Greenhouse Gas Emissions Reduction Fund
Proposal

1.1 Program Title

Fraser NH LLC Steam Reduction Program

1.2 Program Type

This program will reuse hot air, hot water and condensate to reduce fossil fuel consumption and pursuant to Puc 2604.01(c) would fall under #5 “Energy efficiency related industrial process and control systems”.

1.3 Program Summary

Fraser NH LLC will utilize reuse of hot water, hot air and condensate to reduce the #6 fuel oil usage by 2,015 gallons/day (17,366 barrels/year) through 5 specific projects. These projects will install equipment to accomplish this energy recovery. These projects will reduce Gorham mill steam consumption by reducing steam requirements on the paper machines by 11,149 #/hr and fresh river water requirements by 150,000 gallons/day. This program will reduce greenhouse gas emissions (CO2) 8,600 metric tons per year.

1.4 Low Income Residential Customer Qualification

This program is not intended to serve low income residential customers.

1.5 Identification of Applicant Organization.

Fraser NH LLC, Cascades Flats, Gorham, NH is a limited liability company incorporated in the state of Delaware and registered to conduct business in the State of New Hampshire.

1.6 Identification of Subcontractors and Partners

There is no partner involved in these projects. Some of the installation work would be completed by local contractors.

1.7 Authorized Negotiators

William Manzer
Vice President
Fraser NH LLC
707 Sable Oaks Drive
South Portland, ME 04106

Willis Blevins
General Manager
Fraser NH LLC
72 Cascade Flats
Gorham, NH 03581

1.8 Projected Energy Savings

This program is estimated to reduce the amount of #6 fuel oil requirements by 729,410 gallons (17,366 barrels) annually at the Gorham, NH paper mill. Over the projected 10 year life of the projects savings will be 173,660 barrels of oil.

1.9 Projected Greenhouse Gas Emissions Reduction

The estimated reduction in #6 fuel oil will result in an annual reduction of 8,600 metric tons of carbon dioxide emissions or 86,000 metric tons over the projected life.

1.10 Length of the Project

The five projects will each require between 4 weeks to 12 weeks to complete. The projects can be completed concurrently or in sequence. The benefits will be realized sooner if completed concurrently. The projects are expected to be in operation a minimum of 10 years.

1.11 Total Program Costs

This proposed program will require a capital investment of $470,000.

1.12 GHGER Funds Requested

The program applicants are requesting $470,000 from the Greenhouse Gas Emissions Reduction (GHGER) Fund.

2.0 Executive Summary

Fraser NH LLC operates a paper mill in Gorham, NH that employs 250 employees and last year produced 137,000 tons of paper and towel. The Gorham mill's annual payroll and local spending exceeds $20 million per year. The Gorham facility burns approximately nine million gallons (214,000 barrels) of #6 fuel oil annually to generate steam for the papermaking process and to heat the facility. This high fuel usage and cost makes it very difficult for the Gorham Operation to compete in today's global Pulp & Paper industry. Over 98% of the mill's electrical power is provided by hydro dams along the Androscoggin River so the mill does not utilize any steam for power generation.

This program will utilize reuse of existing hot air, hot water and condensate and to reduce the annual oil consumption by about 8% or 729,410 gallons reducing the greenhouse gas emissions by 8,600 metric tons of carbon dioxide emissions. It will also reduce fresh river water intake by approximately 150,000 gallons/day (54 million gallons per year). These reductions will be accomplished through 5 specific projects, with a total cost of $470,000, detailed as follows:

1. Vacuum pump seal water reuse on #11 Paper Machine - $125,000

2. Improve the Pocket Ventilation system on #11 Paper Machine to reuse hot air- $85,000
3. Improve the Pocket Ventilation system on #14 Paper Machine to reuse hot air- $85,000
4. Install a steam trap condensate collection system on #19 Paper Machine - $25,000
5. Install hood economizer on #19 Paper Machine to reuse hot air- $150,000

Total annual savings for these projects is estimated at approximately $800,000 based on an average #6 fuel oil price of $1.10/gallon. There would be no ongoing operating costs associated with these projects other than the normal monitoring and maintenance of the equipment.

