

OUTLOOK FOR  
**U.S.**

# FUEL PRICE OUTLOOK 2023



**GasBuddy**  
A PDI Company

## SUMMARY

# About Our Annual Outlook

Accuracy, reliability and neutrality are GasBuddy's mission when price forecasting, and it is achieved with the independent analysis featured in this 2023 Fuel Price Outlook.

Note that this outlook is not indicative of what will happen but rather what we believe could happen given specific inputs, potential impacts on production as well as supply and demand.

Additionally, as the world continues to navigate Covid recovery, as well as the Russian invasion of Ukraine, a high level of uncertainty is again a factor in 2023, making an accurate forecast very challenging. These situations, as well as the fluid state of the global economy and the actions of various central banks to temper inflation, will cause a higher level of volatility in oil markets.

Fuel markets are complex. This analysis is intended to take current factors and speculate on how today's events may impact gasoline prices in the future. GasBuddy works to make these forecasts as reliable as possible and to be understood by anyone with little to no background in oil and petroleum markets or economics.



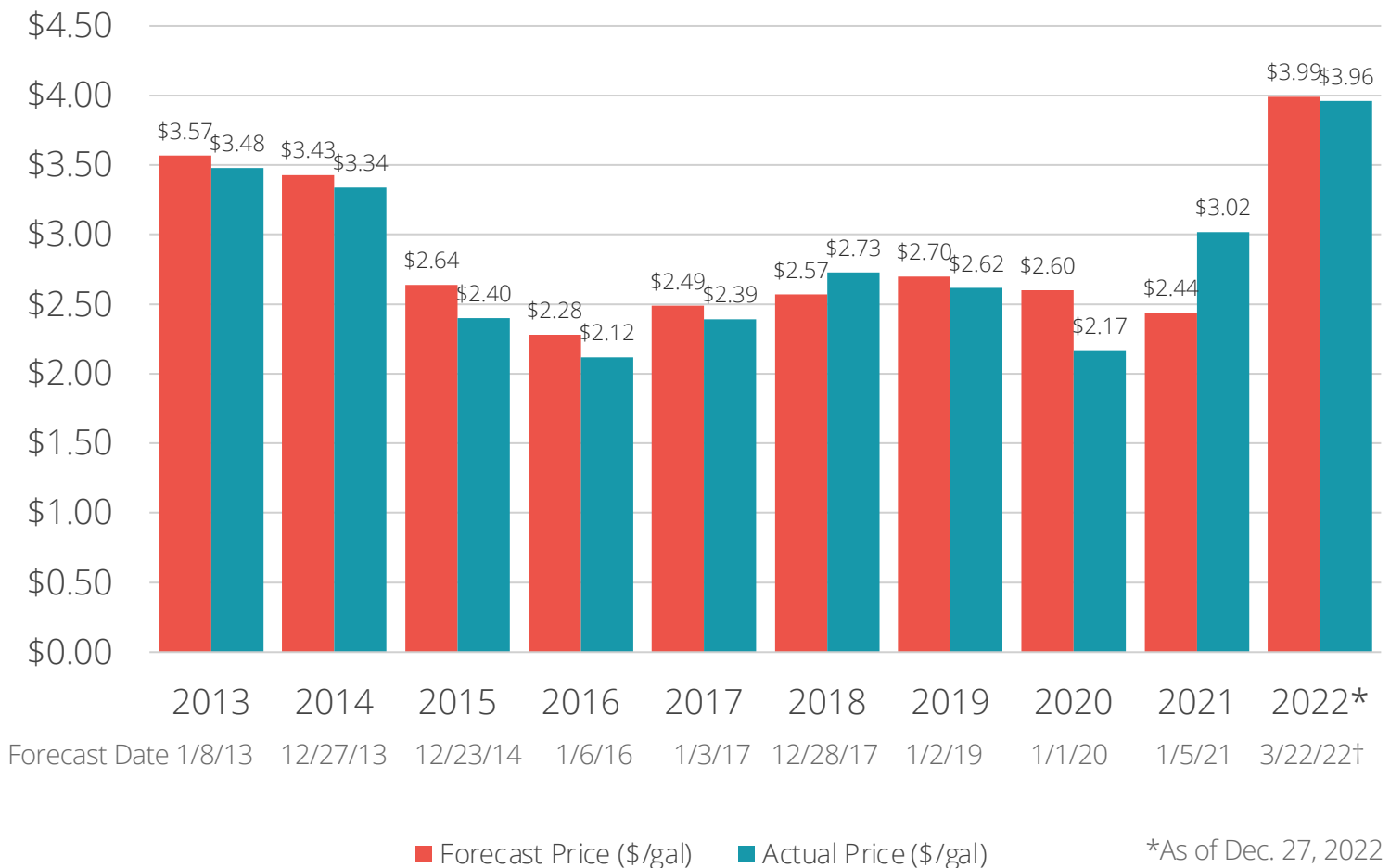
## Outlook assembled by

**Patrick De Haan**, head of petroleum analysis, has been called one of the most accurate fuel forecasters in the U.S. by the *San Jose Mercury News* and has been analyzing fuel prices and trends for over fifteen years. He provided expertise to authorities during Hurricanes Harvey and Irma and is regularly cited in U.S. periodicals and news broadcasts for his knowledge on various topics including oil, fuel prices, motor fuel taxation, pipelines, and retail stations.

# GasBuddy Fuel Price Outlook Accuracy

To create transparency about the accuracy of our Fuel Price Outlook, included are the outcomes of prior forecasts. GasBuddy's 2022 forecast, revised in March after Russia's invasion of Ukraine, saw the lowest margin for error since we began our forecasts in 2012, with a margin of error of 0.8%. Our original Outlook was released on day three of the year, projecting prices as far out as 363 days once it was publicly released. Since 2011, GasBuddy's forecast has been above the actual outcome eight of ten years, with just two years, 2018 and 2021, in which the forecast was lower than the actual outcome, and one year was exactly on target. 2022 saw the lowest margin of error of any yearly outlook issued by GasBuddy, even with unprecedented volatility in energy prices due to sanctions on Russia, and prices ultimately spiking to record levels before settling down at the end of the year.

