has a better than required emissions control equipment (the addition of the baghouse to the multi-cyclone captures all but 0.078 lbs/MMBtu PM10 where the current New Hampshire standard is 3.0 lbs/MMBtu PM10). The boilers and heat exchangers are new and highly efficient. Given the net CO₂ of wood is zero there is a 100% net reduction in CO₂ emitted from the 31,640 gallons of oil used to heat Bromley this past year yielding a net annual reduction of 321.42 metric tons of CO₂. Lastly, the existing oil boilers would be kept in the loop for emergency back-up to for Bromley and the Hayden hospital wing.

We request assistance from the GHGER fund to leverage the benefit from this necessary preliminary work on the DHW system. The proposed contract price of \$182,957 from Eckhardt & Johnson, Inc., mechanical contractor, includes a deduction of \$6,426 for work demolition that Crotched Mountain facilities can assume, along with an estimated \$4,000 of custom carpentry to box in the exposed heating pipe in living space throughout the building, and \$10,000 project management cost. This breaks down to a request for \$176,531 to take advantage of a contribution of \$98,290 for a total project cost of \$274,821.

Our experience working with Eckhardt & Johnson encourages us to hire them again. They have performed similar work here on our campus and have demonstrated a consistent and high skill level and, perhaps more importantly, their workers have consistently demonstrated consideration and exemplary behavior working in the private areas of our clients and the public areas of our campus.

3) Proposed Work Scope and Schedule

This proposed replacement of the heat distribution system would begin on approximately July 1, 2009 with a completion date of October 31, 2009. This work needs to be completed in a non-heating season.

Crotched Mountain facilities staff (2 people working 40 hours each) would gut the supply and return piping just prior to July 1, 2009, allowing the mechanical contractor to begin on July 1. Eckhardt & Johnson, Inc., mechanical contractor, will have 2-4 employees working 40 hours per week for the approximate 4 month duration of this work. They have two major areas of work. One area is to replace the DHW system in the Hayden rehabilitation hospital wing which includes the necessary piping and pumping required to tie-in the Bromley building to the district heating loop while maintaining the

existing oil-fired boilers for emergency backup. The second is to gut and replace the old steam heat piping and terminal heat coils in all locations in the building. This requires the workers to enter and work in the private spaces of staff and client housing, as well as some office and medical space.

The Bromley building has concrete floors and walls and consequently all replacement piping must be installed within the living space. Crotched Mountain will have 1-2 staff carpenters working on boxing in the vertical pipe chases in the conditioned space after the pipes have been insulated. This should take approximately 2 weeks of 40 hours/week to complete. This work can begin only after the pipe is insulated which will be completed in mid October. Crotched Mountain will have a project manager overseeing the entire project from planning to completion. This project manager will also be responsible for monitoring the energy consumption of the Bromley building on an on-going basis and compiling summary reports from the field data.

A gantt schedule is attached as appendix 1.

4) Project Benefits

4.1 Reduce greenhouse gas emissions from all fuels used to provide electricity, heating and cooling in New Hampshire

This program to replace an obsolete heat distribution system in a building that houses both office space and housing for both staff and clients at a rehabilitation center will produce a dramatic reduction in GHG emissions annually and over the expected 20 year life of the system.

4.2 Be cost effective

Simple payback for this program is 34 months for the work to replace the heating distribution system in Bromley with fuel oil cost at \$2.50 gallon.

4.3 Reduce New Hampshire's peak electric load

This program does not address any peak electric load reduction.

4.4 Promote market transformation

Crotched Mountain has had a huge interest in its biomass district heating system. It serves as a model of alternative heating in a challenging world. When upgrading their heating plants many campuses choose to remain with a steam distribution system due to the cost of changing all of the distribution in each building. The expense is high but the long term gains of switching to a hot water distribution are high. Hot water avails itself to several more inputs of heat sources, for example, solar thermal, ground source heat pumps and waste heat capture. Crotched Mountain is actively exploring such alternatives.

