
OUTLOOK FOR
U.S.
FUEL PRICE OUTLOOK
2022
GasBuddy

SUMMARY

About Our Annual Outlook

Accuracy, reliability and neutrality are GasBuddy's mission with price forecasting, and it is achieved with the independent analysis featured in this 2022 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, due to the ongoing COVID-19 pandemic and new variants entering the picture, uncertainty is again a factor in 2022, making a forecast more challenging. Based on emerging variants and vaccines with unknown effectiveness against new strains, governments could be quick to react to slow travel down, causing unexpected and near-immediate impacts on oil demand.

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.

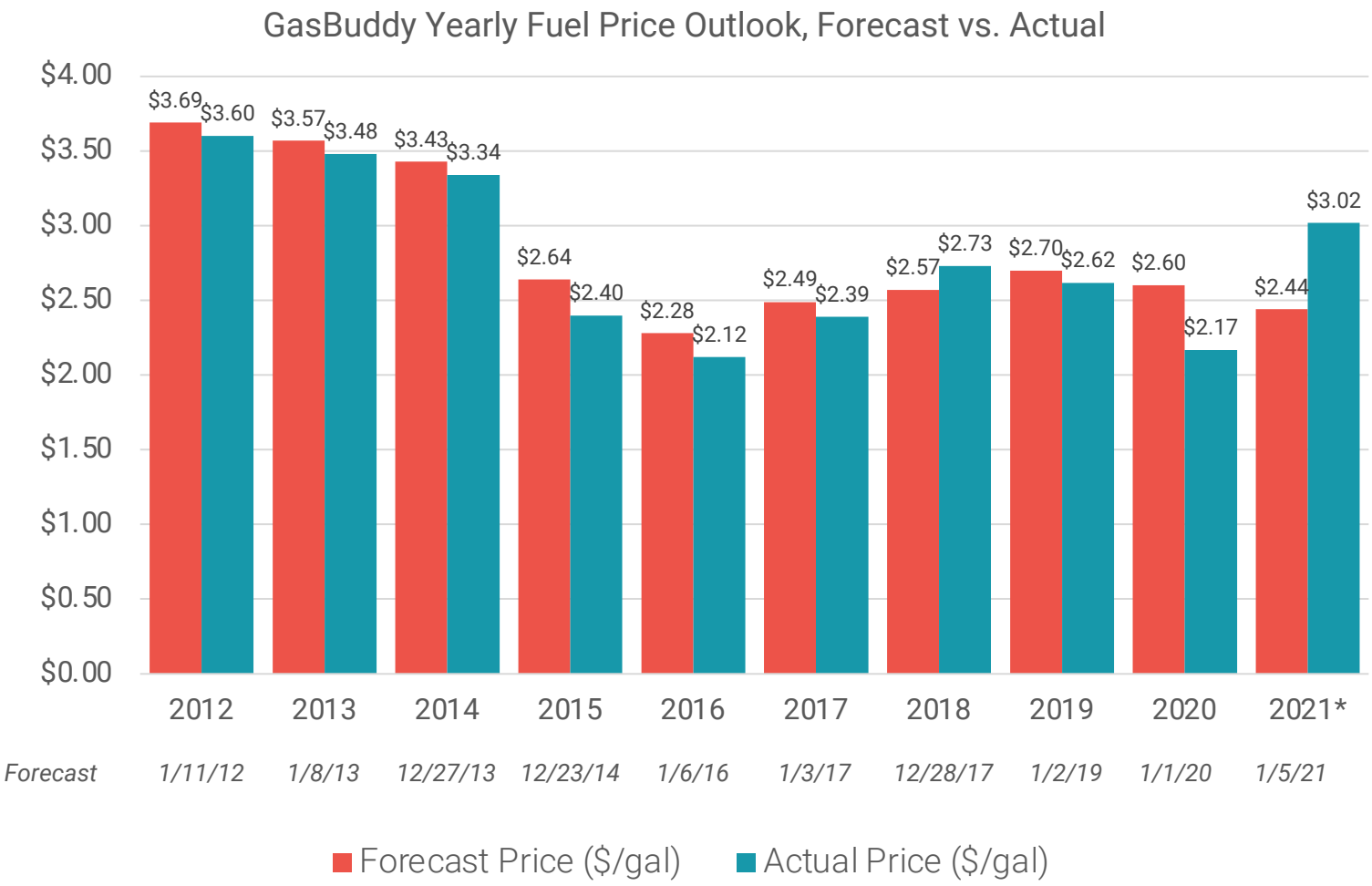
Outlook assembled by

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.