GasBuddy Yearly Fuel Price Outlook, Forecast vs. Actual



# 2023 Gasoline Forecast

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## 2023 Gasoline Forecast

Gasoline – Page 1

### National Average

	Range of Possible	Average
January	\$2.84 - \$3.23	<b>\$3.04</b>
February	\$2.79 - \$3.19	<b>\$2.99</b>
March	\$2.97 - \$3.46	<b>\$3.22</b>
April	\$3.29 - \$3.71	<b>\$3.50</b>
May	\$3.52 - \$4.05	<b>\$3.79</b>
June	\$3.79 - \$4.19	<b>\$3.99</b>
July	\$3.58 - \$4.04	<b>\$3.81</b>
August	\$3.49 - \$4.25	<b>\$3.87</b>
September	\$3.37 - \$3.82	<b>\$3.60</b>
October	\$3.29 - \$3.76	<b>\$3.53</b>
November	\$3.23 - \$3.49	<b>\$3.36</b>
December	\$2.97 - \$3.36	<b>\$3.17</b>
<b>Yearly U.S. Average</b>		<b>\$3.49</b>



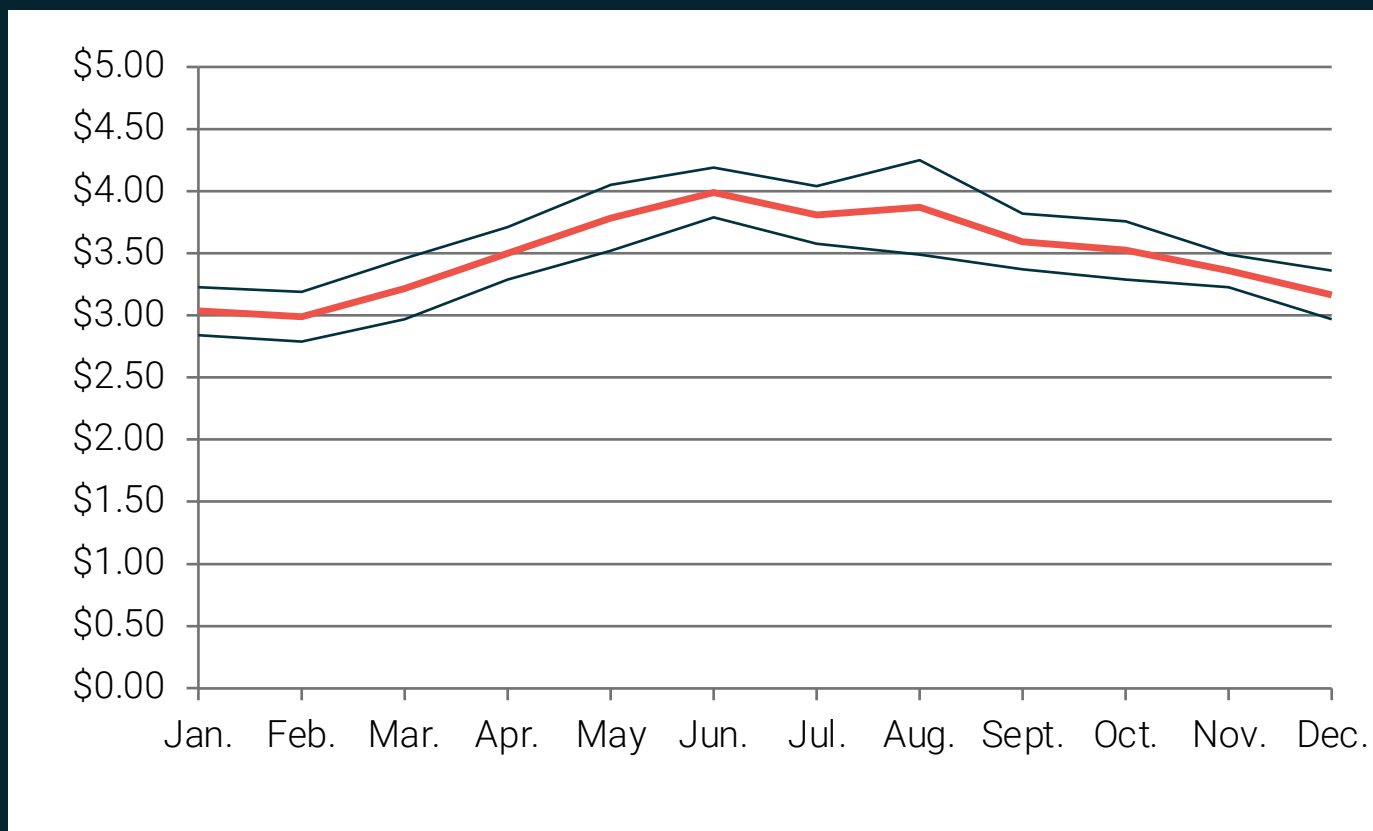
The above table reflects the predicted U.S. national average by month. Individual states will vary based on their location and taxes. California, for example, tends to be considerably higher than average while states like Texas and Oklahoma are considerably lower. Numbers reflect the lowest and highest likely daily national average price in the given month, with the predicted monthly average in bold. (\$/gal)