4.5 Promote innovative technologies

The proposed conversion from steam to hot water distribution system in Bromley allows Crotched Mountain to leverage this opportunity to add nearly 13,000 square feet to our innovative district biomass heating system. Crotched Mountain worked with Biomass Energy Resource Center (BERC), a Vermont non-profit, to design our district heating

system. We worked with the boiler manufacturer, Messersmith Manufacturing, with representatives from Vermont, to install several new features in our campus' installation which was, in essence, an R&D project. The novel features are:

1. A chip storage bin that allows "live bed" trucks to back into it and fill the bin completely, allowing greater storage with a smaller footprint. Additionally, it allows a redundancy of supply chain with 2 augers and conveyors.
2. Dual boilers, 4 MMBtu and 8 MMBtu, to allow a wide range of efficient operations over the course of 12 months, as well as a level of redundancy for reliability.
3. A better than BACT emission controls. We installed both a multi-cyclone and a filter baghouse to reduce our emissions to the greatest possible degree.

4.6 Promote economic development

All of the work involved in this project will be completed by New Hampshire businesses. The design build mechanical contractor Eckhardt & Johnson is NH owned and operated. Our biomass fuel supplier is D.H. Hardwick & Sons, a family owned business in Frankestown, just over the mountain from us.

4.7 Promote energy cost savings

See 4.8 below.

4.8 Promote collaboration and provide useful information for future program evaluation and improvement

Crotched Mountain is a leader in the regional biomass district heating community and has collaborated with the NH Institutional/Community Scale Biomass Heat/Power Task Force, been a participant in a study of the effectiveness of emission control technology by the Vermont Air Pollution Control Division (with oversight by NH DESARD) and offered countless tours and presentations of our facility to interested parties representing colleges, municipalities, businesses and retirement communities who are seeking to lower their energy costs. Details of conversion from steam to hot water distribution are an important aspect of our sharing.

4.9 Otherwise be consistent with the public interest and the purposes of RSA 125-O:19.

The purpose of this project is consistent with the draft Climate Change Action Plan by reducing CO₂ emissions.

5) Measurement and Verification

The project manager will compile any fuel bills attributed to the oil boilers that currently supply the Bromley building. He will also access the SCADA data log of the BTU meter on the supply/return loop of the Bromley heating loop. Data will be compiled regularly to verify the actual savings. All field data and summaries will be available upon request.

6) Budget

GHGER Fund 2-23-09 RFP Budget Worksheet is attached .

Budget Item	Requested from GHGER Fund	Funded by Applicant	Total
Contracted Services	\$176,531	\$77,864	\$254,395
Services by Applicant	\$0	\$20,426	\$20,426
Totals	\$176,531	\$98,290	\$274,821

7) Applicant Qualifications

In 2006, Crotched Mountain completed installation of a central biomass district hot water heating system fueled by wood chips. The model system features a truck bridge, tandem wood boilers of different sizes with capacity for different burn settings to achieve maximum efficiency and a bag house for maximum emissions control. We currently we have about 307, 000 square feet of building area heated with the wood-fired boilers. We still have about 68,000 square feet of existing buildings to add to the system with the capacity to heat all the existing space plus about 250,000 of new construction for a total of 600,000 square feet. Several buildings have already been similarly converted from steam to hot water heat distribution.

8) Additional Information

9) Letters of interest or Commitment

Attached

Appendix 1

Tentative Schedule of Completion - June to October 2009

	June	July	August	September	October
Eckhard & Johnson					
Gut and Replace Dist System		←—————→			
Insulate Piping					↔
Pressure Balance System					*
VFD Start up & Scada Testing					↔
Crotched MT Facilities					
Gut Supply Piping	↔				
Box in exposed riser pipes					←—————→

NH Greenhouse Gas Emissions Reduction Fund (GHGERF) 3/09 RFP Cost Effectiveness Analysis

This worksheet uses default Total Resource Cost (TRC) Test values to calculate Benefit-Cost Ratios for proposed programs.