There would be no sources of matching funds or leverage on these projects.

There would be no key partners or allies on these projects.

3.0 Proposed Work Scope and Schedule

Oversight and quality assurance for all of the projects would be provided by the existing Gorham mill staff, led primarily by the Engineering and Maintenance Manager, Maintenance Superintendents, Electrical Engineers and the Maintenance Supervisor. Financial management will be provided by the existing Gorham mill accounting staff and accomplished by use of the existing computerized maintenance management system (CMMS) to track labor and expenditures.

The proposed Work Scope and Schedule is defined for each project as follows:

Vacuum pump seal water reuse on #11 Paper Machine to reuse hot water

Project Description:
#11 Paper Machine currently has six vacuum pumps pulling vacuum on the wet end of the machine. The papermaking process starts with slurry comprised of 99.5% water and 0.5% wood fibers. Water removal is the major component of the paper manufacturing process and the most energy efficient water removal process is through vacuum. The fourdrinier flat boxes, third press uhle box and anti blow box are critical operating equipment to accomplish the water removal and are serviced by six Nash vacuum pumps equipped with belt drives and electric motors.

Approximately 500 gallons per minute of fresh water is used to seal these vacuum pumps and is discharged directly to the mill sewers. Four of the pumps are sewered to a common trench sewer that discharges to an unused room in the sub-basement. From this room, the water flows to the lift station and to the Waste Water Treatment Plant. The other two vacuum pumps discharge to separate sewers and will have to be collected in a common header and routed to a common discharge with the other four pumps. Water will be collected, screened and reused in the vacuum pumps. Reusing this water will reduce mill steam loads by 4,615 #/hr and save 834 gallons of oil per day.

Scope of Work:

1. Install piping to collect reject water.
2. Install floor drain piping to recapture water.
3. Relocate an existing 2500 gallon stainless steel tank to collect the vacuum pump seal water.
4. Install structural steel and catwalk to support the Albany Gravity Screen and provide access.
5. Install a pump to pump the seal water back to the vacuum pumps.
6. Install pump and screen piping.
7. Install piping to vacuum pumps to collect seal water – some will be installed in existing basement floor.
8. Install lighting in area.
9. Install variable frequency drive on pump.
10. Install field control devices (control valves, temperature transmitter, level transmitter, and pressure transmitter) and connect existing distributed control system.

Project Resource Allocation:

1. Design, engineering and drafting with be completed by Gorham Mill staff
2. Mechanical work – 900 man-hours
3. Electrical/Instrumentation work – 360 man-hours

Project Schedule:

1. Week One & Two: The eight-inch by-pass and reject piping as well as the three-inch floor drain piping will be completed (this must be completed prior to doing anything else to clean this area up).
2. Week Three & Four: The tank will be relocated; the structural steel will be fabricated and installed as will the Albany Gravity Screen. The header will be installed.
3. Week Five & Six: The lighting will be installed along with the pump and some of the piping to the pump and the Gravity Screen.
4. Week Seven & Eight: The remainder of the electrical, instrumentation, controls and piping will be completed.

Improve the Pocket Ventilation System on #11 Paper Machine to reuse hot air

Project Description:
In a well designed, efficient paper machine room, outside air is heated to room temperature and supplied into areas where people are working and areas of high moisture concentration. This air is then used a second time in motor cooling systems, roof sweep systems, paper machine hood supply systems and in paper drying section pocket ventilating (PV) systems. The air that is supplied to the paper machine drying section hood as supply air and PV air is now used a third time to carry the moisture that is evaporated from the paper out of the paper machine hood. This moisture rich air is generally passed through an economizer to preheat the outside air that becomes make-up air and process air.

