

Bioenergy for Heat

The U.S. market, challenges, and opportunities

Joe Seymour, BTEC, June 17, 2014

Take Advantage of the (Overlooked) Opportunity

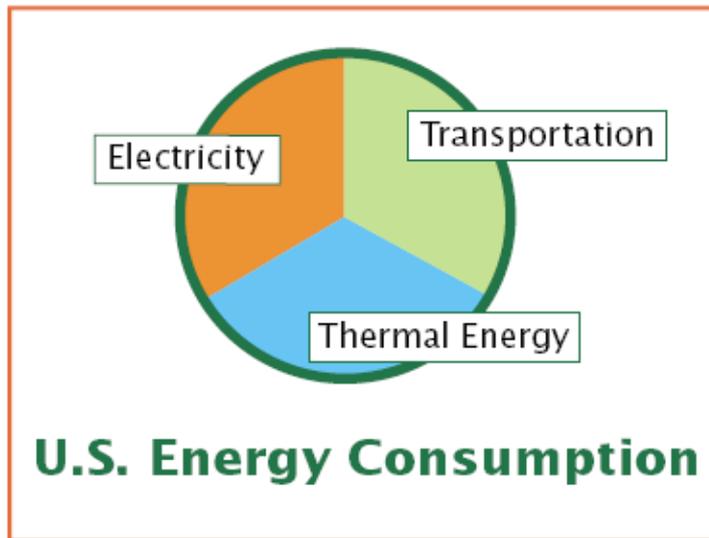
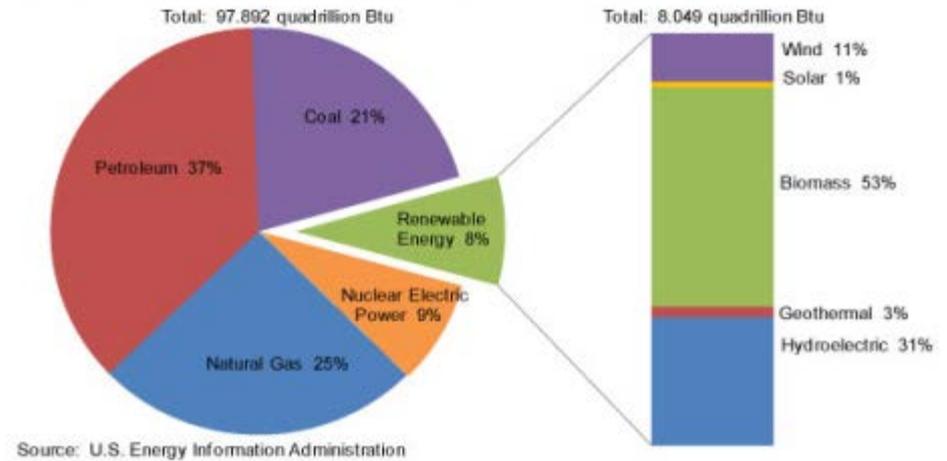


Figure 1. Renewable energy consumption in the nation's energy supply, 2010



- Thermal energy represents the most efficient use of biomass to make energy
- Tremendous potential to address major US energy challenges, especially: dependence on foreign fossil energy and rural development

