

State of Nebraska

Heating Oil and Propane Program

2022/2023 Winter Heating Season

Winter Recap

Weather is always the wild card in the winter season. This winter, weather was not a big factor compared to other winters when weather included more winter storms and cold snaps. The winter of 2022/2023 had more heating degree days than average indicating slightly colder than normal (2 percent) weather in Nebraska.

In October 2022, OPEC+ announced a production cut of 2 million barrels per day. By the end of October, the Energy Information Administration (EIA) estimated U.S. distillate inventories were 104 million barrels, the lowest end-of-October level since 1951. Nebraska doesn't have data from 1951, but distillate inventories were 467 thousand barrels which was the lowest end–of–October level in the last decade.

Nebraska's distillate inventories were below the five–year range only during the month of October. Higher refinery runs and less consumption contributed to Nebraska distillate fuel inventories increasing during October, November, and December of 2022. U.S. distillate inventories were well below the five–year average through all of 2022 in all major trading regions globally, a situation largely related to reduced distillate exports from Russia and trade dislocations following Russia's full–scale invasion of Ukraine in February 2022. In 2023, widespread refinery strikes in France further reduced global diesel supplies. Seasonal increases in demand and refinery closures affected inventories and contributed to price increases.

At the start of the winter heating season, the retail price of home heating oil in the United States and Nebraska climbed rapidly, establishing new records toward the beginning of November. The prices were higher than last year due to high wholesale prices and low imports. In December, crude oil prices rose above $100 per barrel after Russia's further invasion into Ukraine. This didn't impact Nebraska's retail heating oil prices even though Nebraska's wholesale heating oil prices increased. Retailers absorbed the wholesale increase rather than pass any of it along to their customers.

Nebraska's stocks of propane started the season above the five-year range and steadily decreased through the winter staying in the middle of the five–year range with an inconsistent drop in December due to increased heating degree days.

The price of propane was flat and above the five–year (2018–2022) average throughout the heating season. This was probably due to Nebraska's stock levels and the winter weather. In December, when stock levels decreased below the five–year range due to an increase in heating degree days, there was no change in the price of propane. In March

2023, U.S. propane exports reached a record high. There was no impact on Nebraska prices or stocks. Prices were still flat, and stocks were in the center of the five–year range. This was due to the winter season coming to an end.

Both retail propane prices and retail heating oil prices in the Midwest and Nebraska ended the winter heating season lower than in the last week of last year's heating season.

SHOPP 2023 Highlights

- *The month of October had weather that was 10 percent warmer–than–normal October winter weather.*
- *Residential propane prices averaged 11 percent lower than the 2021/2022 heating season.*
- *Propane stocks were at 385,000 barrels at the beginning of the heating season (October 2022). The 385,000–barrel level was just above the five–year range.*
- *Propane stocks ended the season (March 2023) in the center of the five–year range.*
- *Residential heating oil prices averaged 22 percent higher than the 2021/2022 winter season.*
- *Distillate fuel stocks started the heating season (October 2022) at 467,000 barrels, which was considerably below the five–year range.*
- *Distillate fuel stocks stocks ended the season (March 2023) in the lower half of the five–year range.*

FMCSA Hours–of–Service Regulations Waivers

The Federal Motor Carrier Safety Administration (FMCSA) states that "hours of service" (HOS) refers to the maximum amount of time drivers are permitted to be on duty including driving time, and specifies number and length of rest periods, to help ensure that drivers stay awake and alert. In general, all carriers and drivers operating commercial motor vehicles (CMVs) must comply with HOS regulations found in 49 CFR 395.

An HOS waiver is a legal document issued by the FMCSA, a state's governor, or the U.S. President to waive 49 CFR 395. There were four waivers during the winter season. The time periods were as follows:

- *November 1, 2022 to November 30, 2022*
- *December 1, 2022 to December 31, 2022*
- *January 3, 2023 to January 31, 2023*
- *February 2, 2023 to February 28, 2023*

Note: On April 19, 2023, the Federal Motor Carrier Safety Administration (FMCSA) denied the National Propane Gas Association's (NPGA) application for a 5–Year Special Exemption to Hours–of–Service regulations, submitted in September 2022. FMCSA claims in its denial that

NPGA's application does not provide an analysis of safety impacts the requested exemption may cause, or countermeasures to ensure that the exemption would likely achieve a level of safety equivalent or greater than the level achieved by the current regulations.

