

Densified Biomass Fuel Report



For

Pellet Fuels Institute Annual Conference

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By

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Key Takeaways

- 2022 was an average year for the domestic pellet market. Premium/Standard pellet production and domestic sales, both quantity and revenue, were down from 2019 historic highs but both domestic sales and revenue exceeded 2021 levels.
- 2022 was an above average year for the export pellet market.
- Total feedstock purchases for 2022 were 19,509,361 tons.
- Total Premium/Standard pellet production for 2022 was 1,740,626 tons.
- Total Utility Pellet production for 2022 was 8,779,570 tons.
- Domestic Sales for 2022 were 1,805,574 tons with a total revenue of \$370,889,786.
- Export Sales for 2022 were 8,812,147 tons with a total revenue of \$1,734,740,578.

Agenda

- History of the survey
- What the survey collects
- How the data is published
- Summarize 2022-2023 data
- Post-presentation Q&A

About EIA

The U.S. Energy Information Administration (EIA) is the statistical and analytical agency within the US Department of Energy. EIA collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment. EIA is the nation's premier source of energy information, and by law, its data, analyses, and forecasts are independent of approval by any other officer or employee of the US Government.

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History and Purpose

- EIA received a letter from two Senators (Maine and New Hampshire) in 2014 asking to increase coverage of energy from woody biomass.
- EIA received support from other stakeholders.
- Densified Biomass Fuel Report was officially approved August 28th, 2015.

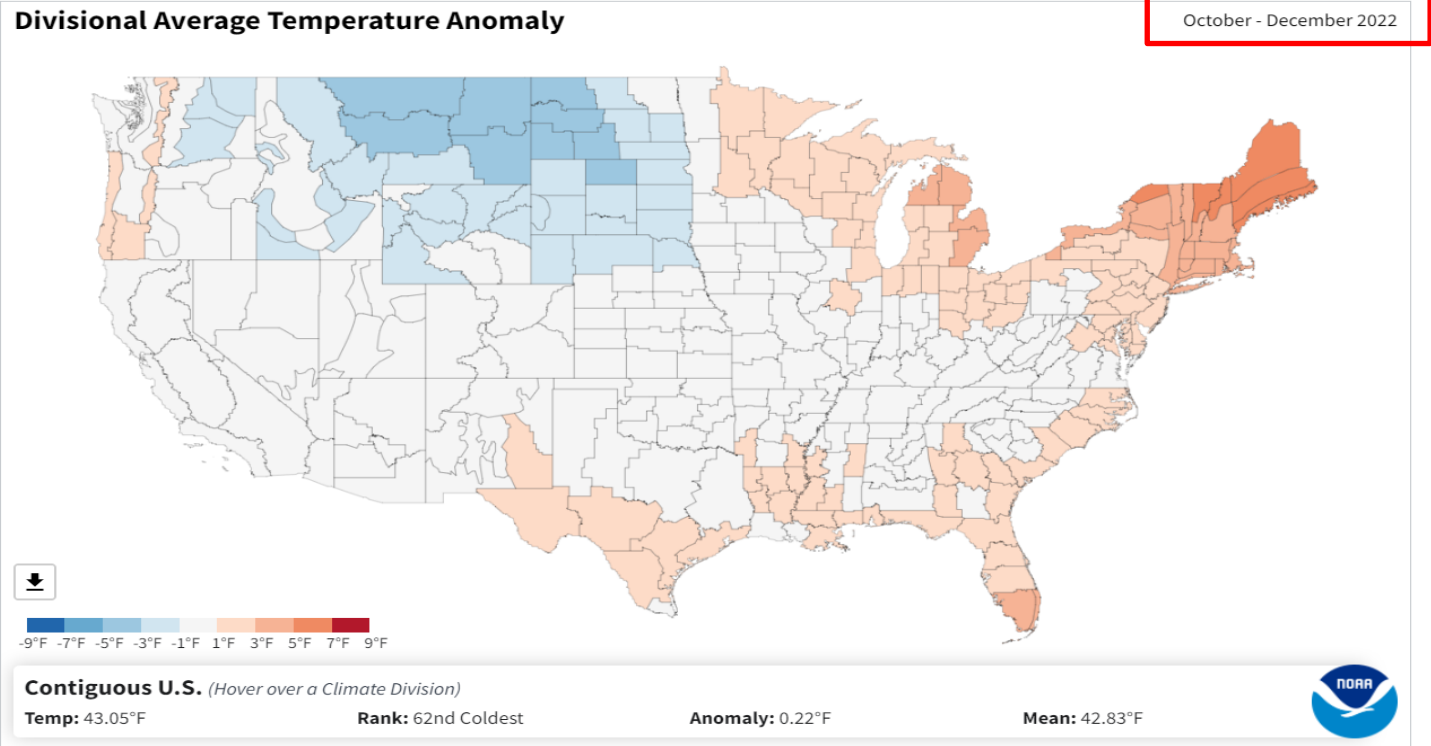
Respondents and Requirements

- All manufacturers of densified biomass fuel products must report on EIA-63C. Both currently operating and those planning to begin operating within one year.
- Those with capacity of 10,000 tons/year or more report monthly.
- Plants producing only animal bedding, absorbents, and/or grilling pellets are not required to report. All others should report **ONLY FUEL** intended for heating or electric power.
- Currently, around 80 manufacturers report each month.

Data Collected

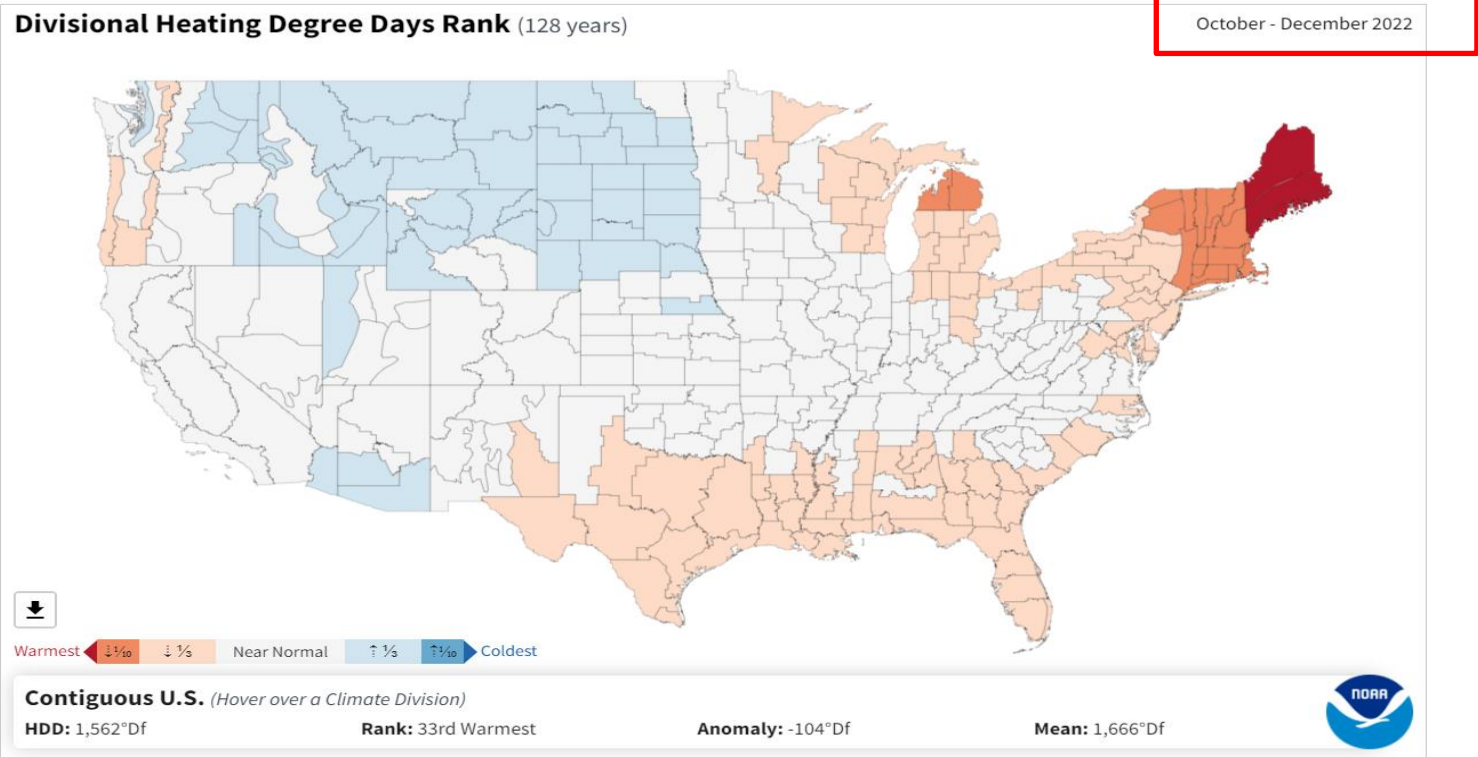
- Plant History: Capacity, plant status and FTE
- Feedstocks: type, source, quantities and cost
- Production: type of product, quantities and characteristics
- Inventory: type of product, total held
- Sales: domestic and export, type of product, quantities and revenues

NOAA average temperature map for early winter season 2022 shows mild temperatures with above average warmth in Northeast