NOTE: Use of this spreadsheet is not required, but is encouraged to the extent applicable and possible, as cost-effectiveness is an important factor in selecting proposals to be funded, as is the extent that they are realistically proposed. Please submit with your proposal the electronic file and a printed copy of the 1st page of each worksheet completed.

Instructions: Enter relevant values in yellow highlighted cells. Then watch for results in green highlighted cells.

Line #	Assumptions	Name of Applicant or Proposal:	Crotched Mountain Rehabilitation Center	
1	Program Type	Select residential, commercial or industrial:	residential	
2	Principal Type of Measures	Select type of program or measures:	Heating - Residential	
3	Average Measure Life (weighted by CO2 savings)	Enter average life** of measures in group here:	20	years 18-20 = Range of measure life based on measure type
4	Assumed Load Reduction Factor*	See **Note near bottom of page for more measure life info.	0.000658	
5	Assumed Summer Annual Demand Coincidence*	See *Note below (right of lines 22-25) and FN 9 of the RFP.	20%	
6	Nominal Annual Discount Rate		5.000%	
7	Annual Inflation Rate		2.700%	
Program Costs			% of Total	
8	Non-GHGER Funds (from applicant, participants and other sources)		\$ 98,290	36%
9	GHGER Funds (amount requested in this proposal)		\$ 176,531	64%
10	Total Program Costs	(sum lines 8 and 9)	\$ 274,821	

NOTE: If you have more than one type of program, measure type or measure life, you can complete a separate Measure Group tab (worksheet) for each one.

Distribution of Electric Savings by % within each time period over the course of a calendar year. (Default normal distribution shown.)	
Line #	
66	46% Winter Peak (6am-10pm, M-F except holidays, Jan.- May, Oct. - Dec.)
67	43% Winter Off-Peak (10pm-6am, M-F, all day Sat., Sun. & holidays, Jan.-May, Oct.-Dec.)
68	6% Summer Peak (6am-10pm, M-F except holidays, June-Sept.)
69	5% Summer Off-Peak (10pm-6am, M-F, all day Sat., Sun & holidays, June-Sept.)
	100% = Total (Holidays are New Year's, Memorial, 7/4, Labor, Thanksgiving & Christmas.)

Line #	Estimated Annual Energy Savings (or increased Use as a negative #)		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
11	Annual kWh Savings (kWh)	See *Note below right (@ lines 23-26)	2	2	2	2	2	2	2	2	2	2
12	kW demand Savings-Summer Coincident	(line 11*line4*line5)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	Annual Natural Gas Savings (MMBTU)		-	-	-	-	-	-	-	-	-	-
14	Annual Propane Savings (MMBTU)	Conversions from gallons and other units to MMBTU are available at:	-	-	-	-	-	-	-	-	-	-
15	Annual Heating Oil Savings (MMBTU)	www.think-energy.net/energy_units.htm	3,444	3,444	3,444	3,444	3,444	3,444	3,444	3,444	3,444	3,444
16	Annual Kerosene Savings (MMBTU)		-	-	-	-	-	-	-	-	-	-
17	Annual Coal Savings (MMBTU)		-	-	-	-	-	-	-	-	-	-
18	Annual Wood Savings (MMBTU)		-	-	-	-	-	-	-	-	-	-
19	Annual Water Savings (Gallons)		-	-	-	-	-	-	-	-	-	-
20	Net value of Operations & Maintenance Savings or (increased Costs) in \$.		-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
21	Electric CO2 Savings (short tons)	((line 11*CO2/kWh)/2000, from GHG Reductions tab)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	Other Fuel CO2 Savings (short tons)	((lines 13-17*CO2/MMBTU)/2000)	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9

23	Benefit/Cost Ratio for Full Program Costs, reg. TRC	(line 43 / line 10)	3.16
24	B/C ratio with GHGER Fund Costs only, reg. TRC	(line 43 / line 9)	4.91
25	B/C ratio, Full Program Cost, \$60/ton CO2 value	(line 46 / line 10)	3.91
26	B/C ratio, GHGERF share only, \$60/ton CO2 value	(line 46 / line 9)	6.09

* NOTE: For simplicity sake assume full annual savings starting in 2010. KW demand savings can be estimated by multiplying kWh savings by the "Load Reduction Factor" and "Annual Demand Coincidence" for "Summer" that most closely matches the proposed program measures from the Measure Type & Load Reduction Factor Lookup Table found under the Lookup Table Tab and referenced in footnote 9 in the RFP. This occurs automatically by default when you select type of program or measures.

