



Pellets: Opportunities for West Virginia

Governor's Energy Summit

Charleston, WV

December 17, 2013

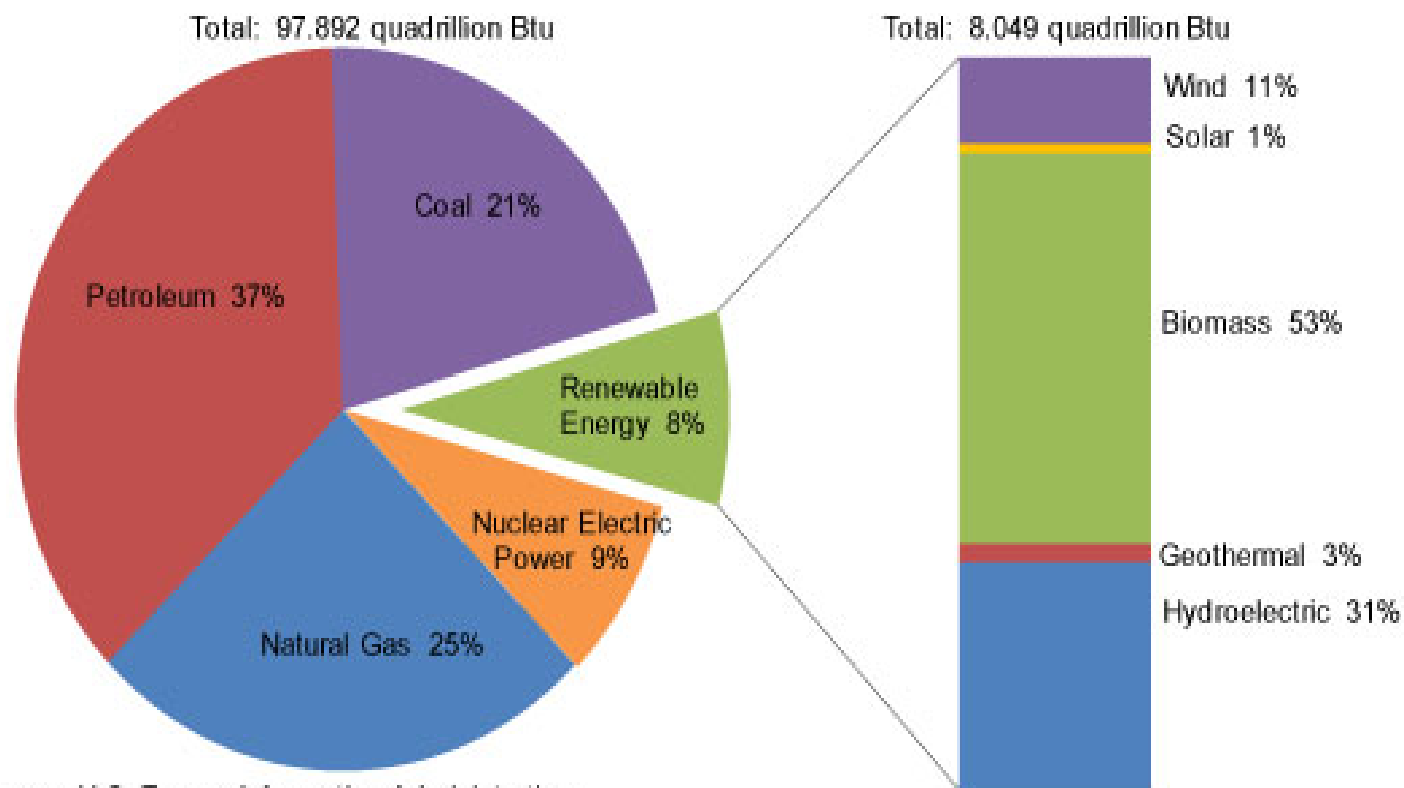
Jennifer Hedrick, Executive Director

PFI in Brief

- Founded in 1985
- A North American Trade Association Promoting Energy Independence through the Efficient Use of Clean, Renewable, Densified Biomass Fuel
- Emphasis on Densified Biomass (e.g. pellets) for a Range of Applications
- Membership Comprised of:
 - Densified Biomass Manufacturers
 - Industry Suppliers
 - Associate Members (e.g. NGOs, universities)