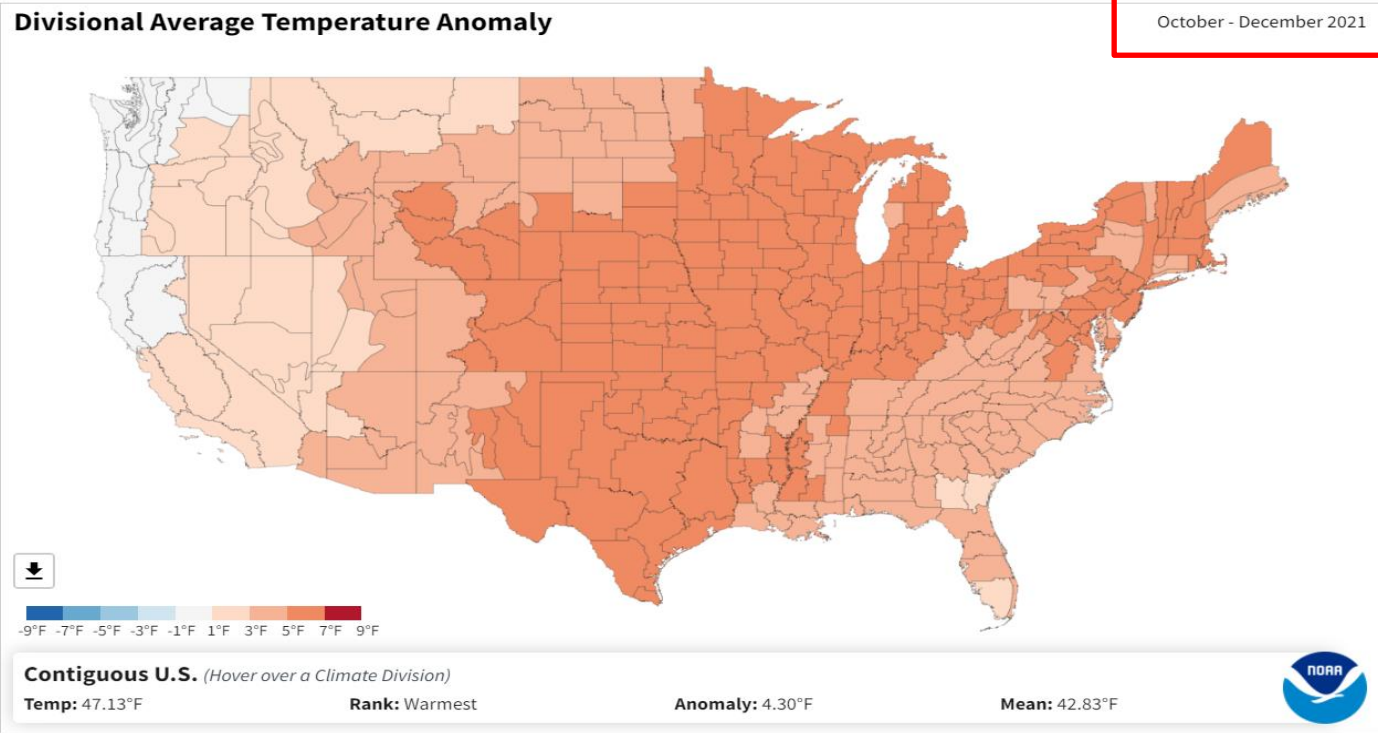
Source: National Oceanic and Atmospheric Administration, National Centers for Environmental Information, [Climate Monitoring](#)

NOAA heating degree day index for early winter 2022 reflects mild temperatures with warmer than average Northeast



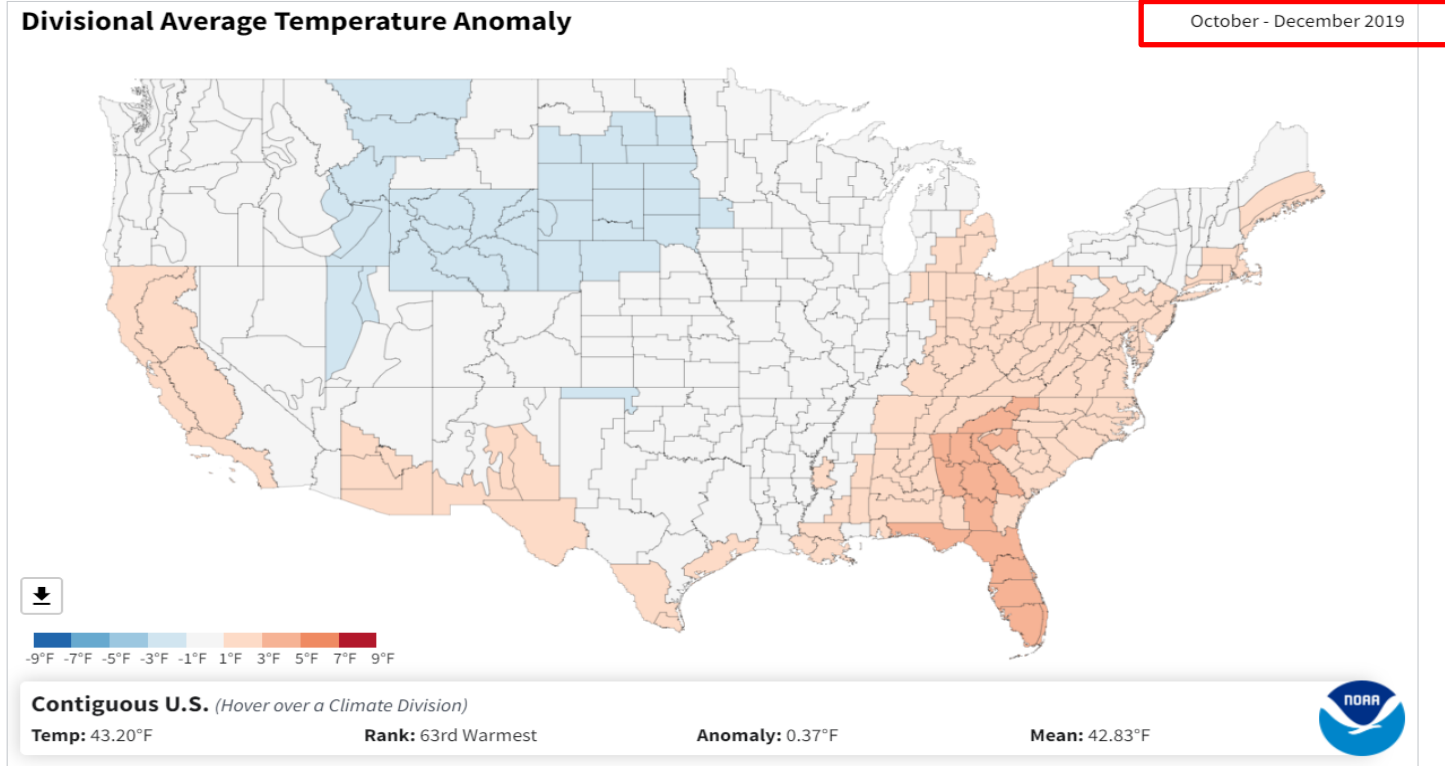
Source: National Oceanic and Atmospheric Administration, National Centers for Environmental Information, [Climate Monitoring](#)

NOAA average temperature map for early winter season 2021 shows above average temperatures across most of United States



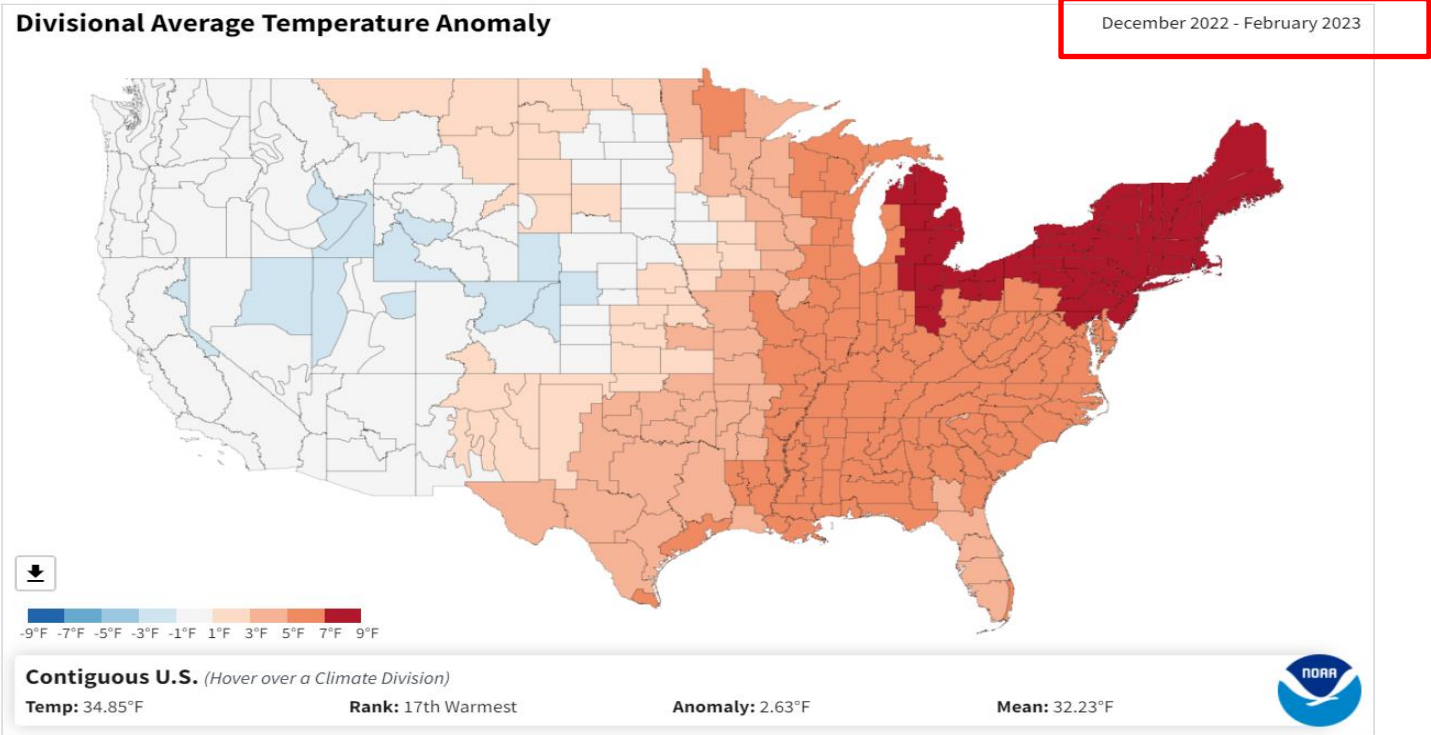
Source: National Oceanic and Atmospheric Administration, National Centers for Environmental Information, [Climate Monitoring](#)