# 2023 Gasoline Forecast

Gasoline – Page 2

## National Average

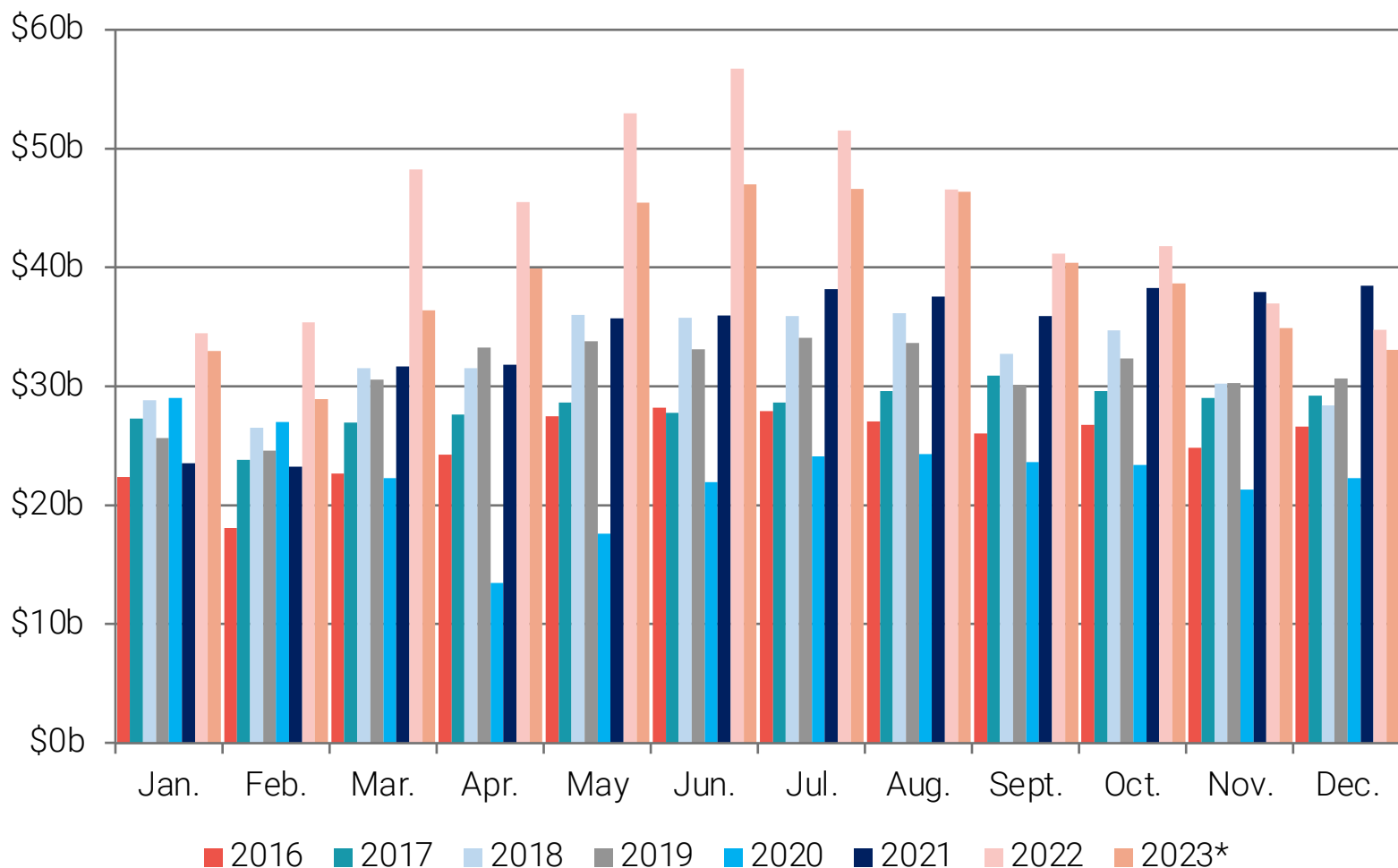


*This chart reflects the forecast range of national averages by month, with the monthly average shown as the red line. (\$/gal)*

# 2023 Gasoline Forecast

Gasoline – Page 3

## Monthly Spending on Gasoline 2016-2022, 2023\* (\*projected, in billions)



### 2023\* Total U.S. Gasoline Spending: \$470.8 billion

2022 Total U.S. Gasoline Spending: \$526.3 billion

2021 Total U.S. Gasoline Spending: \$408.4 billion

2020 Total U.S. Gasoline Spending: \$280.0 billion

2019 Total U.S. Gasoline Spending: \$372.2 billion

2018 Total U.S. Gasoline Spending: \$388.5 billion

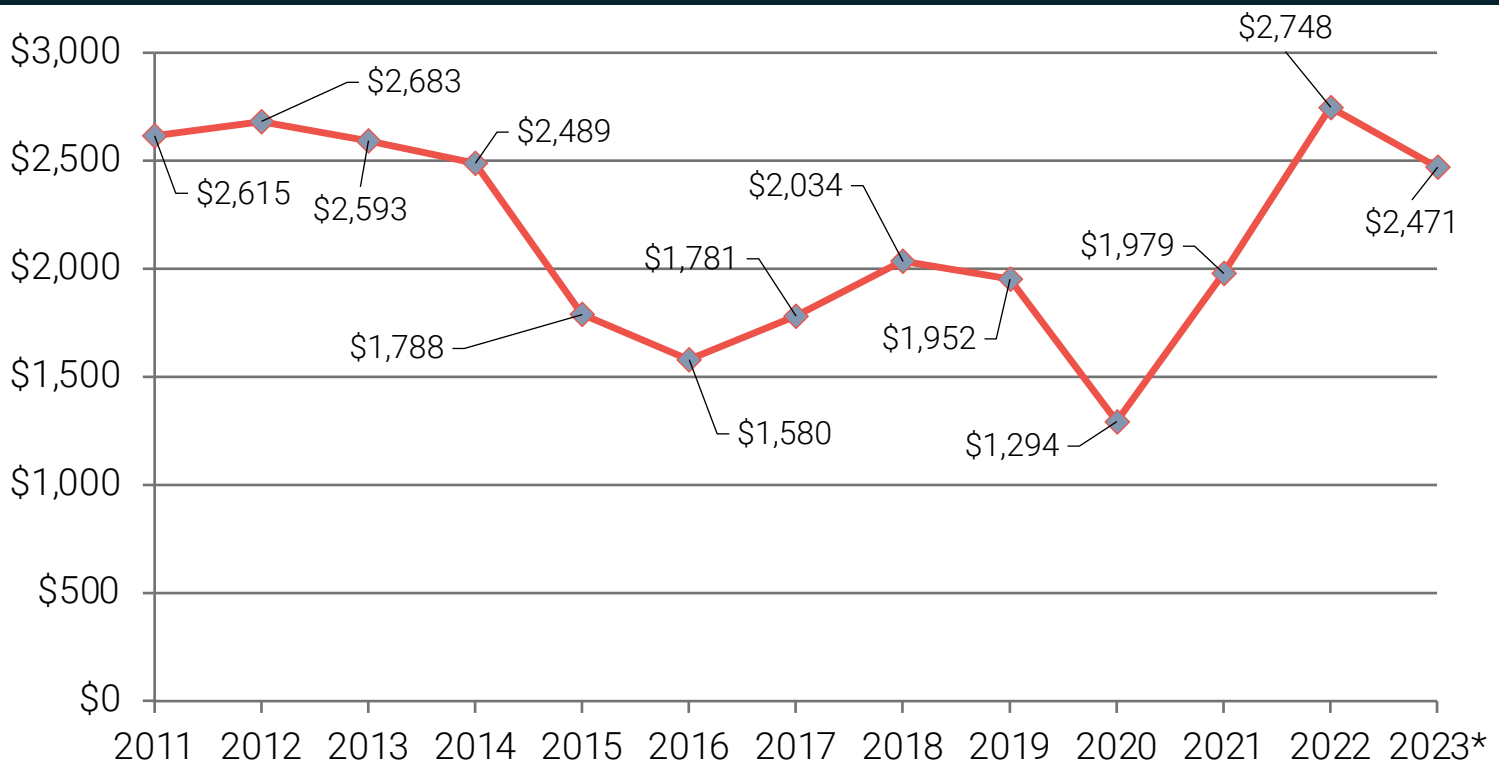
2017 Total U.S. Gasoline Spending: \$339.2 billion

