MADISON'S Pellet Report

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North America Heating Wood Pellet Prices, Bulk

November 2025

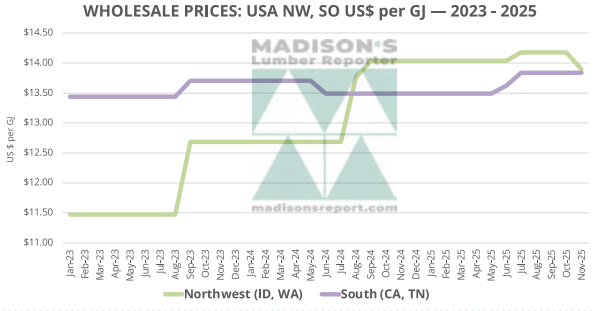
	Wholesale (reseller)					7,800 to 8,700 BTUs				$ / ton
www.madisonsreport.com	Nov 2025	Oct 2025	$ change	% change	Trend	Last Year	$ change	% change	Trend	
Canada West (BC, AB)	**$291**	$291	+0	+0.0%	–	$291	-0	-0.1%	▼	
Canada Central (MB, ON, QC)	**$295**	$295	+0	+0.0%	–	$284	+11	+3.9%	▲	
Canada East (NS, NB, PEI)	**$298**	$298	+0	+0.0%	–	$298	+0	+0.0%	–	
USA Northeast	**$418**	$415	+3	+0.7%	▲	$405	+13	+3.1%	▲	
USA Midwest	**$298**	$298	+0	+0.0%	–	$270	+28	+10.4%	▲	
USA Northwest	**$259**	$264	-5	-2.0%	▼	$261	-3	-1.0%	▼	

All prices in Canada in CAD$ – All prices in USA in US$

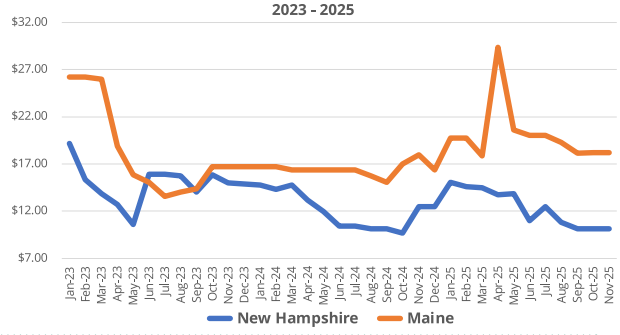
Historical Price Comparison, $/GJ

November 2025

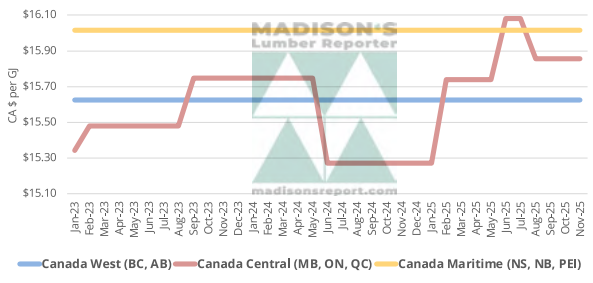
NORTH AMERICA HEATING WOOD PELLET, BULK
WHOLESALE PRICES: USA NW, SO US$ per GJ — 2023 - 2025



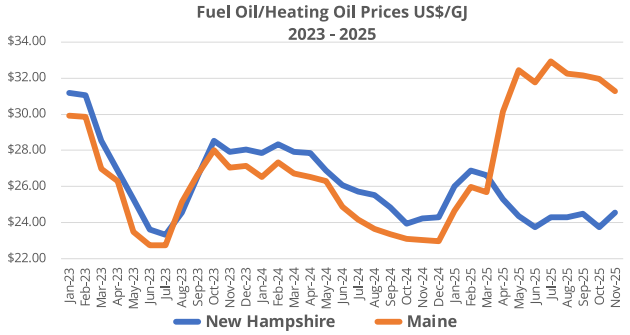
Natural Gas Prices US$/GJ
2023 - 2025



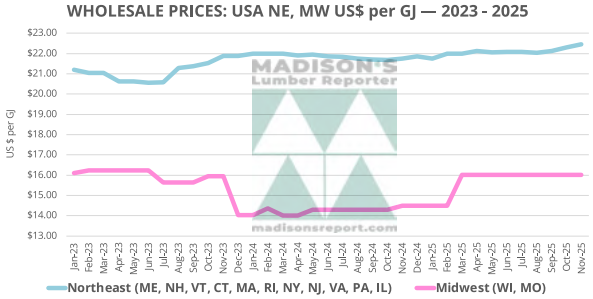
HEATING WOOD PELLET WHOLESALE PRICES, BULK
CANADA C$ per GJ — 2023 - 2025



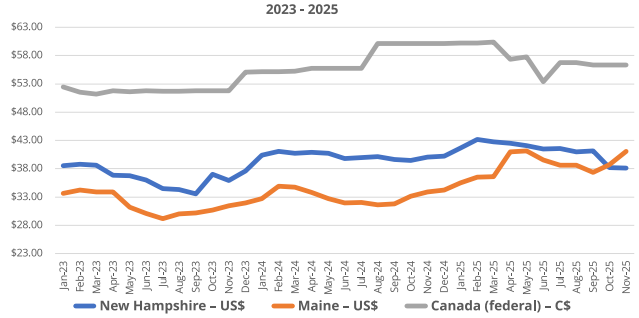
Fuel Oil/Heating Oil Prices US$/GJ
2023 - 2025