FMCSA claims that they cannot ensure that the exemption would achieve the requisite level of safety. FMCSA further stated that the scenarios NPGA outlined as justification for the exemption do not warrant a categorical exemption. NPGA is reviewing the decision, evaluating its options, and will continue to engage FMCSA on hours–of–service regulations.

An exemption is a temporary regulatory relief from one of more of the FMCSRs given to a person or class of persons subject to the regulations, or who intend to engage in an activity that would make them subject to the regulation. An exemption provides the person or class of persons with relief from the regulations for up to two years but may be renewed.

Residential Propane

The average home heating charge price for delivery of consumer–grade propane, excluding taxes and cash discounts, in Nebraska for the 2022/2023 heating season was $1.87 per gallon. This was a 21–cent (or 11–percent) drop from last season's average price at $2.08. Propane prices are subject to both the volatility of the oil markets and natural gas production.

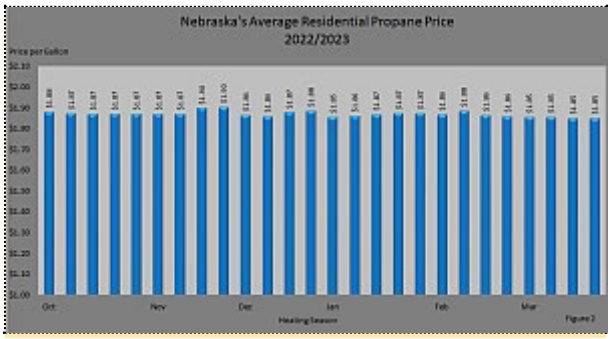


Fig 2: Average Retail Propane Price click/tap to enlarge

For the 2022/2023 season, the average retail price of propane started at $1.88 per gallon. The average price was stable throughout the season. The fourth week of March, or the end of the season, had a price of $1.85 per gallon. This price was three cents lower than the price at the beginning of the heating season. Prices reported on the survey each week were dependent upon when a retailer bought a load of propane from their supplier. After buying a load of propane, the retail price would reflect the wholesale price paid. (See Figure 2.)

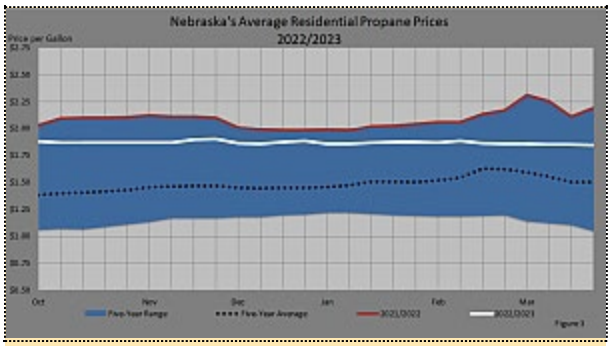


Fig 3: Retail Propane Price Comparisons click/tap to enlarge

The average propane price began the 2022/2023 heating season at $1.88, 15 cents (or seven percent) lower than the price of $2.03 at the beginning of the last heating season. As shown in Figure 3, the average propane prices in the 2022/2023 season were stable in the upper half of the five–year range, above the five–year average, but below last year's prices.