NOAA average temperature map for early winter season 2019 shows cooler temperatures across most of United States



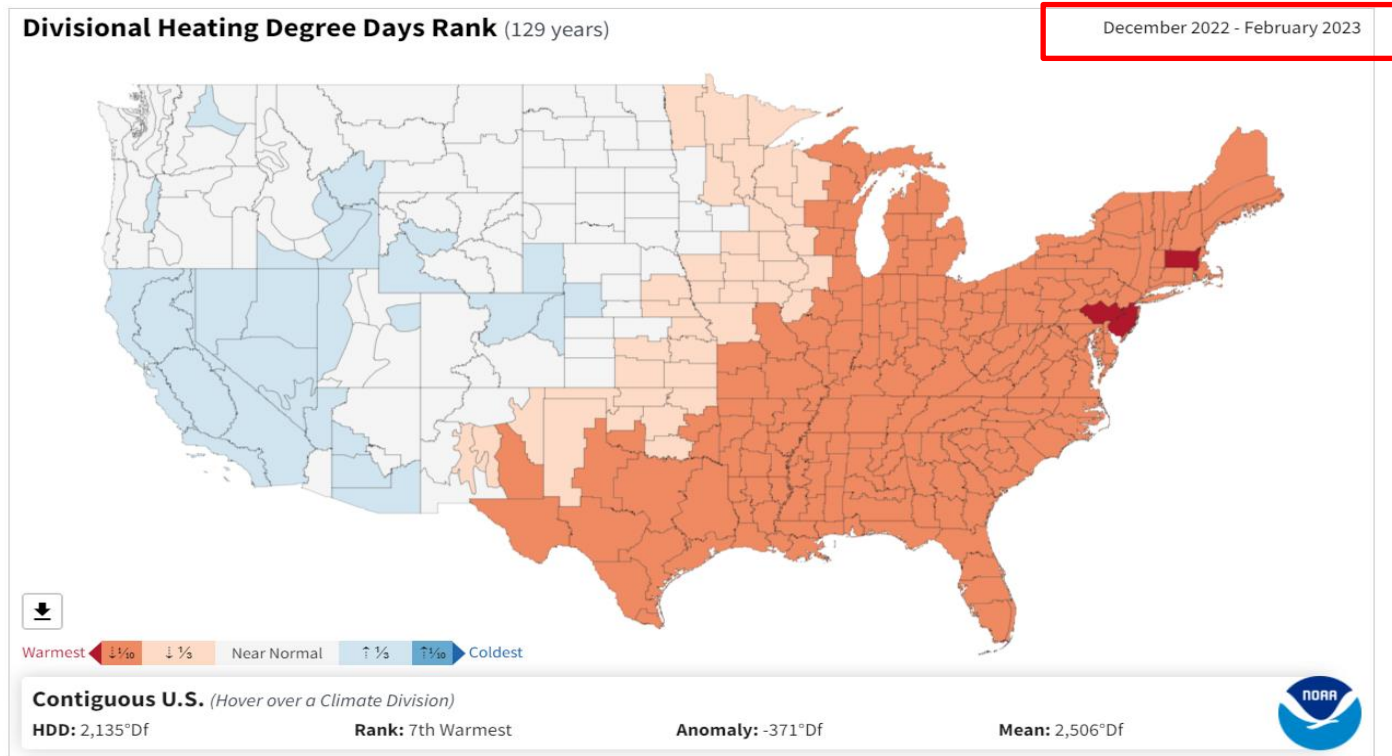
Source: National Oceanic and Atmospheric Administration, National Centers for Environmental Information, [Climate Monitoring](#)

Late winter 2022-2023 show even warmer temperatures than early winter, averaging the 17th warmest winter



Source: National Oceanic and Atmospheric Administration, National Centers for Environmental Information, [Climate Monitoring](#)

Late winter 2022-23 heating degree days reflect warming weather, ranked as the 7th warmest



Source: National Oceanic and Atmospheric Administration, National Centers for Environmental Information, [Climate Monitoring](#)

Monthly Densified Biomass Fuel Report Table 3 provides monthly feedstock volumes and average cost data

Table 3. Feedstocks and average cost per ton for the manufacture of densified biomass products, 2023

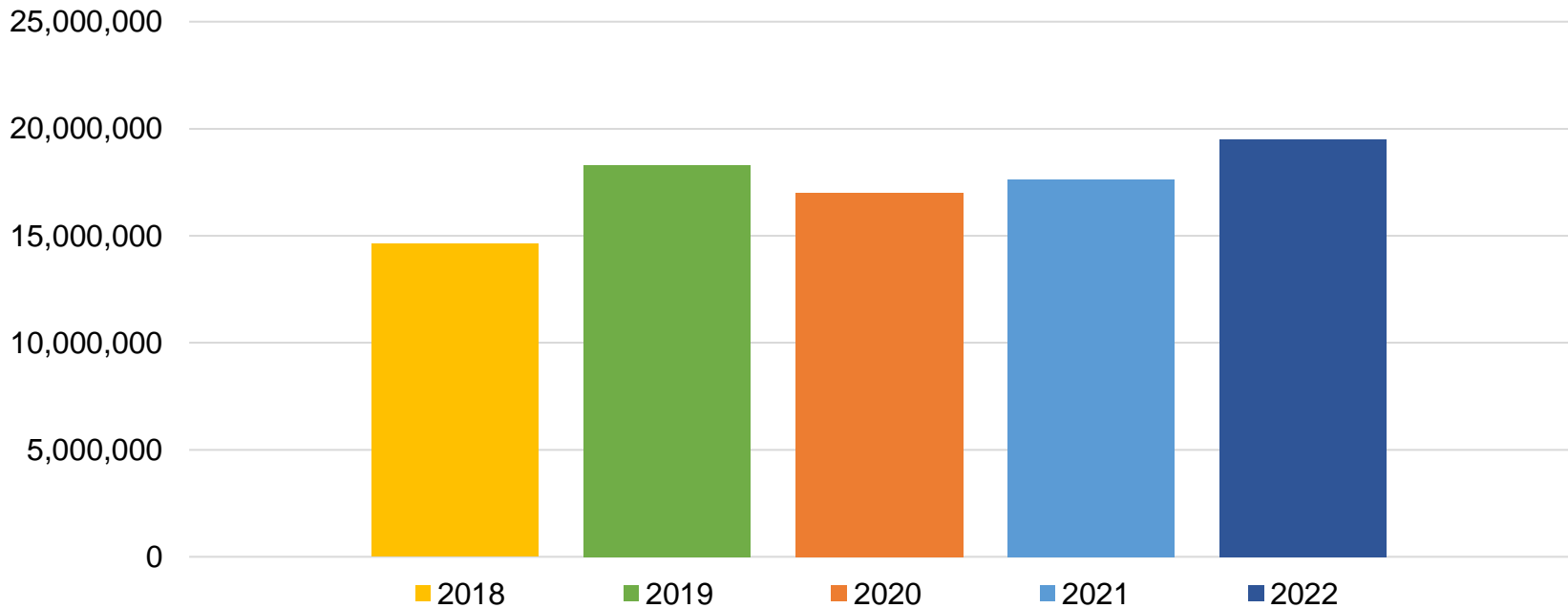
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Month	Roundwood/pulpwood		Sawmill residuals		Wood product manufacturing residuals		Other residuals	
	quantity (tons)	cost (USD per ton)	quantity (tons)	cost (USD per ton)	quantity (tons)	cost (USD per ton)	quantity (tons)	cost (USD per ton)
January	298,280	\$32.04	626,580	\$36.53	35,540	\$42.73	W	W
February	350,839	\$29.63	655,276	\$36.17	38,143	\$41.51	W	W
March	339,537	\$30.75	710,948	\$37.20	45,745	\$38.79	W	W

Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

Reported feedstock purchases reach an all-time high in 2022 despite data withholdings for some months in 2022