NORTH AMERICA HEATING WOOD PELLET, BULK
WHOLESALE PRICES: USA NE, MW US$ per GJ — 2023 - 2025



Propane – $/GJ
2023 - 2025



North America Heating Wood Pellet Price and Market Guide

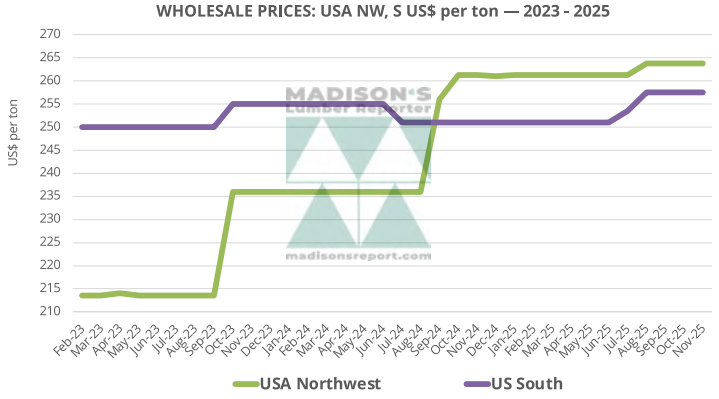
November 2025

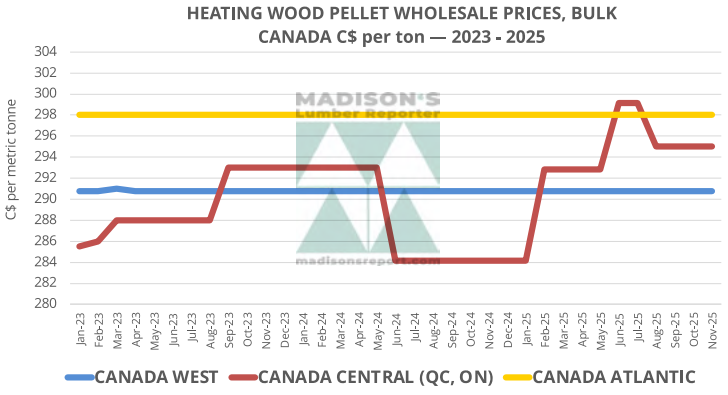
Canada

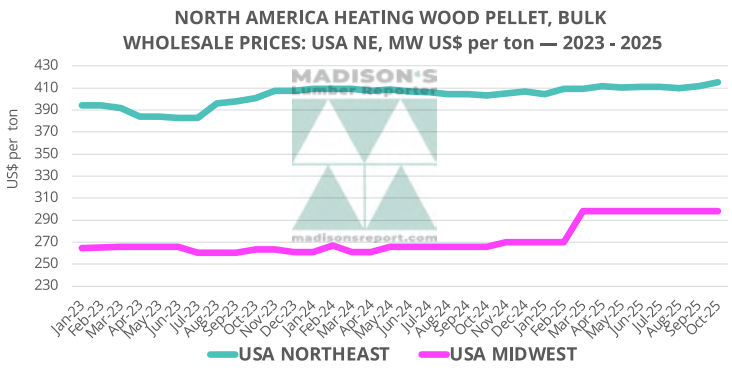
Regional Pricing of Residential Softwood Pellets • International Standard ISO 17225-2

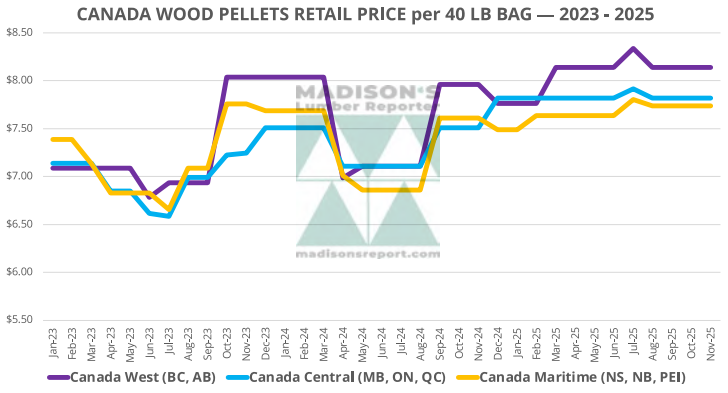
7,800 to 8,700 BTUs		Wholesale (reseller), bulk $/tonne		Retail / 40 lb bag		UNIT CONVERSIONS Wholesale and Retail $ / GJ	$ / MWh	$ / mmBTU
		Nov	Oct	Nov	Oct	Current Month		
WEST (mill gate/roadside)	BC	$279 - 290	$279 - 290	•	•	$15.29	$55.04	$16.13
		•	•	$7.29 - 9.99	$7.29 - 9.99	$25.54	$91.93	$26.94
	AB	$297	$297	•	•	$15.96	$57.45	$16.84
		•	•	$7.29 - 7.99	$7.29 - 7.99	$22.58	$81.29	$23.82
CENTRAL (roadside) (*St. Laurence*)	MB	$225 - 300	$225 - 300	•	•	$14.11	$50.78	$14.88
		•	•	$7.29 - 7.99	$7.29 - 7.99	$22.58	$81.29	$23.82
	ON	$275 - 375	$275 - 375	•	•	$17.47	$62.87	$18.43
		•	•	$6.00 - 9.99	$6.00 - 9.99	$23.63	$85.06	$24.93
	QC	$249 - 346	$249 - 346	•	•	$15.99	$57.55	$16.87
		•	•	$6.38 - 7.99	$6.38 - 7.99	$21.24	$76.45	$22.40
ATLANTIC (delivered to hub)	NS/NB	$263 - 305	$263 - 305	•	•	$15.26	$54.94	$16.10
		•	•	$7.48 - 7.99	$7.48 - 7.99	$22.86	$82.30	$24.12
	PEI	$299 - 325	$299 - 325	•	•	$16.77	$60.36	$17.69
		•	•	$7.49 - 7.99	$7.49 - 7.99	$22.88	$82.35	$24.13

All prices in Canada in CAD$









North America Heating Wood Pellet Price and Market Guide

November 2025

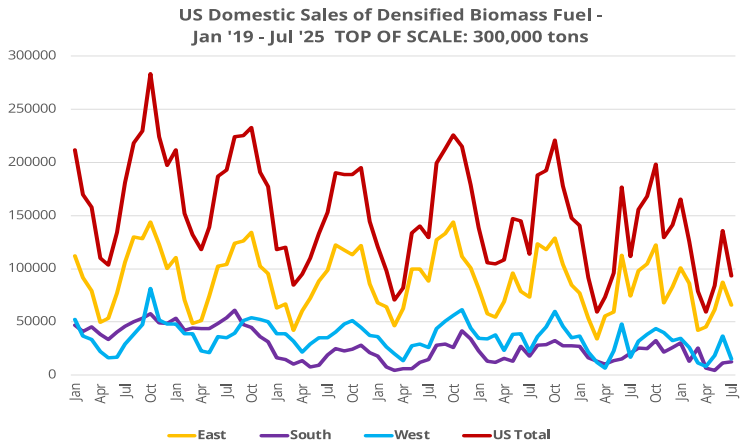
USA

Regional Pricing of Residential Softwood Pellets • International Standard ISO 17225-2

