

Value Chain Workshop Summary: Wood Energy

Monday, March 30, 2015; 9:00 am – 1:00 pm

Forest Center, Woodstock, Vermont

Participants

Facilitators:

Shanna Ratner and Melissa Levy, Yellow Wood Associates

WLEB:

Jared Duval

Paul Frederick

Lauren Masseria

Joe Nelson

Invited Participants:

Grant MacDonald, Vermont Good Wood

Bill Kropelin, Burlington Electric

Ryan Kilborn, Meadowsend Timberlands

Tracy Baker, Bourne's Energy

Jim Kurrle, Bourne's Energy

David Kuhfalh, Hearthstone

Ernest Krusch, E. Krusch LCC

Alyssa Schuren, Vermont Department of Environmental Conservation

Andy Boutin, Pellergy LLC

Alan Benoit, Vermont Renewable Fuels

Jeff Forward, REV and Forward Thinking Consultants

Maura Adams, Northern Forest Center

Eric Deluca, WLEB

Gabrielle Stebbins, REV

Andrew Perchlik, Clean Energy Development Fund

Ansley Bloomer, REV

Jeff Rubin, APM Advertising

Tim Maker, Community Biomass Systems

David Frank, SunWood Biomass

Demand Opportunities and Trends in Wood Energy

(The two areas chosen for value chain discussion at the workshop are in bold)

- **Consumer outreach; unified message – cleaner story**
- More incentives from government – long-term consistency
- Kiln-dried firewood market
- Growing due to government regulations and consumer education
- Fuel switching opportunities
- **Create and consistently supply ultra-high quality product**
 - (Maintenance, emissions, quality)
 - Pellets, firewood and chips
- Localization of supply
- Low cost stoves that perform well
- Understanding the value proposition of the high end consumer
- In-state markets
- Out-of-state markets
 - (Northeast and region)
- International markets

Gaps, Barriers, and Value Chain Opportunities in Wood Energy

- Consumer education is a large obstacle. There is a need for a unified message.
- Competition with alternative fuels, like natural gas and other regional fuels.
- More government intervention is happening to solve these issues.
- Not all parts of the value chain understand the tremendous opportunity in the wood energy market.
- Funding is always an obstacle.
- Banks do not understand this type of business.
- This area is in its infancy. There are lots of opportunities. It is growing because of government regulation.
- People consider themselves to be already on pellet heating, because they have a pellet stove. There is a difference between ambiance and heating.
- There is a need for more incentives and more long-term and consistent incentives. There is nothing in incentives market that values fuel switching.
- There is a huge opportunity from the supply side to create an ultra high quality product. The consumer knows what this means in terms of quality, maintenance and emissions and are willing to pay a higher price for it.
- There is a desire for more certification and assurance of sustainability. People are also interested in a more localized supply.
- The low price of fossil fuels is an obstacle.
- There is an opportunity in low end and low cost products.

Value Chain Analysis by Opportunity

Consumer Outreach With a Unified Message About Wood Energy

The opportunity is to expand the use of wood for energy, particularly thermal. This is already part of Vermont's policy to increase our use of renewables.

The group that worked on consumer outreach with a unified message about wood energy identified several key components of the message that include: benefits of keeping forests as forests, advantages of cutting trees to cultivate forests, positive impacts on the local economy, reliability of supply of product, price stability, positive environmental impact, and local pride. They also determined that the story needs to be told by credible sources, including consumer to consumer and government.

This group identified the following functions needed to address demand. The functions with a (T) are primarily transactional player functions and those with an (S) are primarily supporting player functions. They are arranged in approximate order from consumer to raw materials. The gaps are in bold.