America's Energy Usage

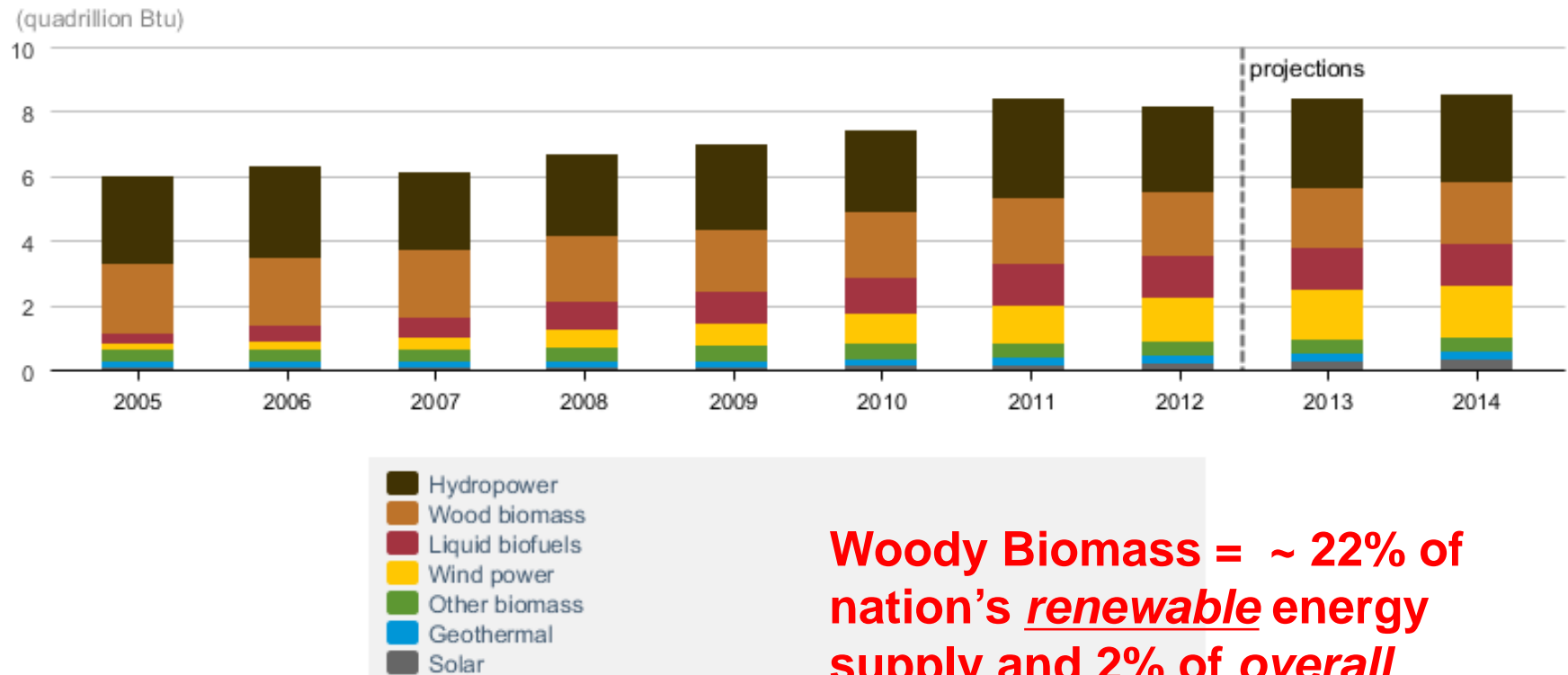
Figure 1. Renewable energy consumption in the nation's energy supply, 2010



Source: U.S. Energy Information Administration

Biomass Energy Supply in the U.S.

U.S. Renewable Energy Supply



Woody Biomass = ~ 22% of nation's renewable energy supply and 2% of overall energy used in the U.S.

America's Energy Use



Transportation
29%



Electricity
40%



Heating (thermal)
31%

Source: Energy Information Administration

U.S. Domestic Pellet Market

Residential Market = Primarily “Bagged” Market; pellets sold in 40 lb. bags at “Box” stores or independent retailers