REVIEW

GasBuddy Fuel Price Outlook Accuracy

To be transparent about the accuracy of our Fuel Price Outlook, included are the outcomes of prior forecasts. GasBuddy's 2021 forecast for gasoline prices had a wider than average margin for error since we began our forecasts in 2012, with a margin of error of 23.8% with zero revisions. Our Outlook was released on day five of the year, projecting prices as far out as 360 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. 2021's large margin of error was entirely due to turbulence from the pandemic, which caused many imbalances that were impossible to predict at the start of the year, like how quickly the economy rebounded and the growing imbalance between supply and demand.



*2021 Yearly Average through December 26, 2021

2022 Gasoline Forecast

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2022 Gasoline Forecast

National Average

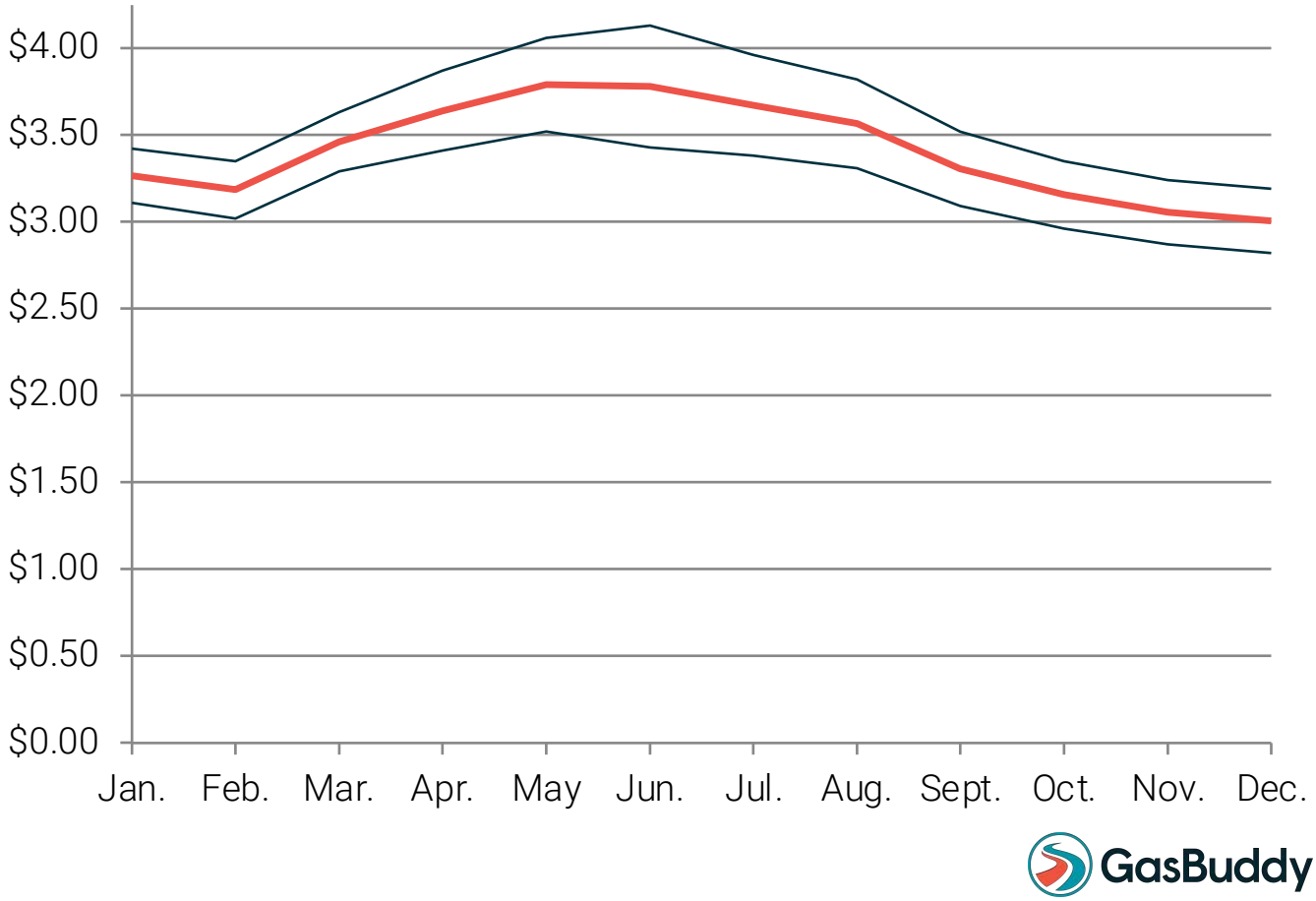
Month	Range of Possible	Average
January	$3.11 - $3.42	**$3.27**
February	$3.02 - $3.35	**$3.19**
March	$3.29 - $3.63	**$3.46**
April	$3.41 - $3.87	**$3.64**
May	$3.52 - $4.06	**$3.79**
June	$3.43 - $4.13	**$3.78**
July	$3.38 - $3.96	**$3.67**
August	$3.31 - $3.82	**$3.57**
September	$3.09 - $3.52	**$3.31**
October	$2.96 - $3.35	**$3.16**
November	$2.87 - $3.24	**$3.06**
December	$2.82 - $3.19	**$3.01**
Yearly U.S. Average		***$3.41***