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- **Train salespeople (T) & (S)**
 - **Raise consumer awareness of modern options for heating with wood versus alternative choices for heating (and electricity) (T) & (S)**
 - **Materials industry can use to communicate effectively with consumers in different target markets, including social marketing (T) & (S)**
 - **Applied market research to determine the value propositions of consumers with respect to wood energy, including pellets for central heating, firewood, wood chips and across a variety of markets (e.g. industrial, residential, institutional), including consumers in Vermont and the northeast (T) & (S)**
 - **Develop incentives for wood energy (T) & (S)**
 - **Supportive, clear and consistent regulations (S)**
 - **Engage policy-makers and public sector leaders in understanding and advocating for wood energy (T) & (S)**
 - **Roadmap detailing the options for using wood to help meet Vermont's goal of 90% reliance on renewables showing the complementary mix of wood chips, wood pellets and firewood required, including benchmarks and goals for the industry (T) & (S)**
 - **Take advantage of opportunities for fuel switching (T)**
 - **Reduce emissions from existing wood boilers (T) & (S)**
 - **More pellet mills that use softwood (T)**
 - **Train installers (T) & (S)**
 - **Develop standards within Vermont's wood energy sector for fuels, systems, storage, training of installers, sales people, etc. (T)**
 - **Engage banks and credit unions (S)**
 - **Engage environmental partners (S)**
 - **Improve storage of wood fuel inventories (T)**
 - **Identify the source of the wood used for wood energy (T)**



- **Adopt a relevant landowner certification that is low cost and credible – e.g. current use and/or American Tree Farm; make sure standards insure sustainable forestry and encourage resource conservation and efficient use of forest resource (T)**

Some observations that emerged from this discussion include:

- The industry has to work together to grow effectively
- There needs to be a value chain coordinator
- The value chain begins with the landowner and the way forests are managed
- There are opportunities to bring new partners like financiers and environmental groups into the value chain as active supporters

Create and Consistently Supply Ultra High Quality Wood Chips, Wood Pellets, and Firewood

The opportunity is to create and consistently supply wood energy products that are consistently superior to commodity products and offer the advantages of reduced maintenance costs, superior burns, and greater ease of use.

The gaps related to supply of raw materials is communicating the opportunities in wood energy to landowners and rewarding landowners with a portion of the price premium that the product receives from consumers.

This group identified the following functions needed to address demand. The functions with a (T) are primarily transactional player functions and those with an (S) are primarily supporting player functions. They are arranged in approximate order from consumer to raw materials. The gaps are in bold.



- **Demand (T)**
 - **School districts**
 - **Out of state homeowners**
 - **In state homeowners**
 - **Institutions**
- **Marketing/Education (S)**
- Transportation to buyer (T)
- Pellet broker/distributor/retailer (T)
- Chip producer (T)
 - **Premium quality chip producer (T)**
 - **Super premium quality chip producer (T)**
- **Pellet analysis (S)**
- **Pellet certifier and labeling for chain of custody (S)**
- **Pellet producer/mill (T)**
- **Technical assistance around just in time manufacturing (S)**
- Regulatory (Act 250) (S)
- **Firewood processor/Kiln dryer (T)**



- Sawmill (T)
- Concentration yard/broker (T)
- Truckers (of chips and roundwood) (T)
- **Small scale loggers**
- **Consulting foresters (T)**
- **Raw materials (T)**

Some clarifications and additional thoughts that emerged from this discussion include:

- All parts of this value chain are typically benefiting from the price premium, except the landowners. For landowners to be engaged and interested, they need to receive part of this premium.
- Consulting foresters can be educating landowners about the benefits of harvesting wood for wood energy, and then connecting landowners with loggers, performing a landowner aggregation function.
- It may make sense to have contracts and guaranteed prices/quantities as foresters are working with landowners.
- Pellet producers/mills have competition from overseas, and the cost of infrastructure is high. There is a gap in the Northeast Kingdom and Central Vermont.
- Demand for this product comes from school districts and other institutions, as well as homeowners in state and out of state. Those from out of state are more likely to be willing to pay a price premium.
- Competition from pulp mills is an issue for this value chain.
- High quality pellets have the following characteristics:
 - Low Ash
 - No bark
 - Higher BTU
 - Few fines