Output Table on Value of Program Benefits

Line #	Avoided Electric Supply Costs	Calculations	NPV	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
27	Winter Peak	(line 11 * line 66)		\$0.10	\$0.10	\$0.11	\$0.10	\$0.11	\$0.11	\$0.12	\$0.12	\$0.12	\$0.13
28	Winter Off-Peak	(line 11 * line 67)		\$0.07	\$0.07	\$0.07	\$0.07	\$0.07	\$0.08	\$0.08	\$0.08	\$0.09	\$0.09
29	Summer Peak	(line 11 * line 68)		\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.02	\$0.02	\$0.02	\$0.02	\$0.02
30	Summer Off Peak	(line 11 * line 69)		\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01
31	Avoided kWh Costs \$	(sum lines 27-30)	\$3.07	\$0.20	\$0.20	\$0.20	\$0.20	\$0.21	\$0.21	\$0.22	\$0.24	\$0.24	\$0.24
32	Avoided kW demand -Summer Coincident Costs \$	(line 12* line 51)	\$0.78	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
33	Total Avoided Electric Supply Costs	(sum lines 31 and 32)	\$3.85										
Avoided Non-Electric Supply Costs													
34	Avoided Natural Gas Costs \$	(line 13*(line 52 or 53))	\$0.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
35	Avoided Propane Costs \$	(line 14* line 54)	\$0.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
36	Avoided Heating Oil Costs \$	(15*(55 or ave(56 and 57) or 58))	\$867,604.51	\$58,106	\$57,870	\$57,733	\$57,472	\$58,233	\$60,076	\$61,977	\$64,230	\$66,578	\$68,986
37	Avoided Kerosene Costs \$	(line 16* line 59)	\$0.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
38	Avoided Coal Costs \$	(line 18* line 60)	\$0.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
39	Avoided Wood Costs \$	(line 17* line 61)	\$0.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
40	Avoided Water Costs \$	(line 20* line 62)	\$0.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
41	Avoided (or Increased)) O&M Costs	same as line 20	\$0.00	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
42	Total Avoided Non-Electric Supply Costs	(sum lines 34-41)	\$867,604.51										
43	Total Program Benefits w/o Avoided CO2 Costs	lines 33+42+43 from other measure tabs	\$867,608.36										
44	Electric Additional Avoided CO2 Costs @ \$60/ton	(line 21* line 65)	\$0.55	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
45	Non-electric Avoided CO2 Costs @ \$60/ton	(line 22* line 63)	\$207,810.95	\$16,675	\$16,675	\$16,675	\$16,675	\$16,675	\$16,675	\$16,675	\$16,675	\$16,675	\$16,675
46	Total Program Benefits w/ Avoided CO2 Costs	33+42+44+45+46 from other measure tabs	\$1,075,419.87										

