

PA FUELS FOR SCHOOLS & BEYOND INITIATIVE:



PA Department of Conservation & Natural Resources



PA Department of Agriculture



PA Department of Environmental Protection

Pocono Northeast



Pocono Northeast RC&D Council



US Department of Agriculture/Natural Resource Conservation Service



US Department of Agriculture/Rural Development



Sustainable Forestry Initiative of PA



Pennsylvania State University



Endless Mountains RC&D Council



Advanced Recycling Equipment



Cycle4ward Inc.



PA Hardwoods Development Council

USDA US Forest Service

Elk County Regional Facility

PA Association of School Administrators

Southern Alleghenies Conservancy

PA Dep. of General Services

PA Forest Products Association

PA Higher Educational Facilities Authority

Bradford Forest Landowners

PA School Boards Association

Dillon Floral Corporation

Capital RC&D Council

Center Point Engineering

Community Partnerships RC&D Council

McFarren & Associates

Headwaters RC&D Council

Penn TAP

Penn's Corner RC&D Council

Suez Energy Northumberland Cogeneration

Penn Soil RC&D Council

Clarion Limestone School District

Southern Alleghenies RC&D Council

Mount Union Area School District

Regional Economic Development Districts Initiative

Mountain View School District

Warrior Run School District

Pennsylvania Fuels for Schools & Beyond



A RENEWABLE ENERGY RESOURCE PROJECT

PROMOTING RENEWABLE ENERGY TO PENNSYLVANIA SCHOOLS AND BUSINESSES

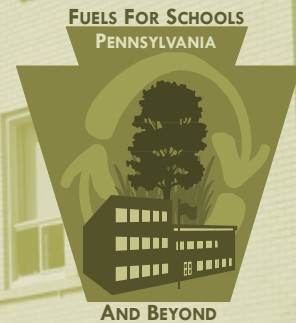
What is the Pennsylvania *Fuels for Schools & Beyond* Program?

A statewide energy-use initiative promoting the use of local renewable resources to provide reliable energy for Pennsylvania schools and businesses.

With environmental concerns and fuel costs mounting, many Americans are looking for ways to reduce their dependence on fossil fuels and replace them with renewable energy sources.

In Pennsylvania, renewable energy sources include wood, wood residue and dedicated agricultural energy crops, also known as biomass.

The Pennsylvania Fuels for Schools & Beyond program is helping schools and businesses understand the economic, operational, and environmental benefits of biomass systems.



BETTER FUEL ALTERNATIVES

Energy from Wood

Wood for energy can come from a number of sources, such as: 1) urban or construction site wood, 2) low value wood that is part of a timber harvest, 3) residues from wood manufacturing, 4) dedicated energy crops, and 5) timber stand improvement activities.

Wood fired systems are currently a viable alternative when installed in schools, offices, prisons or greenhouses. Such projects save substantial money on fuel, when compared to the price of fossil fuel. Combined heat and power systems generate electricity to offset power costs and can power air conditioning systems during the summer.

Energy from Biomass

Large quantities of biomass can be grown specifically for energy purposes on Pennsylvania farms. High yielding, native grasses are becoming profitable crops for farmers, while providing many environmental benefits and a locally grown fuel source for their communities. Much of the agricultural land base in Pennsylvania, while only marginally suited for traditional row crop production, is perfectly suited for grassland biomass production.



In addition, many of the farmers have the experience and much of the equipment needed to cost effectively bring this material to market.

Economics

As a locally produced fuel, wood chips are more economical to burn than fossil fuels. Biomass heating systems also avoid price volatility associated with natural gas and oil. Modern wood burning systems require less than 30 minutes of maintenance per day. Locally generated wood can be used near the source, thus minimizing the cost of labor for transport. Collectively, wood fired systems can become part of the support structure for local economies through jobs and energy savings.



The Pennsylvania Fuels for Schools and Beyond Program estimates that when fuel oil is \$2.00/gallon and wood costs \$50.00/ton, wood fuel reduces energy costs by nearly 75%, making wood fuel systems very economically sensible. During the 2006 heating season, the Mountain View School District in Susquehanna County saved \$114,000 by heating with wood chips instead of fuel oil, and the Elk Regional Health Center saved \$300,000 over the cost of natural gas. Ultimately, 100% of the energy costs for biomass heat systems is returned to the local economy.

Operation

Biomass systems can be designed to meet the needs of the user and the available fuel sources. Biomass systems can use green, dry or blended fuels. System maintenance varies from a half hour to one hour per day, depending on the level of automation. Biomass systems use computerized delivery systems that automatically move fuel from the stockpile, bin or hopper to the boiler, according to the energy needs of the system.

Developing a fuel inventory usually allows for the storage of a supply to cover periods of weather not suitable for delivery. Some facilities allow for delivery of large quantities at the best prices.

In addition to schools, wood fuel systems make sense in other buildings such as hospitals, offices and prisons. Wood manufacturing facilities routinely take advantage of the wood residues they generate as a fuel source for process and facility heat. Greenhouse systems, like the one installed at Dillon Floral in Bloomsburg, provide the economic balance on energy costs to heat the greenhouses.

Environmental

When timber is harvested from forests, secondary waste wood can be sustainably removed and converted to wood chips to be used as an energy source. Some waste wood is left behind for ground cover until forest regeneration begins and to provide benefits to the ecosystem. Care must be taken to prevent over-harvesting and maintain our forestlands as a renewable resource.

Growing native grasslands for energy can return many benefits to the local and regional environments. Native grasslands protect the integrity of our soil and water resources for future generations, while providing high quality habitat to many species of wildlife. In addition, these crops can greatly reduce the amount of fuel, fertilizers, and pesticides farmers need to use annually to produce a profitable crop on their farms. Simply put, native grasslands are the most efficient, environmentally friendly crops that can be grown on farmland and transformed into a wide variety of truly green fuels for consumers.

Modern biomass burners are clean burning and meet current air emission standards. Biomass is a renewable resource that is carbon neutral and reduces greenhouse gases which contribute to global warming.

Funding Sources

Numerous sources of funding assistance exist for biomass energy systems in Pennsylvania for schools, institutions, greenhouses or other businesses. Both state and federal programs have grant and loan opportunities available at certain times during the year.

The Pennsylvania Department of Environmental Protection offers the Energy Harvest and PA Energy Development Authority grant programs, two sources of funding for renewable energy projects.

The Department of Community and Economic Development (DCED) offers the MELF (Manufacturers Equipment Loan Fund) for the handling of biomass fuels and the installation and purchase of biomass boilers.

The USDA Rural Development Program also provides funding to municipalities with fewer than 50,000 residents, which qualifies most areas of Pennsylvania. The USDA US Forest Service is another potential source for funding.

Additional funding sources and special loan programs are currently under development to provide financial assistance to school districts. The economic savings of these bio-fuel systems not only provides positive savings for the school districts, but is also sound business considerations for industries looking to reduce energy costs and maintain profitability.



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