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.
Council Main Service Area

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

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**
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.

www.pafuelsforschools.org
We are **Not** talking about this!
We are talking about this!

- Wood fired heat system at PA hospital
- Wood fired heat system at PA wholesale greenhouse
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”
## Why Biomass for Energy???

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

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
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.


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