About BTEC

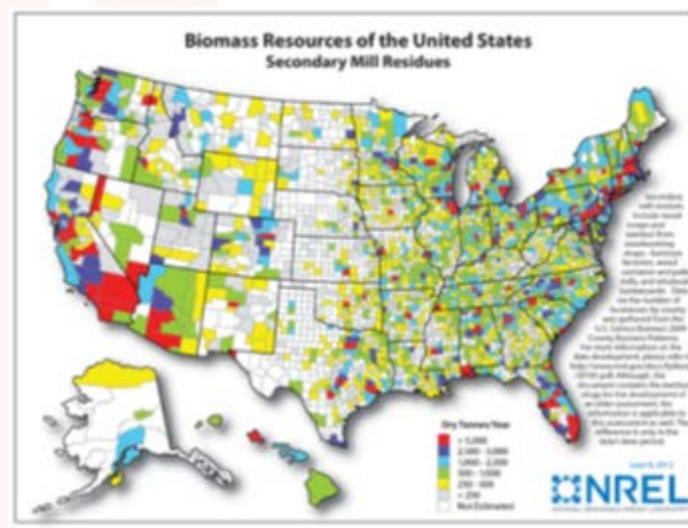
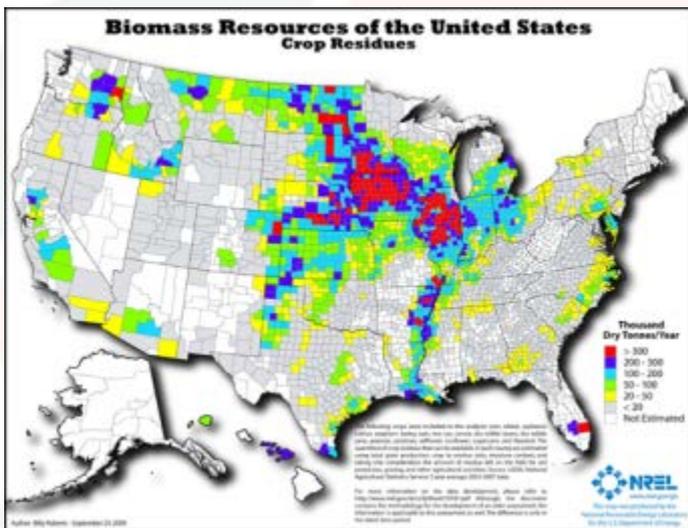
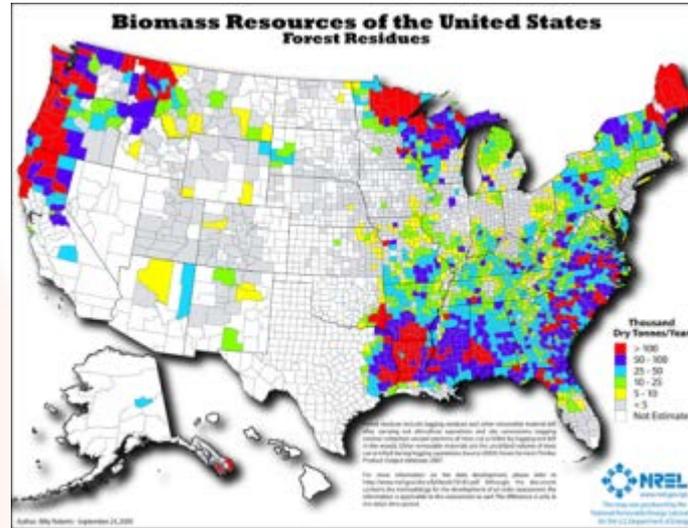
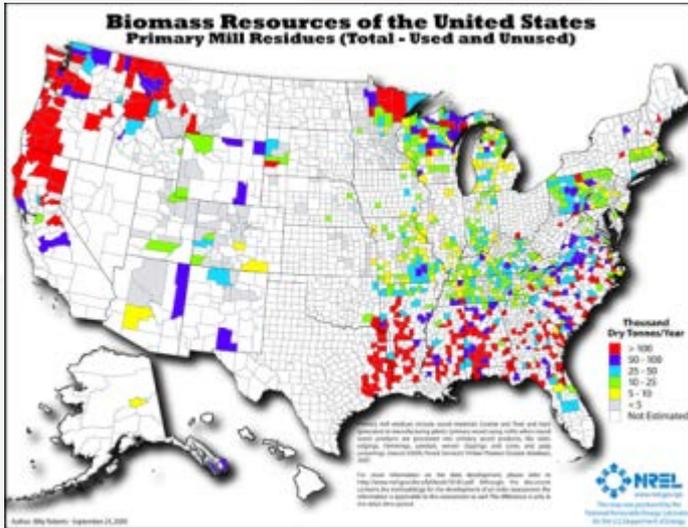
The Biomass Thermal Energy Council (BTEC) is the industry trade association dedicated to advancing the use of biomass for heat and other thermal energy applications.