Requested

NH PUC Greenhouse Gas Emissions Reduction Fund		2/23/09 RFP Proposed Budget Worksheet						REQUESTED AMOUNTS FOR TARGETED PROGRAM SIZE					
Program Title:		Bromley Building Heat Distribution Upgrade											
Applicant Name:		Crotched Mountain Rehabilitation Center											
		2009						2010					2011
USE OF FUNDS	April	May	June	Q2	Q3	Q4	Total CY09	Q1	Q2	Q3	Q4	Total CY10	Total CY11
EXPENSES													
Salaries & Wages				\$0	\$9,621	\$3,207	\$12,828	\$1	\$2	\$3	\$4	\$10	
Benefits/Fringe				\$0	\$4,956	\$1,652	\$6,608					\$0	
Contracted Labor & Services				\$0	\$120,589	\$40,196	\$160,785					\$0	
Rent & Utilities				\$0			\$0					\$0	
Advertising & Marketing				\$0			\$0					\$0	
Travel & Mileage Reimbursement				\$0			\$0					\$0	
Tools, Supplies, Subscriptions				\$0			\$0					\$0	
Other Current Expenses(such as office expense, insurance, maintenance, repairs, taxes, legal, etc.)				\$0			\$0					\$0	
Cost of Goods Installed				\$0			\$0					\$0	
General Overhead & Profit*				\$0	\$13,080	\$4,360	\$17,440					\$0	
TOTAL EXPENSES	\$0	\$0	\$0	\$0	\$148,246	\$49,415	\$197,661	\$1	\$2	\$3	\$4	\$10	\$0
Capital Invested in Building Improvements					\$57,870	\$19,290	\$77,160					\$0	
Funds used for Loan Fund capital							\$0					\$0	
Loan Fund credit enhancement(such as interest rate buy-down)							\$0					\$0	
TOTAL USE OF FUNDS	\$0	\$0	\$0	\$0	\$206,116	\$68,705	\$274,821	\$1	\$2	\$3	\$4	\$10	\$0
		2009						2010					2011
SOURCES OF FUNDS	April	May	June	Q2	Q3	Q4	Total CY09	Q1	Q2	Q3	Q4	Total CY10	Total CY11
Applicant Cash Contribution				\$0			\$0					\$0	
Applicant In-kind Contribution				\$0			\$0					\$0	
Program Participant Contribution			\$25,000	\$25,000	\$50,000	\$23,290	\$98,290					\$0	
Loans & Other Financing				\$0			\$0					\$0	
Forward Capacity Market Payments				\$0			\$0					\$0	
Other Grants				\$0			\$0					\$0	
GHGER Fund (this proposal)			\$50,000	\$50,000	\$100,000	\$26,531	\$176,531					\$0	
TOTAL SOURCES OF FUNDS	\$0	\$0	\$75,000	\$75,000	\$150,000	\$49,821	\$274,821	\$0	\$0	\$0	\$0	\$0	\$0
GHGER Funds as a % of TOTAL							64%					#DIV/0!	#DIV/0!

NOTE: Above "Use of Funds" is a break out what otherwise would amount to a project contract total of \$254,395 in line 10 Contracted Labor & Services
 Note: for General Overhead & Profit, please indicate to what extent any amounts are proposed to be contingent on program performance. (10% contingency)