Attendance by Position(s) in the Value Chain

DEMAND PARTNERS

Business/Org

Burlington Electric

HearthStone

Vermont Good Wood

Pellergy

Vermont Renewable Fuels

Bournes Energy

Name

Bill Kropelin

David Kuhfahl

Grant MacDonald

Andy Boutin

Alan Benoit

Tracy Baker

Jim Kurre

TRANSACTIONAL PARTNERS

<i>Function</i>	<i>Business/Org</i>	<i>Name</i>
Foresters	Upland Forestry	Joe Nelson
Foresters	Meadowsend Timberlands	Ryan Kilborn
Equipment Suppliers	Sunwood Biomass	David Frank
Equipment Suppliers	Pellergy	Andy Boutin
Truckers	E Krosch LLC	Ernest Krosch
Distributor	Sunwood Biomass	David Frank
Transportation	VT Renewable Fuels	Alan Benoit

SUPPORT PARTNERS

<i>Function</i>	<i>Business / Org</i>	<i>Name</i>
Media	REV	Gabrielle Stebbins
Media	Northern Forest Center	Maura Adams
Media	APM Marketing	Jeff Rubin
Certifiers	CEDF	Andrew Perchlik
Certifiers	REV	Gabrielle Stebbins
Technical Assistance Providers	Meadowsend Timberlands	Ryan Kilborn
Technical Assistance Providers	REV	Gabrielle Stebbins
Technical Assistance Providers	Forward Thinking	Jeff Forward
Technical Assistance Providers	WLEB	Joe Nelson
Technical Assistance Providers	Sunwood Biomass	David Frank
Technical Assistance Providers	Community Biomass Systems	Tim Maker
Technical Assistance Providers	Vermont Department of Economic Development	Jared Duval
Technical Assistance Providers	Vermont Department of Forests, Parks and Recreation	Paul Frederick
Technical Assistance Providers	Northern Forest Center	Maura Adams
Technical Assistance Providers	Vermont Agency of Agriculture, Food and Markets	Lauren Masseria
Technical Assistance Providers	Vermont Renewable Fuels	Alan Benoit

Technical Assistance

Providers	Pellergy	Andy Boutin
	Vermont Department of	
Researchers	Economic Development	Jared Duval
Researchers	Hearthstone	David Kuhfahl
Researchers	Pellergy	Andy Boutin
Researchers and		
Engineers	Forward Thinking	Jeff Forward
Researchers and		
Engineers	Northern Forest Center	Maura Adams
Regulatory Policy	DEC	Alyssa Schuren
Regulatory Policy	CEDF	Andrew Perchlik
Regulatory Policy	Burlington Electric	Bill Kropelin
Regulatory Policy	REV	David Frank
Regulatory Policy	Hearthstone	David Kuhfahl
Regulatory Policy	Vermont Renewable Fuels	Alan Benoit
	Vermont Department of	
Regulatory Policy	Economic Development	Jared Duval
	Vermont Agency of	
	Agriculture, Food and	
Regulatory Policy	Markets	Lauren Masseria
	Vermont Forest Parks and	
Regulatory Policy	Rec	Paul Frederick
Financers/funders	Northern Forest Center	Maura Adams
Financers/funders	CEDF	Andrew Perchlik
Financers/Funders	WLEB	Eric Deluca
Energy Programs	Hearthstone	David Kuhfahl
Energy Programs	Forward Thinking	Jeff Forward
Educational Institutional	Vermont Forest Parks and	
Training Providers	Rec	Paul Frederick
Educational Institutional		
Training Providers	HearthStone	David Kuhfahl
Educational Institutional		
Training Providers	VTC	David Frank
Educational Institutional		
Training Providers	Pellergy	Andy Boutin
Educational Institutional	Northern Forest Center	Maura Adams