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)

2022 Gasoline Forecast

National Average

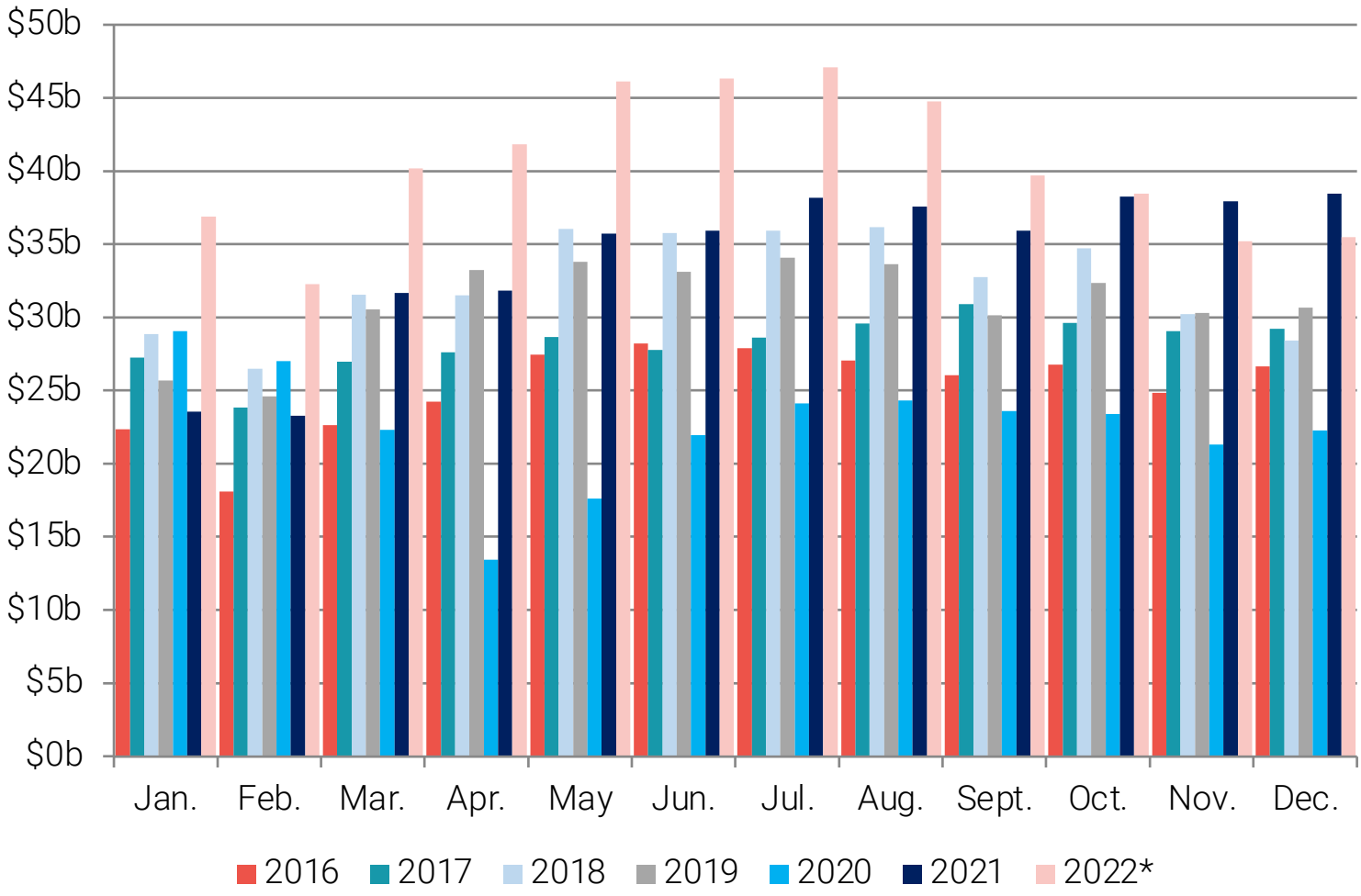


This chart reflects the forecast range of national averages by month, with the monthly