Why was BTEC established?

- To **advocate for and promote** the biomass thermal industry in the national energy policy debate
- To **reach out to and educate** the public and decision makers on the benefits and advantages of using biomass for heat and CHP
- To **develop biomass energy research** and analysis that enables sound investment and policy decisions



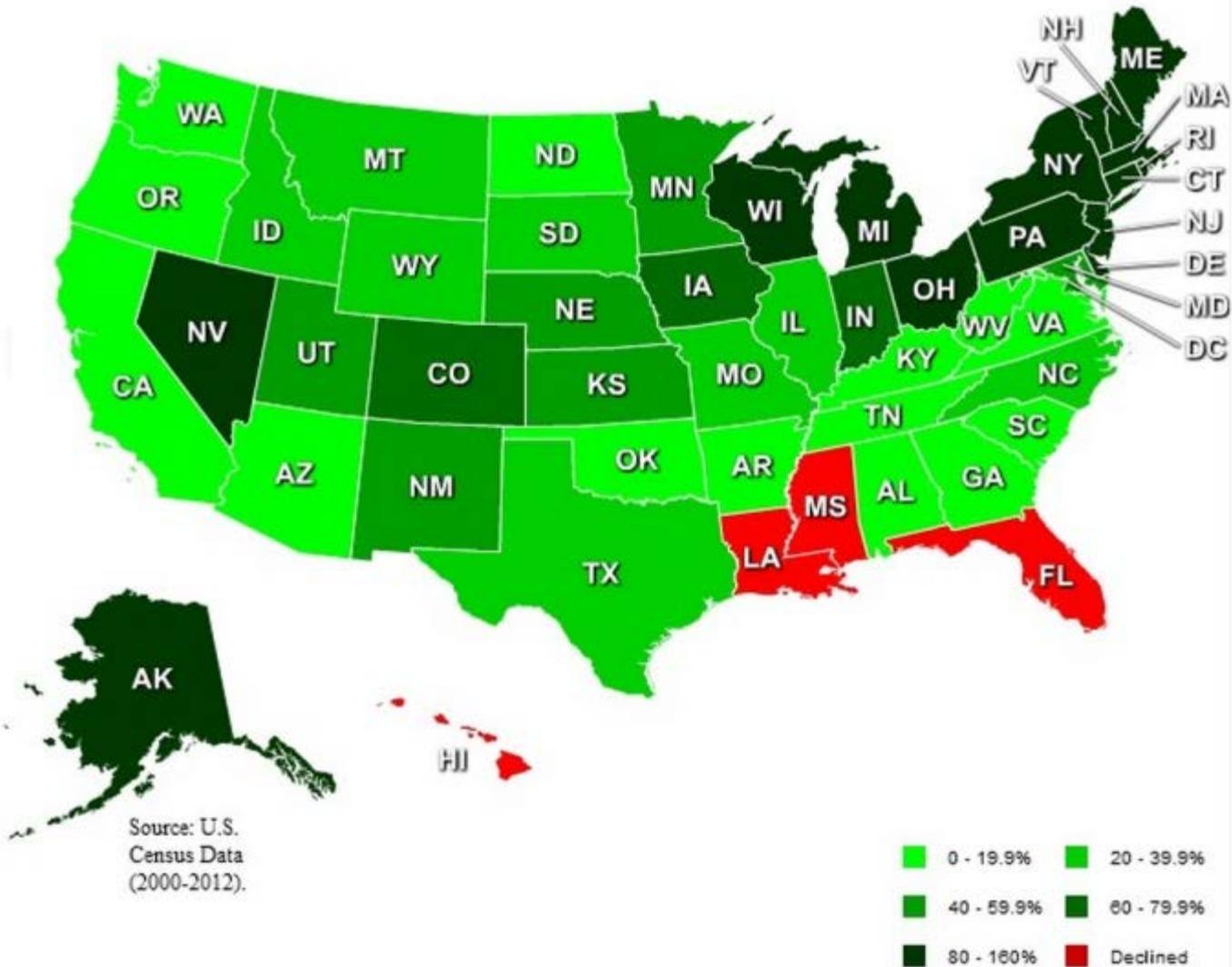
Biomass Feedstocks



Residential Market

- Approximately 10 million U.S homes
 - 2 million homes heat primarily with wood
- Estimated 2.8 million homes w/ pellet stoves; central systems gaining traction
- Pellet and cordwood appliance shipments up 12% and 15% from 2012, respectively^(HPBA '14)
- Demonstration and bulk storage taking off (OR, VT, NY, ME), significant innovation
- Challenges include:
 - New emissions limits for new appliances in Feb. '15
 - High capital costs of central systems and bulk storage
 - Volatile sales cycle driven by comparative fuel costs
 - Installation expertise

