Pocono Northeast Resource Conservation & Development Council

http://www.pnercd.org

Mission of the Council

- **The Mission of the Pocono Northeast Resource Conservation & Development (RC&D) Council** to enhance and improve the ecological, cultural, and economic characteristics of the area through projects and programs that promote the management, protection, and utilization of the area's resources.

http://www.pnercd.org

Who is the Council?

- The Council is composed of a group of citizens that volunteer their time and effort to facilitate and improve the environment and economic character of the region.

- The Council is a community resource providing expertise in resource management and development throughout a ten county area of Northeastern Pennsylvania.

Pocono Northeast
Resource Conservation & Development Council

Vision of the Council

- **The Vision of the Pocono Northeast Resource Conservation and Development Council** to become a advocate for natural resources and community sustainability in northeastern Pennsylvania.

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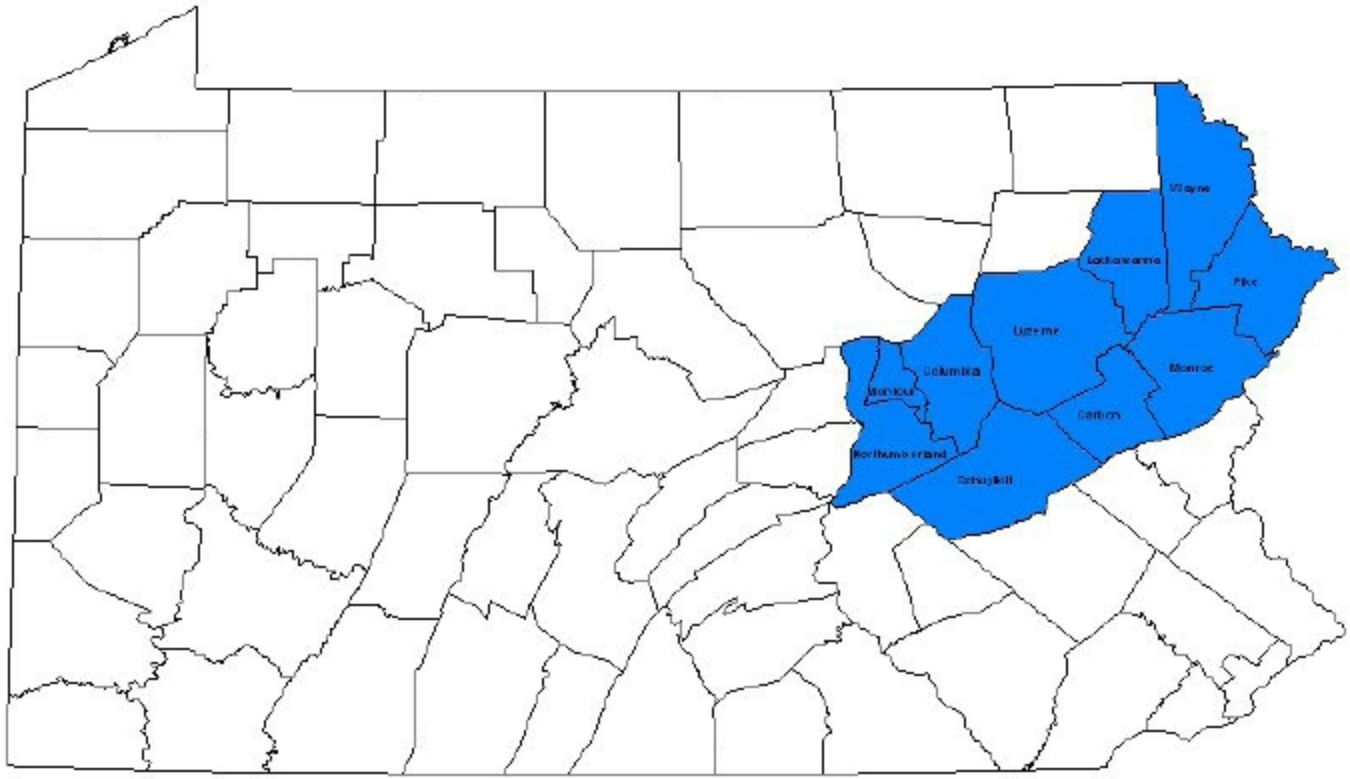
Council Main Service Area



Serving the Following Counties in Pennsylvania: Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Schuylkill, and Wayne

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Program Areas
Local and Statewide Initiatives

