A thermal biomass system is a stove, furnace or boiler that runs on biomass fuels such as wood pellets and chips, solid wood or agricultural residues. The system produces thermal energy for heating residential, commercial and industrial buildings, as well as process heat for industrial applications.

Wood pellets, chips and solid wood are the most common fuels for biomass heating systems, although agricultural wastes will see growth in the future.

Wood pellets are generally made from wood waste, compressed under heat and pressure, with no additives. They have high energy density, low moisture content, and are as easy to transport and use as traditional fossil fuels. Wood chips offer a slightly less refined form of biomass fuel, but also allow for easy transport and storage.

Advanced combustion technologies allow the use of biomass fuels with very high efficiencies and low emissions. Leading technologies have been developed in Europe, and are now entering the U.S. market. Domestic U.S. manufacturers are also developing advanced technologies.

These technologies utilize fuels and feedstocks that support forest- and agricultural-based economic development in rural regions. Many rural regions are dependent on imported fossil heating fuels such as oil and propane, and do not have access to natural gas. Locally produced biomass fuels can displace dependence on these expensive imported fuels, thereby keeping fuel dollars local and greatly reducing heating costs.

Thermal biomass systems provide markets for hazardous fuels contributing to wildfires. Removing these hazardous fuels will improve health of forest, particularly those most impacted by insects, disease and drought.

Biomass fuels are low carbon and result in net reduction of greenhouse gas emissions when displacing high carbon intensity fuels such as heating oil. In addition, the use of wood fuels reduces sulfur emissions that contribute to acid rain.

The use of biomass fuels produced in America helps strengthen American energy independence and security.

The BTU Act adds high efficiency biomass thermal technologies to the list of renewable energy technologies that currently benefit from investment tax credits under section 25D (residential) and Section 48 (commercial/industrial) of the tax code (see third page).

This investment credit currently applies to solar thermal and geothermal technologies, but not to biomass thermal. The BTU Act corrects this oversight. The BTU Act only qualifies the most efficient and advanced technologies for the credit.

Investment credits are needed for advanced biomass thermal technologies because of their comparatively high up front capital cost. This “capital hurdle” must be overcome to build the market and gain economies of scale that will bring system costs down.

Similar policy has been very effective in reducing the cost of solar (PV and thermal) and geothermal technologies.
The BTU Act of 2019 seeks to recognize and promote the many economic and environmental benefits that biomass thermal energy provides by opening the door to two sections of the Internal Revenue Code that already incentivize renewable energy. Currently, a host of renewable energy technologies qualify for investment tax credits for capital costs incurred in residential and commercial installations. Simply, this legislation seeks to achieve parity between thermal biomass and other renewable systems.

**Section 1**

The title underscores that heat from biomass is an underutilized energy source in this country. Converting biomass—in the form of agricultural crop waste, wood chips, pellets or sawmill residuals—into thermal energy is one of the most efficient uses of this resource. Biomass heating systems now entering the marketplace operate at efficiency levels of 80 percent or higher.

**Section 2, Residential Tax Credit**

This provision adds biomass fuel property to the list of existing technologies that qualify for the residential renewable energy investment tax credit in Section 25d of the Internal Revenue Code. To qualify, the biomass fuel property must operate at a thermal efficiency rate of at least 75 percent higher heating value (HHV) and be used to either heat space within the dwelling or heat water.

Included in this section is a broad definition of “biomass fuel.” The term applies both to agricultural and woody biomass, wood processing residues and wastes and grasses. Essentially, any plant derived fuel that is available on a recurring and renewable basis is eligible, including densified biomass fuel. This provision would apply to expenses incurred in years following 2018. This modification to the 25d tax credit would expire at the end of 2023.

**Section 3, Industrial Investment Tax Credit**

This provision adds open-loop biomass heating property to the list of existing technologies that qualify for the commercial renewable energy investment tax credit in Section 48 of the Internal Revenue Code. Qualifying biomass heating property must operate at thermal output efficiencies of at least 65 percent (higher heating value) and be used to generate heat, hot water, steam or industrial process heat.

The credit specified in this section is two tiered. For those technologies that operate at thermal output efficiencies between 65 percent and 80 percent, the investment tax credit is limited to 15 percent of installed capital cost. Technologies operating at thermal output efficiencies greater than 80 percent would be eligible for the full 30 percent investment tax credit under Section 48.

This provision would apply to expenses incurred in years following its enaction, and the tax credit would expire at the end of 2023.
Who supports the BTU Act?