average shown as the red line. ($/gal)

2022 Gasoline Forecast

Monthly Spending on Gasoline 2016-2021, 2022*

(*projected, in billions)



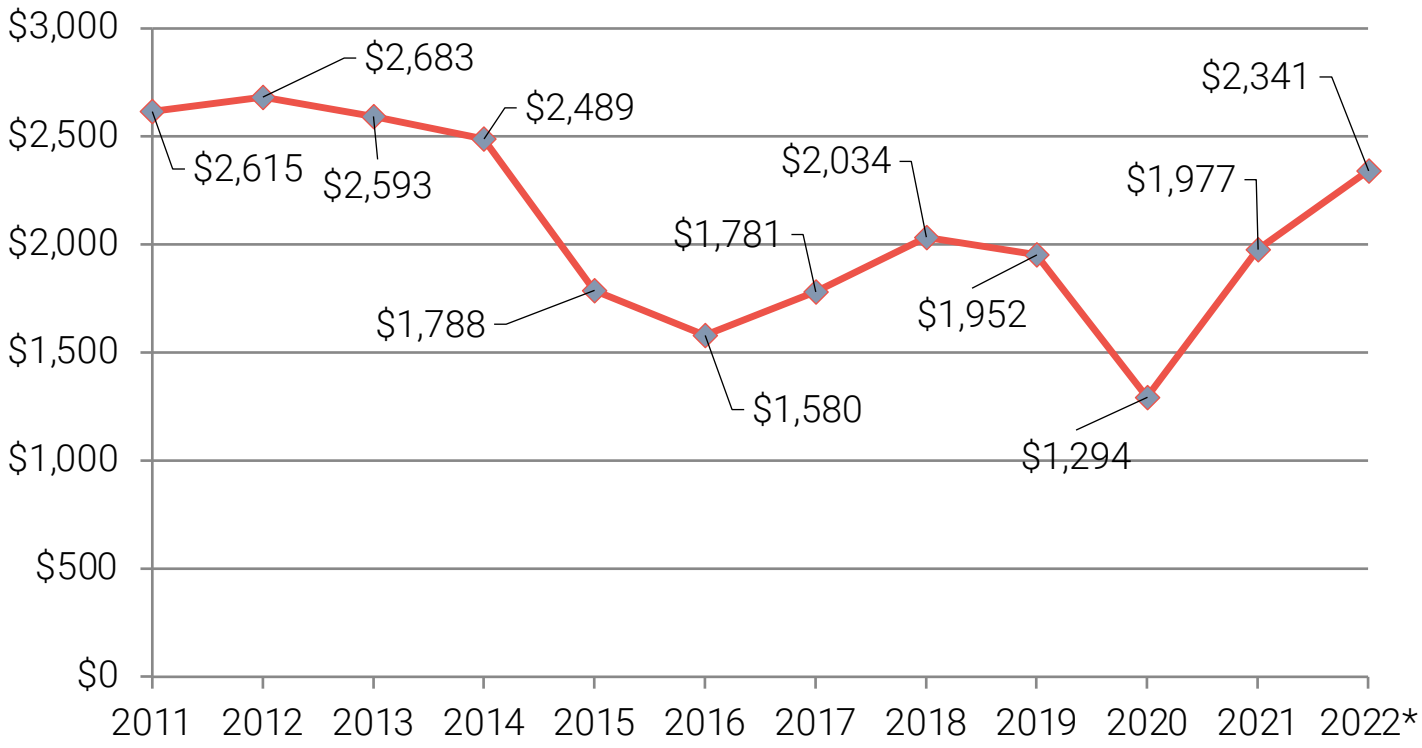
2022* Total U.S. Gasoline Spending: $484.4 billion