Minimum

NH PUC Greenhouse Gas Emissions Reduction Fund		2/23/09 RFP Proposed Budget Worksheet						MINIMUM FEASIBLE PROGRAM SIZE					
Program Title:		Bromley Building Heat Distribution Upgrade											
Applicant Name:		Crotched Mountain Rehabilitation Center											
USE OF FUNDS	2009							2010					2011
	April	May	June	Q2	Q3	Q4	Total CY09	Q1	Q2	Q3	Q4	Total CY10	Total CY11
EXPENSES													
Salaries & Wages				\$0	\$9,621	\$3,207	\$12,828	\$1	\$2	\$3	\$4	\$10	
Benefits/Fringe				\$0	\$4,956	\$1,652	\$6,608					\$0	
Contracted Labor & Services				\$0	\$120,589	\$40,196	\$160,785					\$0	
Rent & Utilities				\$0			\$0					\$0	
Advertising & Marketing				\$0			\$0					\$0	
Travel & Mileage Reimbursement				\$0			\$0					\$0	
Tools, Supplies, Subscriptions				\$0			\$0					\$0	
Other Current Expenses(such as office expense, insurance, maintenance, repairs, taxes, legal, etc.)				\$0			\$0					\$0	
Cost of Goods Installed				\$0			\$0					\$0	
General Overhead & Profit*				\$0	\$13,080	\$4,360	\$17,440					\$0	
TOTAL EXPENSES	\$0	\$0	\$0	\$0	\$148,246	\$49,415	\$197,661	\$1	\$2	\$3	\$4	\$10	\$0
Capital Invested in Building Improvements					\$57,870	\$19,290	\$77,160					\$0	
Funds used for Loan Fund capital							\$0					\$0	
Loan Fund credit enhancement(such as interest rate buy-down)							\$0					\$0	
TOTAL USE OF FUNDS	\$0	\$0	\$0	\$0	\$206,116	\$68,705	\$274,821	\$1	\$2	\$3	\$4	\$10	\$0
SOURCES OF FUNDS	2009							2010					2011
	April	May	June	Q2	Q3	Q4	Total CY09	Q1	Q2	Q3	Q4	Total CY10	Total CY11
Applicant Cash Contribution				\$0			\$0					\$0	
Applicant In-kind Contribution				\$0			\$0					\$0	
Program Participant Contribution			\$25,000	\$25,000	\$100,000	\$23,290	\$148,290					\$0	
Loans & Other Financing				\$0			\$0					\$0	
Forward Capacity Market Payments				\$0			\$0					\$0	
Other Grants				\$0			\$0					\$0	
GHGER Fund (this proposal)			\$50,000	\$50,000	\$50,000	\$26,531	\$126,531					\$0	
TOTAL SOURCES OF FUNDS	\$0	\$0	\$75,000	\$75,000	\$150,000	\$49,821	\$274,821	\$0	\$0	\$0	\$0	\$0	\$0
GHGER Funds as a % of TOTAL							46%					#DIV/0!	#DIV/0!

NOTE: Above "Use of Funds" is a break out what otherwise would amount to a project contract total of \$254,395 in line 10 Contracted Labor & Services
 Note: for General Overhead & Profit, please indicate to what extent any amounts are proposed to be contingent on program performance. (10% contingency)

Maximum

NH PUC Greenhouse Gas Emissions Reduction Fund		2/23/09 RFP Proposed Budget Worksheet						MAXIMUM FEASIBLE PROGRAM SIZE					
Program Title:		Bromley Building Heat Distribution Upgrade											
Applicant Name:		Crotched Mountain Rehabilitation Center											
		2009						2010					2011
USE OF FUNDS	April	May	June	Q2	Q3	Q4	Total CY09	Q1	Q2	Q3	Q4	Total CY10	Total CY11
EXPENSES													
Salaries & Wages				\$0	\$9,621	\$3,207	\$12,828	\$1	\$2	\$3	\$4	\$10	
Benefits/Fringe				\$0	\$4,956	\$1,652	\$6,608					\$0	
Contracted Labor & Services				\$0	\$120,589	\$40,196	\$160,785					\$0	
Rent & Utilities				\$0			\$0					\$0	
Advertising & Marketing				\$0			\$0					\$0	
Travel & Mileage Reimbursement				\$0			\$0					\$0	
Tools, Supplies, Subscriptions				\$0			\$0					\$0	
Other Current Expenses (such as office expense, insurance, maintenance, repairs, taxes, legal, etc.)				\$0			\$0					\$0	
Cost of Goods Installed				\$0			\$0					\$0	
General Overhead & Profit*				\$0	\$13,080	\$4,360	\$17,440					\$0	
TOTAL EXPENSES	\$0	\$0	\$0	\$0	\$148,246	\$49,415	\$197,661	\$1	\$2	\$3	\$4	\$10	\$0
Capital Invested in Building Improvements						\$57,870	\$19,290					\$0	
Funds used for Loan Fund capital							\$0					\$0	
Loan Fund credit enhancement (such as interest rate buy-down)							\$0					\$0	
TOTAL USE OF FUNDS	\$0	\$0	\$0	\$0	\$206,116	\$68,705	\$274,821	\$1	\$2	\$3	\$4	\$10	\$0
		2009						2010					2011
SOURCES OF FUNDS	April	May	June	Q2	Q3	Q4	Total CY09	Q1	Q2	Q3	Q4	Total CY10	Total CY11
Applicant Cash Contribution				\$0			\$0					\$0	
Applicant In-kind Contribution				\$0			\$0					\$0	
Program Participant Contribution				\$0	\$10,000	\$23,290	\$33,290					\$0	
Loans & Other Financing				\$0			\$0					\$0	
Forward Capacity Market Payments				\$0			\$0					\$0	
Other Grants				\$0			\$0					\$0	
GHGER Fund (this proposal)			\$75,000	\$75,000	\$140,000	\$39,821	\$254,821					\$0	
TOTAL SOURCES OF FUNDS	\$0	\$0	\$75,000	\$75,000	\$150,000	\$63,111	\$288,111	\$0	\$0	\$0	\$0	\$0	\$0
GHGER Funds as a % of TOTAL							88%					#DIV/0!	#DIV/0!
NOTE: Above "Use of Funds" is a break out what otherwise would amount to a project contract total of \$254,395 in line 10 Contracted Labor & Services													
Note: for General Overhead & Profit, please indicate to what extent any amounts are proposed to be contingent on program performance. (10% contingency)													

