

National Life Insurance Company



Project Completion: December 2010

Boiler Size:

Steam Boiler #1 operates at 12psi. Output is 154hp or 5mmbtu/hr.

Steam Boiler #2 operates at 12psi. Output is 200hp or 6.7mmbtu/hr.

Displaces: 210,000 gallons of #4 fuel oil.

Project Cost: \$2 million.

Savings: Average \$400,000 per year.

National Life Group® is a trade name of National Life Insurance Company, Montpelier, VT – founded in 1848. The National Life Insurance Company was chartered by the Vermont Legislature on Nov. 13, 1848. After a period of organization, National Life began selling policies in 1850.

National Life Group's biomass energy project meets 95 percent of the heating needs of its Montpelier campus while reducing the company's annual carbon footprint by 45 percent.

The \$2 million project, cut National Life's annual usage of #4 heating by 210,000 gallons. Estimated savings on heating cost are \$400,000/year.

National Life is operating 2 biomass boilers.

- Boiler #1 is a 15psi steam boiler operating at 12psi. Output is 154hp or 5mmbtu/hr.
- Boiler #2 is a 15psi steam boiler operating at 12psi. Output is 200hp or 6.7mmbtu/hr.

National Life's 500,000-square-foot headquarters is one of the largest commercial buildings in Vermont.

"This project will reduce our reliance on foreign oil, reduce our greenhouse gas emissions and will create jobs in our region by supporting our forest products industry," said Mehran Assadi, president and CEO of National Life Group.

National Life's heating system is using two Messersmith biomass boilers to burn carbon-neutral wood chips from local renewable sources as fuel. A bin holding 75 tons of wood chips is located below ground near the building's entrance.

The Montpelier-based Biomass Energy Resource Center, BERC, worked closely with National Life in the development of the biomass system. Currently there are more than 70 wood-burning biomass heating systems in use throughout Vermont, primarily in schools. National Life is one of only a few commercial office buildings to use such a system.

According to BERC, wood chip biomass systems are carbon neutral and have lower sulfur dioxide and net greenhouse gas emissions than both oil and propane. In addition, a sophisticated electrostatic precipitator, an exhaust filtration system, will remove on average 98 percent of any particles from the emissions. However, because the wood chips are green and nearly half water, occasional steam plumes may be released through the building's emissions stack.

According to Tim Shea, who spearheaded the project for National Life, **"What is remarkable to me is that we'll be heating approximately 500,000 square feet of building with the biomass system this winter and the emissions will only be that of about 12 woodstoves, the biomass system will cost approximately \$2 million and will pay for itself in savings within five to six years."**