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

2022 Gasoline Forecast

Yearly Household Spending on Gasoline

(*projected)



2022* Average Household Gasoline Spending: $2,341

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

Highest Daily Average Gas Price, Select Cities, 2022

City	Highest Daily Average
Atlanta	$3.75 - $4.15
Boston	$3.95 - $4.25
Chicago	$4.35 - $4.75
Cleveland	$3.95 - $4.25
Dallas/Ft. Worth	$3.60 - $3.95
Denver	$3.95 - $4.30
Detroit	$3.85 - $4.20
Houston	$3.50 - $3.75
Los Angeles	$4.95 - $5.45
Miami	$3.85 - $4.15
Minneapolis	$3.75 - $4.15
New York City	$4.05 - $4.45
Orlando	$3.80 - $4.15
Philadelphia	$4.05 - $4.30
Phoenix	$4.25 - $4.55
Sacramento	$4.95 - $5.25
San Francisco	$5.25 - $5.65
Seattle	$4.35 - $4.60
St. Louis	$3.60 - $3.95
Tampa	$3.75 - $4.05
Washington, D.C.	$3.95 - $4.25

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

Forecasting Volatility

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.

Oil prices can be impacted as President Biden navigates the pandemic while trying to transition the nation away from internal combustion engine vehicles. As such, there have been policy shifts that have had various, yet generally small, impacts on oil and gasoline prices. In addition, as the pandemic continues to evolve with potentially new variants that must be independently studied, there could be turbulence in oil markets as demand for fuels or production of oil changes.

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. We find that oil prices are especially sensitive to developments in the COVID-19 pandemic as well as geopolitical events that can impact the supply and timely delivery of these commodities. These events whether perceived or actual and whether positive or negative can influence prices.

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

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 Memorial Day. The associated rise in gas prices has been 25 to 75 cents per gallon on average over the last ten years.

This 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 their 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.

Weather always represents a potential threat. Hurricanes Harvey and Irma in 2017 prompted widespread fuel disruptions and shortages in 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 Texas, the nation's largest oil-producing and refining state. 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.

Due to the pandemic, some refinery capacity has also been lost due to a steep drop in demand in early 2020, leading to a smaller margin of error and less breathing room should a major outage, weather event or pipeline issue constrain supply.