2016 Total U.S. Gasoline Spending: \$302.5 billion

## 2023 Gasoline Forecast

Gasoline – Page 4

### Yearly Household Spending on Gasoline (\*projected)



#### **2023\* Average Household Gasoline Spending: \$2,471**

2022 Average Household Gasoline Spending: \$2,748

2021 Average Household Gasoline Spending: \$1,977

2020 Average Household Gasoline Spending: \$1,294

2019 Average Household Gasoline Spending: \$1,952

2018 Average Household Gasoline Spending: \$2,034

2017 Average Household Gasoline Spending: \$1,781

2016 Average Household Gasoline Spending: \$1,580



## GASOLINE FORECAST

### Highest Daily Average Gas Price, Select Cities, 2023

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	Highest Daily Average
Atlanta	\$4.10 - \$4.35
Boston	\$4.30 - \$4.85
Chicago	\$4.45 - \$5.25
Cleveland	\$4.10 - \$4.50
Dallas/Ft. Worth	\$3.90 - \$4.20
Denver	\$4.20 - \$4.60
Detroit	\$4.25 - \$4.65
Houston	\$3.85 - \$4.15
Los Angeles	\$5.20 - \$6.75
Miami	\$4.25 - \$4.65
Minneapolis	\$4.30 - \$4.70
New York City	\$4.50 - \$4.95
Orlando	\$4.15 - \$4.55
Philadelphia	\$4.45 - \$4.95
Phoenix	\$4.50 - \$5.35
Sacramento	\$5.10 - \$6.65
San Francisco	\$5.40 - \$6.95
Seattle	\$4.95 - \$5.45
St. Louis	\$4.05 - \$4.45
Tampa	\$4.10 - \$4.45
Washington, D.C.	\$4.45 - \$4.90

*Prices represent possible peak average daily gas price by city for select U.S. cities*



# Forecasting Volatility

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Gasoline – Page 6

Unless something out of the ordinary or catastrophic occurs, little thought is given to the process by which gasoline arrives at our neighborhood convenience stores and gas stations. It is often assumed that gasoline is always available whenever we need it. Most of us pay little attention to the fuel we rely on until prices at the pump surprise us. Events like major hurricanes, power outages or pipeline outages remind us that gasoline is very much a “just-in-time” commodity.

When we take a closer look, we see that volatility is built into the price we pay at the pump because many components, both globally and locally, have a hand in pressing those prices higher and/or lower. These components include the time of year and the federal regulations that dictate whether “summer blend” gasoline must be available (June 1 through September 15 in much of the U.S.) or “winter blend” (the remainder of the year in most areas), and how much; the strength of global economies; the relative value of major currencies; crude oil prices; supply and demand of oil and gasoline; refinery operations; pipeline logistics; state and local taxes; weather; OPEC policy; and, last but not least, politics.

In the year ahead, as we continue to put Covid behind us, there are new challenges that will lead to another year with high levels of uncertainty. The global economy has been hit by rapidly rising inflation, with central banks raising interest rates to slow down growth. Such moves risk tipping economies into slowdowns or even recessions, and as the U.S. economy has seen fast-paced growth in jobs, it will take a delicate hand to slow growth while not pushing the U.S. into recession, which could leave gas prices lower. However, should the U.S. avoid a significant slowdown, there could be an upside risk to our forecast.

Gasoline is a product derived from crude oil, and retail gasoline prices are largely tied to the fluctuating price of crude oil and downstream logistics as well as the overall balance between supply and demand. As we recover from Covid, the refining sector has been permanently changed with shutdowns that have limited our ability to produce as much gasoline, diesel, and jet fuel. While U.S. refining capacity has been diminished due to Covid and other events, global refining capacity is set to rise, likely helping to ease the decline in U.S. supply.

Gasoline prices are also subject to seasonal increases and decreases tied directly to both refinery maintenance season (spring and fall) and the Clean Air Act, which has been slowly eliminating some pollutants from fuels.

*Continued on the next page*

# Forecasting Volatility

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Gasoline – Page 7

The purpose of these regulations is to reduce smog and pollution, especially in large metro areas across the U.S. during the peak summer driving season. The transition from “winter blend” to “summer blend” gasoline that takes place as refiners perform seasonal maintenance results in a reduction in the amount of gasoline produced. This kicks off an upward trend in gas prices that starts in February or March and lasts through late May or early June. The associated rise in gas prices has been 35 to 85 cents per gallon on average over the last ten years.

This transition also results in a rise in retail pricing that arrives every spring as refineries deplete their inventory of winter blend prior to the annual maintenance needed before they can begin production (in March and April) of the more expensive summer blend.

What is unpredictable are the unscheduled obstacles that refineries may encounter. In areas such as the West Coast, where gasoline is produced by a small number of dominant refineries, motorists are most susceptible to severe price spikes, triggered when local refineries hit unexpected snafus (even brief ones), especially during a time of year when refineries are transitioning to a larger slate of localized blends. In addition, pipelines that carry refined fuels have had unexpected shutdowns in recent years that may also affect the price of fuels and delivery of fuels to the retail level.

Weather also always represents a potential threat. Hurricanes Harvey in 2017 and Irma in 2021 prompted widespread fuel disruptions and shortages in Louisiana, Texas, and Florida. The impact was felt in every corner of the country due to the amount of gasoline production that was shut down after tremendous amounts of rain fell on two of the nation’s largest oil-producing and refining states. Gasoline inventories plummeted and it took months to recover. There is no national emergency gasoline supply, and significant events have the potential to challenge both fuel supply and prices. In 2019, wind events also caused some disruption in California, where such events may be more commonplace in the years ahead due to electric utilities’ efforts to prevent forest fires. In addition, the Colonial Pipeline outage in 2021 led to panicked motorists swarming pumps and filling anything they could find with fuel, straining supply.

With fewer refineries operating in recent years, motorists are faced with a smaller margin of error and less breathing room should a major outage, weather event, or pipeline issue constrain supply, such as what happened in California this past fall.