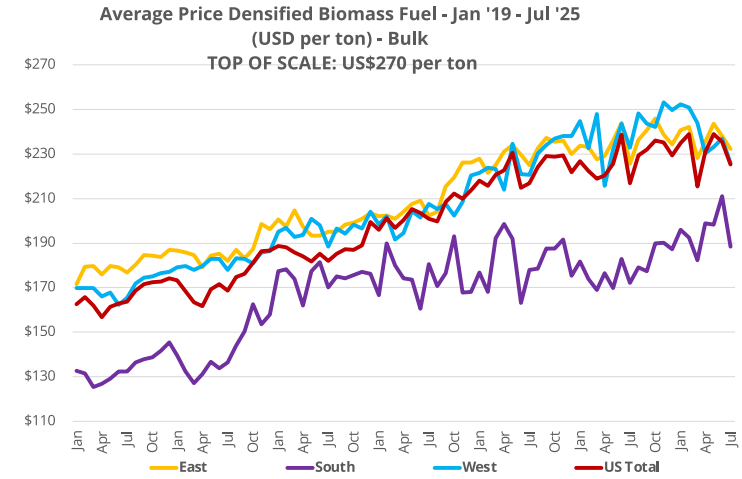
7,800 to 8,700 BTUs		Wholesale (reseller), bulk $/ton		Retail / 40 lb bag		UNIT CONVERSIONS Wholesale and Retail $ / GJ	$ / MWh	$ / mmBTU
		Nov	Oct	Nov	Oct	Current Month		
NORTHEAST (warehouse/ wholesale yard)	ME	**$359 - 569**	$359 - 569	♦	♦	**$24.94**	**$89.76**	**$26.31**
		♦	♦	**$5.99 - 11.50**	$5.99 - 11.50	$25.85	$93.04	$27.27
	NH	**$325 - 539**	$325 - 539	♦	♦	**$23.22**	**$83.57**	**$24.49**
		♦	♦	**$6.48 - 10.78**	$6.48 - 10.78	$25.51	$91.82	$26.91
	VT	**$330 - 500**	$329 - 500	♦	♦	**$22.30**	**$80.28**	**$23.53**
		♦	♦	**$5.99 - 10.00**	$5.99 - 10.00	$23.63	$85.06	$24.93
	MD	**$349 - 369**	$349 - 369	♦	♦	**$19.29**	**$69.45**	**$20.35**
		♦	♦	**$5.99 - 8.98**	$5.99 - 8.98	$22.12	$79.64	$23.34
	CT	**$385 - 585**	$375 - 585	♦	♦	**$26.06**	**$93.82**	**$27.50**
		♦	♦	**$5.76 - 9.00**	$5.76 - 9.00	$21.81	$78.52	$23.01
	MA	**$300 - 539**	$300 - 539	♦	♦	**$22.54**	**$81.15**	**$23.78**
		♦	♦	**$5.99 - 9.50**	$5.99 - 9.50	$22.89	$82.40	$24.15
	RI	**$360 - 509**	$360 - 509	♦	♦	**$23.35**	**$84.05**	**$24.63**
		♦	♦	**$6.59 - 8.98**	$6.79 - 8.98	$23.01	$82.83	$24.28
	NY	**$390 - 635**	$370 - 635	♦	♦	**$27.54**	**$99.14**	**$29.06**
		♦	♦	**$5.99 - 7.99**	$5.99 - 7.99	$20.66	$74.37	$21.80
	NJ	**$355 - 580**	$355 - 580	♦	♦	**$25.12**	**$90.44**	**$26.50**
		♦	♦	**$5.99 - 10.75**	$5.99 - 10.75	$24.74	$89.05	$26.10
	VA	**$279 - 309**	$279 - 309	♦	♦	**$15.80**	**$56.87**	**$16.67**
		♦	♦	**$6.59 - 7.99**	$6.79 - 7.99	$21.55	$77.56	$22.73
	PA	**$280 - 605**	$270 - 580	♦	♦	**$23.78**	**$85.60**	**$25.09**
		♦	♦	**$5.69 - 12.49**	$5.69 - 12.49	$26.87	$96.71	$28.34
	IL	**$244 - 330**	$244 - 330	♦	♦	**$15.42**	**$55.52**	**$16.27**
		♦	♦	**$5.99 - 7.99**	$5.99 - 7.99	$20.66	$74.37	$21.80
MIDWEST (roadside)	WI	**$290 - 442**	$290 - 442	♦	♦	**$19.67**	**$70.80**	**$20.75**
		♦	♦	**$4.99 - 7.99**	$4.99 - 7.99	$19.18	$69.05	$20.24
	MT	**$230**	$230	♦	♦	**$12.36**	**$44.49**	**$13.04**
		♦	♦	**$6.09 - 8.98**	$5.99 - 8.98	$22.27	$80.17	$23.50
NORTHWEST (delivered to hub)	ID	**$200 - 290**	$200 - 290	♦	♦	**$13.17**	**$47.40**	**$13.89**
		♦	♦	**$6.99 - 8.98**	$7.19 - 8.98	$23.60	$84.96	$24.90
	WA	**$249 - 295**	$270 - 295	♦	♦	**$14.62**	**$52.62**	**$15.42**
		♦	♦	**$5.99 - 11.99**	$5.99 - 11.99	$26.57	$95.65	$28.03
SOUTH (delivered to hub)	CA	**---**	---	♦	♦	**---**	**---**	**---**
		♦	♦	**$7.09 - 8.88**	$7.29 - 8.88	$23.60	$84.96	$24.90
	TN	**$245 - 255**	$245 - 255	♦	♦	**$13.44**	**$48.36**	**$14.17**
		♦	♦	**$6.59 - 7.99**	$6.79 - 7.99	$21.55	$77.56	$22.73
	OR	**$215 - 315**	$215 - 315	♦	♦	**$14.24**	**$51.26**	**$15.02**
		♦	♦	**$7.09 - 8.99**	$7.29 - 8.99	$23.76	$85.54	$25.07

All prices in USA in US$

US Regional Pellet Sales and Prices
July 2025



Densified biomass fuel consists primarily of compressed wood pellets, briquettes, and logs.
The manufacture of wood pellets utilizes **wood residues** from sustainably managed forests as well as high-quality **wood waste** from a variety of industrial activities such as construction and logging. Wood pellet combustion has a high efficiency level and extremely low particulate emissions. Additionally, wood pellets are a renewable energy source.
Densified biomass fuel is used for heating in wood pellet stoves or furnaces in residential settings and in large-scale boilers in commercial buildings. Industry uses utility-grade wood pellets in processes that require thermal energy, such as generating electricity.



Shows sales (tons) and average price (revenue per ton) of **primarily wood pellets in the US domestic heating market** for the reporting month. Sales and average revenue per ton include **both retail and wholesale sales.**

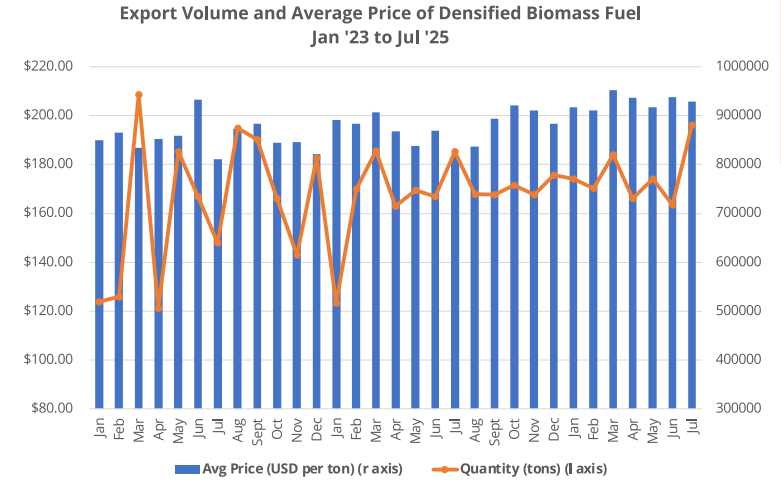
SOURCE: U.S. Energy Information Administration Form EIA-63C, Densified Biomass Fuel Report

US Domestic Densified Biomass Fuel Sales

Month	East	South	West	US Total
Full Year 2023	**1,070,257**	**282,835**	**451,895**	**1,804,987**
Apr-24	55,788	10,629	6,762	73,179
May-24	59,120	13,830	22,945	95,895
Jun-24	112,899	15,325	48,283	176,507
Jul-24	74,346	20,404	16,707	111,457
Aug-24	98,251	25,215	32,013	155,479
Sep-24	104,812	24,682	38,467	167,961
Oct-24	122,253	32,310	43,890	198,453
Nov-24	67,931	21,542	40,027	129,500
Dec-24	83,018	25,800	32,473	141,291
Full Year 2024	**943,156**	**245,916**	**352,462**	**1,541,534**
Jan-25	100,674	30,260	34,387	165,321
Feb-25	86,335	13,048	26,227	125,610
Mar-25	42,029	25,424	11,253	78,706
Apr-25	45,130	6,507	7,966	59,603
May-25	61,481	4,467	18,237	84,185
Jun-25	87,474	11,651	36,629	135,754
Jul-25	65,961	12,411	15,151	93,523