3E Thermal  
Active Energy and Solar Development  
Add-On Energy, LLC  
Adirondack Hearth and Stove  
AFS Energy Systems, Inc.  
Alaska Masonry Heat  
Alaska Sustainable Energy  
Alliance for Green Heat  
Alodyne, LLC  
Alternative Energy of Maine  
Alternative Heating of North America  
American Bio Boilers Corp.  
American Forest Foundation  
Applied Ceramics, Inc.  
Arbor Day Foundation  
Berlin Area Renewable Energy Initiative  
Bioenergy Project Partners, LLC  
Biomass Combustion Systems  
Biomass Energy Lab  
Biomass Energy Resource Center  
Biomass Engineering & Equipment  
Biomass Thermal Energy Council  
Biotech Energy  
Bridgwell Resources  
Broad USA  
Central Boiler, Inc.  
Choquette Heating & A- C  
Clayloft studio  
Clean Energy Economy Minnesota  
Clean Energy New Hampshire (CENH)  
Community Power Corporation  
Continental Biomass Industries  
Curran Renewable Energy  
Custom Masonry, LLC  
Cutting Edge Energy Systems  
Dale Anderson Masonry, Inc.  
DCM Logic LLC  
Denali Energy  
Design Masonry LLC  
Earthtech Energy  
EcoHeat Solutions LLC  
Ehrhart Energy  
Empire State Forest Products Association  
Enwave Seattle  
EXIT Realty Trailblazers  
FHS  
Fiber By-Products, Corp.  
Fireshpaking, LLC  
Forest Concepts, LLC  
Forest Energy Corporation  
Forward Thinking Consultants, LLC  
Froling Energy  
FVB Energy Inc  
Gaelectric North America  
Ganneston Construction  
GARN Wood Heating Systems  
Greenwood Clean Energy  
Hearth, Patio & Barbecue Association  
Heartwood Tree Service  
Heating the Midwest  
Home & Hearth Conservation Inc.  
Home and Hearth Masonry  
Hot Rock Masonry  
Houles  
Hurst Boiler & Welding Co, Inc.  
Hydronic Alternatives  
Idaho Forest Owners Association  
Innovative Natural Resource Solutions, LLC  
Integrated Biomass Resources  
Integrated Energy Systems, PLLC  
Interphase Energy LLC  
Jetco Builders  
JMH Chimney  
Kingdom Biofuel LLC  
Kirtland Products, LLC  
Koda Energy LLC  
Lake County Resources Initiative  
Legal Logging and Firewood  
Lignetics  
Lopez Quarries  
LPC Services Inc.  
Maine Energy Systems  
Maine Pellet Fuels Association  
Masonry Heater Association of North America  
Masonry Heater Design House  
Massachusetts Forest Alliance  
Mc Ranch  
Mendocino Forest Products Company LLC  
Messersmith Manufacturing Inc.  
Mid-Atlantic Bioenergy Council  
National Wildlife Federation  
New Hampshire Clean Tech Council  
Nordic LLC  
North Stone Heat Supply  
Northeast BioEnergy Systems, LLC  
Northeast Mill Services, Inc.  
Northern Forest Center  
Northwest Manufacturing, Inc.  
Oregon State University  
Pellergy LLC  
Pellet Fuels Institute  
Precision Energy Services  
Proe Power Systems  
Professional Logging Contractors of Maine  
ReEnergy Holdings LLC  
Renewable Energy Center LLC  
Renewable Energy Consultants, LLC  
Renewable Energy Vermont  
Renewable Resource Innovative Design Group  
Enterprise  
Ridgeline Forestry  
Round for a Reason LLC  
Sandri Energy, LLC  
Sheridan Brick & Stone Work  
Sierra Institute  
Sol Fire Masonry Heaters  
Solaratechnic Contractors, Inc  
Somerset Pellet Fuel  
Studio in the woods  
Sullivan Alliance for Sustainable Development  
SunWood Biomass  
Sustainable Heating Outreach & Education Inc.  
SUSTAINABLE HEATING OUTREACH & EDUCATION, INC.  
Sustainable Northwest  
Tarm Biomass  
TempleFire  
The Center for Natural Capital  
The County Stove Shop  
Timber Products Inspection  
TNT Ventures LLC  
Uzelac Industries Inc  
Vermeer  
Vermont Energy Investment Corporation  
Vermont Public Interest Research Group  
Viessmann Manufacturing Company (U.S.)  
Watershed Research and Training Center  
West Oregon Wood Products, Inc  
Westhoff Cone & Holmstedt Wilder Plumbing & Heating Inc.  
Wilson Engineering Services, PC  
Wisewood Energy  
Woodbury’s Plumbing and Heating  
WoodFuels North Carolina LLC  
WoodMaster Boilers  
Woodshed Renewables, LLC  
Yale Mechanical  

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