1. **Pennsylvania Fuel for Schools & Beyond Program (statewide) and Energy Education (local)**
2. **Consortium for Scientific Assistance to Watersheds (local and statewide)**
3. **Solar / Wind Agricultural Systems (local and statewide)**
4. **Energy Initiatives, Switchgrass (Biomass), and the Mobile Pelletizer (local and statewide)**
5. **Agricultural/Rural Stormwater Best Management Practices and Forestry Initiatives. (local)**

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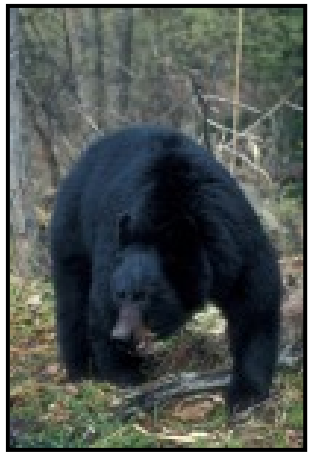
What is Biomass?

- Biomass is any organic material that can be produced on a renewable basis, and be used as a feedstock for energy.

"Working local biomass energy into our lives responsibly"

Why biomass for energy???



EDUCATION

ENERGY

BIOMASS

ENVIRONMENT

ECONOMICS / LOCAL JOBS

CARBON Neutral – Creates Local Jobs

Pennsylvania
Fuels for Schools & Beyond

The Pennsylvania Fuels for Schools & Beyond Working Group supports and fosters a statewide biomass energy use initiative promoting local renewable natural resources to provide reliable energy for Pennsylvania schools and businesses.

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www.pafuelsforschools.org

We are <u>Not</u> talking about this!

FUELS FOR SCHOOLS
PENNSYLVANIA
AND BEYOND

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We are talking about this!

- Wood fired heat system at PA hospital

- Wood fired heat system at PA wholesale greenhouse

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Pennsylvania's Fuels for Schools & Beyond

Biomass Feedstock Sources

- **Forest**
  - Low grade wood and logging residues from timber sales
  - Timber stand improvements
  - Rehabilitation of understocked sites
  - Short rotation woody crops: poplar, willow, etc.
    - Restoring abandoned mine lands
- **Grasses**
  - Native warm-season grasses
  - Cool season grasses
- **Crops**
  - Corn, grains, soybeans
- **Waste**
  - Urban and suburban wood/lawn residues
  - Industrial: packaging, pallets, dunnage (scrap wood)
  - Food / animal byproducts

"Working local biomass energy into our lives responsibly"

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Why Biomass for Energy???

	Gross Btu	Unit	Efficiency	Net Btu	COST per	unit	$ per million Btu
Green wood- wood chips (40% MC)	10,320,000	Btu/ton	0.71	7,327,200	***$ 35.00***	ton	**$ 4.78**
Coal	30,600,000	Btu/ton	0.85	26,010,000	***$ 180.00***	ton	**$ 6.92**
Seasoned firewood	20,000,000	Btu/cord	0.77	15,400,000	***$ 150.00***	cord	**$ 9.74**
Switchgrass (pellets)	15,500,000	Btu/ton	0.80	12,400,000	***$ 180.00***	ton	**$ 14.52**
Shelled corn @15% MC (56lb/bsh)	14,000,000	Btu/ton	0.80	11,200,000	***$ 178.00***	ton	**$ 15.89**
Natural Gas	1,025,000	Btu/mcf	0.80	820,000	***$ 13.70***	mcf	**$ 16.71**
Fuel oil #2	138,800	Btu/gal	0.83	115,204	***$ 2.75***	gal	**$ 23.87**
Electricity	3,412	Btu/kwh	0.98	3,344	***$ 0.118***	kwh	**$ 35.29**
Propane	91,300	Btu/gal	0.79	72,127	***$ 2.95***	gal	**$ 40.90**

Based on work done originally by USDA-FS. Expanded with values and prices from variety of sources (such as http://www.hearth.com/econtent/index.php/fuels/)

http://www.energysavers.gov/your_home/space_heating_cooling/index.cfm/mytopic=12330
http://www.fpl.fs.fed.us/documnts/techline/fuel-value-calculator.pdf
http://www.eia.doe.gov/cneaf/solar.renewables/page/trends/table10.html

Cost Savings to Schools, Tax Payers, plus create Local Jobs

- Mountain View School District- **$131,000/yr.**
  - Current savings per year versus fuel oil
- Dillon Floral Corporation (Greenhouse) - **$191,000/yr.**
  - Savings per year versus #6 fuel oil
- Elk Regional Health Facility (Hospital) - **$300,000/yr.**
  - Anticipated savings versus natural gas
- Benton Area School District - **$72,800/yr.**
  - Anticipated savings versus fuel oil

Pennsylvania's Fuels for Schools & Beyond

Why this works!