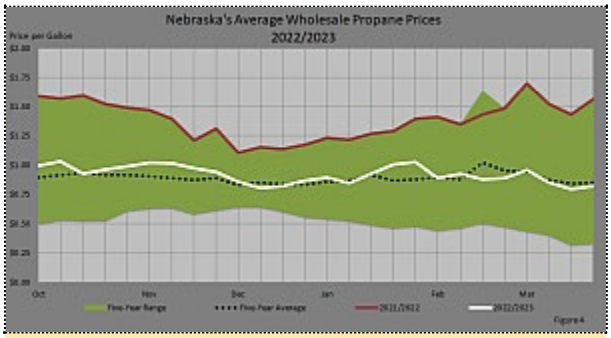


Fig 4: Wholesale Propane Price Comparison click/tap to enlarge

The average wholesale propane price began the 2022/2023 heating season at 99 cents, which was 60 cents lower than the price of $1.59 at the beginning of the last heating season. As Figure 4 shows, average wholesale propane prices were relatively stable while staying in the center of the five–year range, above and below the five–year average, and below last year's prices throughout the season. The wholesale price ended the season at 82 cents which was 17 cents below the price at the beginning of the season (99 cents).

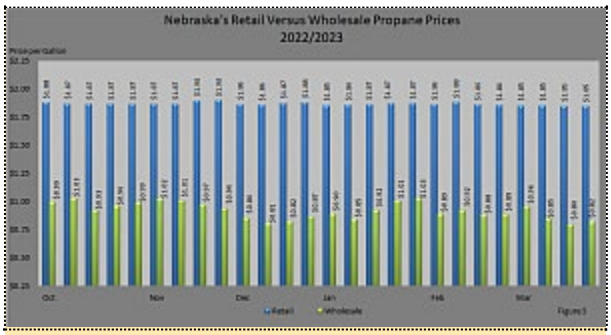


Fig 5: Avg Retail vs. Wholesale Propane Price Comparison click/tap to enlarge

A comparison of average retail propane prices versus average wholesale propane prices in Figure 5 shows that retail prices during the 2022/2023 heating season ranged from a low of $1.85 to a high of $1.90, while wholesale prices ranged from a low of 80 cents to a high of $1.03. Both retail prices and wholesale prices were stable.

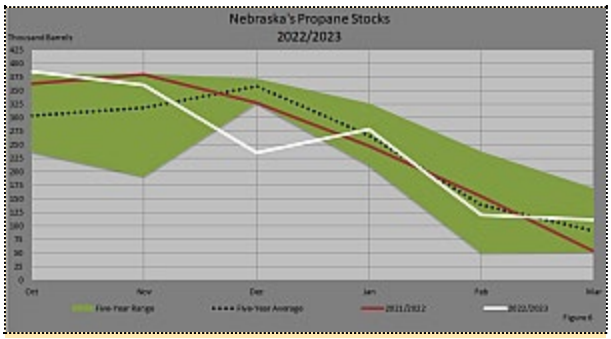


Fig 6: Retail Propane Stock Comparisons click/tap to enlarge

According to EIA, Nebraska's total inventory of propane was 385,000 barrels at the beginning of the heating season in October 2022, which was 22,000 barrels (six percent) above propane stocks one year earlier. Stocks started the season right above the five–year range, dropped way below the five–year range in December (due to increased heating degree days), but moved back into the five–year range where stock levels stayed through March. Stocks ended the heating season at 111,000 barrels. (Figure 6)

Residential Heating Oil

The average home heating charge price for delivery of No. 2 heating oil, excluding taxes and cash discounts, in Nebraska for the 2022/2023 heating season was $3.76 per gallon. The season's average price jumped 69 cents (or 23 percent) from last season's average of $3.07. Heating oil prices are highly dependent on crude oil market movements.

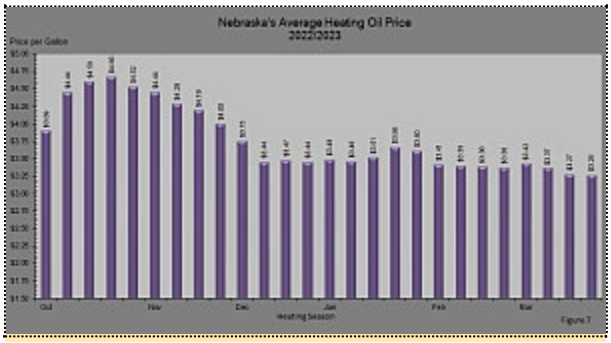


Fig 7: Average Retail Heating Oil Price click/tap to enlarge

Figure 7 shows that the average retail price of heating oil started the 2022/2023 season at $3.89 per gallon, $1.06 (37 percent) higher than the price of $2.83 at the beginning of the last heating season. Average heating oil prices jumped through October but decreased through November. The prices were relatively stable after the second week of December until the end of March. The ending price of $3.26 per gallon was 63 cents (16 percent) lower than the price at the beginning of the season ($3.89).