# 2023 Diesel Forecast

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## 2023 Diesel Forecast

Diesel – Page 1

## National Average

	Range of Possible	Average
January	\$4.29 - \$4.72	<b>\$4.51</b>
February	\$4.13 - \$4.69	<b>\$4.41</b>
March	\$4.06 - \$4.62	<b>\$4.34</b>
April	\$4.01 - \$4.53	<b>\$4.27</b>
May	\$3.93 - \$4.37	<b>\$4.15</b>
June	\$3.87 - \$4.30	<b>\$4.09</b>
July	\$3.73 - \$4.21	<b>\$3.97</b>
August	\$3.64 - \$4.12	<b>\$3.88</b>
September	\$3.59 - \$4.03	<b>\$3.81</b>
October	\$3.68 - \$4.19	<b>\$3.94</b>
November	\$3.73 - \$4.29	<b>\$4.01</b>
December	\$3.78 - \$4.36	<b>\$4.07</b>
<b>Yearly U.S. Average</b>		<b>\$4.12</b>



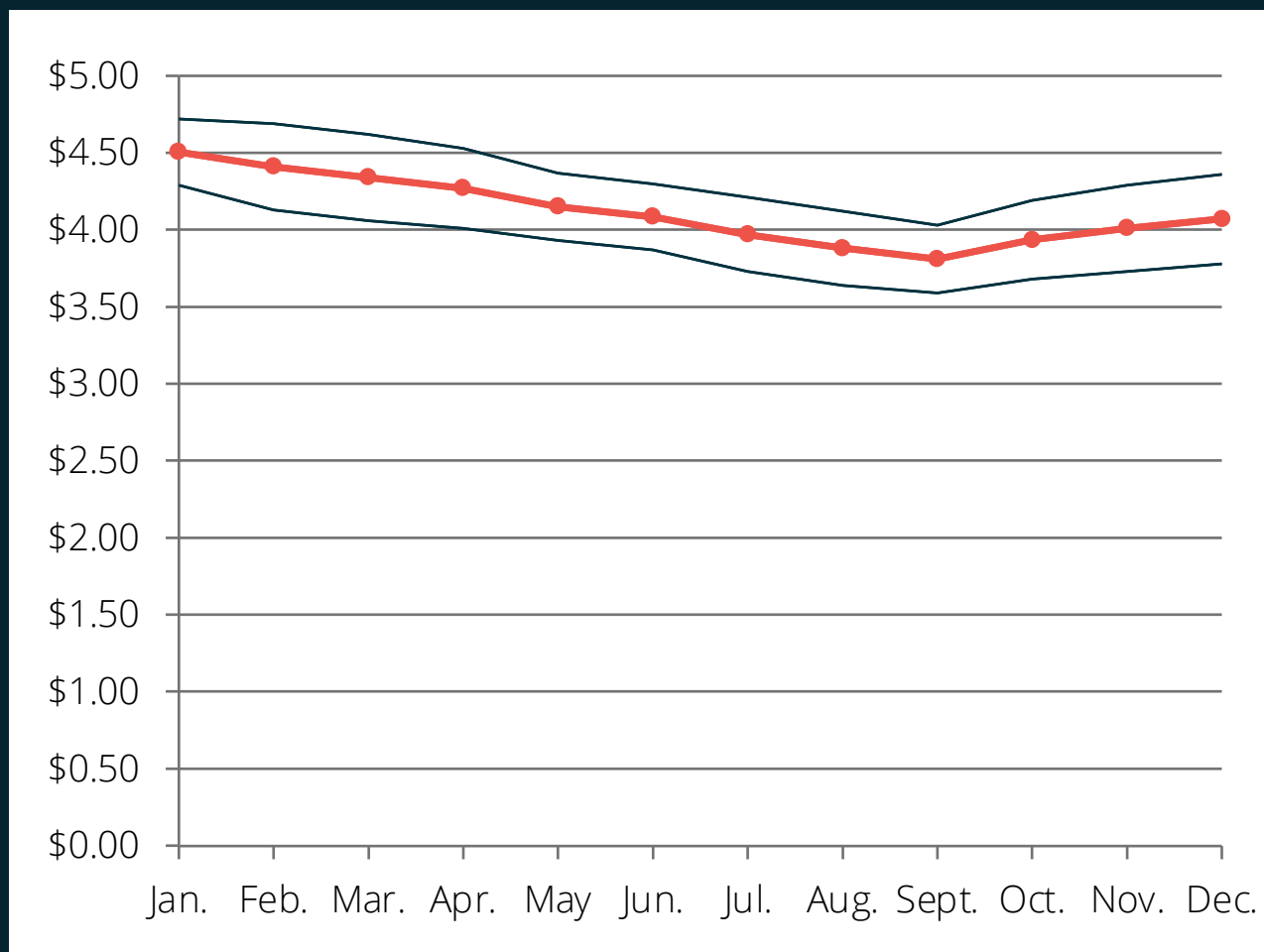
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Numbers reflect the lowest and highest likely daily national average price in the given month, with the predicted monthly average in bold. (\$/gal)

## 2023 Diesel Forecast- Revised

Diesel – Page 2

### National Average (Diesel)



*This chart reflects the forecast range of national averages by month, with the monthly average shown as the red line. (\$/gal)*