Presently the #11 Paper machine Pocket Ventilation system uses outside air that is preheated through a hood exhaust economizer and then heated to design temperature by steam coils. It is not energy efficient to heat 100% outside air and use it immediately in the paper machine hood.

The drying system pocket ventilating air (which needs to be above 180 degrees) should be supplied by the warm air from the underside of the roof over the paper machine. The heat exiting the paper machine hood has already preheated the air in this location. This change would replace the current heating of air from a yearly average of 45 degrees for use in the pocket ventilating system, with air at 100 degrees – dramatically reducing the process steam required to heat the air up to the design temperature of 180 degrees.

The recommended pocket ventilating air flow for the #11 Paper Machine is 48,000 cubic feet per minute. Using this inside air instead of outside air would increase the temperature of the air entering the steam coil heaters by 35 degrees and result in energy savings of 1976 lbs/hr of steam, reducing oil consumption by 357 gallons per day.

Scope of Work:

1. Open a 48” by 48” hole in the roof over the #11 PM.
2. Install a roof curb and seal the roof.
3. Install ductwork from the #11 PM economizer to the roof opening. As there are two economizers, this duct will have to transition for the two inlets then connect together before entering the room through the roof
4. Install balancing dampers in the two duct sections to allow equal flow through the economizers.
5. Seal the duct to the roof curb.
6. Remove the section of duct after the economizer that now supplies the room make-up air system. 100% of the air going through the economizers should go to the PV system.
7. Patch and seal the PV duct section and re-insulate the duct.

Project Resource Allocation:

1. Design engineering and drafting – 80 man hours - LaCasse & Weston, Inc.
2. Roofing work – 120 man hours – outside roofing contractor
3. Ductwork fabrication – 160 man hours – outside sheet metal contractor
4. Install duct work;
    a. 8 hours of crane time to get ductwork onto the roof.
    b. Install duct – 72 man hours- outside sheet metal contractor
5. Remove duct from economizers to the make-up air system, seal and patch PV duct – 24 man hours – outside sheet metal contractor.

Project Schedule:

1. Week One: Project start.
2. Week Three: Engineering and drawings complete.
3. Week Four: Bids package sent to roofing and sheet metal contractors.
4. Week Five: Bids received and contractors selected.
5. Week Six: Roofing work begins, duct fabrication begins;
6. Week Seven: Roofing work completed.

7. Week Eight: Duct fabrication completed.
8. Week Nine: Duct installed
9. Week Ten Project completed.

Improve the Pocket Ventilation System on #14 Paper Machine to reuse hot air

Project Description:
In a well designed, efficient paper machine room, outside air is heated to room temperature and supplied into areas where people are working and areas of high moisture concentration. This air is then used a second time in motor cooling systems, roof sweep systems, paper machine hood supply systems and in the paper drying section pocket ventilating (PV) systems. The air that is supplied to the paper machine drying section hood as supply air and PV air is now used a third time to carry the moisture that is evaporated from the paper out of the paper machine hood. This moisture rich air is generally passed through an economizer to preheat the outside air that becomes make-up air and process air.

Presently the #14 Paper machine Pocket Ventilation system uses outside air that is preheated through a hood exhaust economizer and then heated to design temperature by steam coils. It is not energy efficient to heat 100% outside air and use it immediately in the paper machine hood.

The drying system pocket ventilating air (which needs to be above 180 degrees) should be supplied by the warm air from the underside of the roof over the paper machine. The heat exiting the paper machine hood has already preheated the air in this location. This change would replace the current heating of air from a yearly average of 45 degrees for use the pocket ventilating system, with air at 100 degrees – dramatically reducing the process steam required to heat the air up to the design temperature of 180 degrees.

The recommended pocket ventilating air flow for the #14 Paper Machine is 41,600 CFM. Using this inside air instead of outside air would increase the temperature of the air entering the steam coil heaters by 35 degrees and result in energy savings of 1,500 lbs/hr of steam, reducing oil consumption by 271 gallons per day.

