Norwich University

Norwich University is a private college, located in Northfield, Vermont, with two centuries of military tradition. Founded in 1819 by Captain Alden Partridge, it is the first private military college in the United States and the birthplace of the nation's Reserve Officers' Training Corps (ROTC) program.

Approximately 2,300 cadets, civilian residents, and commuters attend Norwich University, along with about 1,200 online graduate students from over 45 states and 20 foreign countries. The University has 165 full University offers academic programs in Five Colleges: Liberal Arts, Professional Schools, Science & Mathematics, National Services, and Graduate and Continuing Studies.

Norwich University has always been on the forefront of new technology and the campus heating system is no exception.

The new Biomass plant is a fantastic new facility that ushers in a new era of energy efficiency and fiscal smarts at Norwich University. We are proud to say this project was completed on budget and on schedule.

This $6 million project, utilizes two wood-burning boilers to heat the campus, bringing a dramatically more efficient and sustainable use of resources to the campus physical plant, as well as substantial cost savings.

- Project completion date:

  October 2013

- Boiler size:

  Two 400 hp

  26mmbtu/hr. total output

- Displaces:

  700,000-800,000 gals. of fuel oil per year.

- Project cost: $6 million
- Savings: $2.2 million in the first 20 months.

The Biomass Boiler Plant:

- Has displaced the burning of more than 750,000 gallons of fuel oil with 10,000-13,000 tons of green hardwood bole chips annually. The 35%-40% moisture content wood chips are acquired from local sources within a 100-mile radius the campus. The boilers operate 12 months of the year.
- Two 400 HP, 150 PSI steam boilers have a total output of 26 MMBtu at 125 psi in winter and 50psi during summer months. Generating up to 230kw with a back pressure steam turbine in winter.
- Chip Bin Capacity - 300 tons, with four Messersmith Traveling Augers to move wood chips using low electrical energy consumption.
- Uses best available technology (electrostatic precipitator) to reduce particulate emissions to 0.028 lbs/ MMBtu, less than half of EPA requirement of 0.07 lbs/MMBtu. Combustion Efficiency is 99.8%
- All ash from the system goes to a farm close to the University. Project cost of $6 million includes biomass plant and new underground piping to two new dorms. Savings - $ 2.2 million in first 20 months of operation!

The new Biomass Boiler Plant also has been aesthetically blended with the surrounding buildings like Kreitzberg Arena, Doyle Hall and the existing Central Power Plant.

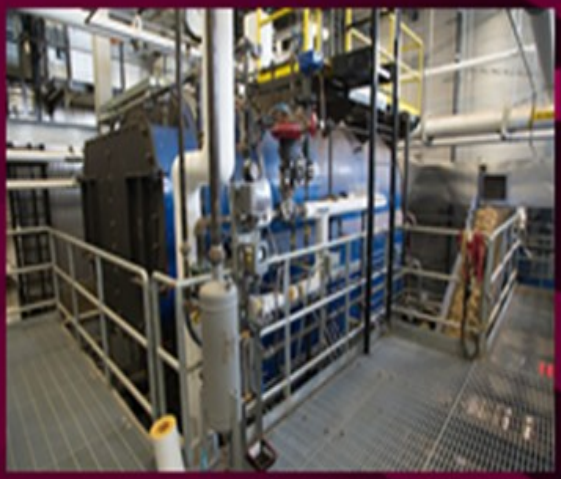
Biomass Plant Info: Oct. 20, 2014 through March 31, 2015

Tons of wood burned= 20,651

Oil equivalent (displaced oil) gallons= 1,174,971

Net Fuel Cost Savings= $ 2,018,167*

Reduction in CO_2 emissions (metric tons)= 11,152



* does not include debt or depreciation

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