# Fuel Outlook Commentary

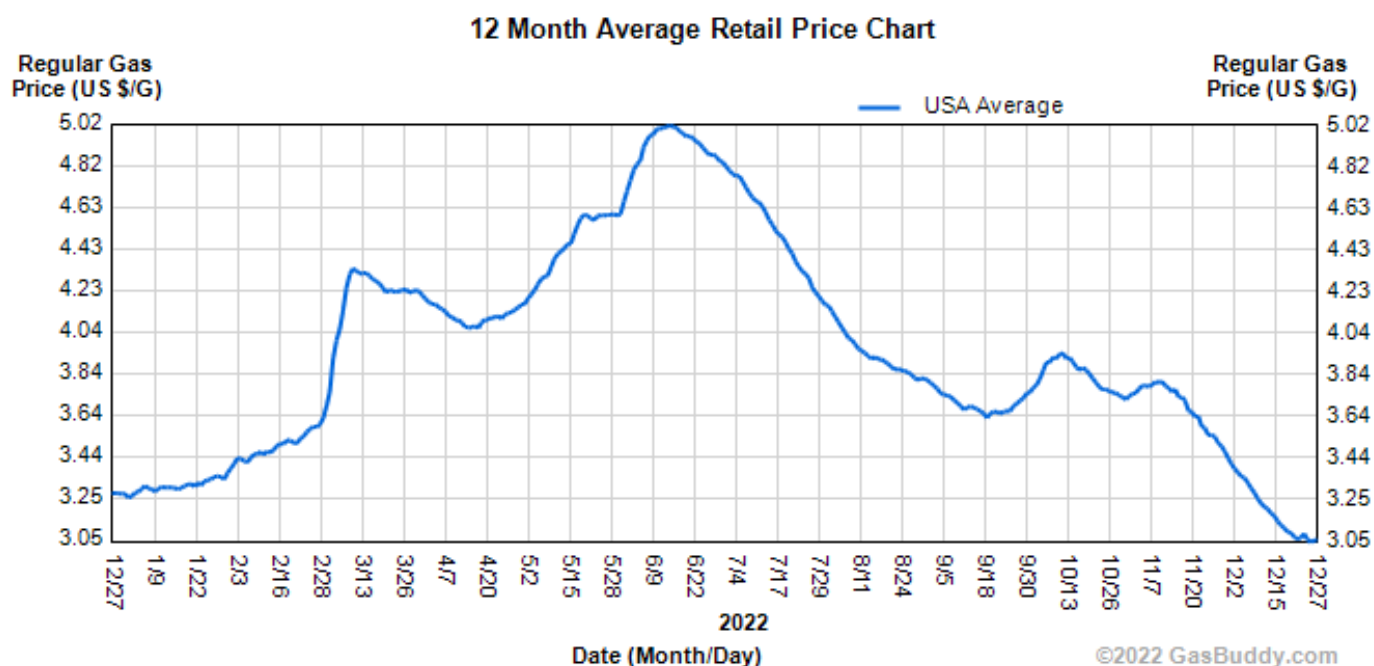
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# Fuel Outlook Commentary

Commentary – Page 1

While much progress has been made in re-opening the global economy as Covid concerns have eased, the pace of our return to normalcy has aggravated trends and pushed up inflation significantly. While many countries have eased restrictions, China remains locked down, continuing its stringent Covid-zero policies, restricting movements, and contributing to reduced oil demand. However, there are signs China may soon ease its restrictions, which could lead to an eventual recovery in oil demand—the timing of which could greatly impact oil prices, and thus, our forecast.



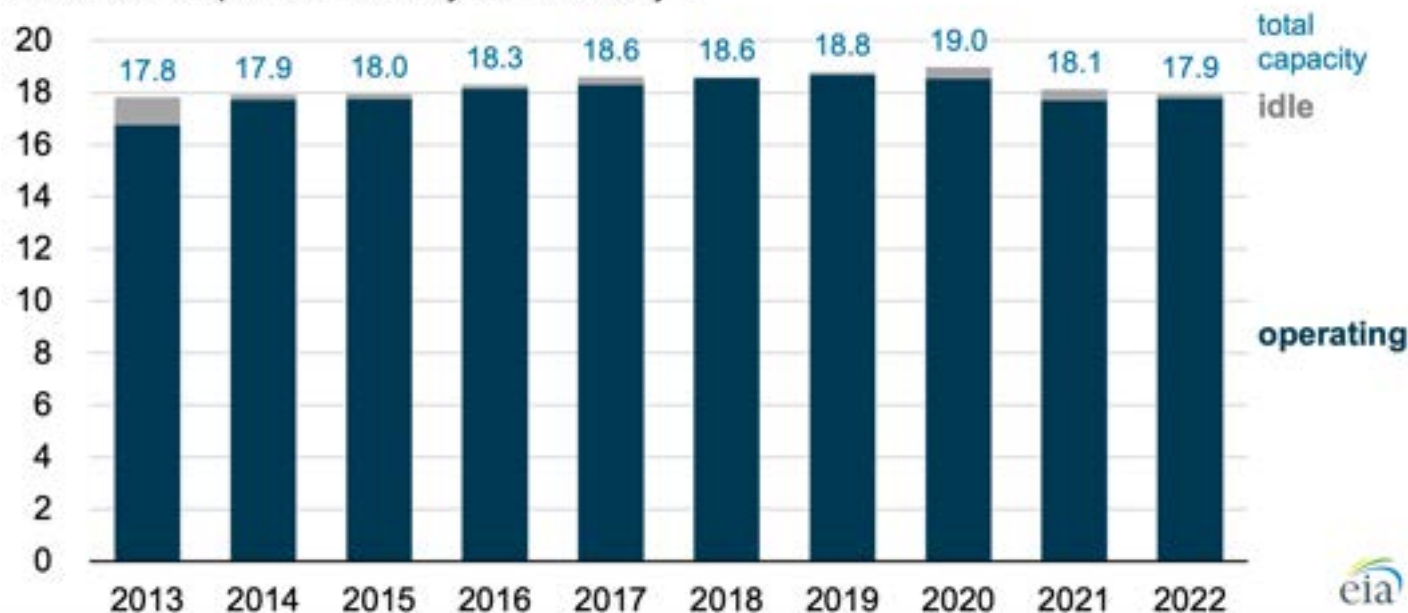
In addition, as central banks attempt to tame inflation by raising interest rates, risk is rising of a global economic slowdown, which could have a significant impact on oil consumption, and thus prices. Our forecast assumption is that a severe recession is unlikely, but some level of economic reset will limit oil demand, leading fuel prices to a gentler year ahead. If governments act too aggressively, there could be a major impact on fuel prices. A stronger economic slowdown could lead to lower fuel prices, while additional economic growth could lead to more consumption, and exacerbated by China's potential easing of Covid mandates, could provide a strong upside to our forecast. OPEC is also likely to try to balance oil markets that tip out of balance by cutting oil production in late 2022 to address slowing demand. Russia's war on Ukraine also brings additional uncertainty.

# Fuel Outlook Commentary

Commentary – Page 2

While all this uncertainty could lead to unexpected volatility, the decline of U.S. refining capacity for two straight years is also a catalyst for challenges, should demand see unexpected growth in 2023. Covid caused severe setbacks in terms of capacity, exacerbated by other unpredicted events, including hurricanes and fires. As in 2022, the year ahead could see refined products like gasoline and diesel “de-couple” from the price of oil, leading to temporary spikes in prices.