2022 Diesel Forecast

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2022 Diesel Forecast

National Average (Diesel)

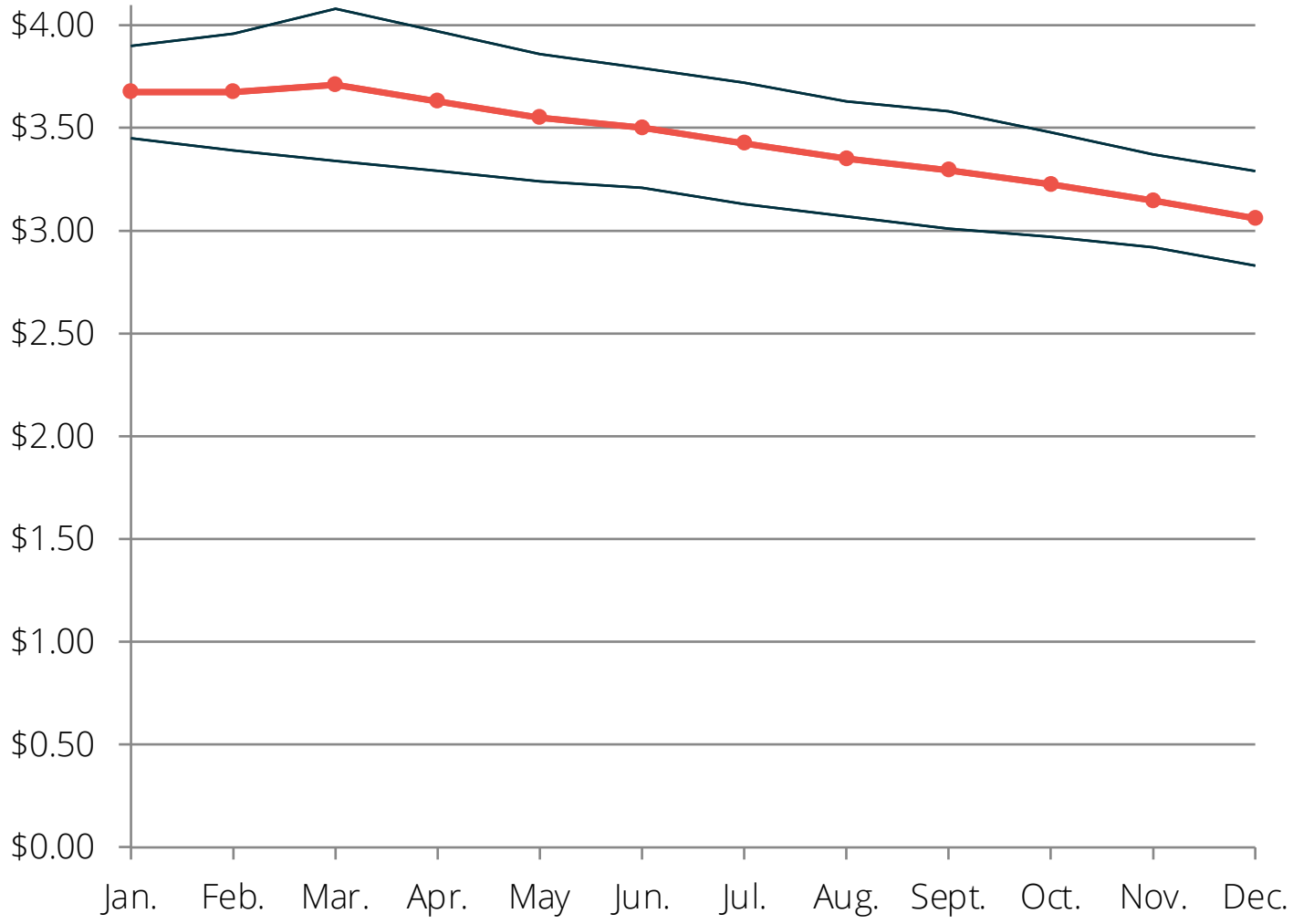
Month	Range of Possible	Average
January	$3.45 - $3.90	**$3.68**
February	$3.39 - $3.96	**$3.68**
March	$3.34 - $4.08	**$3.71**
April	$3.29 - $3.97	**$3.63**
May	$3.24 - $3.86	**$3.55**
June	$3.21 - $3.79	**$3.50**
July	$3.13 - $3.72	**$3.43**
August	$3.07 - $3.63	**$3.35**
September	$3.01 - $3.58	**$3.30**
October	$2.97 - $3.48	**$3.23**
November	$2.92 - $3.37	**$3.15**
December	$2.83 - $3.29	**$3.06**
Yearly U.S. Average		***$3.44***

