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.

Wood pellet and chip manufacturing, as well as dedicated production of agricultural feedstocks for thermal applications can help revitalize economies in regions that have been impacted by decline in forest industry or agriculture. Biomass thermal creates and helps retain jobs.

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 enactment, and the tax credit would expire at the end of 2023.
Who supports the BTU Act?

- Active Energy and Solar Development
- Add-On Energy, LLC
- Adirondack Hearth and Stove
- AFS Energy Systems
- Alaska Masonry Heat
- 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 Works
- Biomass Thermal Energy Council
- Bridgewell Resources
- Central Boiler, Inc.
- Chip Energy Inc.
- Choquette Heating & A-C
- Clayloft studio
- Community Power Corporation
- Continental Biomass Industries
- Custom Masonry, LLC
- Cutting Edge Energy Systems
- Dale Anderson Masonry, Inc.
- Denali Energy
- Design Masonry LLC
- Earthtech Energy
- EcoHeat Solutions LLC
- Enwave Seattle
- EXIT Realty Trailblazers
- FHS
- Fiber By-Products, Corp.
- Firespeaking, LLC
- Forest Concepts, LLC
- Forest Energy Corp
- Forward Thinking Consultants, LLC
- FVB Energy Inc
- Gaelectric North America
- Ganneston Construction
- GARN Wood Heating Systems
- Green Globe Services, LLC
- Greenwood Clean Energy
- GRZ LLC
- Heartwood Tree Service
- Home & Hearth Conservation Inc.
- Home and Hearth Masonry
- Hot Rock Masonry
- Houles
- Housing Trust of Rutland County
- Innovative Natural Resource Solutions, LLC
- Integrated Energy Systems, PLLC
- International Applied Engineering, Inc.
- Interphase Energy LLC
- Jettco Builders
- JMH Chimney
- Kingdom Biofuel LLC
- Kirtland Products, LLC
- Koda Energy LLC
- Legal Logging and Firewood
- Lopez Quarries
- LPC Services Inc.
- Maine Energy Systems
- Maine Pellet Fuels Association
- Masonry Heater Association
- Masonry Heater Design House
- Mc Ranch
- Mendocino Forest Products Company LLC
- Messersmith Manufacturing Inc.
- Nordic LLC
- North Stone Heat Supply
- Northeast BioEnergy Systems, LLC
- Northeast Mill Services, Inc.
- Northern Forest Center
- Northwest Manufacturing, Inc.
- Ochoco Lumber Co.
- Oregon State University
- Pellowg LLC
- Pellet Fuels Institute
- Precision Energy Services
- Renewable Energy Center LLC
- Renewable Energy Consultants, LLC
- Renewable Resource Innovative Design
- Group Enterprise
- Sandri Energy, LLC
- Sheridan Brick & Stone Work
- Sol Fire Masonry Heaters
- Solartechnic Contractors, Inc
- Solid Rock Masonry
- Somerset Pellet Fuel
- Southern Tier Biomass, LLC
- Studio in the woods
- Sullivan Alliance for Sustainable Development
- Sustainable Northwest
- Tarm USA, Inc.
- TempleFire
- The County Stove Shop
- The Pizza Via Co
- Timber Products Inspection
- Vermeer
- Vermont Energy Investment Corporation
- Viessmann Manufacturing Company (U.S.)
- West Oregon Wood Products, Inc
- Westhoff Cone & Holmstedt
- Wilder Plumbing & Heating Inc.
- Woodbury’s Plumbing and Heating
- Wooden Sun
- WoodFuels North Carolina LLC
- WoodMaster Boilers
- Woodshed Renewables, LLC
- Yale Mechanical

Add your organization by contacting Peter. Thompson@biomassthermal.org