NH PUC Greenhouse Gas Emissions Reduction Fund 2/23/09 RFP Proposed Budget Worksheet

DEFAULT VALUES FOR ESTIMATING GHG EMISSIONS REDUCTIONS BASED ON ENERGY SAVINGS

Program Title: **Bromley Building Heat Distribution Upgrade**
 Applicant Name: **Crotched Mountain Rehabilitation Center**

Method # 1, using MWH (Megawatt Hours), Cubic Feet (natural gas), & Gallons of fuel					
Reductions from	Enter Reductions in Units shown in next Column	Units	CO ₂ Emission Factors in lbs/unit	Estimated CO ₂ Emission Reductions in pounds (lbs.)	Estimated CO ₂ Emission Reductions in Metric Tons
Electricity		MWH	1,087	0	0.00
Natural Gas		Cubic Feet	120.6	0	0.00
Distillate Fuel Oil (#1, 2 & 4)	24832	Gallons	22.4	556,237	252.26
Residual Fuel Oil (#5 & 6)		Gallons	26	0	0.00
Kerosene		Gallons	21.5	0	0.00
LPG		Gallons	12.8	0	0.00
Propane		Gallons	12.7	0	0.00
TOTAL					252.26

Method # 2, using MWH & MMBtu (million Btus)					
Reductions from	Enter Reductions in Units shown in next Column	Units	CO ₂ Emission Factors in lbs/unit	Estimated CO ₂ Emission Reductions in pounds (lbs.)	Estimated CO ₂ Emission Reductions in Metric Tons
Electricity		MWH	1,087	0	0.00
Natural Gas		MMBtu	117.1	0	0.00
Distillate Fuel Oil (#1, 2 & 4)		MMBtu	161.4	0	0.00
Residual Fuel Oil (#5 & 6)		MMBtu	173	0	0.00
Kerosene		MMBtu	159.5	0	0.00
LPG		MMBtu	139	0	0.00
Propane		MMBtu	139.2	0	0.00
TOTAL					0.00

Eckhardt & Johnson, Inc.

MECHANICAL CONTRACTORS

896 Goffs Falls Road, Manchester, NH 03103-3288
Tel. 603-622-7493 • Fax 603-647-4618 • Email: info@eckhardtjohnson.com



March 20, 2009

Ray Seybold
Crotched Mountain Rehab Ctr.
1 Verney Drive
Greenfield, NH 03047

Subject: Heating Distribution and Control system upgrades

Dear Mr. Seybold,

I would like to express Eckhardt & Johnson, Inc. interest in providing any mechanical design and installation services required in your continued efforts to tie in new and existing buildings onto your central biomass district heating system.

Sincerely,

A handwritten signature in black ink that reads 'Daniel C. Clair'. The signature is written in a cursive style.

Daniel C. Clair
President
Eckhardt & Johnson, Inc.