Using pellets as primary or secondary heat source; zone heating

About 1.5 million homes heating with pellets



Thermal Applications: Residential Heating

- Stoves and Inserts
- Boilers and Furnaces



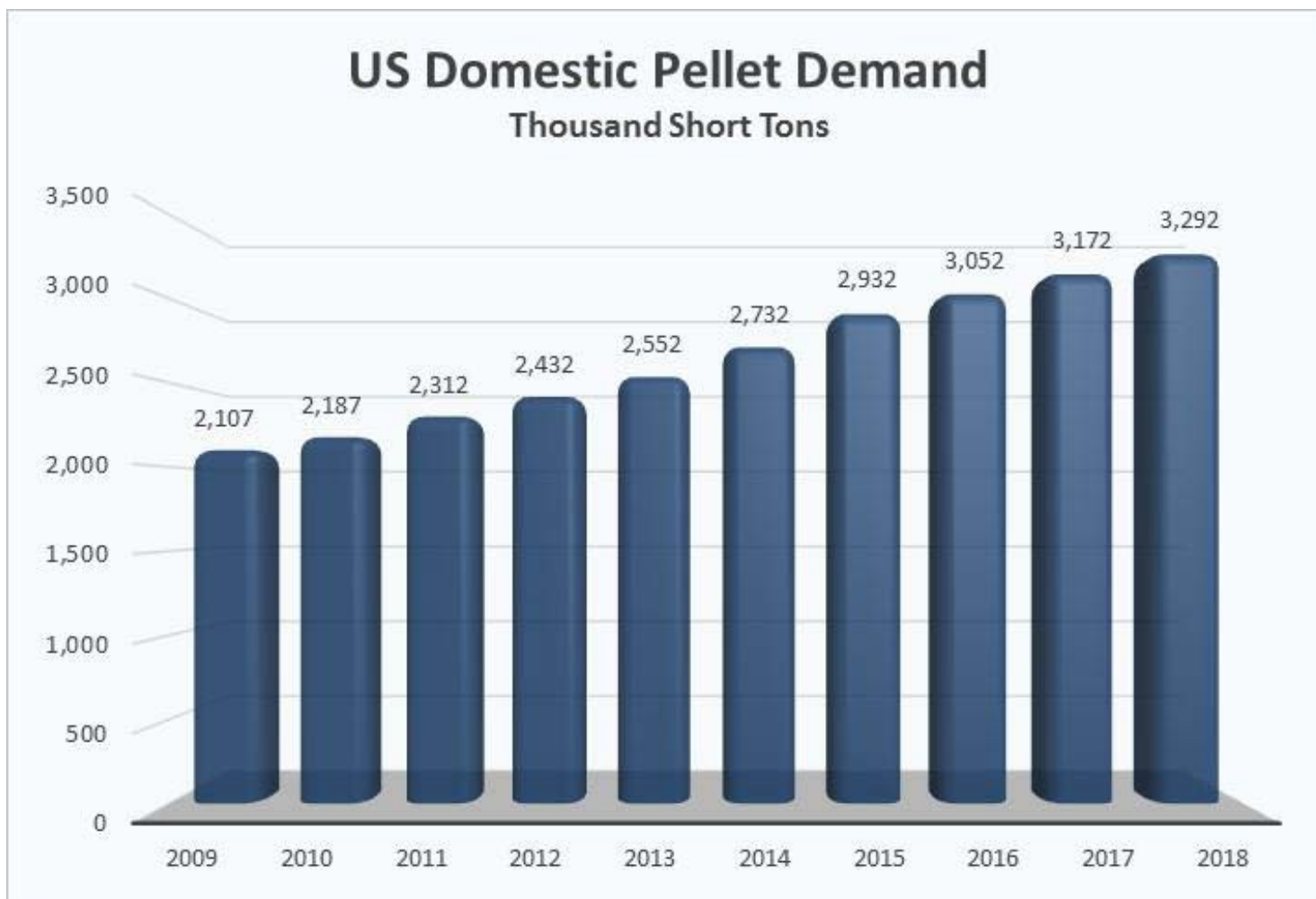


Thermal Applications: Commercial/Industrial Market

- Large-scale boilers
- Generally > 250,000 BTU/hr
 - Schools
 - Hospitals
 - Government Buildings
 - Communities
 - Confined Animal Feeding Operations