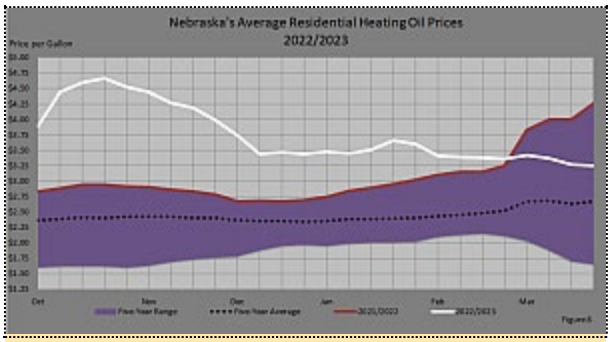


Fig 8: Retail Heating Oil Price Comparisons click/tap to enlarge

As Figure 8 shows, the average price of heating oil had a considerable jump from last year's price and the five–year average at the beginning of the heating season. The average price started far above the five–year range and continued to rise above the five–year range until the last week of February. From then on, the prices slowly decreased to end the season near the center of the five–year range.

The average wholesale heating oil price began the 2022/2023 heating season at $3.55 per gallon, $1.00 (39 percent) higher than the price of $2.55 at the beginning of the last heating season. Average wholesale heating oil prices were volatile this winter.

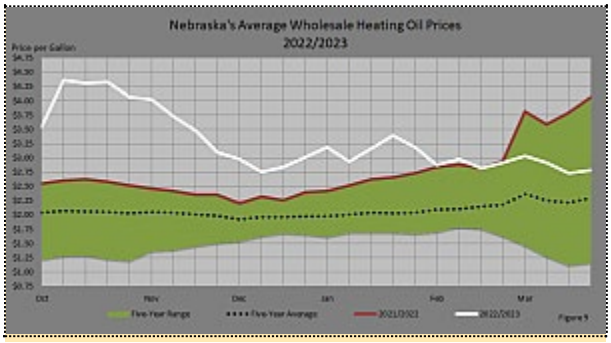


Fig 9: Wholesale Retail Heating Oil Price Comparisons click/tap to enlarge

As Figure 9 shows, the average wholesale price of heating oil had a considerable jump from last year's price and the five–year average at the beginning of the heating season. The average wholesale price started above the five–year range and jumped 81 cents the first week. In the weeks afterward, the prices slowly decreased until the second week of December. From there, the prices were volatile even while entering the five–year range in the third week of February. Winter ended with the prices near the center of the five–year range.

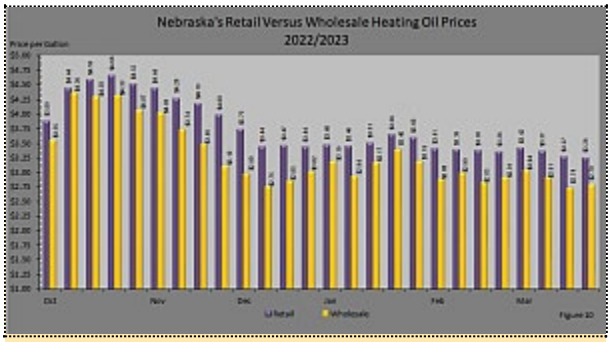


Fig 10: Retail vs. Wholesale Heating Oil Price Comparison click/tap to enlarge

A comparison of retail heating oil prices and wholesale heating oil prices in Figure 10 shows that, during the 2022/2023 heating season, retail prices ranged from a low of $3.26 to a high of $4.66, while wholesale prices ranged from a low of $2.74 to a high of $4.36.