Scope of Work:
1. Open a 48” by 48” hole in the roof over the #11 PM.
2. Install a roof curb and seal the roof.
3. Install ductwork from the #14 PM economizer to the roof opening. As there are two economizers, this duct will have to transition for the two inlets then connect together before entering the room through the roof
4. Install balancing dampers in the two duct sections to allow equal flow through the economizers.
5. Seal the duct to the roof curb.
6. Remove the section of duct after the economizer that now supplies the room make-up air system. 100% of the air going through the economizers should go to the PV system.
7. Patch and seal the PV duct section and re-insulated the duct.

Project Resource Allocation:

1. Design engineering and drafting – 80 man hours - LaCasse & Weston, Inc.
2. Roofing work – 120 man hours – outside roofing contractor
3. Ductwork fabrication – 160 man hours – outside sheet metal contractor
4. Install duct work;
    a. 8 hours of crane time to get ductwork onto the roof.
    b. Install duct – 72 man hours- outside sheet metal contractor
5. Remove duct from economizers to the make-up air system, seal and patch PV duct – 24 man hours – outside sheet metal contractor.

Project Schedule:

1. Week One: Project start.
2. Week Three: Engineering and drawings complete.
3. Week Four: Bids package sent to roofing and sheet metal contractors.
4. Week Five: Bids received and contractors selected.
5. Week Six: Roofing work begins, duct fabrication begins;
6. Week Seven: Roofing work completed.
7. Week Eight: Duct fabrication completed.
8. Week Nine: Duct installed.
9. Week Ten Project completed.

Install hood Economizer on the #19 Paper Machine to reuse hot air

Project Description:
The paper making process requires removing almost 50% of the water by drying over heated steel drums. The evaporation of the water creates moisture rich hot air in the dryer hood which must be removed and replaced with hot dry air for maximum drying energy efficiency. The #19 paper machine has existing hood exhausts that remove the moist air from the paper machine hood and dump it directly to the outdoors. This machine has an open hood design, which means the air being introduced to the drying section to replace the exhaust air is directly from the paper machine room. The #19 paper machine room has a 50,000 CFM make-up air system that uses 100% outside air. This air supply is heated through steam coils to ambient temperature (70 degrees) and supplied to the paper machine room. Preheating this air with the exhaust dryer air would reduce the steam consumption in the steam coils. This project proposes to reuse an economizer that is currently not in service, move to the #19 paper machine and connect to the exhaust and make-up air systems. Reusing this hot air will reduce steam heating needs by 2,058 #/hr and save 372 gallons per day of oil.

Scope of Work:

1. Remove the economizer from the #12 paper machine.
2. Fabricate and install new support steel for the economizer on the #19 paper machine room.
3. Move the economizer to the #19 paper machine.
4. Install ductwork from the #19 paper machine exhaust to the economizer.
5. Install ductwork from the economizer to the #19 paper machine make-up air system.

6. Speed up the #19 paper machine exhaust fan to maintain the exhaust rate with the new static pressure requirements.

Project Resource Allocation:

1. Design engineering and drafting – 160 man hours - LaCasse & Weston, Inc.
2. Roofing work for new supports – 16 man hours – outside roofing contractor
3. Fabricate structural supports – 80 man hours – outside steel fabricators
4. Ductwork fabrication – 240 man hours – outside sheet metal contractor
5. Installation;
    a. 24 hours of crane time to get economizer moved and supports and duct in place
    b. Install economizer an duct – 120 man hours- outside sheet metal contractor
6. Exhaust fan speed increased – 8 man hours – mill personnel

Project Schedule:

1. Week One: Project start.
2. Week Four: Engineering and drawings complete.
3. Week Five: Bids package sent to roofing contractors, sheet metal contractors and steel fabricators.
4. Week Six: Bids received and contractors selected.
5. Week Seven: Roofing work begins, duct fabrication begins, support fabrication begins;
6. Week Eight: Roofing work completed.
7. Week Nine: support fabrication completed.
8. Week Ten: Duct fabrication completed.
9. Week Eleven: Economizer and duct installed. Fan speed increased
10. Week Twelve: Project completed.