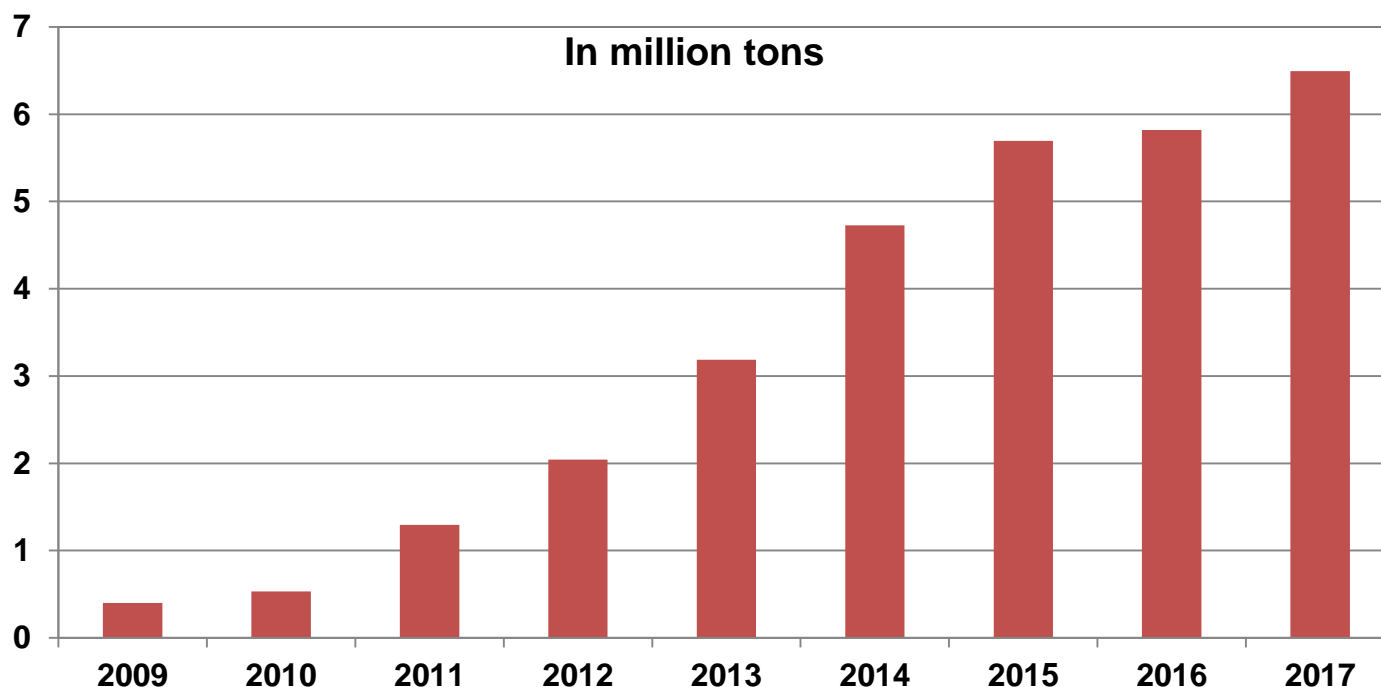
U.S. Domestic Market



Source: RISI

U.S. Wood Pellet Exports

Growing number of pellets now exported to EU utilities



Source: RISI North American Bioenergy Forecast

West Virginia Pellet Industry

- Appalachian Wood Pellets, Inc. Kingwood, WV
- Hamer Pellet Fuel Co., Elkins, WV
- Lignetics, Inc., Linn, WV





West Virginia Pellet Industry

- Employing 65 people— jobs for rural West Virginians
- Over 40 years of experience producing pellets for West Virginia, Northeastern and Mid-Atlantic states, and Canada
- Utilizing production residues from saw and lumber mills—excellent outlet for waste byproduct
- Producing pellets for residential heating, barbecuing, and for use by other industries as absorbents
- Pursuing other market opportunities



West Virginia Pellet Industry

- Provide an affordable heating alternative to other fuels, which can offer families significant costs savings
- Every ton of pellets used vs. oil reduces CO₂ emissions by about 1.5 tons
- Pellet stoves have extremely low particulate emissions due to their high burn efficiency and the density of the fuel (<1gm/hr)



West Virginia Wood Pellet Production and Sales



Developing Market Opportunities

Confined Animal Feeding Operations (CAFOs)

Fuel switch from LP gas to pellets provides:

- Greater cost effectiveness and predictability
- Savings up to 50%
- Zero moisture content resulting in: dryer litter, improved bird health, reduced ammonia and odors, improved air quality for workers and birds
- No carbon impact
- Use of renewable resources





Opportunities for Pellets: Lessons from Neighboring States

- **Goal** = Provide affordable heating options for residents of New England, MD and PA
- **Goal** = Job Creation
- **Goal** = Grow biomass thermal market

Opportunities for Pellets: Lessons from Neighboring States

- ✓ Commitment from Community (physic and financial)
- ✓ Support of State and Local Governments
- ✓ Federal Government Funding