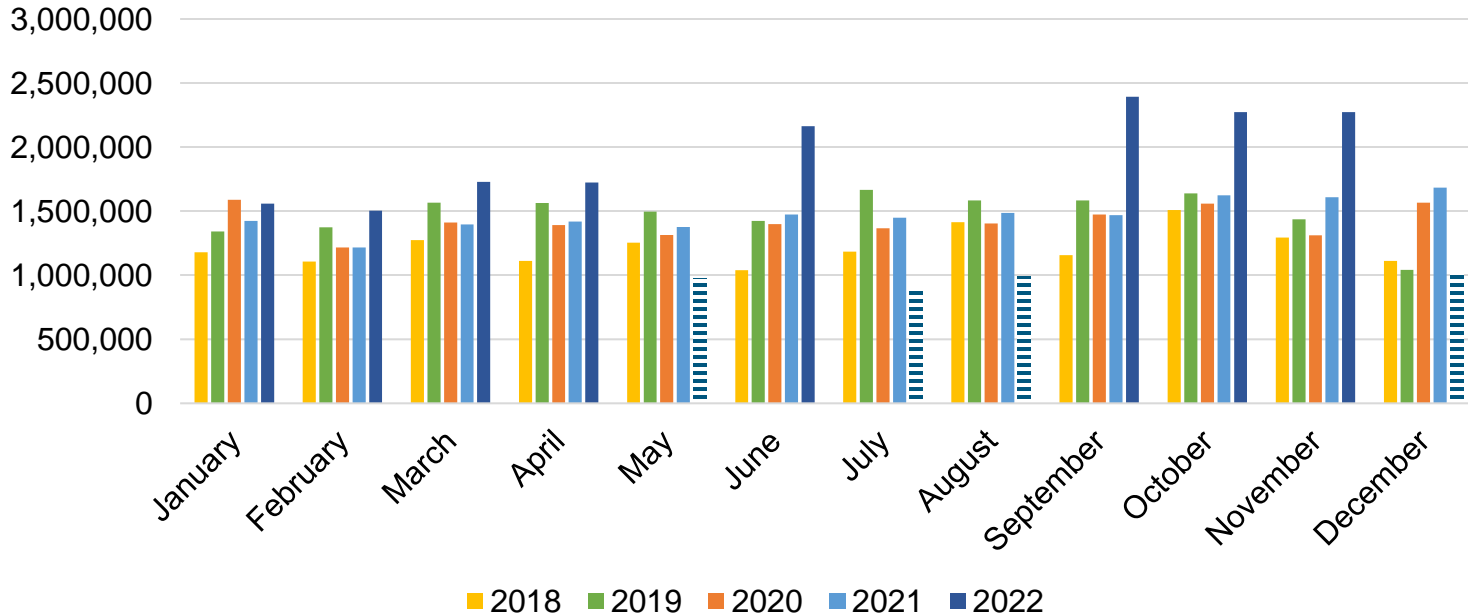
Feedstock purchases by year
tons



Note: some data withheld to avoid disclosure of individual company data
Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

Feedstock purchases by month show record breaking volumes throughout 2022 despite data withholdings

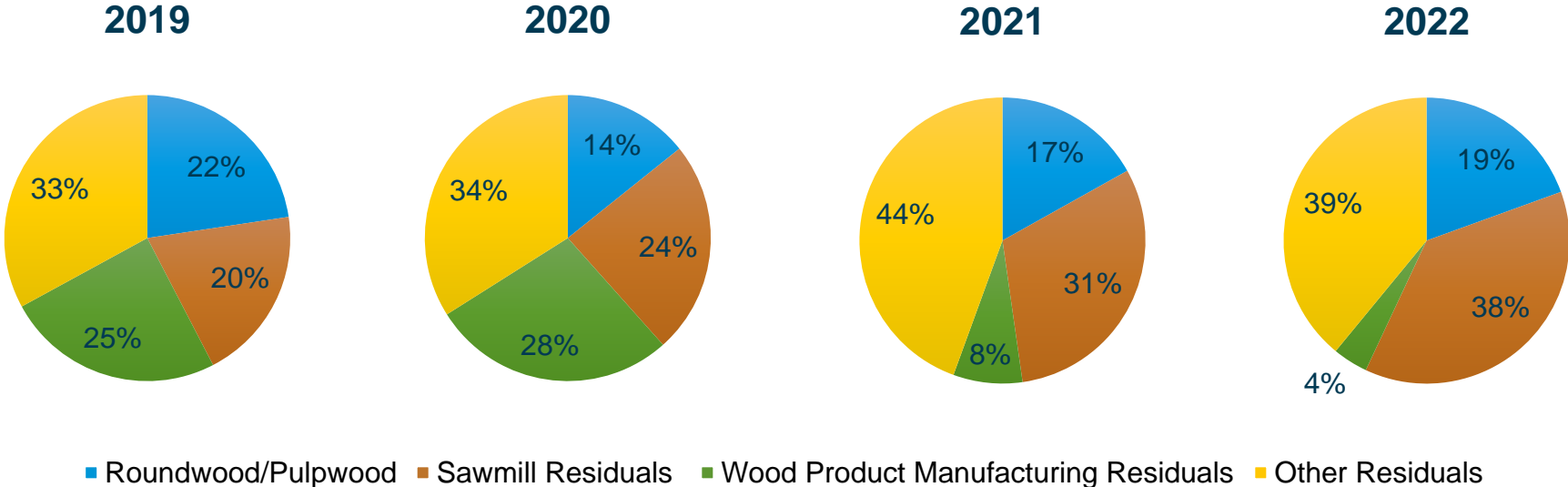
Feedstock purchases by month and year
tons



Note: some data withheld to avoid disclosure of individual company data

Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

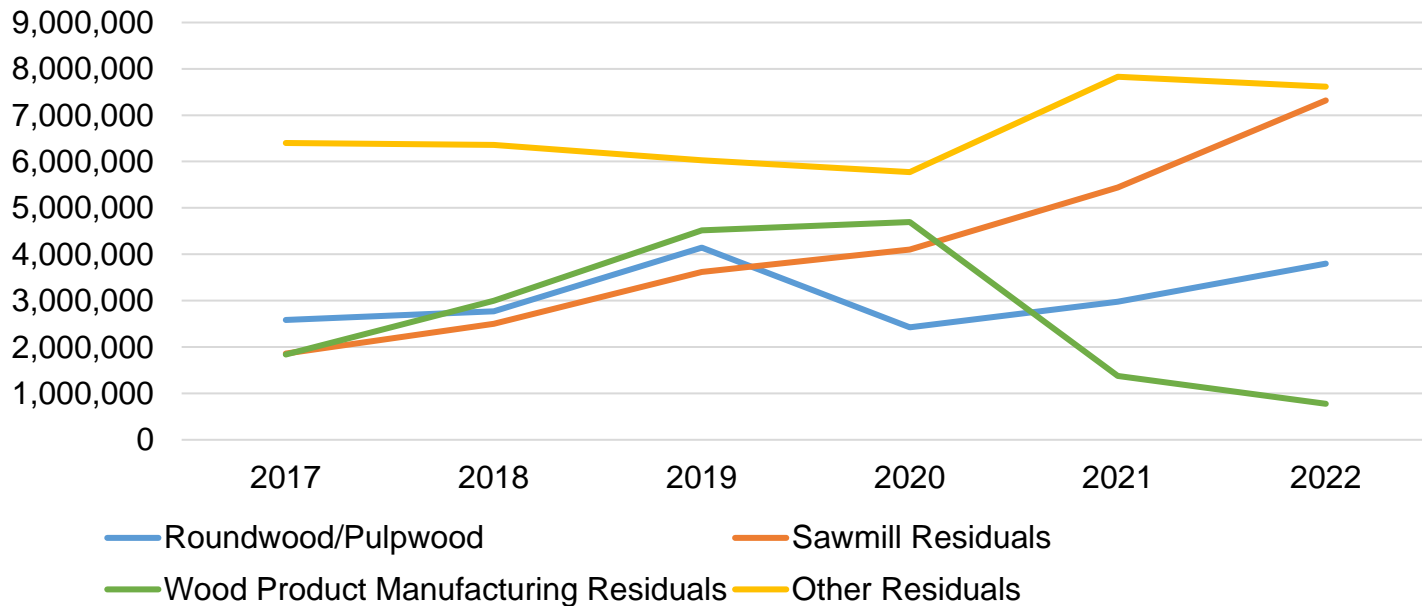
Feedstock source type shifts over last few years showing significant increase in sawmill residuals and other residuals



Note: some data withheld to avoid disclosure of individual company data
Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

Sawmill residuals feedstocks see continued increase while wood product manufacturing residuals feedstocks see decrease from 2020

Feedstock purchases by source type
tons



Note: some data withheld to avoid disclosure of individual company data

Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

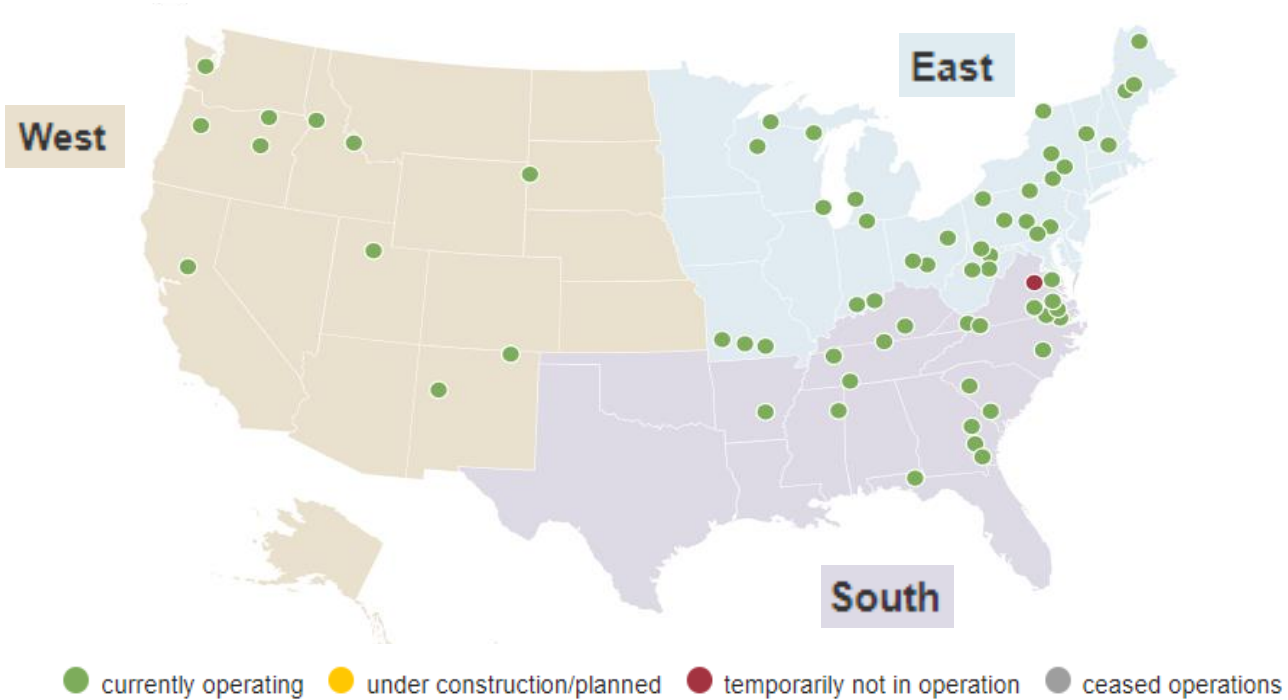
Monthly Densified Biomass Fuel Report Table 4 provides monthly production volumes of premium/standard and utility wood pellets

