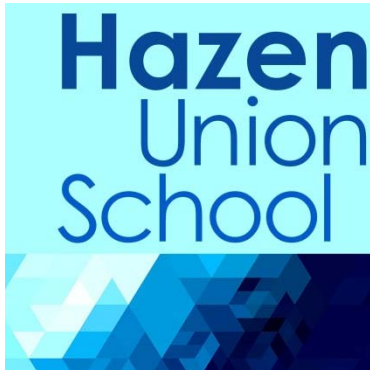


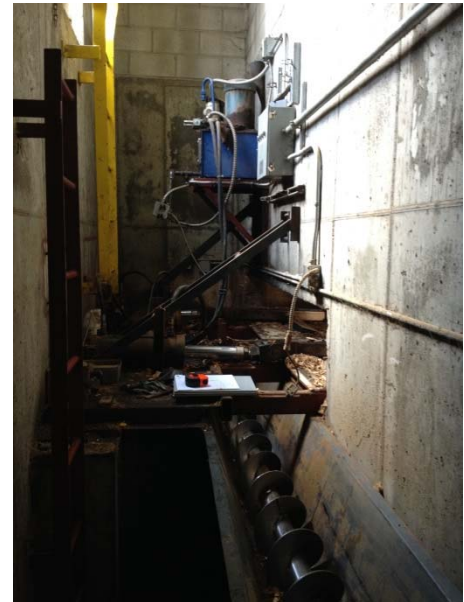
## Case Study-Maintenance & Upgrades



Located in Hardwick VT, The Hazen Union School has operated a biomass boiler since 1993. Hazen Union pioneered biomass thermal energy in Vermont, being one of the earliest proponents of the benefits of using locally sourced biomass fuel for thermal energy production. For over 20 years, Hazen Union School has been supporting their local economy, reducing their dependent on foreign oil and saving thousands of dollars through the use of their biomass energy plant.

After many years of reliable service, several key pieces of equipment started to show their age. Increasing maintenance cost and system down time were having a negative effect on the operational cost of their heating plant. In the summer of 2015, Hazen Union decided to move forward with a plan to make several improvements and upgrades to their biomass system. All upgrades & improvements are intended to reduce labor, increase plant uptime and reliability, and improve boiler efficiency.

Biotech Energy's VP of Engineering, Maintenance & Operations played a key role in helping Hazen Union realize their vision.



**Material Handling System-Pre Upgrades**

Plant upgrades included the following:

- Installation of air operated, automated boiler tube cleaner system
- New hydraulic moving wedge floors system
- New receiving conveyor screw
- New receiving conveyor screw tail bearing
- New receiving conveyor screw gear drive and motor
- New metering conveyor screw gear drive and motor
- New air lock wiper blades
- New air lock bearings
- New induce draft fan and motor
- New refractory burner
- New air compressor system for tube cleaners and plant air usage
- New variable speed drives for draft and combustion fans
- New actuator for combustion system lid



### **Material Handling System-Post Upgrades**

The work performed at Hazen Union School highlights some of Biotech Energy capabilities. Call us at **1-800-340-1387** or visit us at [www.Biotech-energy.com](http://www.Biotech-energy.com) today to find out how Biotech Energy Inc, can improve your plant operations and your bottom line.