**Annual U.S. refinery atmospheric crude oil distillation capacity (2013–2022)**  
million barrels per calendar day as of January 1



With the shift to alternative fuels and electric vehicles accelerating and talks arising of potential windfall taxes, there is little industry interest in building additional refining capacity or expanding, especially given these projects face uphill political battles and questions of profitability in the future given the shift and uncertainty over legislation and politics. One delayed refinery expansion will likely be coming online in 2023, adding the equivalent of a new refinery, which will provide much-needed breathing room by reducing volatility in refined product prices in the second half of the year. This will likely arrive in time for hurricane season, which dodged nearly all critical oil industry infrastructure in 2022. Additionally, the high prices in 2022 led some refining capacity to return that had been previously offline due to Covid.

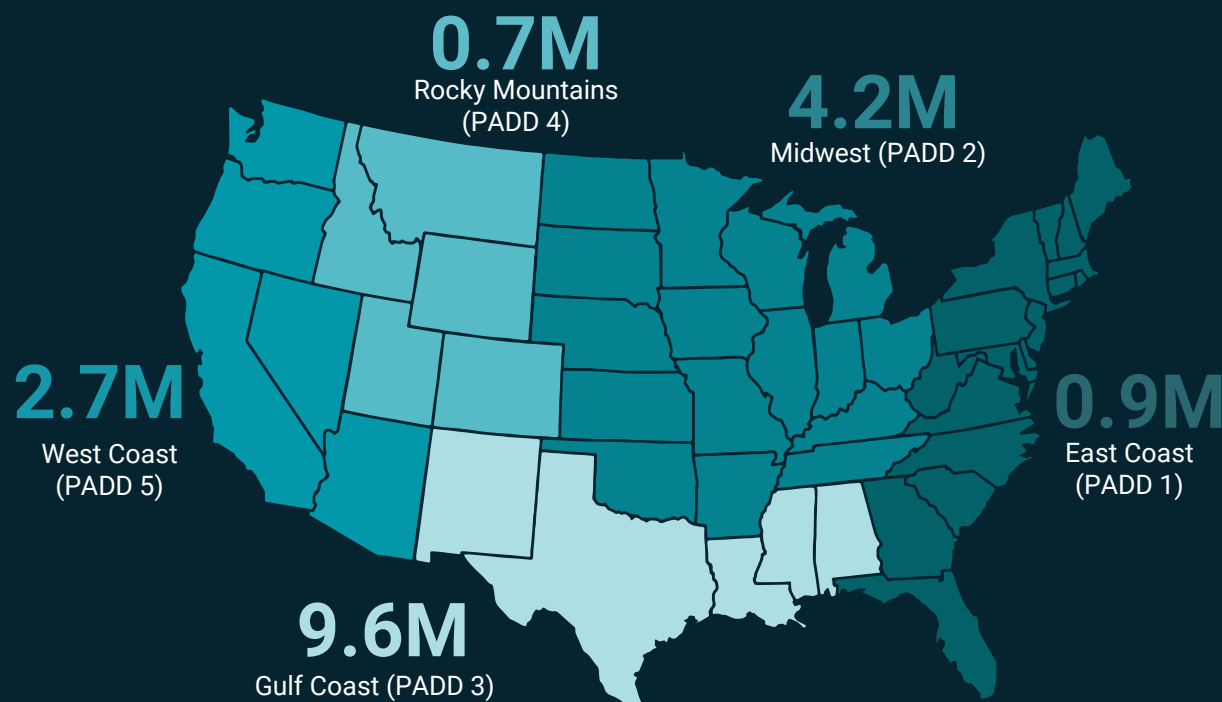
# Fuel Outlook Commentary

Commentary – Page 3

The East Coast remains highly susceptible to Russia's war on Ukraine, as European countries seek out supplies of oil and refined products from elsewhere, putting upward pressure on prices on the East Coast. The mid-Atlantic and Northeast, areas that rely heavily on fuel imports due to its low amount of refining capacity and high population, specifically face pressure. However, capacity improved in PADD 1 as PBF's Paulsboro, NJ returned to service after being shut due to Covid as diesel and gasoline prices spiked, giving the company incentive to return the unit to service.

## U.S atmospheric crude distillation capacity by region (2021)

million barrels per calendar day



The Gulf Coast saw some capacity go offline in the last year, but more concerningly, a large refinery in Houston operated by LyondellBassell may shut down at the end of 2023 if a buyer is not found. The refinery has the capacity of 268,000 barrels, nearly equivalent to ExxonMobil's refinery expansion of 250,000 barrels at its Beaumont, Texas refinery due to come online later this year. Refining has been a rising concern as Covid shutdowns have left consumers more susceptible to outages and price spikes. And, gasoline consumption has not fallen as quickly as capacity has, leaving the nation vulnerable when refineries encounter unexpected disruptions, pipeline problems, or weather events, such as hurricanes.

# Fuel Outlook Commentary

Commentary – Page 2

While U.S. refining capacity is unlikely to see considerable growth, improvements in refining operations in Mexico may ultimately help keep more refined product in the United States, as utilization rates rise due to investments from Mexico's President. In addition, refinery projects overseas will see global refining capacity rise by over 2.5 million barrels in the year ahead. A major new refinery in Dangote, Nigeria, is also slated to open, helping to ease the refining crunch in the United States.

**Selected major global refinery projects scheduled for 2022 and 2023**



These new and expanded facilities will help provide well-needed capacity after Covid-related shutdowns and help decrease volatility in fuel prices in the year ahead. There remains the wildcard of OPEC policy, however, as well as Russia's war on Ukraine that has dragged on, with the EU sanctioning Russian oil and agreeing to a price cap. This brings a level of uncertainty should Russia retaliate. OPEC+, which includes Russia, has been resisting calls to produce more oil to maintain balance. While President Biden has been openly calling on OPEC to produce more oil, the organization has failed to heed the request, with Biden turning to Venezuela, approving an export permit request from Chevron to allow oil exports to resume from the country.

