

Hickory's first-of-its-kind soy-based system to provide hot water and electricity for Allston Brighton CDC's new low income apartments.

Renewable biofuels will provide, electricity, heat and hot water for the new Bryan Honan Apartments developed by Allston Brighton CDC. Hickory provided feasibility analysis and design support for the Combined Heat and Power System (CHPS) for ABCDC, which will showcase this technology for the first time in the USA. Biodiesel is a 100% plant-based fuel from soy that generates lower pollution than petroleum diesel. Biodiesel is a far cleaner fuel than petroleum diesel in almost every pollutant category. For this project alone, the CHPS will cut greenhouse gas production by 210 tons per year over a standard heating system installation! Moreover, growing soybeans to produce the fuel enriches the soil through nitrogen fixation, thereby improving another part of the ecosystem.

Diesel engines were originally designed to run on plant-based fuels, but petroleum fuels proved cheaper initially. Nonetheless most diesel engines may be run on biofuels without alteration. Hickory's biodiesel CHPS for ABCDC's 80-unit multifamily residential project represents a breakthrough in renewable electric power and heat generation for small residential buildings. Though similar cogeneration systems have been used in residential buildings, up until now they have all been powered by fossil fuels. ABCDC plans to install a 40 kilowatt electrical generation system powered solely by soy based biodiesel fuel. The internal combustion diesel engine will power a generator for electricity, and heat will be recovered from the exhaust and the cooling water to supply heat and hot water. Roughly 38% of the energy will be converted to electricity and half of the input energy will be delivered as heat. This system will operate approximately 50% of the year to produce roughly 131,000 kWh per year and 600 MMBTU per year for heat and hot water in the two apartment buildings being served.

This application of biodeisel offers a new opportunity to provide renewable energy in an urban setting, while supporting rural agriculture. The industry sees this as opening the door for more such projects, a concept promoted by the Massachusetts Technology Collaborative.

For more information please contact the Hickory Consortium, 85 Depot Rd. Harvard, MA 01451
978-456-6950 • info@hickoryconsortium.org • www.hickoryconsortium.org.