

# Biomass Thermal Utilization (BTU) Act of 2021 (S.1191)

House Co-sponsors: Representatives Kuster (D-NH), Welch (D-VT), Pappas (D-NH), Golden (D-ME), Pingree (D-ME)  
Senate Co-sponsors: Senators King (I-ME), Collins (R-ME), Shaheen (D-NH), Hassan (D-ME), Murkowski (R-AK)

## What is thermal biomass?



A thermal biomass system is a stove, furnace or boiler that runs on plant-derived fuel available on a renewable or recurring basis, including agricultural crops and trees, wood and wood waste and residues, plants (including aquatic plants), grasses, residues, and fibers. The system produces thermal energy for heating residential and commercial, as well as process heat for industrial applications.



Wood pellets, chips and cordwood 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.



*A biomass thermal system can provide hot air, water, and process heat*

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.

## What are the economic and environmental benefits of renewable thermal biomass?



These technologies utilize sustainably harvested fuels and feedstocks that support forest- and agricultural-based economic development in rural regions. Many rural regions are dependent on expensive fossil heating fuels such as oil, natural gas and propane. Locally produced biomass fuels can displace dependence on high carbon intensity fossil fuels, thereby keeping fuel dollars local and greatly reducing heating costs.

Thermal biomass systems provide markets for hazardous fuels contributing to catastrophic wildfires. Removing these hazardous fuels improves forest health and carbon stocks, 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 or agriculture industries. Biomass thermal creates and helps retain jobs.



*Biomass fuels can be conveniently delivered in bulk*

Biomass fuels are low carbon and result in net reduction of greenhouse gas emissions when displacing high carbon intensity fuels. 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, resilience and security.

## Why is the BTU Act important?



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 (business) of the tax code.

This investment credit currently applies to biomass thermal (residential), solar thermal and geothermal technologies, but not to biomass thermal (business). 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. Furthermore, through the BTU Act, biomass heating systems (business) will benefit from accelerated depreciation, improving the economics of the projects.

Similar policy has been very effective in reducing the cost of solar (PV and thermal) and geothermal technologies.

## Biomass Thermal Utilization (BTU) Act of 2021

### Legislative Summary

The BTU Act of 2021 seeks to recognize and promote the many economic and environmental benefits that biomass thermal energy provides by extending the biomass thermal (residential - 25d) and opening the door to Section 48 of the Internal Revenue Code to incentivize biomass thermal (business). 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 biomass thermal and other renewable systems.

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#### 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 75 percent or higher.

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#### Section 2, Business Tax Credit

This provision adds biomass fuel property to the list of existing technologies that qualify for the business renewable energy investment tax credit in Section 48 of the Internal Revenue Code. To qualify, the biomass fuel property must operate at a thermal efficiency rate of at least 75 percent lower heating value (LHV) and used for space heating, air conditioning, domestic hot water, industrial process heat, or any combination.

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 2021. This modification to the Section 48 tax credit would expire at the end of 2028.

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#### Section 3, Residential Investment Tax Credit Extension

This provision extends the Section 25d investment tax credit for residential open-loop biomass heating property through the end of 2028. Qualifying biomass heating property must operate at thermal output efficiencies of 75 percent (higher heating value) and be used to generate heat, hot water, or steam.

The credit would increase to the full 30 percent investment tax credit under Section 25d. The credit applies the same broad definition of “biomass fuel” as the Section 48 Tax Credit. This provision would apply to expenses incurred in years following its enactment, and the tax credit would expire at the end of 2028.

The extension of the residential investment tax credit in the BTU Act has also been proposed under the House Ways and Means Committee’s Growing Renewable Energy Now Act (GREEN Act).

# Who supports the BTU Act?

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Advanced Cyclone Systems  
AFS Energy Systems  
Alliance for Green Heat  
American Loggers Council  
American Wood Fibers  
Aroostook Partnership  
Baling Twine Farm  
Biomass Engineering and Equipment  
Biomass Energy Resource Center  
Biomass Thermal Energy Council  
Caluwe, Inc.  
Curran Renewable Energy  
Cutting Edge Energy Systems  
Etkind Consulting LLC  
Firespeaking, LLC  
Forest Energy Corporation  
Froling Enrgy  
FutureMetrics  
Hearth, Patio & Barbecue Association  
Heating the Midwest  
Innovative Natural Resource Solutions  
Integrated Energy Systems, PLLC  
Lamppa Manufacturing Inc.  
Lignetics, Inc.  
Maine Energy Systems  
Maine Pellet Fuels Association  
Maine Wood Pellet Co.  
Masonry Heater Association of North America  
Massachusetts Forest Alliance  
Messersmith Manufacturing  
Northern Forest Center  
Pellet Fuels Institute  
Professional Logging Contractors of Maine  
Q-Team Tree Service  
Renewable Energy Vermont  
Riverdale Farm and Forest  
Sustainable Heating Org, Inc.  
Sustainable Northwest  
T&D Wood Energy LLC  
Tarm Biomass  
Technology Transition Corporation  
Travis Industries  
TTC Energy LLC  
Virginia Loggers Association  
Warren & Baerg Mfg., Inc.  
Wilson Engineering Services  
Wisewood Energy

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