Table 4. Production of densified biomass fuel, 2023 (tons) [download](#)

Region	Month	Wood pellets, premium/standard	Wood pellets, utility
East			
	January	99,033	N/A
	February	87,479	N/A
	March	97,632	N/A
South			
	January	15,631	744,281
	February	14,190	707,400
	March	17,500	767,273
West			
	January	33,420	N/A
	February	35,468	N/A
	March	37,414	N/A
U.S. total			
	January	148,084	744,281
	February	137,137	707,400
	March	152,405	767,273

Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

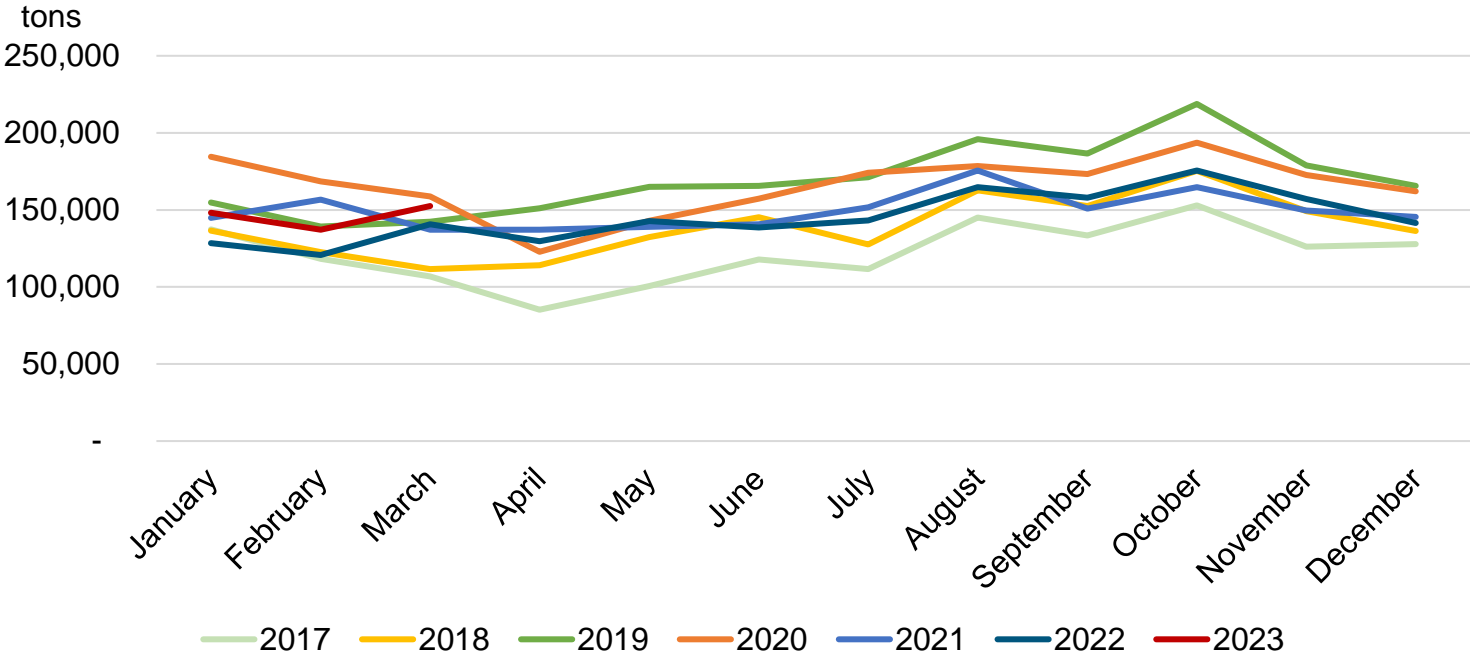
Region map for the *Monthly Densified Biomass Fuel Report* with data for March 2023



Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

Premium/standard wood pellet production started out low in 2022, but increase to average range by end of year

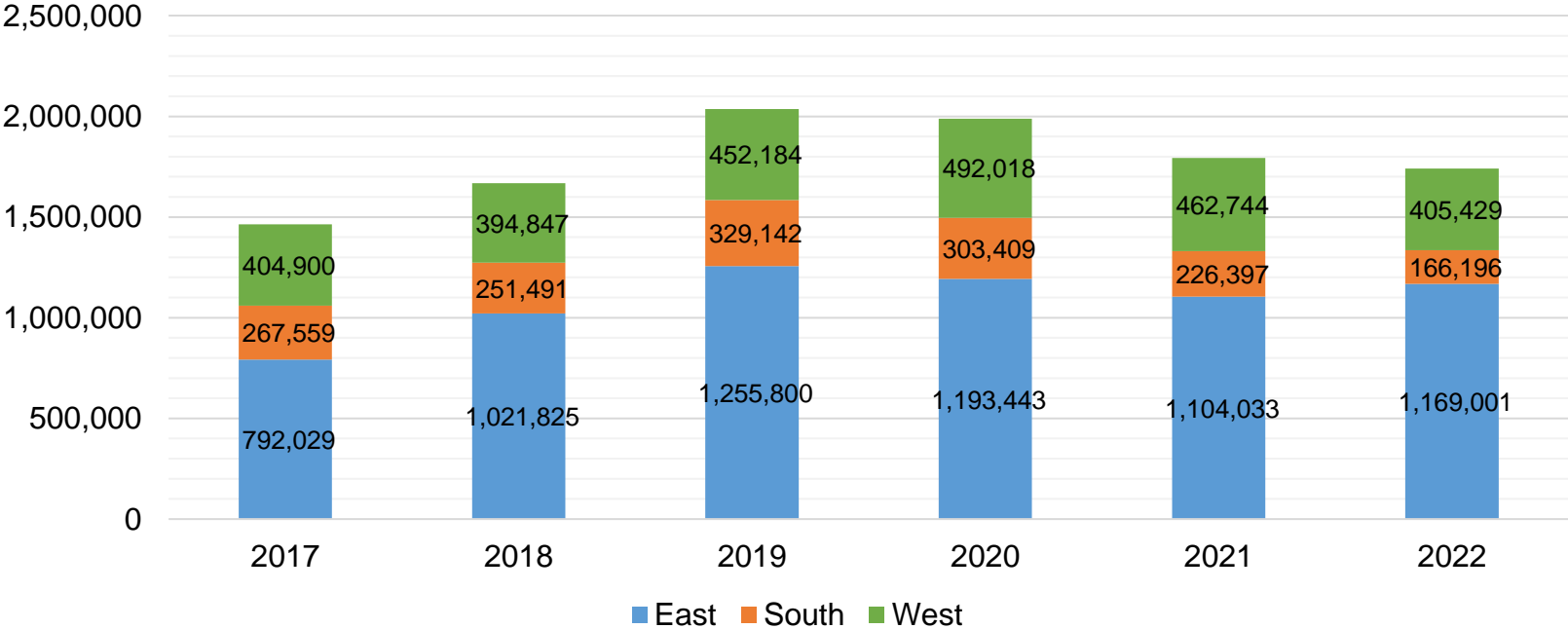
Premium/standard pellet production by month



Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

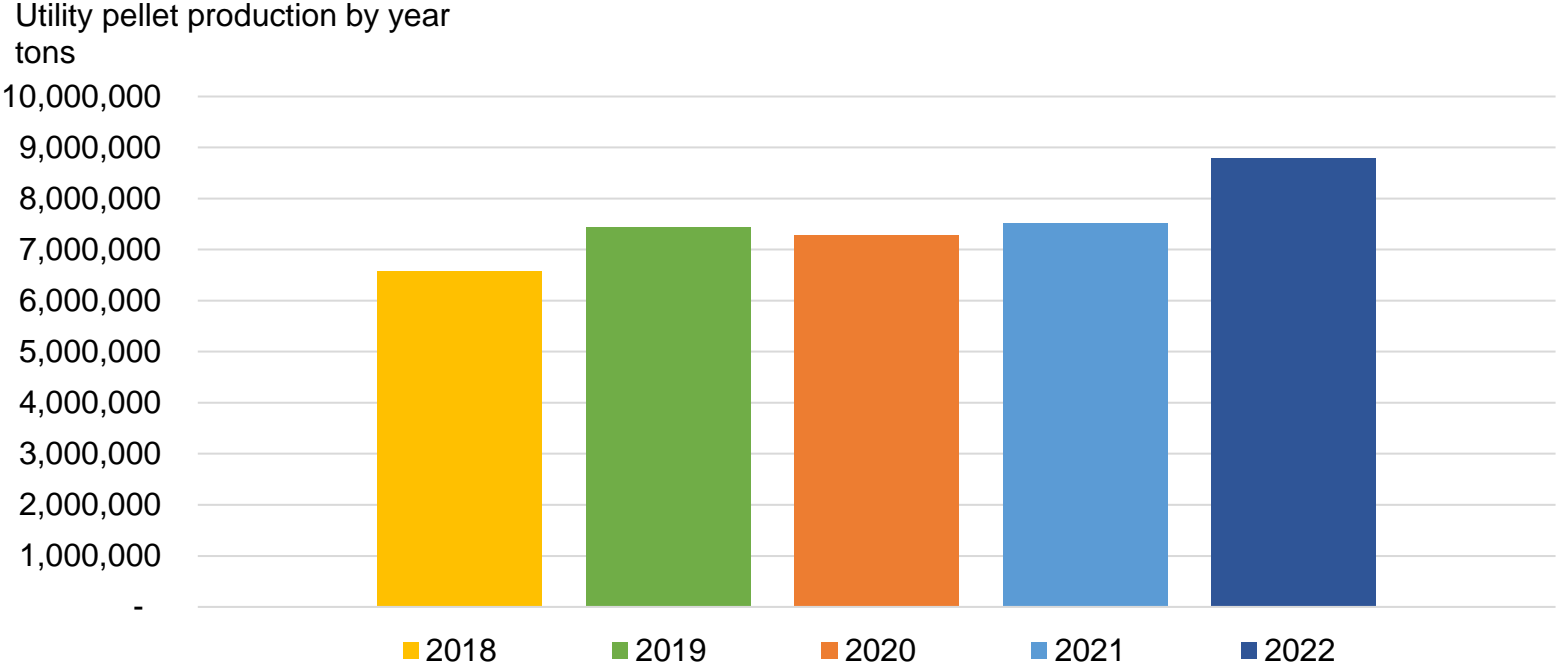
Premium/standard production by region shows slight decreases in the South and West regions, and an increase in the East region