Average Price US Densified Biomass Fuel, Bulk

Month	East	South	West	US Total
Avg 2023	**$230.45**	**$181.52**	**$228.00**	**$222.08**
Apr-24	$229.07	$176.57	$215.71	$220.21
May-24	$236.05	$169.72	$232.10	$225.54
Jun-24	$243.86	$182.95	$243.64	$238.51
Jul-24	$225.67	$172.23	$232.85	$216.96
Aug-24	$236.29	$179.07	$248.27	$229.48
Sep-24	$240.66	$177.31	$243.47	$231.99
Oct-24	$246.01	$189.96	$242.24	$236.05
Nov-24	$238.71	$190.30	$253.27	$235.16
Dec-24	$234.33	$187.36	$249.66	$229.27
Avg 2024	**$235.44**	**$179.15**	**$240.55**	**$227.61**
Jan-25	$240.75	$196.07	$252.24	$234.96
Feb-25	$242.21	$192.61	$250.77	$238.85
Mar-25	$228.12	$182.24	$243.76	$215.53
Apr-25	$235.35	$198.87	$230.24	$230.68
May-25	$243.47	$198.27	$233.08	$238.82
Jun-25	$238.19	$211.08	$236.81	$235.49
Jul-25	$232.31	$188.41	$225.75	$225.42



Export Volume and Average Price of US Wood Pellets
July 2025

US export sales and average price (revenue per ton) of primarily **utility-grade pellets** to global markets. Blend of FOB and delivered

SOURCE: U.S. Energy Information Administration - Export sales and average price of densified biomass fuel

US Biomass Feedstock Volumes and Prices

July 2025

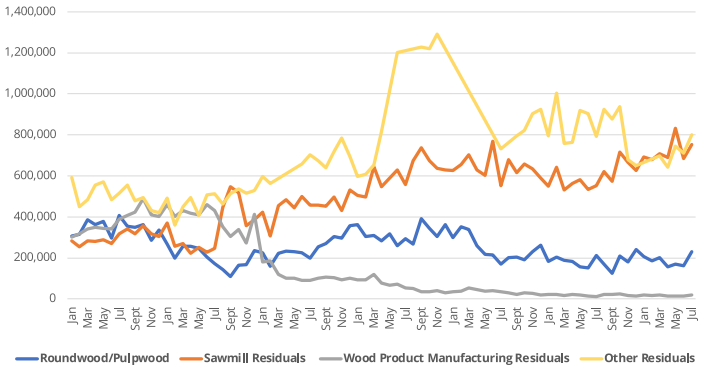
US Biomass Feedstock Volumes

Month	Roundwood/ Pulpwood *	Sawmill Residuals **	Wood Product Manufacturing Residuals **	Other Residuals *
Full Year 2023	**2,951,314**	**7,725,900**	**405,400**	**4,355,308**
Apr-24	182,774	561,858	22,914	763,877
May-24	157,814	580,669	19,632	918,486
Jun-24	151,402	534,118	13,168	902,232
Jul-24	213,056	551,293	12,664	792,932
Aug-24	169,303	620,781	20,988	923,150
Sep-24	124,429	572,647	22,376	877,737
Oct-24	209,821	715,850	24,331	936,489
Nov-24	180,340	666,453	16,620	679,917
Dec-24	240,185	625,809	14,906	649,723
Full Year 2024	**2,205,293**	**7,154,068**	**228,430**	**10,000,707**
Jan-25	207,222	691,452	19,070	–
Feb-25	185,397	679,096	17,728	–
Mar-25	202,709	708,283	19,794	697,646
Apr-25	156,283	688,800	14,937	642,955
May-25	169,726	830,875	14,756	744,123
Jun-25	162,206	683,175	14,412	711,660
Jul-25	229,973	754,003	20,270	800,929

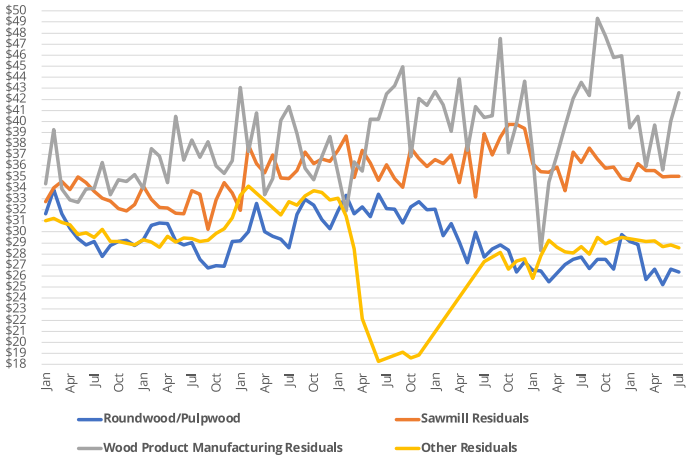
US Biomass Feedstock Cost

Month	Roundwood/ Pulpwood *	Sawmill Residuals **	Wood Product Manufacturing Residuals **	Other Residuals *
Avg 2023	**$28.86**	**$37.40**	**$41.38**	**$27.40**
Apr-24	$26.25	$35.89	$36.99	$28.62
May-24	$27.04	$33.74	$39.55	$28.17
Jun-24	$27.53	$37.20	$42.08	$28.10
Jul-24	$27.71	$36.30	$43.52	$28.67
Aug-24	$26.70	$37.59	$42.34	$27.98
Sep-24	$27.52	$36.61	$49.33	$29.49
Oct-24	$27.53	$35.75	$47.73	$28.90
Nov-24	$26.61	$35.88	$45.81	$29.22
Dec-24	$29.78	$34.85	$45.93	$29.52
Avg 2024	**$27.10**	**$35.91**	**$41.10**	**$28.43**
Jan-25	$29.13	$34.68	$39.41	–
Feb-25	$28.86	$36.16	$40.48	–
Mar-25	$25.65	$35.57	$35.90	$29.11
Apr-25	$26.63	$35.57	$39.69	$29.21
May-25	$25.21	$35.00	$35.62	$28.64
Jun-25	$26.63	$35.05	$40.02	$28.82
Jul-25	$26.35	$35.01	$42.59	$28.58

US Biomass Feedstock Purchase Volumes, Jan '19 - Jul '25 (tons)
TOP OF SCALE: 1,420,000 tons



US Biomass Feedstock Cost, Jan '19 - Jul '25 (USD per ton)
TOP OF SCALE: US$48 per ton



Shows the feedstock purchases (tons) and average weighted cost (USD per ton) for four categories of raw materials: roundwood timber, sawmill residue, wood product manufacturing residue, and other residuals.

Other residuals includes: bark, logging residues, wood chips, post-consumer wood, unmerchantable wood, and other.