Install a steam trap collection system on #19 Paper Machine Yankee Hood Air Heater to reuse condensate

Project Description:
Paper machine #19 produces a towel product that requires operating a very large drying cylinder (Yankee). This Yankee dryer uses a hot air hood for efficient water removal. The condensate generated in the hood air heating coil is currently not recovered for reuse in the mill.

This project consists of fabricating a condensate collection header out of 10" schedule 40 ASTM A106 black iron pipe. The header will have six 1-1/2" thread-o-lets welded to it to accept the condensate return piping from each of the six steam coils in the Yankee Hood air heater. The header will have a level transmitter and sight glass for measuring condensate level in the header. The level transmitter will send a signal to the distributive control system (DCS), which will control a valve on the discharge of the header to control the condensate level in the header. Reusing the condensate will lower steam consumption by 1,000#/hr and save 181 gallons per day of oil.

The mill maintenance force can accomplish this project, with the exception of the thermal insulation. Damon Insulation would install the insulation.

Scope of Work:

1. Construct the header – the header consists of 8+ feet of 10" schedule 40 ASTM black iron pipe with two welded end caps and eight welded thread-o-lets
2. Install the header and pipe the supply and return pipes to the thread-o-lets –
3. Install the level transmitter, control valve and wiring to the DCS
4. Thermal insulation – the header plus supply and discharge piping will all be insulated by Damon Insulation.

Project Resources:

1. Design, engineering and drafting will be completed by Gorham Mill staff
2. Mechanical crafts – 88 man-hours
3. Electrical and instrumentation crafts – 100 man-hours

Project Schedule:

1. Week One: Fabricate the header.
2. Week Two: Install the header.
3. Weeks One through Four: The electrical and instrumentation would be installed and the programming in the DSC completed.
4. End of Week Four: Insulate the header and associated piping by outside contractor.

4.0 Project Benefits

There are several benefit areas that the Gorham Steam Reduction Program will accomplish.

4.1 The five projects will reduce the greenhouse gas emissions by 8,600 metric tons of carbon dioxide or 8% of the total mill emissions related to the burning of #6 fuel oil.

4.2 This program will be very cost effective with a Return on Investment average of 170%.

4.3 This program will not reduce New Hampshire's peak electric load.

4.4 This program will not promote market transformation.

4.5 This program will not promote innovative technologies.

4.6 This program will promote the economic development in Northern New Hampshire by helping to preserve 250 good paying manufacturing jobs in a region that has lost several major businesses in the past several years. It would also provide work to local outside contractors as defined in the work scope section.

4.7 This program would promote energy costs savings through the reduction of fossil fuel usage.

5.0 Measurement and Verification

The following are the measurements and calculations used to determine the goals and savings for each project. All measurable data will be tracked to determine the program's performance. We

will also measure the gallons of #6 fuel oil per gross ton of production compared to the 2008 baseline of 63.3 gallons/ton.