Rise of Residential Wood Heat in U.S. 2000-2012

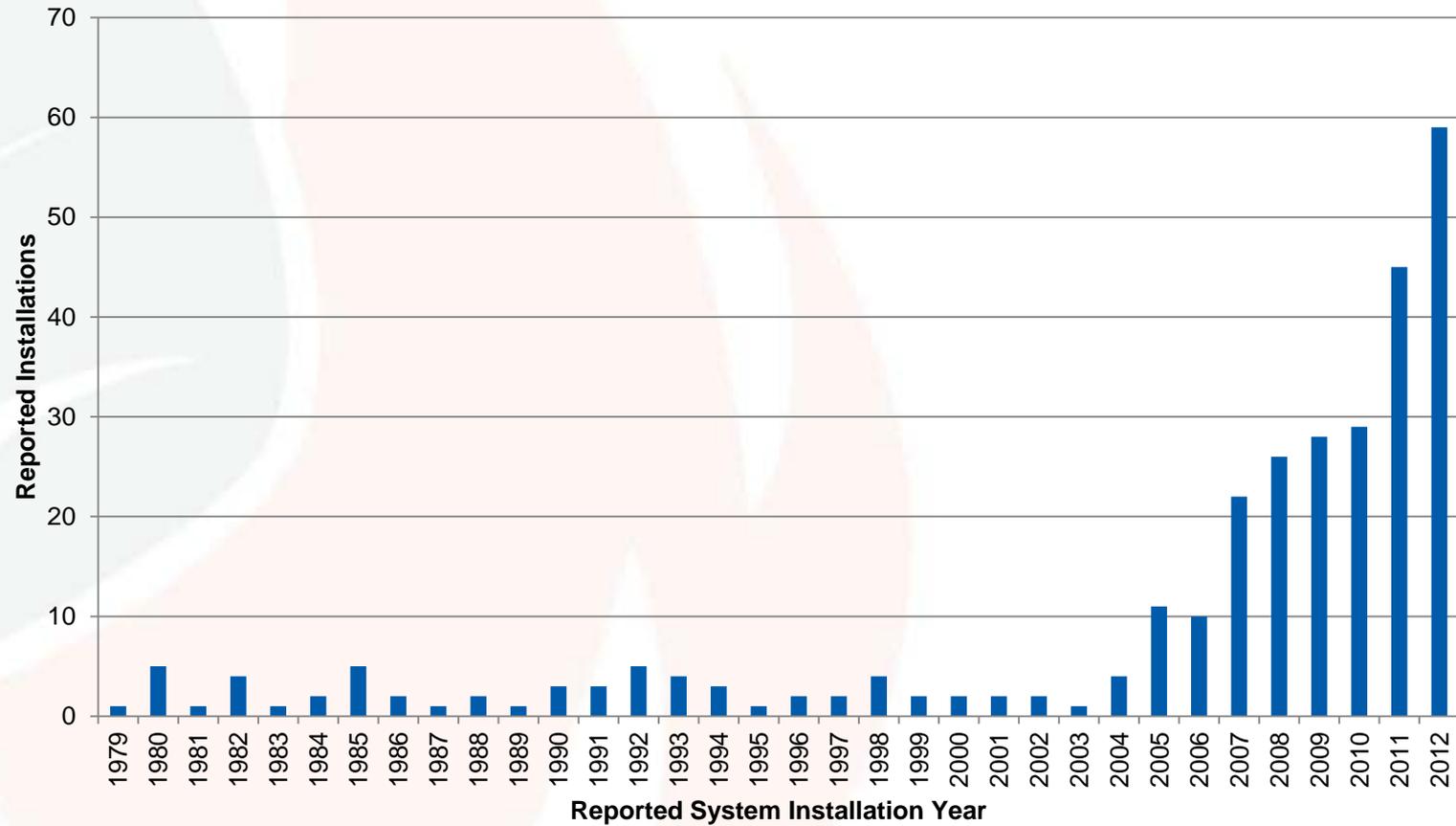




Commercial & Institutional Market

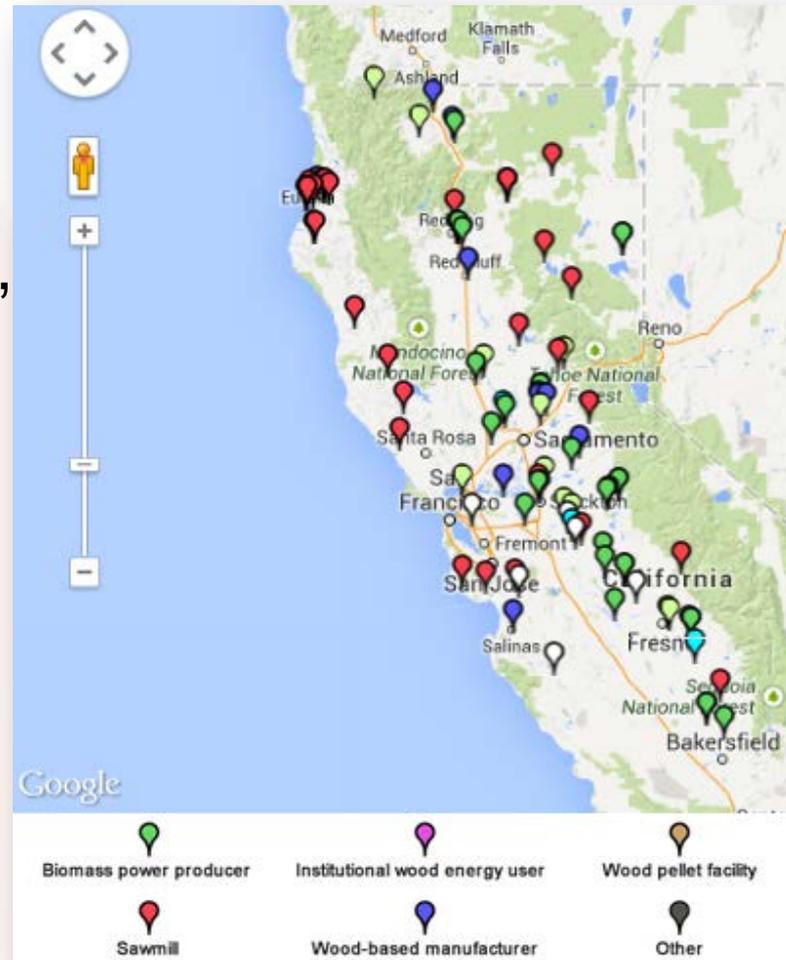
- Est. 10,000 industrial and commercial biomass boilers
 - Est. 500 biomass CHP/co-gen sites
 - Est. 400 institutional (i.e. gov't, campus) sites
- Fuel costs remain primary driver for fuel switching
- Challenges include:
 - Recently implemented Boiler MACT emissions regulations (tune ups for <10MMBtu)
 - High capital costs
 - Community support
 - Data gathering
 - Standards and A/E acceptance

U.S. Institutional Biomass Energy Installations*



Wood2Energy.Org & Data Collection

- Message is only as good as the data
- Need industry, private, nonprofit assistance gathering data
- Submit data online easily
- California's 103 installations?