Premium/standard pellet production by year and region
tons



Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

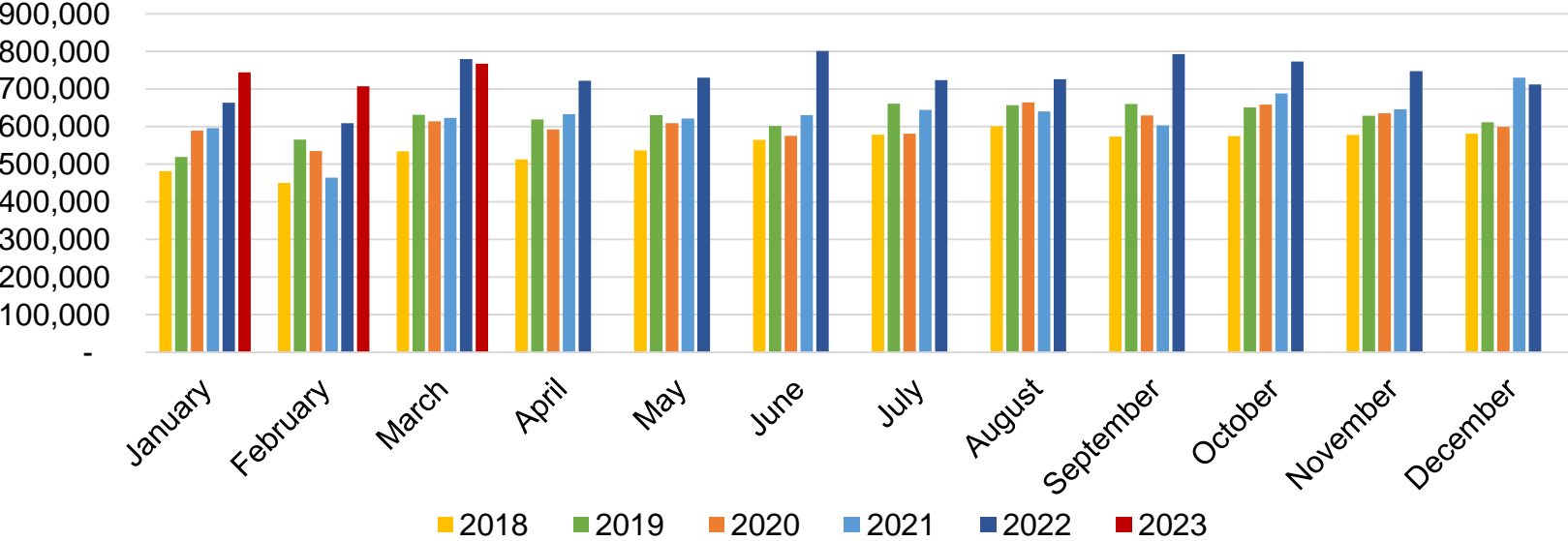
Utility pellet production at an all-time high in 2022 at nearly 9 million tons



Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

Monthly utility pellet production highest for almost all months in 2022 and continues to grow in 2023

Utility pellet production by month
tons



Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

Monthly Densified Biomass Fuel Report Table 6 provides monthly inventory volumes of premium/standard and utility wood pellets

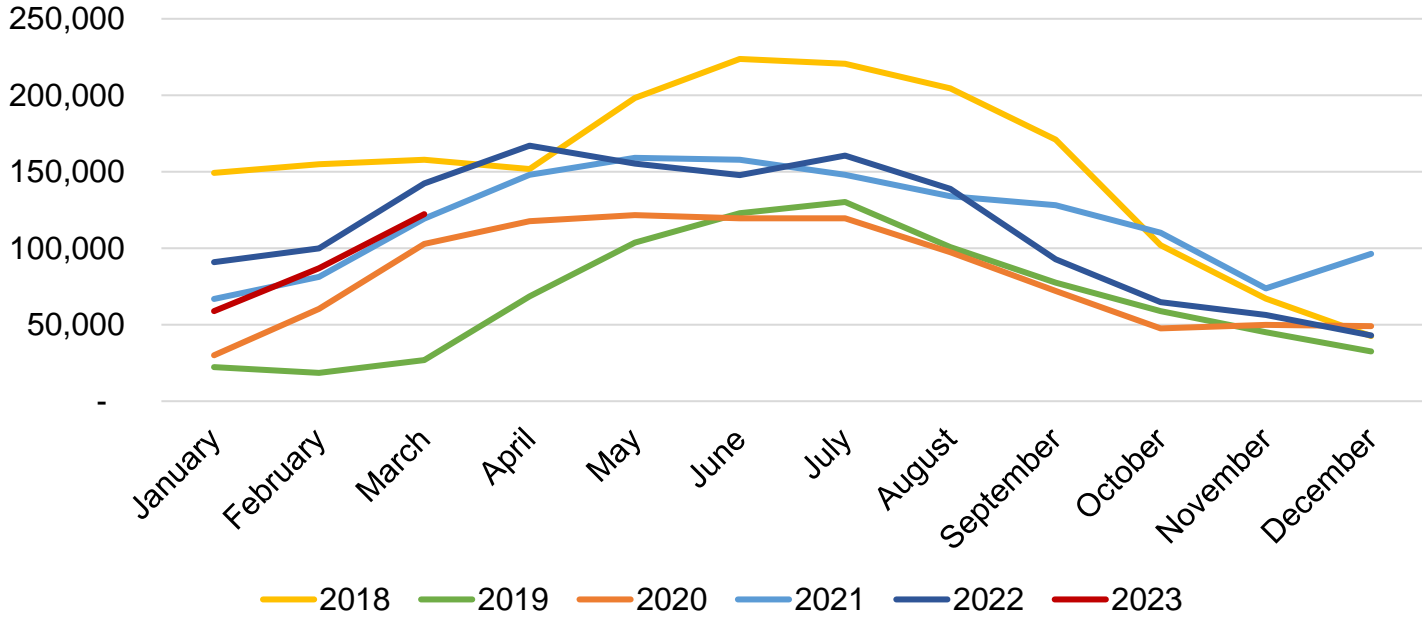
Table 6. Inventories of densified biomass fuel, 2023 (tons) [download](#)

Region	Month	Wood pellets, premium/standard	Wood pellets, utility
East			
	January	58,886	N/A
	February	87,009	N/A
	March	122,250	N/A
South			
	January	29,599	501,508
	February	30,916	420,194
	March	40,998	819,108
West			
	January	15,342	N/A
	February	17,192	N/A
	March	12,682	N/A
U.S. total			
	January	103,827	501,508
	February	135,117	420,194
	March	175,890	819,108

Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

East region premium/standard inventory starts higher than average at beginning of 2022 and decreases by the end of the year