Grassroots Action = Market Expansion





Project Examples: Millinocket Regional Hospital Maine

- 25 beds
- 70,000 square feet



Choose Site

Millinocket Regional Hospital

Maine Biomass Heating Projects Data Dashboard

Summary Data

Millinocket Regional Hospital

Public School building

200 Somerset Street

Millinocket, ME, 04662

Building Size = 70,000 Square Feet

New Boiler: Schmid Model UTSP 700

Boiler Capacity = 2.20 MMBTU/hr

Fuel Type is Pellets

Grant Amount = \$258,978

Owner Amount = \$258,977

Total Cost = \$517,955

Capital Cost per MMBTU = \$235,434

Completion Date: January 24, 2013

2012-2013 Actual

2012-2013 Wood Cost \$46,538.88

2012-2013 Heating Oil Cost \$59,588.06

2012-2013 Savings \$157,458.33

Projected in Grant

Prior Oil Cost \$263,585.27

Estimated Wood Cost \$56,961.65

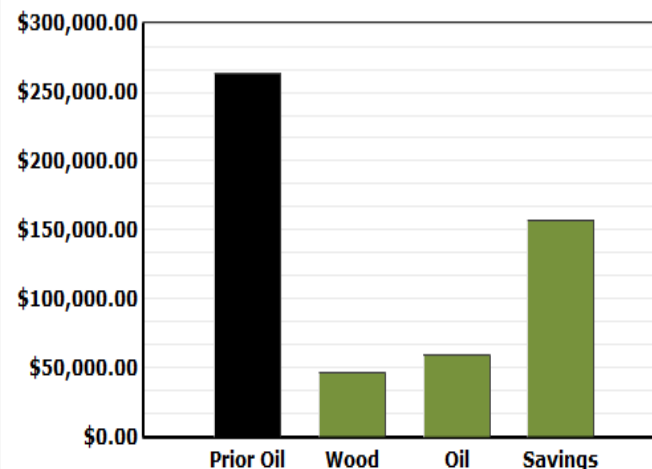
Estimated Oil Cost \$0.00

Estimated Savings \$206,623.62

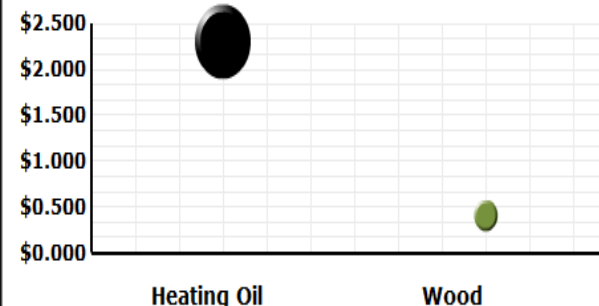
Savings Variance from Grant (+ is good) (\$49,165.29)

Millinocket Regional Hospital, 2012-13 Actual

2012-2013 Savings = \$157,458



Heating cost per degree day / 10,000 sq. ft.



Total Cost per 1000 Sq. Ft.
(includes amortized
capital cost over 20

\$521.44

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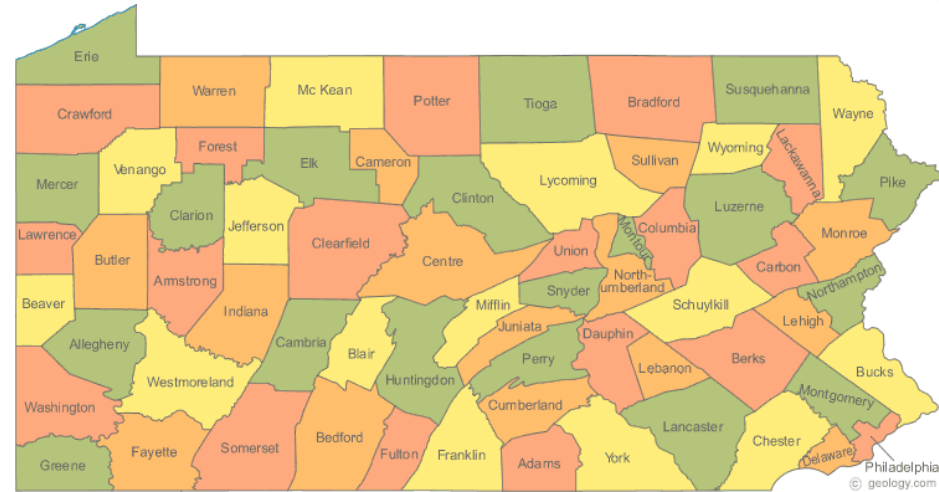
Project Examples

Bulk Delivery

- Gaining Traction in the U.S.
- Development of recommendations for delivery and storage of pellets



Public Policy: Examples





Opportunities for WV

- Increasing collaboration between interest groups, state and local governments to advance pellet industry
- Looking at feasibility of expanding RPS, other public policy initiatives
- Creating additional job growth, especially for more rural regions



THANK YOU!

Contact us!



Facebook.com/pfipellets



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