Vacuum pump seal water reuse on #11 Paper Machine			
Current Seal Water Flow (gals/day)	750,000		(This is the current flow of seal water to the vacuum pumps)
Hot Water recovered from seal water (gals/day)	150,000		(assumed to be 20% of current flow and the balance is re-circulated to the vacuum pump)
Average Temperature rise (Deg F)	85		(Seal water target temp minus average fresh water temp)
BTU value of hot water recovered (BTUs per day)	106,335,000		(Hot water flow 150,000 gals/day times 8.34 pounds/gallon of water times 85 deg F times 1 BTU/lb Deg F)
Steam savings (#/hr)	4,615		(BTUs saved divided by 960 BTU/pound of steam divided by 24 hrs/day)
#6 Fuel oil saved (gals/day)	834		(BTUs saved divided by 85% boiler efficiency divided by 150,000 BTUs per gal of #6 fuel oil)
Savings/yr	**$332,099**		(Fuel oil saved times $1.10/gal times 362 days operated per year)
Improve the Pocket Ventilation System on #11 Paper Machine			
Lacasse Steam savings estimate (#/hr)	1,976		(From Lacasse & Weston report)
Steam savings/yr (thousand pounds/yr)	17,167		(Steam saved/hr times 24 hrs/day times 362 days operated/year)
Steam cost ($/thousand pounds of steam)	$8.28		(960 BTU/pound of steam times 1000 divided by 150000 BTU/lb of fuel oil divided by
			85% boiler efficiency times $1.10/gal of #6 fuel oil)
#6 Fuel oil saved (gals/day)	357		(pounds of steam saved/hr times 24 hrs/day times 960 BTU/pound of steam divided by
			150000 BTU/gal of #6 fuel oil divided by 85% boiler efficiency
Project savings	**$142,187**		

Improve the Pocket Ventilation System on #14 Paper Machine			
Lacasse Steam savings estimate (#/hr)	1,500		(From Lacasse & Weston report)
Steam savings/yr (thousand pounds/yr)	13,032		(Steam saved/hr times 24 hrs/day times 362 days operated/year divided by 1000)
Steam cost ($/thousand pounds of steam)	$8.28		(960 BTU/pound of steam times 1000 divided by 150000 BTU/lb of fuel oil divided by
			85% boiler efficiency times $1.10/gal of #6 fuel oil)
#6 Fuel oil saved (gals/day)	271		(pounds of steam saved/hr times 24 hrs/day times 960 BTU/pound of steam divided by
			150000 BTU/gal of #6 fuel oil divided by 85% boiler efficiency
Project savings	**$107,936**		
Install hood Economizer on the #19 Paper Machine			
Lacasse Steam savings estimate (#/hr)	2,058		(From the Lacasse & Weston study)
Steam savings (thousand pounds/yr)	17,880		(pounds of steam saved/hr times 24 hrs/day times 362 days operated/year divided by 1000)
Steam Cost ($/thousand pounds of steam)	$8.28		(960 BTU/pound of steam times 1000 divided by 150000 BTU/lb of fuel oil divided by
			85% boiler efficiency times $1.10/gal of #6 fuel oil)
#6 Fuel oil saved (gals/day)	372		(pounds of steam saved/hr times 24 hrs/day times 960 BTU/pound of steam divided by
			150000 BTU/gal of #6 fuel oil divided by 85% boiler efficiency
Project savings ($/year)	**$148,088**		
Install a steam trap collection system on #19 PM Yankee Hood Air Heater			
Lacasse Steam savings estimate (#/hr)	1,000		(From the Lacasse & Weston study)
Steam savings (thousand pounds/yr)	8,688		(pounds of steam saved/hr times 24 hrs/day times 362 days operated/year divided by 1000)

Steam cost ($/thousand pounds of steam)	$8.28		(960 BTU/pound of steam times 1000 divided by 150000 BTU/lb of fuel oil divided by
			85% boiler efficiency times $1.10/gal of #6 fuel oil)
#6 Fuel oil saved (gals/day)	181		(pounds of steam saved/hr times 24 hrs/day times 960 BTU/pound of steam divided by
			150000 BTU/gal of #6 fuel oil divided by 85% boiler efficiency
Project savings ($/year)	**$71,957**		

6.0 Detailed Budget

The following is the detailed budget for each project with the total program totaling $470,000.

The Vacuum Pump Seal Water project and the Steam Trap Collection System project will be engineered and completed by the Gorham Operations staff and maintenance employees.

The Pocket Ventilation System on #11 & #14 paper machines projects plus the Hood Economizer project will be engineered by LaCasse & Weston Inc. and completed by outside contractors based on competitive bids. The project costs for each line item includes labor and materials for these three projects.