*** Green**
**** Kiln Dried**

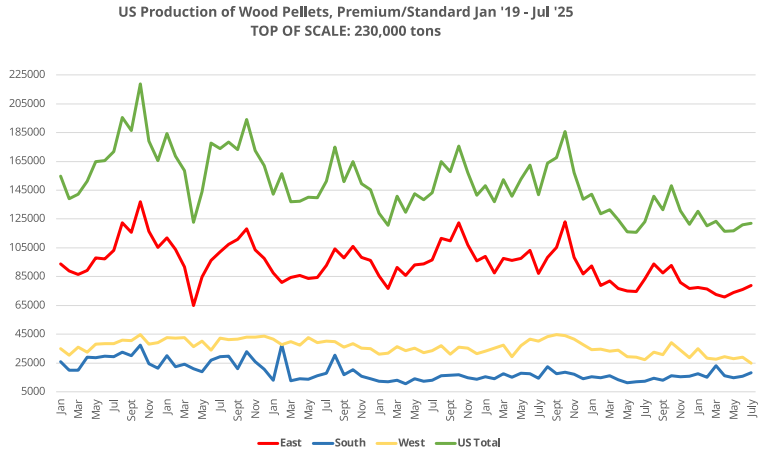
SOURCE: U.S. Energy Information Administration Form EIA-63C, Densified Biomass Fuel Report

US Production of Wood Pellets, Volumes

July 2025

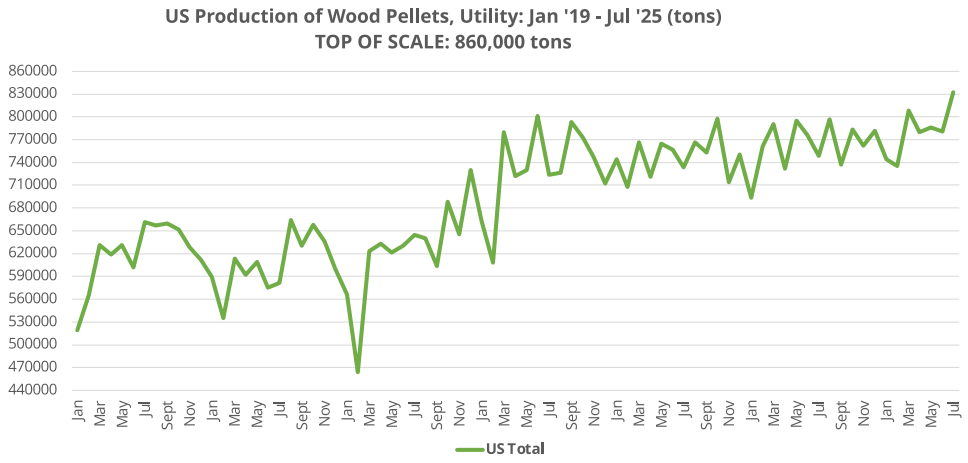
Wood Pellets, Premium/Standard

Month	East	South	West	US Total
Full 2023	**1,180,315**	**226,954**	**493,110**	**1,900,238**
Sep 2024	87,561	12,916	30,908	131,385
Oct 2024	92,785	16,135	39,139	148,059
Nov 2024	81,035	15,525	34,127	130,687
Dec 2024	76,655	15,760	28,869	121,284
Full 2024	**995,008**	**171,018**	**387,811**	**1,553,837**
Jan 2025	77,654	17,724	34,877	130,255
Feb 2025	76,482	15,258	28,463	120,203
Mar 2025	72,768	23,134	27,671	123,573
Apr 2025	70,974	16,105	29,471	116,550
May 2025	73,879	14,917	27,995	116,791
Jun 2025	76,082	15,729	29,236	121,047
Jul 2025	78,859	18,265	24,909	122,033



Wood Pellets Utility

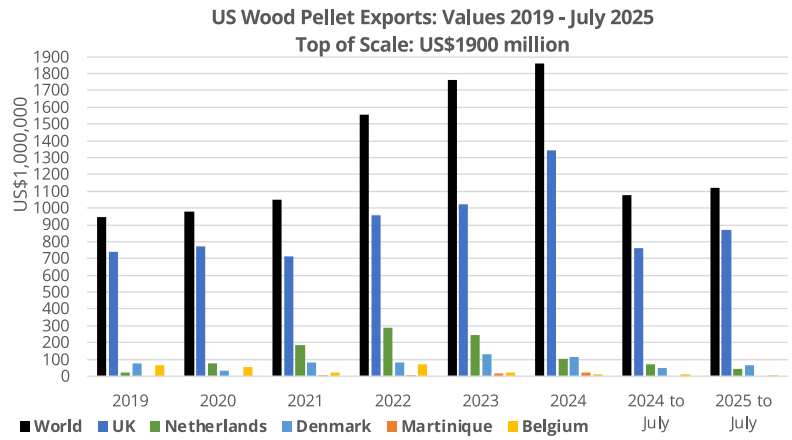
Month	South	US Total
Full 2023	**8,967,687**	**8,967,687**
Sep 2024	736,792	736,792
Oct 2024	783,569	783,569
Nov 2024	761,668	761,668
Dec 2024	781,118	781,118
Full 2024	**9,155,790**	**9,155,790**
Jan 2025	744,044	744,044
Feb 2025	735,491	735,491
Mar 2025	808,350	808,350
Apr 2025	779,578	779,578
May 2025	786,223	786,223
Jun 2025	780,390	780,390
Jul 2025	832,421	832,421



Tons of wood fuel products manufactured in each region during the reporting month for three categories: **wood pellets, PFI certified; wood pellets, not certified; and wood pellets, utility.** (Non-certified pellets are those that did not have the official PFI certification)
Included in wood pellets: PFI certified and not certified categories are premium, super-premium, and standard pellets. These pellet types are primarily used for heating residences and schools. Utility-grade pellets are generally used for electrical power generation and include both those with and without certifications.

SOURCE: US Energy Information Administration

North America Wood Pellet Exports
August 2025



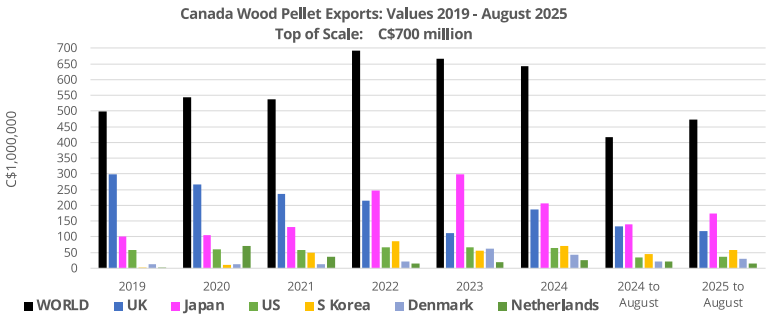
SOURCE: US Census

US Wood Pellet Exports: Values 2020 to JUL 2025

US$1,000,000	Belgium	Denmark	NL	UK	World
2020	55.74	33.94	78.15	770.11	981.59
2021	19.19	80.93	185.05	713.48	1,051.29
2022	67.86	79.21	288.46	956.47	1,556.11
2023	22.70	128.10	244.78	1,024.89	1,764.03
2024	11.33	111.90	104.90	1,342.08	1,859.22
2024 to Jul	**10.01**	**51.26**	**73.19**	**760.70**	**1076.50**
2025 to Jul	**5.37**	**63.07**	**43.77**	**870.13**	**1117.79**
Jul '24/'25	**-46%**	**23%**	**-40%**	**14%**	**4%**