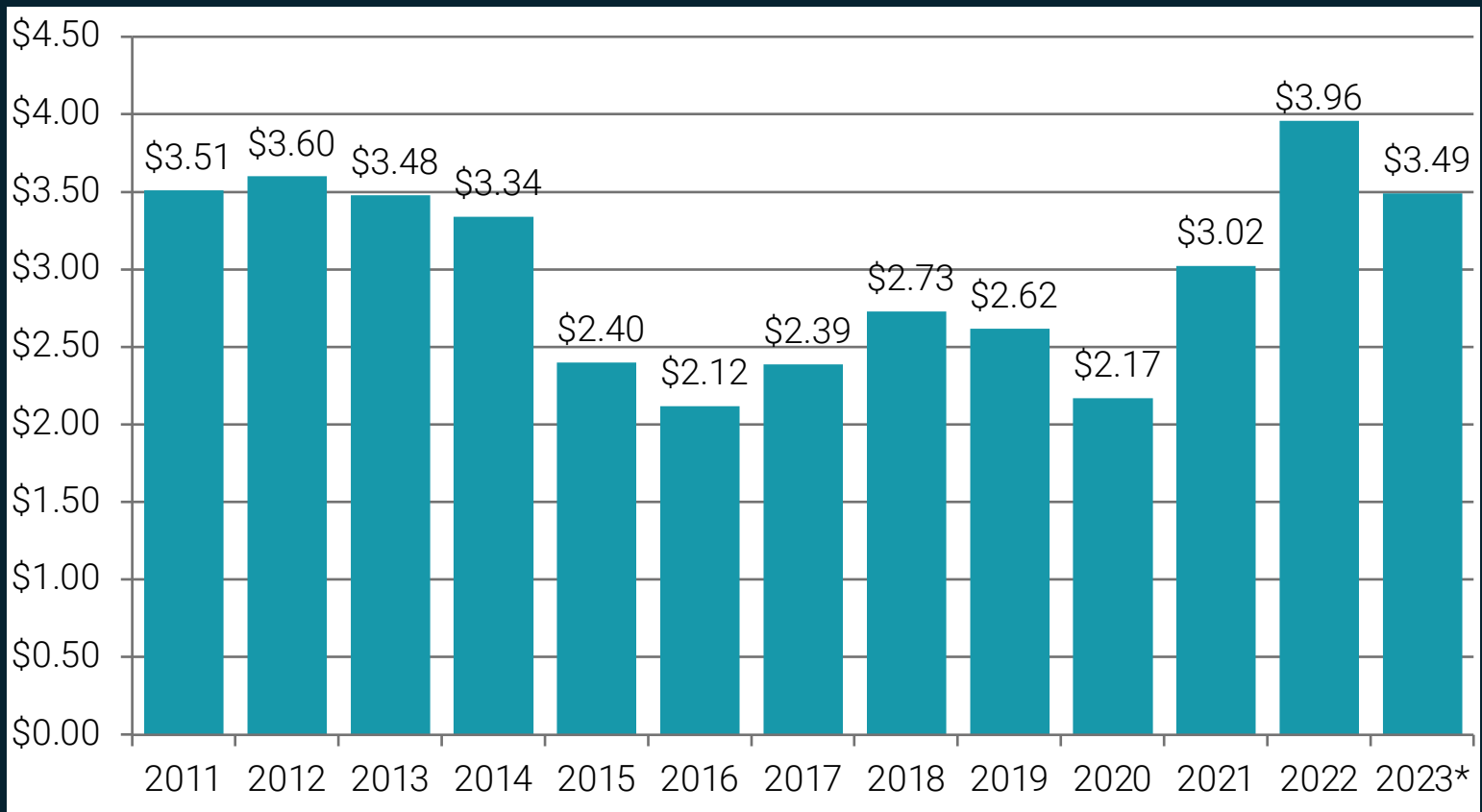
# Fuel Outlook Commentary- Updated

Commentary – Page 6

GasBuddy projects that the yearly national average in 2023 will be \$3.49 per gallon. The month of February (2023) will see the lowest prices at an average of \$2.99 per gallon, while June could average around \$3.99 per gallon, with a strong chance of \$4 prices returning, making it the priciest month of the year.

On a yearly basis, a total of nearly \$471 billion will be spent on gasoline in the United States, down over \$55 billion from the \$526.2 billion spent in 2022. The drop comes as global oil production continues to recover from Covid lows, and fears of Russian oil being cut off from the market cool. In addition, we expect refining capacity improvements to lead to more supply, also keeping prices lower than in 2022.

## Yearly U.S. national average price of gasoline:



\*Projected



# Forecast Quotes

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*What we saw in 2022 was simply madness at the nation's fuel pumps, with records being set seemingly left and right as Covid imbalances persisted and Russia invaded Ukraine. While it's highly improbable that lightning strikes the same spot twice, the storm clouds over oil and refined markets may persist, and there still could be some spikes as the market remains somewhat tight.*

*- Patrick De Haan, Head of Petroleum Analysis*

*Americans love to hold onto the myth that politicians are all-powerful and all-knowing, but when it comes to gasoline prices, global influences on supply and demand are really the gremlin that determines prices, and politicians who only care about your vote would love you to think they can control everything, but really can't do much over global fundamentals driving prices down or up.*

*- Patrick De Haan, Head of Petroleum Analysis*

*2023 is not going to be a cakewalk for motorists. It could be expensive. The national average could breach \$4 a gallon as early as May – and that's something that could last through much of the summer driving season. Basically, curveballs are coming from every direction. Extreme amounts of volatility remain possible, but should become slightly more muted in the year ahead. I don't think we've ever seen such an amount of volatility as we saw this year, and that will be a trend that likely continues to lead to wider uncertainty over fuel prices going into 2023.*

*- Patrick De Haan, Head of Petroleum Analysis*

*2022 will go down as one of the most nauseating years to budget for fuel expenses, and perhaps one of the most depressing, having watched the national average hit the \$5 per gallon mark, with diesel prices soaring to nearly \$6. However, with prices starting to moderate as imbalances are worked through, Americans are going to start to feel that gas prices are no longer as much of a thorn in their side in 2023.*

*- Patrick De Haan, Head of Petroleum Analysis*

# About GasBuddy

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GasBuddy is the leading fuel savings platform providing North American drivers with the most ways to save money on gas. GasBuddy has delivered more than \$3.5 billion in cumulative savings to its users through providing real-time gas price information at 150,000+ stations, offering cash back rewards on purchases with brand partners, and through the Pay with GasBuddy™ fuel card that offers cents-off per gallon at virtually all gas stations across the U.S. As one of the most highly-rated apps in the history of the App Store, GasBuddy has been downloaded over 100 million times.

Acquired by [PDI Technologies](#) in 2021, GasBuddy's publishing and software businesses enable the world's leading fuel, convenience, QSR, and CPG companies to shorten the distance between the fueling public and their brands. For more information, visit [www.gasbuddy.com](http://www.gasbuddy.com).

Market-specific and other forecasts are available from GasBuddy for a nominal charge. GasBuddy has provided forecasts for large end-users as well as smaller businesses. Other such forecast or data inquiries can be made via the contact information below.

To sign up to receive weekly gas price updates, alerts, and other GasBuddy updates, email the contact below with your state or city and contact information.

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