Federal Incentives? Yes*

- Production Tax Credit*
- Residential Energy Tax Credit*
- Special USDA Grants (W2E, SWET)
- 2014 Farm Bill Energy Title Programs

Farm Bill Energy Title

- **REAP**
 - Funding just announced with deadlines of July 7th and 31st, new program details in fall 2014
- **Producer Payment Program for Advanced Biofuels (Sec. 9005)**
 - Mandatory funding of \$15 million, open now
 - However, solid forest biofuels capped at 5%, for now...
- **BCAP**
 - Mandatory funding, revamped BCF payments of \$12.5 million for federal lands
- **CWEP**
 - Seeking appropriated funds of \$5 million, reimagining program

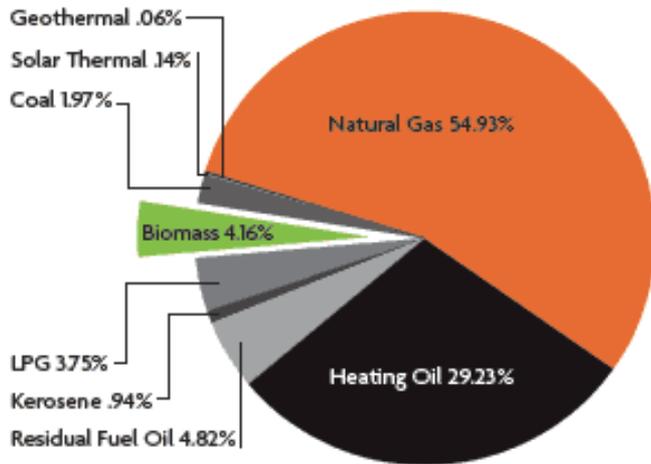
Proposed Policy Parity

- **The BTU Act, a.k.a. the “Grand Slam”**
 - 30% tax credit for res/comm/ind biomass thermal systems
 - Pending in House, Senate. Potential tax extenders play?
 - Eight co-sponsors in each chamber
- **Renewable Thermal Parity**
 - Renewable electrons = renewable Btus = renewable kW
 - Federal building compliance
- **EPA’s Biogenic Emissions Rulemaking**
 - A potential disincentive to biomass utilization
 - Impact bioenergy in EPA’s Clean Power Plan

A Bold Northeast Vision for 2025

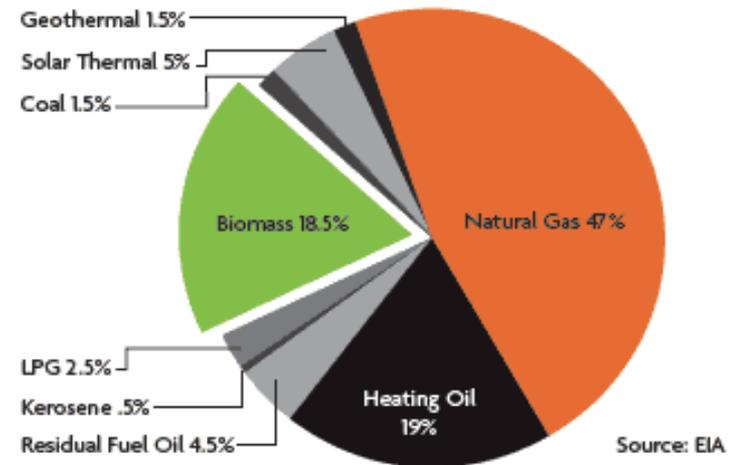
2010

New England and New York thermal energy from:



2025

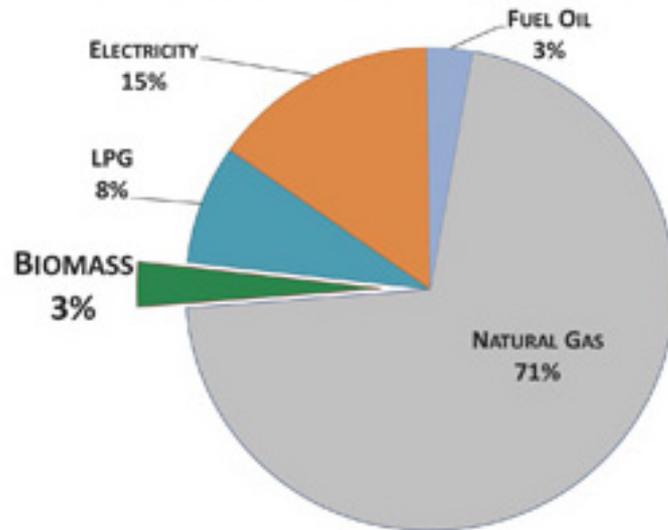
New England and New York thermal energy from:



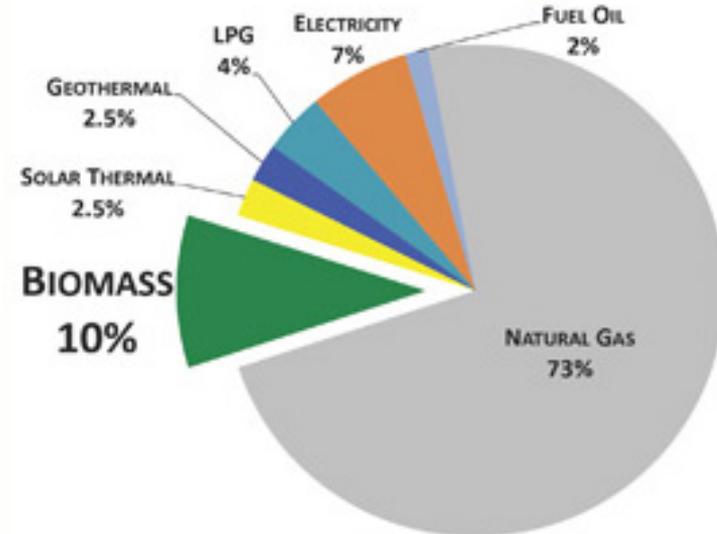
- Supply 19 million green tons of sustainable biomass for thermal energy
- Convert 1.38 million households in the seven states to biomass for thermal needs
- Reduce 1.14 billion gallons of heating oil annually
- Reinvest \$4.5 billion in resulting economic wealth in the Northeast economy, and create 140,200 jobs
- The market: 9 million homes and businesses off natural gas

A Bold Midwestern Vision for 2025

2012 Midwest Thermal Energy Sources

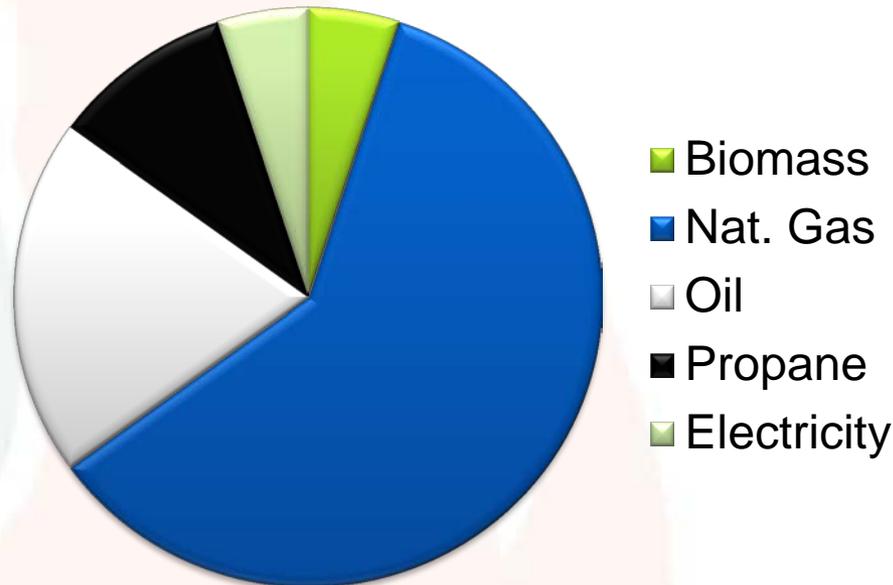


2025 Midwest Thermal Energy Vision



- Reduce 1.01 billion gallons of propane and 278 million gallons of heating oil
- Reinvest \$2.2 billion into the Midwest economy
- Create 13,170 jobs from the expansion of the thermal biomass industry and up to 210,000 direct, indirect and induced jobs
- Supply 17.2 million green tons of sustainable biomass
- The market: 12 million homes and businesses are not connected to low-cost natural gas

What's Your Vision to Heat the West?