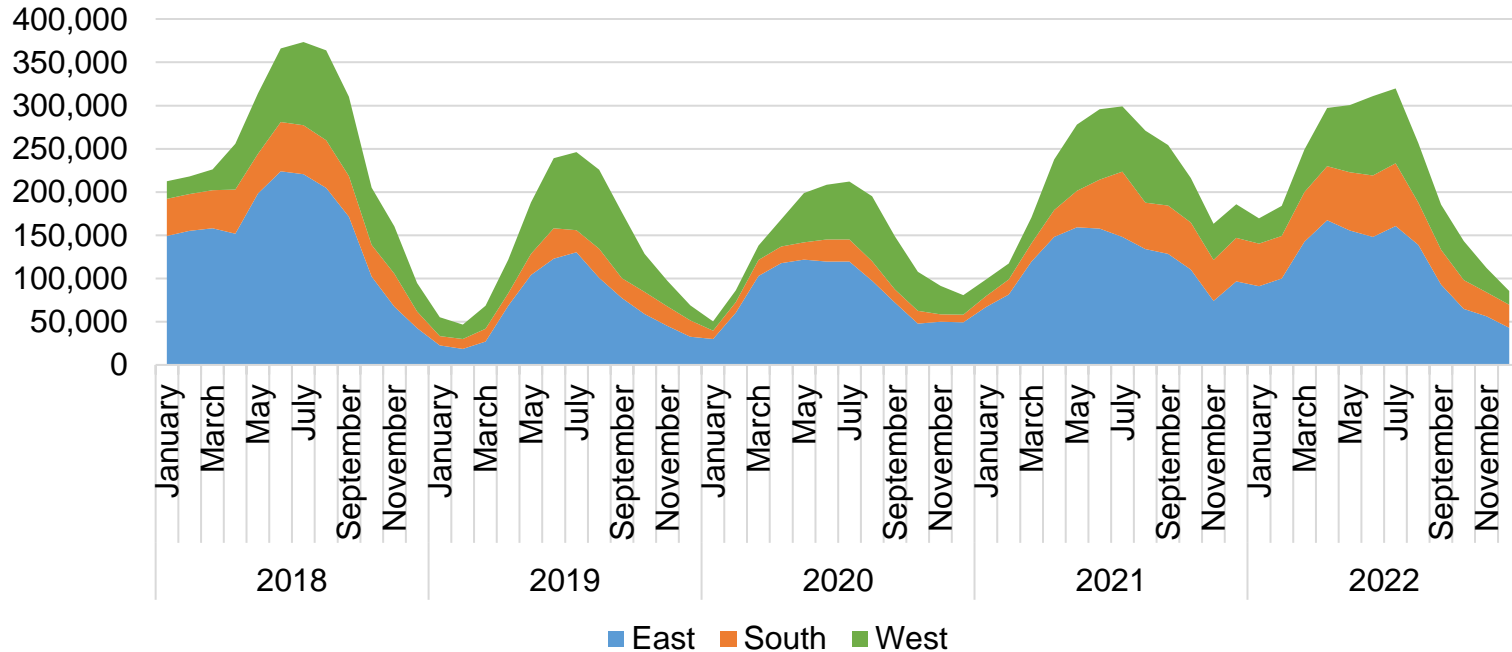
East region premium/standard pellet inventory by month
tons



Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

Premium/standard inventory in 2022 stays near 2021 levels with drop-off into late winter season

Premium/standard pellet inventory by month and region
tons



Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

Monthly Densified Biomass Fuel Report Table 7 provides monthly domestic sales volumes and average price

Table 7. Domestic sales and average price of densified biomass fuel, 2023

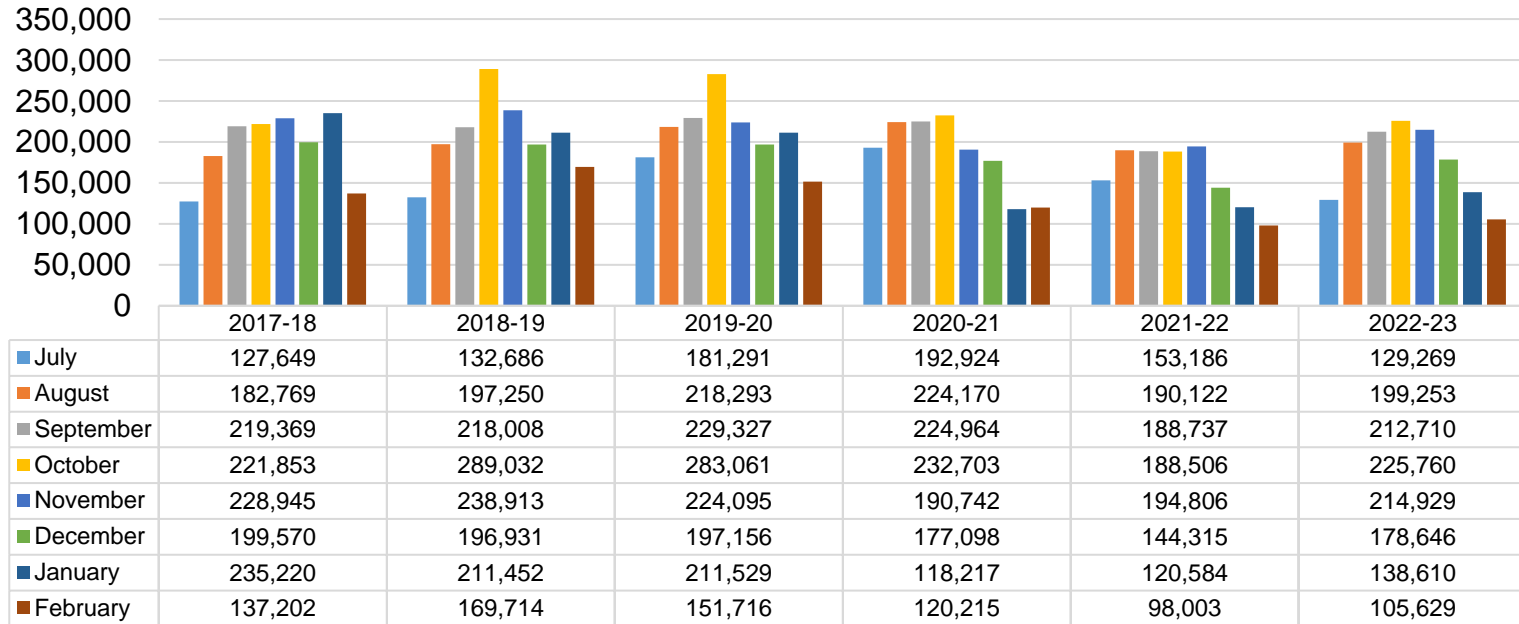
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Region	Month	Quantity (tons)	Average price (USD per ton)
East			
	January	81,169	\$227.99
	February	58,007	\$221.55
	March	54,623	\$225.00
South			
	January	22,895	\$176.91
	February	13,300	\$168.09
	March	11,847	\$192.13
West			
	January	34,546	\$221.46
	February	34,322	\$223.92
	March	37,999	\$223.27
U.S. total			
	January	138,610	\$217.92
	February	105,629	\$215.59
	March	104,469	\$220.65

Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

Heating season domestic sales in 2022 show an increase from the low of 2021 heating season

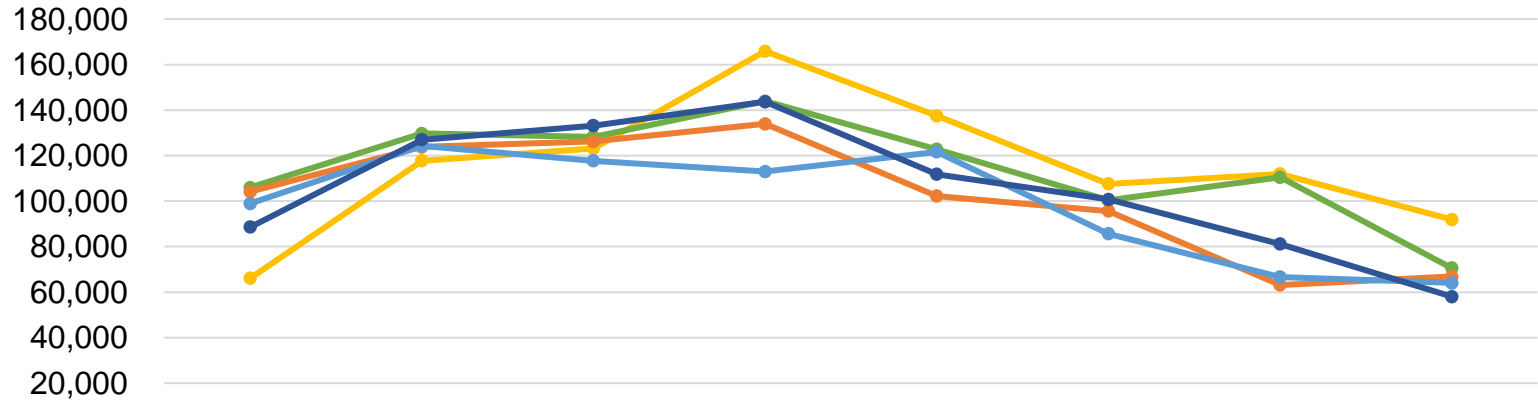
Domestic sales by month and year
tons



Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

Domestic sales quantity in the east region fall through the heating season 2022-23 compared to previous years

East region domestic sales by month and year
tons

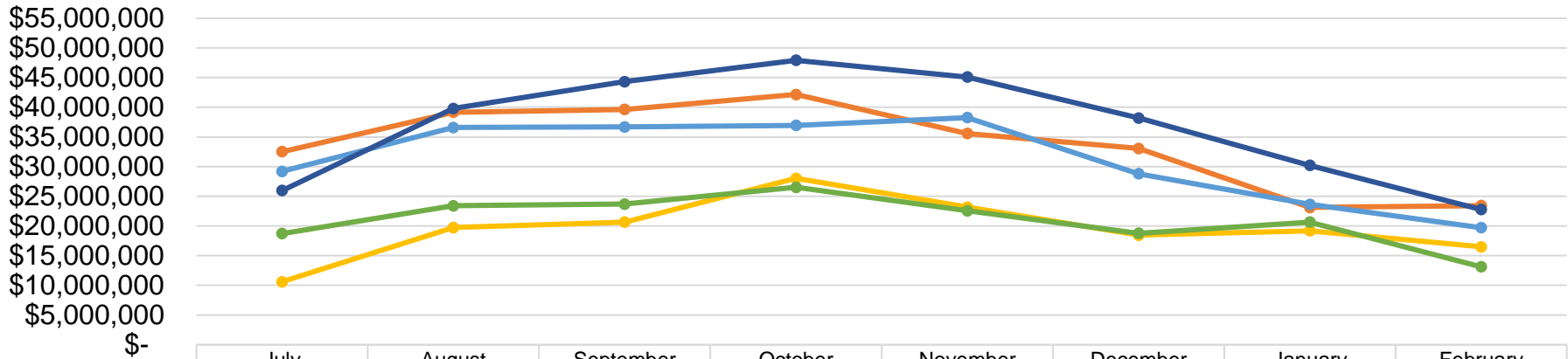


	July	August	September	October	November	December	January	February
2018-19	66,080	117,729	123,112	165,862	137,509	107,594	111,923	91,915
2019-20	105,961	129,775	128,292	143,941	122,749	100,367	110,500	70,623
2020-21	104,134	123,835	126,234	133,953	102,242	95,633	63,128	66,879
2021-22	98,907	124,281	117,679	113,023	121,630	85,629	66,652	64,041
2022-23	88,603	126,965	133,158	143,693	111,771	100,783	81,169	58,007

Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

East region saw record domestic sales revenue in 2022-23 despite below average domestic sales volumes

East region domestic sales revenue by month and year
US dollars



	July	August	September	October	November	December	January	February
2018-19	\$10,601,875	\$19,723,139	\$20,654,500	\$28,009,116	\$23,171,642	\$18,464,206	\$19,197,033	\$16,485,874
2019-20	\$18,727,547	\$23,397,135	\$23,690,401	\$26,521,129	\$22,567,404	\$18,760,600	\$20,643,610	\$13,128,109
2020-21	\$32,521,199	\$39,149,049	\$39,634,158	\$42,135,532	\$35,569,568	\$33,062,426	\$23,120,881	\$23,432,308
2021-22	\$29,207,975	\$36,590,880	\$36,673,486	\$36,935,866	\$38,252,106	\$28,795,172	\$23,640,493	\$19,718,204
2022-23	\$25,966,264	\$39,782,854	\$44,309,620	\$47,913,045	\$45,087,806	\$38,180,223	\$30,205,891	\$22,772,556

Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

Monthly Densified Biomass Fuel Report Table 8 provides monthly export sales volumes and average price

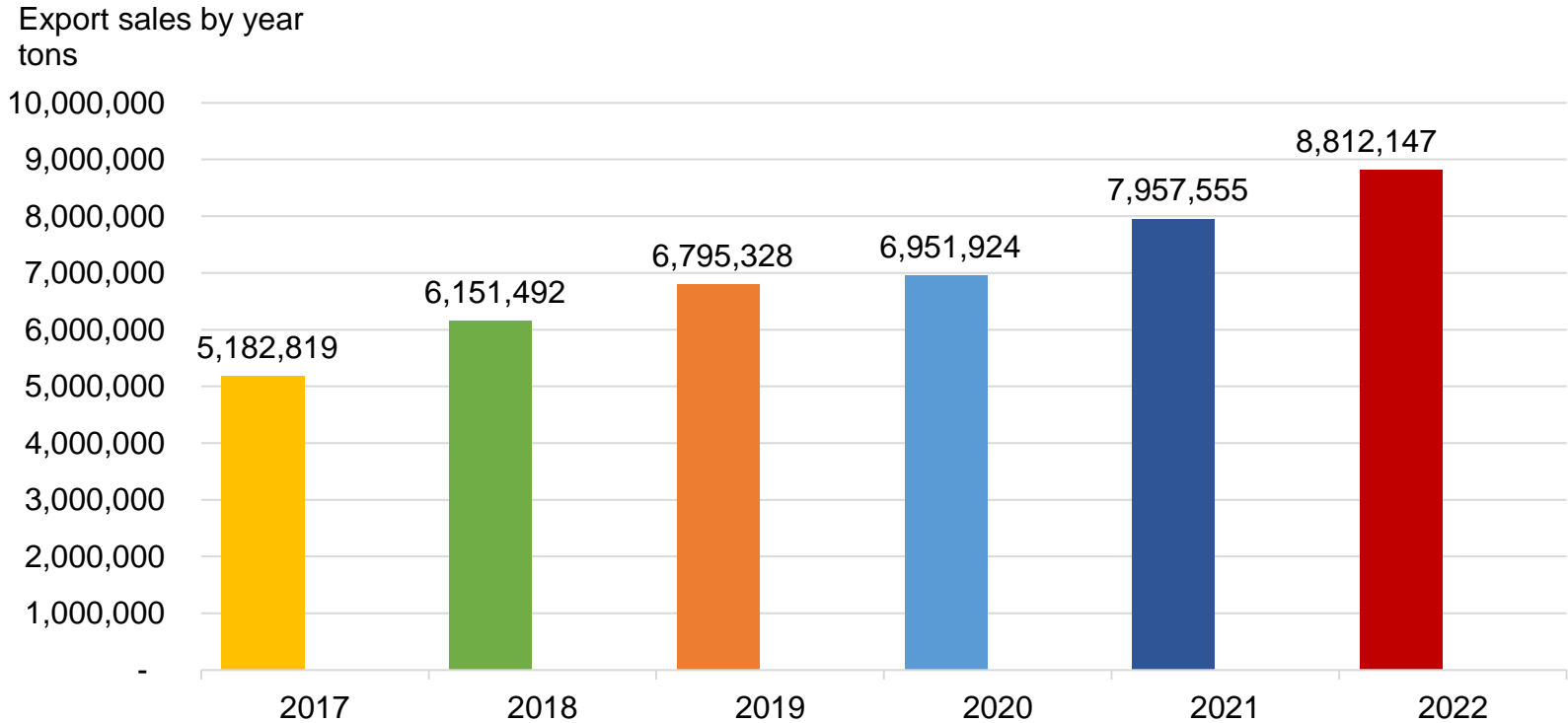
Table 8. Export sales and average price of densified biomass fuel, 2023

 [download](#)

Month	Quantity (tons)	Average price (USD per ton)
January	518,747	\$190.04
February	529,418	\$192.98
March	948,618	\$186.58

Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

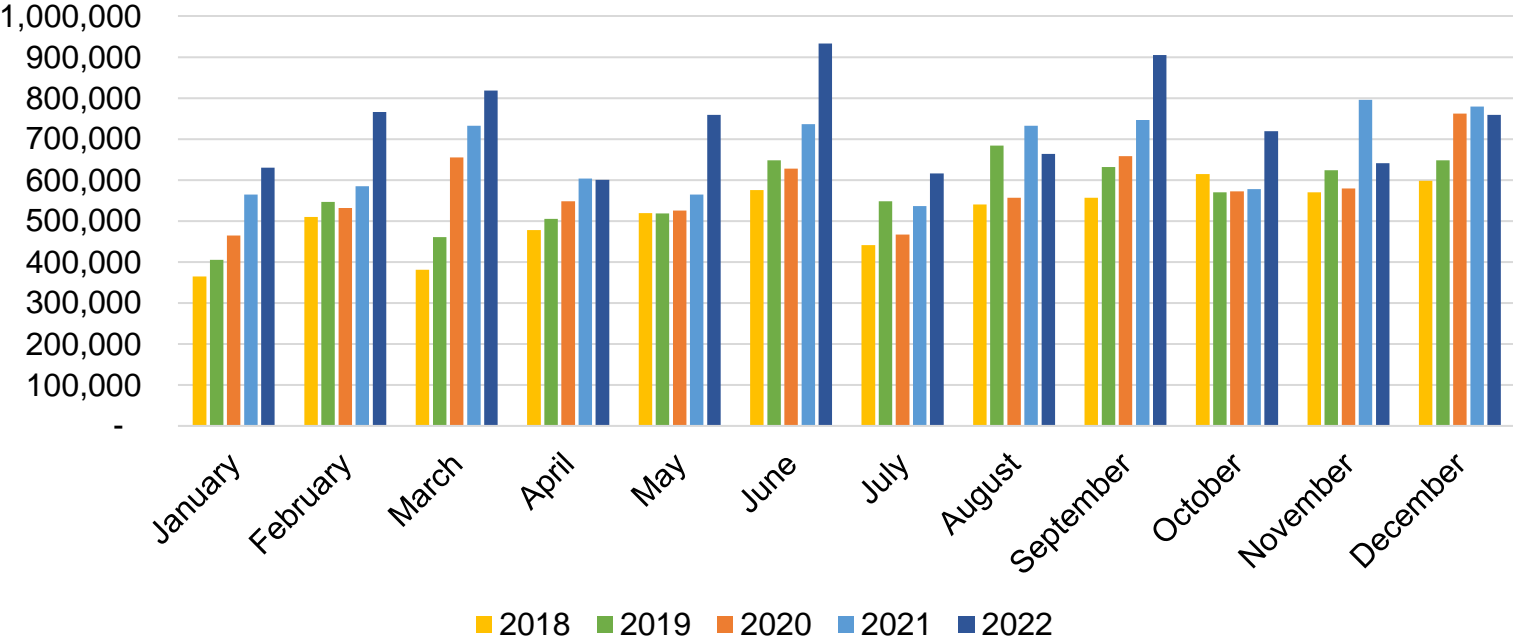
Export sales continues to grow and sees record breaking year in 2022, with an 11% growth from 2021



Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

Export sales see record breaking numbers for 8 of 12 months in 2022 as growth continues

Export sales by month and year
tons



Source: U.S. Energy Information Administration, *Monthly Densified Biomass Fuel Report*

Key Takeaways

- 2022 was an average year for the domestic pellet market. Premium/Standard pellet production and domestic sales, both quantity and revenue, were down from 2019 historic highs but both domestic sales and revenue exceeded 2021 levels.
- 2022 was an above average year for the export pellet market.
- Total feedstock purchases for 2022 were 19,509,361 tons.
- Total Premium/Standard pellet production for 2022 was 1,740,626 tons.
- Total Utility Pellet production for 2022 was 8,779,570 tons.
- Domestic Sales for 2022 were 1,805,574 tons with a total revenue of \$370,889,786.
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EIA Monthly Densified Biomass Fuel Report

<https://www.eia.gov/biofuels/biomass/>