- ***Saves Tax Payers Money $$$!!!***
- ***Locally Produced Feedstocks***
- ***Boost to Local Economy – Create / Maintain Local Jobs !***
- ***Utilization of Biomass (Renewable Resources)***
- ***Utilization of Waste Product (Wood Waste)***
- ***Reduces Dependence on Fossil Fuels***
- ***Carbon Neutral***
- ***Environmental (Water Quality, Wildlife Habitat, etc.)***

www.pafuelsforschools.org

Make Economic Development and Homegrown Solutions Part of the Plan!

- Just Like the Buy Fresh Buy Local – Program Saves Money and Supports Economic Base.

- Lets Save Money – Reduce Taxes – Create Jobs – Using Local Energy Solutions- Support Green Sustainable Infrastructure – “The Fuel for Schools Program”.

Note: The Council also supports the use of ground source heating/cooling systems and other alternative energy systems.

Mountain View School District

(Susquehanna County)

- Installed Wood Chip Boiler in 1991 as part of capital improvement project
- Heating with wood chips from local supplier(s)
  - Wood chips are bid out every year (~$25-35 per ton)
  - Chips are required to meet certain specifications (moisture, size, non-foreign material, etc.)
- In 2005-2006 Mt. View saved ***$69,000*** and in 2006-2007 saved ***$60,000*** heating with wood chips versus fuel oil
- In 2007-2008 Mt. View saved ***$131,000***

Dillon Floral Corporation

(Columbia County)

- Installed Wood Chip Boiler in 2007 to replace #6 Heating Oil burning system
- Annual heating requirement is of 145,152 gallons of #6 heating oil
- In 2006 #6 heating oil was $1.26/gallon= $182,891
- In 2007 #6 heating oil is $1.80/gallon= $252,000
- Annual heating requirement using wood chips would be 2,444 tons of wood chips annually at $30/ton= $73,320
- Using these figures there would be ***$178,680*** savings per year in 2007
- Actual savings in 2007-2008 were ***$191,000***
- Wood chips are being supplied locally from: sawmills, furniture manufacturer, right-of-way clearings, and other suppliers.

FUELS FOR SCHOOLS
PENNSYLVANIA
AND BEYOND

Elk County Regional Health Facility

(Elk County)

- Installed Wood Chip Boiler in 2007
- Heating with wood chips from local supplier(s)
- System is not only providing heat but also domestic water and hospital equipment
- IN 2007-2008 for 6 months savings were ***$94,000***
- In 2008-2009 Facility is expected to save ***$300,000***

Fuels For Schools Pennsylvania

And Beyond

Benton School District

(Columbia County)

- Heating Requirements & Costs
  - Five years average indicates approximately 46,400 gallons of oil required to heat the elementary, high school/middle school buildings
  - In 2005-06 ***$107,648*** was spent to heat the buildings
  - In 2004-05, bid cost was $1.54 per gallon, in 2007 the cost was $2.32 per gallon.
  - In 2008 the price quoted was $4.00 per gallon

FUELS FOR SCHOOLS PENNSYLVANIA AND BEYOND

Benton School District

(Columbia County)

- Anticipated $$ Savings with Biomass
  - ***Wood Chips:*** 995 tons/year @ $35/ton $34,825 annual cost: savings of **$113,655** annually
  - ***Grass Pellets:*** 430 tons/year @ $180/ton $77,400 annual cost: savings of **$71,080** annually
  - ***Corn:*** 461 tons/year @ $178/ton $82,058 annual cost: savings of **$66,422** annually
  - ***Wood Pellets:*** 403 tons/year @ $225/ton $90,675 annual cost: savings of **$57,805** annually

* Costs and figures using average BTU's values for feedstock, 80% efficient heating system, cost of fuel oil was at ***$4.00 per gallon in 2008,*** and biomass providing 80% of heating requirement of school.

Our Mobile Pelletizing System- For Biomass

Upcoming Events

- NEPA Energy Solutions Expo
- June 26 – 27, 2010
- Luzerne County Fairgrounds
- Dallas, PA

http://www.pnesolutions.org

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We **NEED You** – Positions Available
We are looking for New Community Partners,
Citizens, and Projects to More Effectively
Service Our Area.

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