- Reduce xx billion gallons of propane and xx million gallons of heating oil
- Reinvest \$xx billion into the Western economy
- Create xx,xxx jobs from the expansion of timber, recreation, and thermal energy industry
- Supply xx million green tons of sustainable biomass, treating xxx thousand acres
- How big is your market? And how will you grow it?

What a Difference a Vision Makes

- Vermont – Inclusion in Efficiency Vermont
- New York – Launch of “Renewable Heat NY,” thermal PONs
- Maine - \$5K pellet boiler rebate
- New Hampshire – Thermal REC in RPS
- Massachusetts – Change out/rebate programs and thermal REC*
- Maryland – Commercial scale open, thermal REC study
- Wisconsin – Fuel switching grants
- Minnesota – SWET leveraging and thermal REC progress
- Oregon – SWET Pilot, cluster developments & financing
- Washington – Forest Products Financial Asst. Program
- California – SWET, SB 1122 bioenergy carve-out
- Idaho – SWET
- Alaska - SWET



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The Biomass Thermal Energy Council is a nonprofit association dedicated to advancing the use of biomass for heat and other thermal energy applications.

BTEC is an association of biomass fuel producers, processors, distributors, supply chain companies and non-profit organizations that view biomass thermal energy as a renewable, resource-efficient pathway to meeting America's energy needs. BTEC engages in research, education, and public advocacy for the fast-growing biomass energy industry. [More >>](#)

nonprofit association dedicated to advancing the use of biomass for heat and other thermal energy applications.

BTEC NEWS

BTEC Calls for EPA to Implement Data Driven Emissions Regulations for Residential Hydronic Heaters May 5, 2014

The national bioenergy association's comments addressed Subpart QQQQ of the proposed rule, focusing on timing of the regulations, acceptable test methods, cord wood test fuels, emissions limits, and labeling for efficiency and performance for indoor and outdoor hydronic heaters.

[Read BTEC's comments here >>](#)

The Arboretum at Flagstaff Recognized for Commitment to Renewable Energy and Sustainable Forestry

Flagstaff, A.Z./Washington, D.C. - April 16, 2014 - Renewable energy is most commonly associated with solar panels and wind turbines, highly visible structures that display a clear commitment to green energy. That public perception omits a vast local resource, ideally suited to reduce energy costs for businesses and low-income families: biomass heating.



Senator King's Address To NEBHX Attendees (3'17")

Early Bird Discount
Hydronic-Based Biomass Heating Systems
Online Course

Is your biomass heating system

Upcoming Thermal Events

- Biomass and the USDA's REAP Program – What you need to know for 2014 and 2015
 - » Webinar
 - » June 24, 2014

- Healthier Forests Through Sustainable Energy – A Project Debrief
 - » Webinar
 - » June 25, 2014

- Hydronic-Based Biomass Heating Systems
 - » Online educational course
 - » Sept. 15 – Nov. 21, 2014
 - » Led by John Siegenthaler, Appropriate Designs

- Second Annual National Bioenergy Day
 - » October 22, 2014
 - » Events nationwide for power, heat, pellets

We Are Helping Grow the Biomass Heating and CHP Market

Who BTEC Is

- Non-profit advocacy group with 130 members from U.S., Canada, Europe
- All sectors represented, from landowners to end users

Why You Should Join

- Promote the use of biomass thermal fuels and technology to all industries
- Achieve policy parity at the national and state levels
- Share best practices and drive innovation and research
- Recognition of our company's leadership and achievements

Join Us!

Membership levels tailored to a company's size. Ask me about how to join, email info@biomassthermal.org, or visit www.biomassthermal.org