The above table reflects the predicted U.S. national average. 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)

2022 Diesel Forecast

National Average (Diesel)



GasBuddy

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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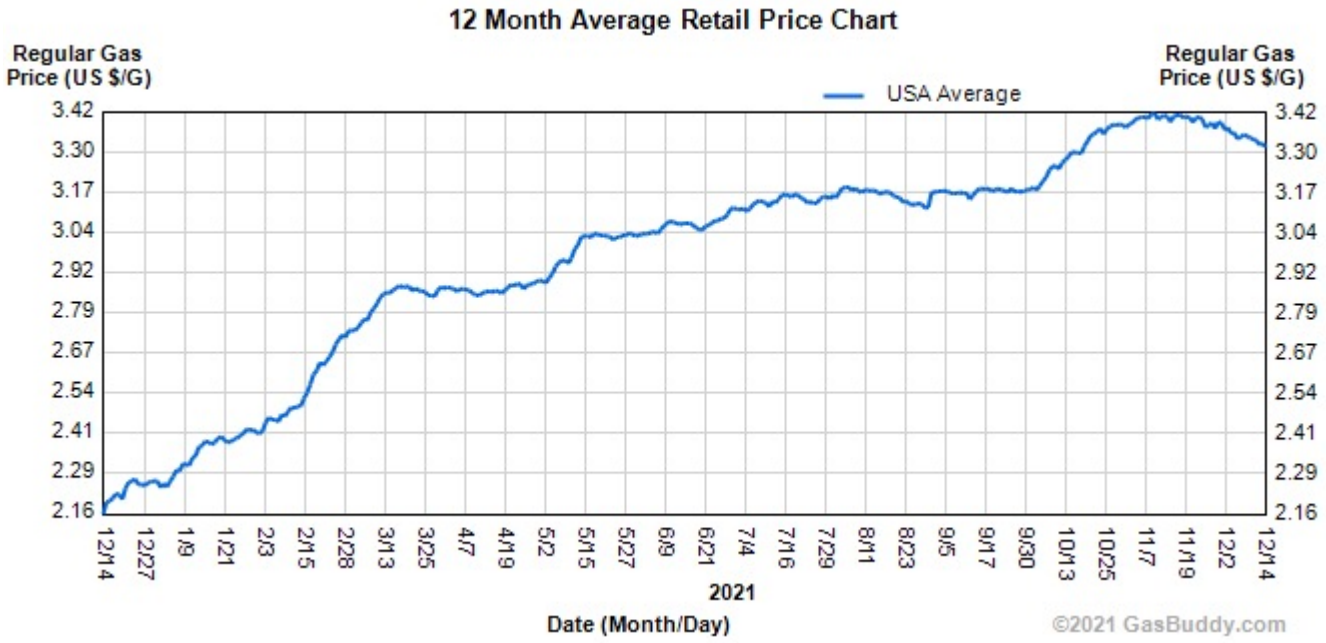
Fuel Outlook Commentary