Canada Wood Pellet Exports: Values 2020 to AUG 2025

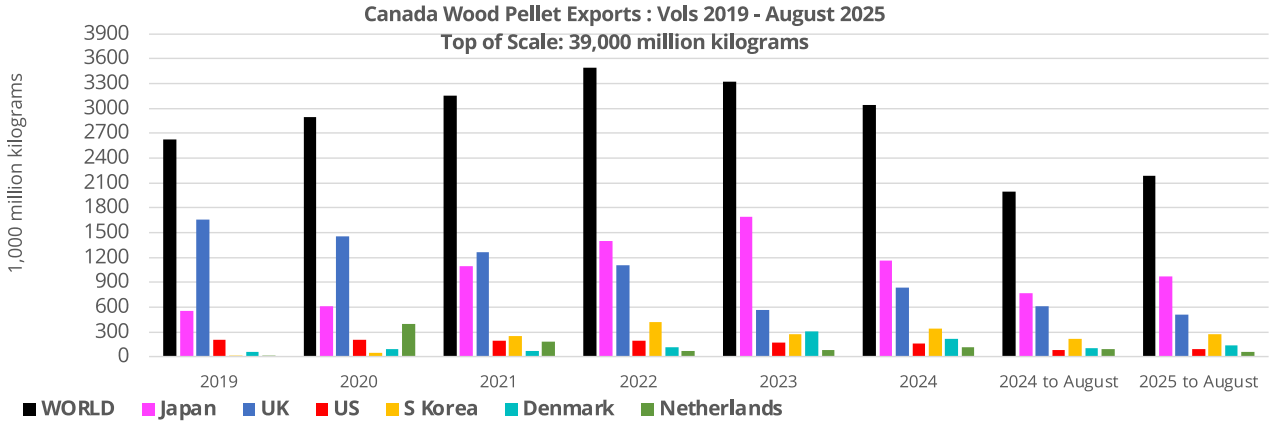
C$1,000,000	UK	NL	Japan	S Korea	US	World
2020	265.81	71.80	105.91	10.25	60.54	544.22
2021	235.77	37.43	131.16	48.49	57.58	538.54
2022	214.71	13.99	246.34	85.52	65.75	693.10
2023	112.80	18.37	299.69	56.14	66.98	666.39
2024	186.07	26.63	207.21	70.99	63.68	643.86
2024 to Aug	**134.29**	**20.40**	**139.04**	**45.83**	**34.20**	**418.20**
2025 to Aug	**118.49**	**14.61**	**174.22**	**57.40**	**36.87**	**472.87**
Aug '24/'25	**-12%**	**-28%**	**+25%**	**+25%**	**+8%**	**+13%**



SOURCE: Statistics Canada

Canada Wood Pellet Exports: Volumes 2020 to AUG 2025

C$1,000,000	UK	NL	Japan	S Korea	US	World
2020	1,456	399	611	48	205	2,901
2021	1,259	180	1,091	254	195	3,153
2022	1,102	77	1,401	426	194	3,493
2023	562	85	1,693	280	176	3,323
2024	839	121	1,159	346	160	3,042
2024 to Aug	**612**	**90**	**772**	**219**	**87**	**1,994**
2025 to Aug	**506**	**62**	**973**	**270**	**93**	**2,189**
Aug '24/'25	**-17%**	**-32%**	**+26%**	**+23%**	**+7%**	**+10%**



Domestic exports - Wood and articles of wood; wood charcoal
HS 440131 Wood pellets, agglomerated
Delivered to distribution hub

Pellet Industry News and Updates: November 2025

Pellet and Biomass Fuel Industry Updates, News, and Announcements

Bioprocess Laboratory Opened in Iowa

The US arm of Ireland-based biomass analysis company Celignis recently launched commercial operations at a new laboratory in Waterloo, Iowa. The 10,000 square-foot facility will offer analytical and bioprocess development services to US-based clients, including more than 170 standardized analysis packages covering approximately 400 analytes ranging from lignocellulosic composition and biofuel potential to seaweed and biochar composition. The Iowa lab will support companies in the bioenergy, bioproducts, and renewable natural gas sectors, reducing logistical barriers, improving turnaround times, and increasing collaboration with American clients.

Bioenergy Facility Opened in Hat Creek

California-based energy company West Biofuels has officially opened its Hat Creek Bioenergy facility in Northern California. The biomass-based energy plant utilizes low-value forest waste residues cleared to reduce wildfire risk and severity, supplying clean energy to the local grid while supporting sustainable forest management in the Burney, CA, region. The facility employs 15 skilled plant operators, most of whom come from the local Burney community. Over the lifetime of the project, it is expected to help manage more than a hundred miles of surrounding forest to significantly reduce the risk of catastrophic fires. Key grant support for the endeavour has come from the California Energy Commission, the Fall River Resource Conservation District, the US Forest Service, and the USDA Rural Energy for America Program. Ongoing support from CalFire has also been instrumental, including a Biomass Transportation Subsidy to make feedstock logistics affordable.

Russia Targets Ukraine Biomass Plant

Russian forces launched an overnight drone strike against Ukraine's most prominent large-scale biomass-based thermal power plant. The facility was visibly damaged by the attack, but thankfully no casualties were reported. According to representatives from Ukraine, the plant has become a milestone project in the country's renewable energy sector and an emblem of its drive toward energy independence.

Scottish Government Blocks Biomass Plant

The Scottish government recently announced it will uphold a decision to block plans for a biomass facility near Elgin, rejecting an appeal from Acorn Bioenergy. The London-based organic waste-to-energy company had proposed constructing a plant at Longmorn to convert waste residues from distillery operations into biomethane, which can be refined to make biofuels. The company argued that the project could reduce annual carbon emissions by approximately 27,000 tonnes, but the local council's planning committee denied permission citing concerns over increased heavy industry traffic and noise impact. As of October 28, Acorn had six weeks to consider taking the case to the Court of Session, though any successful challenge would need to demonstrate a legal error rather than a difference of opinion on planning matters.

Christchurch Biomass Plant Enters Next Phase

Ecogas' Ōtautahi Christchurch Organics Processing Facility recently entered its next stage of development. The plant combines biomass processing with anaerobic digestion to transform organic municipal and industrial waste into renewable energy and biofertilizer. The facility is designed to process 100,000 tonnes of waste annually, with Ecogas' dual-system design treating wet organic waste in its anaerobic digestion tanks, while fibrous green waste is converted into fuel through biomass processing. Construction is slated to begin in 2026, with the facility able to accept waste for processing in early 2027.

Blaze Erupts at Pellet Facility in West Virginia

Multiple volunteer fire departments and other emergency services responded to a fire at Appalachian Wood Pellets in Kingwood, WV, in early November. Officials thankfully were able to contain the blaze with no injuries reported. While the cause of the fire was under ongoing investigation, the fire was reported to have damaged structures outside the main plant. These included an open trailer filled with material, an open-roofed storage structure, a belt-to-silo apparatus, and a maintenance building.