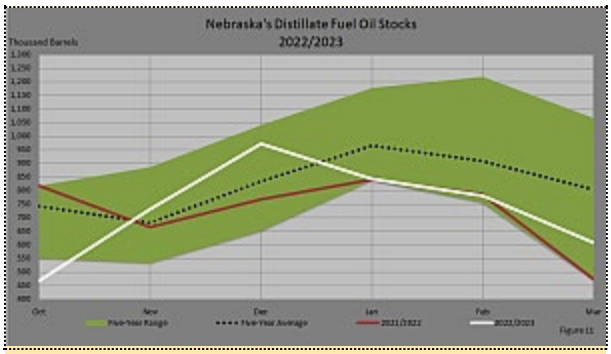


Fig 11: Distillate Stocks click/tap to enlarge

According to EIA, Nebraska's total inventory of distillate fuel was 467,000 barrels at the beginning of the heating season in October 2022, which was 350,000 barrels (43 percent) below distillate fuel stocks one year earlier. Stocks started the season below the five-year range but steadily increased to the upper half of the five-year range by December. From then, stocks dropped to the bottom of the five-year range. The winter ended with stocks in the lower half of the five-year range at 608,000 barrels. (Figure 11)

Heating Degree Days

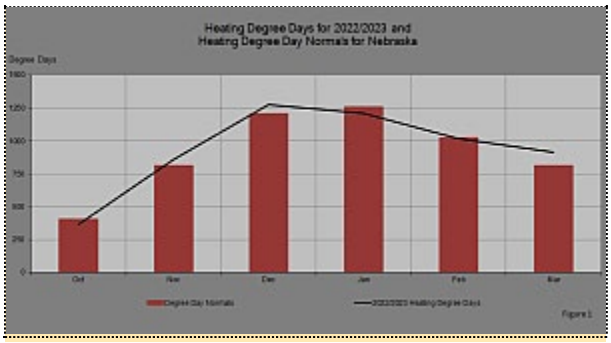


Fig 1: Heating Degree Days click/tap to enlarge

The 2022/2023 winter heating season, as a whole, saw colder–than–normal winter weather. The traditional heating season for both heating oil and propane is October through March. For this period, Nebraska normally has 5520 heating degree days. From October through March during the 2022/2023 winter season, Nebraska had 5647 heating degree days which indicates that the weather was 2 percent colder than normal. A degree day is a 1 degree Fahrenheit difference between 65 degrees Fahrenheit and the average outdoor air temperature on a given day. The more extreme the temperature, the higher the number of degree days. The higher the number of heating degree days, the colder the weather, and the more days that Nebraskans had to heat their homes.

Looking at individual months, it was warmer–than–normal winter weather in October and January, normal winter weather in February, and colder–than–normal winter weather in November, December, and March as reflected by Figure 1. The bars in Figure 1 represent the heating degree day results of normal winter weather for each month in Nebraska. The line represents the heating degree day results of the actual weather that the 2022/2023 winter season experienced.

Purpose of State Heating Oil and Propane Program Survey

The Nebraska Department of Environment and Energy (NDEE) collects residential prices of No. 2 heating oil and consumer–grade propane during the heating season (October to March) for the State Heating Oil and Propane Program (SHOPP). It is the only U.S. Department of Energy (USDOE) Energy Information Administration (EIA) survey that collects propane prices. The data are used by NDEE to monitor the prices of propane and heating oil during the winter season to maintain awareness of any price or supply irregularities that may be developing. The data is also used by policymakers, industry analysts, and consumers.

Sources: Today in Energy, U.S. Energy Information Administration, Washington, DC.

Short–Term Energy Outlook, U.S. Energy Information Administration, Washington, DC.

2022/23 Winter Propane Market Update, U.S. Energy Information Administration, Washington, DC.

This Week in Petroleum, U.S. Energy Information Administration, Washington, DC.

Average Residential Propane Prices in Nebraska and *Average Residential Heating Oil Prices in Nebraska*. Nebraska Department of Environment and Energy, Lincoln, NE.

This report was completed September 2023.