

By the Numbers

5 million Btus/hr

20,000 square feet

1 Messersmith
Combustion Boiler

100-ton fuel storage
garage

1,000 tons of chips/year

\$50/ton of wood chips

\$250,000 in fuel savings

\$3,900,000 total project
costs

Narragansett Regional School District

Narragansett Regional Middle and High Schools (NRSD) share a building and central office in Baldwinville. In 2015, the district installed a Messersmith wood chip boiler to heat the 20,000-square foot building.

The wood chip boiler runs on chips supplied by Anderson Timber in Westminster. The system uses about 1,000 tons of local wood per year at \$50/ton. Before converting to biomass, the school heated with an oil burner that used up to 800 gallons each day. As wood chips are the cheapest wood fuel option, NRSD now saves \$250,000 on fuel each year. The back-up propane system is rarely used.

Wood chips are delivered via truck to the 100-ton storage bunker, accessible via two garage doors. Wood chips move from the storage bin into the boiler via an auger system that meters the rate of chip delivery so that the boiler maintains optimum combustion efficiency.

An electrostatic precipitator is connected to the system to reduce emissions. The ESP uses electrical charges to separate particulates from harmless outgoing emissions such as water vapor. The other by-product of combustion is ash, which is emptied daily and can be mixed with soil and used for landscaping.