Government Funding will Support New Zealand Pellet Plant

Australia-based renewable energy company Foresta recently announced it will receive $9 million in government funding to support the construction of a torrefied wood pellet plant in Kawerau, New Zealand. The $410 million facility is expected to provide long-term, stable positions for more than 75 workers while producing up to 2.1 million tonnes of pellets annually. That level of production is nearly on par with the entire country of New Zealand's current coal consumption. Feedstock for the plant will come from forest and sawmill waste residues generated by the country's thriving radiata pine plantation forestry sector. By producing torrefied pellets that can be used as a drop-in replacement for coal-fired energy generation, this latest project will be part of New Zealand's broader climate goal of phasing out coal boilers by 2037.

By Earl Heath

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Two Black Pellet Plants Coming to Alberta

UK-based PowerWood Canada Corp. recently announced it will build two plants in Northern Alberta which will use forest waste residuals to manufacture torrefied – or "black" – wood pellets. The company plans to utilize low-value, fire-damaged timber to make biomass for export to Japanese energy markets to reduce that country's reliance on coal for energy generation.

PowerWood will work alongside local businesses and indigenous partners to address wildfire threats in the harvesting region, while also producing a low-carbon direct drop-in replacement for coal. These facilities will also mark the first steam explosion pellet production process, capable of manufacturing black wood biofuel pellets with 94 per cent less carbon release than coal. This endeavour is expected to create more than 500 new jobs across the company's Northern Alberta supply chain, with a single plant anticipated to produce up to 350,000 tons of black pellets per year. PowerWood has secured long-term renewable Crown forestry licenses to source raw materials from millions of hectares of Albertan forest containing a supposed 15-20 year supply of fire damaged timber.

Brazil's Growing Bioeconomy Highlighted at Conference

The 10th annual Scaling Up Bio Conference was recently held in Ottawa, Canada, with Brazil's growing bioeconomy a significant topic throughout. The country has long been active in the biofuels sector after launching its national ethanol program in 1975 in response to the oil crisis of the 1970s. Brazil's ambassador to Canada described the country's choice to reduce dependence on imported fossil fuels, instead focussing on the development of homegrown renewable ethanol from sugar cane.

Over the intervening decades, Brazil has become the second-largest producer of ethanol next to the United States, with the country producing over 37 billion litres – or almost 20 per cent of global output – in 2024. In addition to sugarcane, corn has become a significant source of feedstock for ethanol production. Brazilian companies are also investing heavily in second generation and advanced biofuels, using agricultural and forest waste residues to produce cellulosic ethanol, biogas, green diesel, and sustainable aviation fuel. It is hoped that this example of scalable circular economic principles, where one industry feeds another, will be a model for other nations looking to decarbonize.

By Earl Heath

Competing Heating Fuel Prices USA and Canada

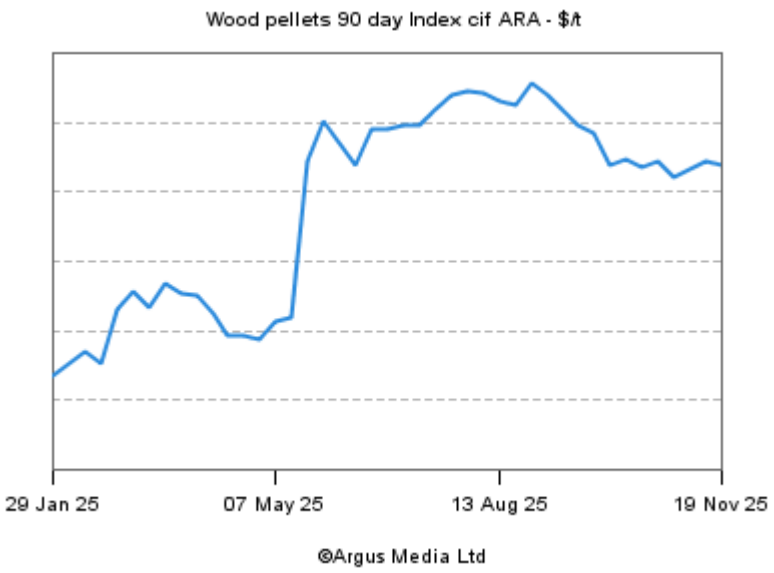
April 2024 – November 2025

	Fuel Type	US$/GJ	US$/MWh	Date
NEW HAMPSHIRE	Natural Gas 1st tier	$10.14	$36.51	November 3, 2025
	Fuel Oil (#2)	$24.57	$88.45	
	Propane	$38.09	$137.12	
	Kerosene	$30.80	$110.87	
	Electricity - Resistance Heat	$63.95	$230.20	
	Electricity - Air Source Heat Pump	$17.77	$230.00	
	Heating Pellets NH (wholesale bagged)	**$20.32**	**$73.14**	
MAINE	Cord Wood	$17.70	$63.70	November 10, 2025
	Natural Gas (Avg)	$18.23	$65.61	
	Heating Oil	$31.27	$112.56	
	Propane	$41.04	$147.73	
	Kerosene	$38.62	$139.03	
	Wood Pellets	**$28.83**	**$103.79**	
	Electricity (Baseboard)	$66.91	$240.87	
BOSTON, MA	Electricity (Residential)	$131.43	$473.10	April 2024; tax not incl
NASHVILLE, TN	Electricity (Residential)	$49.70	$178.90	
MIAMI, FL	Electricity (Residential)	$47.34	$170.40	
HOUSTON, TX	Electricity (Residential)	$45.00	$162.00	
PORTLAND, OR	Electricity (Residential)	$57.20	$205.90	
	Fuel Type	**C$/GJ**	**C$/MWh**	**Date**
CANADA (Federal)	Furnace Oil	$49.56	$178.42	Nov 11, 2025; incl tax
	Diesel	$50.52	$181.85	
	Auto Propane	$55.11	$198.39	
	Electricity (Residential - Avg of 12 Major Canadian Cities)	$45.03	$162.11	April 2024; tax not incl
QUEBEC	Furnace Oil	$60.65	$218.32	Nov 11, 2025; incl tax
	Diesel	$60.16	$216.56	
	Auto Propane	$66.39	$238.99	
	Electricity (Residential)	$22.36	$80.50	April 2024; tax not incl
VANCOUVER, BC	Diesel	$55.74	$200.65	Nov 11, 2025; incl tax
	Auto Propane	$47.51	$171.03	
	Electricity (Residential)	$33.50	$120.60	April 2024; tax not incl

ARGUS WOOD PELLET INDEX: NOVEMBER 2025

Argus® Wood Pellets cif ARA Index

Prices in US$



Unit Conversions

Typical Heat Values and Densities of Certain Fuels

Fuel	Unit of Measurement	GJ	MWh	toe	t/m³ (or t/m³[v])
Crude oil	tonne	41,868	11.63	1.00	0.855
Heavy fuel oil normal/low sulphut	tonne	40.60/41.10	11,278/11,417	0.970/0.0982	0.955
Light fuel oil	tonne	42.50	11,806	1.015	0.845
Diesel oil	tonne	41.50	11,528	0.991	0.845
Liquid oils	tonne	46.30	12,861	1.106	0.580
Coal	tonne	25,211	7,003	0.602	0.800
Coke	tonne	29.30	8,139	0.700	0.750
Natural gas (OoC)	1,000 m³	36.00	10,00	0.860	0.732
Blast furnace gas	1,000 m³	3.79	1,053	0.091	
Coke oven gas	1,000 m³	16.70	4,639	0.399	
Black liquor	DT	11.70	3,250	0.279	1.415
Birch chip (log)	m³st	5.40	1.50	0.129	0.400
Mixed chip (log)	m³st	4.51	1.25	0.107	0.350
Fuel chip	m³[v]	2.88	0.80	0.069	0.300
Saw dust	m³[v]	2.16	0.60	0.052	0.300
Wood shavings	m³[v]	1.80	0.50	0.043	0.100
Conifer bark	m³[v]	2.16	0.60	0.052	0.300
Birch bark	m³[v]	2.52	0.70	0.060	0.350
Wood pellet	tonne	16.92	4.70	0.404	0.690
Sod peat	m³[v]	5.04	1.40	0.120	0.380
Milled peat	m³[v]	3.24	0.90	0.077	0.320
Biogas	m³ gas	14.4 - 28.8	4 - 8	0.344 - 0.688	