Enclosures: 0
File
DCC/kag

-----Original Message-----

From: Marc Rosenbaum [mailto:marc@energysmiths.com]

Sent: Friday, March 20, 2009 9:22 AM

To: Don Shumway

Subject: Re: Letter of support request

I am writing in support of the proposed project at Crotched Mountain to extend the manifold benefits of the wood-chip-fired district heating system to the Bromley building. Crotched Mountain has assumed a perhaps unlikely role far, from its core competencies, in leading New Hampshire organizations to think, and act, boldly to increase resource efficiency, reduce greenhouse gas emissions, and support their local economy. The impact of this project is significant at a reasonable cost. Crotched Mountain is also demonstrating the fundamental truth that the only way to make a serious reduction in GHG emissions in the building sector is by addressing existing buildings. I strongly support this application.

Marc Rosenbaum, P.E.
Energysmiths
PO Box 194 (mailing)
172 Bean Road (shipping)
Meriden, NH 03770
603 469-3355
marc@energysmiths.com

-----Original Message-----

From: Jane Difley [mailto:JDifley@forestsociety.org]

Sent: Monday, March 23, 2009 12:04 PM

To: Don Shumway

Cc: Will Abbott

Subject: Letter of Support

Don

I send this on behalf of the Forest Society to encourage the Public Utilities Commission to support the proposal from Crotchet Mountain by funding it from the Regional Greenhouse Gas Emissions Reduction Fund. We at the Society believe that using wood as a fuel to efficiently replace fossil fuels needs to be a top priority for a state that is too dependent on oil for the heating of buildings. The project you propose addresses this challenge head on. You will save energy, save money and reduce your greenhouse gas footprint. Your project should be a model for others to use in New Hampshire, as we collectively advance the goal of reducing greenhouse gas emissions.

Jane



Jane A. Difley

President/Forester
Society for the Protection of
New Hampshire Forests
54 Portsmouth Street
Concord, NH 03301
(603) 224-9945

-----Original Message-----

From: TED LEACH [<mailto:tlnhrep@myfairpoint.net>]

Sent: Sat 3/21/2009 1:29 PM

To: Michael Redmond

Subject: Leach letter

RE: Green House Gas Emissions Reduction Project

Michael D. Redmond

VP for Finance & Advancement

Crotched Mountain Foundation

1 Verney Drive

Greenfield, NH 03047

March 20, 2009

Hi Michael:

Thanks for the opportunity to comment on the effort of Crotched Mountain to expand its unique campus bio-mass outreach and stamp out one of the last fuel oil burning albatrosses in your outstanding 100 acre facility.

Naturally, I am a soft-touch when it comes to voicing support for anything that will reduce greenhouse gases, but some projects seem to rise above others. Yours is one of those.

I always look for the emissions reduction piece first. You pass that test with ease.

Wood replacing fuel oil is a mega improvement. And this project just sharpens the cutting edge of your bio-mass effort and captures the efficiency that all such projects are capable of delivering. As I understand the current situation, your main power plant is up and running and your core buildings are now being heated by that plant. But the plant has the already-installed capacity to handle the whole campus. So now you are tying together all the various ancillary buildings around that magnificent hospital campus.

And you also have a huge local component involved here running from concept to completion to continuance. That is real important and ratchets up the footprint of the project beyond what merely ends up on the ground. Take your wood supplier for instance. He's right in your backyard. He can satisfy your needs, and keep his business viable and

do it all within a few miles of your facility. That keeps him from having to haul wood over long distances with diesel-emitting trucks.

As you know we take our greenhouse gas emissions seriously here in the Granite State. I threw everything I had into that effort during my tenure in the Legislature. Through the efforts of many organizations, the work of NH DES and others, we are now seeing that the public, Crotched Mountain included, has gotten the message.

So your project is right on target and right on time.

I am pleased to add my support and while I can't "officially" speak for the Carbon Coalition, I am secure in saying that projects such this are exactly what we encourage.

Thanks again for allowing me to add my thoughts.

Kindest regards

Edward R. (Ted) Leach

Co chair

The Carbon Coalition