Vacuum pump seal water reuse on #11 Paper Machine		
	Rate/Hr	Cost
Mechanical work – 900 man-hours	**$20**	**$18,000**
Electrical/Instrumentation work – 360 man-hours	**$20**	**$7,200**
Total Labor		**$25,200**
Fringes at 55 %		**$13,860**
Total Labor & Fringes		**$39,060**
Materials		**$85,940**
Total Project Cost		**$125,000**
Improve the Pocket Ventilation System on #11 Paper Machine		
Design engineering and drafting – 80 man hours - LaCasse & Weston, Inc.		**$8,000**
Roofing work – 120 man hours – outside roofing contractor		**$20,000**
Ductwork fabrication – 160 man hours – outside sheet metal contractor		**$38,400**
Install duct – 72 man hours- outside sheet metal contractor		**$14,600**

Remove duct from economizers to the make-up air system, seal and patch PV duct – 24 man hours – outside sheet metal contractor		**$4,000**
Total Project Cost		**$85,000**
Improve the Pocket Ventilation System on #14 Paper Machine		
Design engineering and drafting – 80 man hours - LaCasse & Weston, Inc.		**$8,000**
Roofing work – 120 man hours – outside roofing contractor		**$20,000**
Ductwork fabrication – 160 man hours – outside sheet metal contractor		**$38,400**
Install duct – 72 man hours- outside sheet metal contractor		**$14,600**
Remove duct from economizers to the make-up air system, seal and patch PV duct – 24 man hours – outside sheet metal contractor		**$4,000**
Total Project Cost		**$85,000**
Install hood Economizer on the #19 Paper Machine		
Design engineering and drafting – 160 man hours - LaCasse & Weston, Inc.		**$16,000**
Roofing work for new supports – 16 man hours – outside roofing contractor		**$3,000**
Fabricate structural supports – 80 man hours – outside steel fabricators		**$28,000**
Ductwork fabrication – 240 man hours – outside sheet metal contractor		**$78,000**
Install economizer and duct – 120 man hours- outside sheet metal contractor		**$24,700**
Exhaust fan speed increased – 8 man hours – mill personnel		**$300**
Total Project Cost		**$150,000**
Install a steam trap collection system on #19 PM Yankee Hood Air Heater		
	Rate/Hr	
Mechanical work – 88 man-hours	**$20**	**$1,760**
Electrical/Instrumentation work – 100 man-hours	**$20**	**$2,000**
Total Labor		**$3,760**
Fringes at 55 %		**$2,068**
Total Labor & Fringes		**$5,828**
Materials		**$19,172**
Total Project Cost		**$25,000**

In summary:
Gorham Mill labor & Fringes - $45,000
Outside Contractors and Services - $320,000 (Includes supplied materials)
Purchased Materials - $105,000

7.0 Applicant Qualifications

Andrew Hartford – Program Coordinator
Fraser NH LLC

Mr. Hartford is currently the Engineering and Maintenance Manager for Fraser NH LLC's Gorham mill. He has over 28 years of paper industry experience in the maintenance and engineering areas. He has experience at several different mills in the Northeast including Monadnock Paper Mills, Groveton Paper Board, Kimberly-Clark Corporation, Simpson Paper Company, and Georgia Pacific Corporation.

During 2000-2002, he was project manager for Groveton Paper Board's $14mm cogeneration project. The project included two Solar 60 natural gas turbines, two ERI heat recovery steam generators, and new feeds to the mill's switch gear.

David LaCasse P.E. – Engineer on three of the projects
LaCasse & Weston, Inc.
21 New Portland Rd.
Gorham, Maine 04038

Gorham Mill mechanical and electrical & instrumental employees with many years of experience will be working on these projects.

Outside contractors have not been identified yet but will be chosen based on proven track records for the skills required to properly complete these projects.

8.0 Additional Information

None

9.0 Letters of Commitment

Not Applicable to this program

Willis Blevins
General Manager