SOURCE: Energy statistics (KTM) and VTT Energia http://www.bioenergyadvice.com/facts/conversion-factors/

	toe	MWh	GJ	Gcal
toe	1	11,630	41,868	10.0
MWh	0.08598	1	3.6	0.86
GJ	0.02388	0.2778	1	0.2388
Gcal	0.1	1.1630	4,1868	1

Feature	Chips from lopped poles	Wood pellet	Wood briquette	Sod peat	Oat	Fuel oil
Moisture content %	25-30	8-10	8-10	25-40	14	
Bulk density (kg/m3[v)	250-320	600-650	600-650	350-400	520-590	0.845
Energy density (kWh/m3[v)	700-900	2,900-3,900	2,900-3400	1,400	2,200-2,500	10,000 (kWh/m3)
Ash content	0.5-2.0	0.5	0.5	4.0-6.0	5.0-7.0	+/-0

Comparison of key spcifications of properties for selected woody solid biofuels and fossil fuels

Fuel Type	Density* (kg/m³)	Density* (lb/ft³)	High heating value by mass (MJ/kg)	High heating value by mass (Btu/lb)
Wood chips (about 45% moisture, loosely packed)	300-400	19-25	10-11	4,300-4,700
Firewood (stacked; air dry to about 25% moisture)	300-500	19-31	14-15	6,200-6,500
Wood pellets (≤10% moisture) density about 650-700 kg/m³	550-800	34-50	18-20	7,700-8,500
Heating oil (No.2)	850	53	42	18,000
Propane Liquid Petroleum Gas	1.7	0.12	50	21,500
Natural Gas	0.7-0.9	0.04-0.06	43	19,500

* Bulk density is typically used for solid biofuels while density is used for gaseous and liquid fossil fuel

Solid Biofuels	Amount of Fuel (metric tonnes/year)	
Boiler efficiency	70%	85%
Wood pellets (A2 - M10)	280	230
Wood chips (A2 - M35)	395	325
Wood chips (B1 - M50)	500	410

annual fuel amounts as a function of soli bio-fuels, moisture content and boiler efficiency

Unit Conversions

Conversion Factors for Different Energy Sources

Comparing and understanding the energy content of different fuels is difficult, but converting them into kilowatt-hours makes the process easier. It is wide to compare different fuels, because comparing makes you understand the heating value of firewood and its potential as a source of energy. Biofuels are potential replacements for oil because of their cost - and energy - efficiency.

In the table below, biofuels are compared with other energy sources. The conversion factors are approximate average numbers, since the energy-efficiency of biofuels varies along with the quality of the biomass.

1,000 litres fuel oil / 10,000 kWh

2,100 kg pellet

12.5 m³ wood chips

6 stacked cubic metres of birch

Using the table above, it can be calculated that, for example, the energy of one stacked cubic metre of dry birch chips equals approximately the energy of 170 litres of fuel oil. That is 1,700 kWh

SOURCE

Btu Content of Common Energy Units

1 barrel (42 gallons) of crude oil = 5,800,00 Btu

1 gallon of gasoline = 124,000 Btu (based on US consumption, 2008)

1 gallon of diesel fuel = 139,000 Btu

1 gallon of heating oil = 139,000 Btu

1 barrel of residual fuel oil = 6,287,000 Btu

1 cubic foot of natural gas = 1,028 Btu (based on US consumption, 2008)

1 gallon of propane = 91,000 Btu

1 short ton of coal = 19,988,000 Btu (based on US consumption, 2008)

1 kilowatthour of electricity = 3,412 Btu

SOURCE

1 $/MWh, $ per megawatthour

1 $/MWh =	2.77777 x 10^{-10} $/J
1 $/MWh =	2.77777 x 10^{-7} $/kJ
1 $/MWh =	0.00027777777777778 $/MJ
1 $/MWh =	0.27777777777778 $/GJ
1 $/MWh =	2.93071 x 10^{-7} $/BTU
1 $/MWh =	1.16222 x 10^{-9} $/cal
1 $/MWh =	1.16222 x 10^{-6} $/kcal
1 $/MWh =	4.45053 x 10^{-29} $/eV
1 $/MWh =	1 x 10^{-6} $/Wh
1 $/MWh =	0.001 $/kWh

SOURCE

Common energy units (Scientific notation)	
British themal unit (Btu)	1.0
Millions of Btu	1.0E+06 Btu
Therm	1.0E+05 Btu
Billions of Btu	1.0E+09 Btu
Quad	1.0E+15 Btu
Calorie	1.0 Calorie
Kilocalorie	1.0E+03 Calories
Food calorie	1.0E+03 Calories
Thermie	1.0E+05 Calories
Teracalorie	1.0E+12 Calories
Megajoule	1.0E+06 Joule
Joule	1.0 Joule
Gigajoule	1.0E+09 Joule
Terajoule	1.0E+12 Joule
Watthour	1.0
Kilowatthour (kWh)	1.0E+03 watthour
Megawatthour (mWh)	1.0E+06 watthour
Gigawatthour (gWh)	1.0E+09 watthour
Terawatthour (tWh)	1.0E+12 watthour

SOURCE

Units and Conversions for Various Energy Masses and Densities

Volume

1 full cord = 128 ft³

1 cubic metre = 35.3 cubic feet

1,000 litre (lt) = 1 m³

Fuel Equivalents

1,000 litre (lt) heating oil **equivalent (in energy basis)**

~ 5-8 m³ dry stacked firewood (M 20%)

10-12 m³ wood chips (M 45%, loosely stored)

~ 2 metric tonne (or ~ 3 m³) wood pellet

Weight

Metric ton (t) = tonne = 1,000 kilograms = 2,205 lb

Imperial or **Long ton (lt)** = 1,016 kilograms = 2,240 lb

Short (US) ton (st) = 907 kilograms = 2,000 lb

From **long ton** to **metric ton** multiply by 1.016

From **short ton** to **metric ton** multiply by 0.9072

Energy and Density

From **MJ/kg** to **kWh/kg** multiply MJ/kg by 0.2778

From **MJ/kg** to **BTU/lb** multiply MJ/kg by 430

From **BTU/lb** to **MJ/kg** multiply Btu/lb by 0.002326

From **MJ/m³** to **BTU/ft³** multiply MJ/m³ by 26.84

From **BTU/ft³** to **MJ/m³** multiply Btu/ft3 by 0.0373