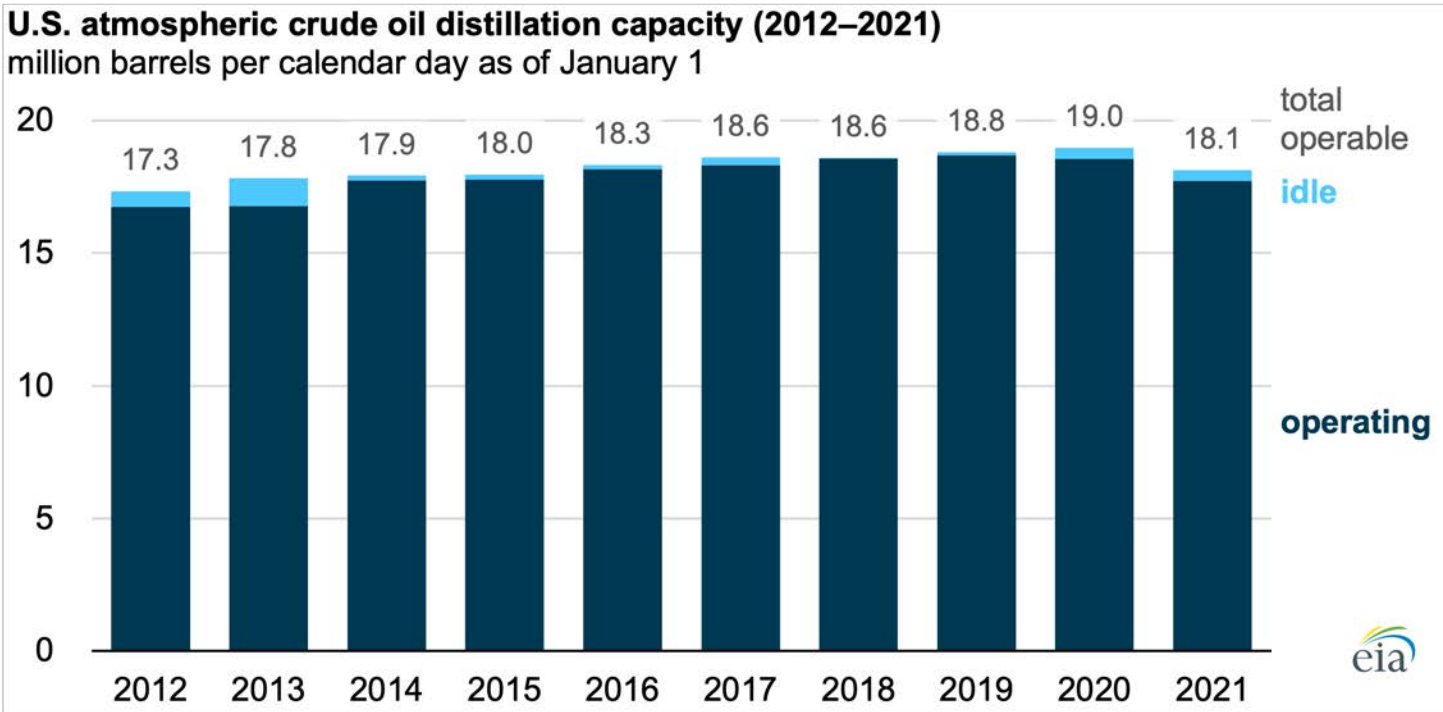
With broad recovery in the U.S. and global economies in 2021, demand for gasoline rebounded sharply, while oil producers and OPEC cautiously awaited to see if the new vaccines would indeed allow oil demand to rise. That's the exact situation that unfolded, and as demand rebounded, OPEC finally began a multi-month campaign in July to slowly boost oil production. In the meantime, the imbalance between the sharp rise in demand and the slow rise in oil production led oil and gasoline prices to rally through most of 2021. However, higher gasoline and oil prices are likely somewhat temporary.



Even against uncertainty over the newly discovered omicron variant, OPEC+ members have continued to increase oil production. But with omicron leading some countries to issue new travel restrictions, demand may slightly trail off, giving more time to right the ship and for oil production to rise faster than demand. For 2022, we expect as the year progresses, supply will meet demand, reversing the situation that led to rising gas prices this year, leading to relief at the pump. The relief could accelerate in mid to late 2022 as the imbalance is rectified and potentially supply even outpaces demand. But this would depend on how quickly air travel reopens and is contingent on no new variants that can dodge the previously produced vaccines emerging. 2022 could be another turbulent year if the uncertainty continues or if new variants are discovered.

Fuel Outlook Commentary

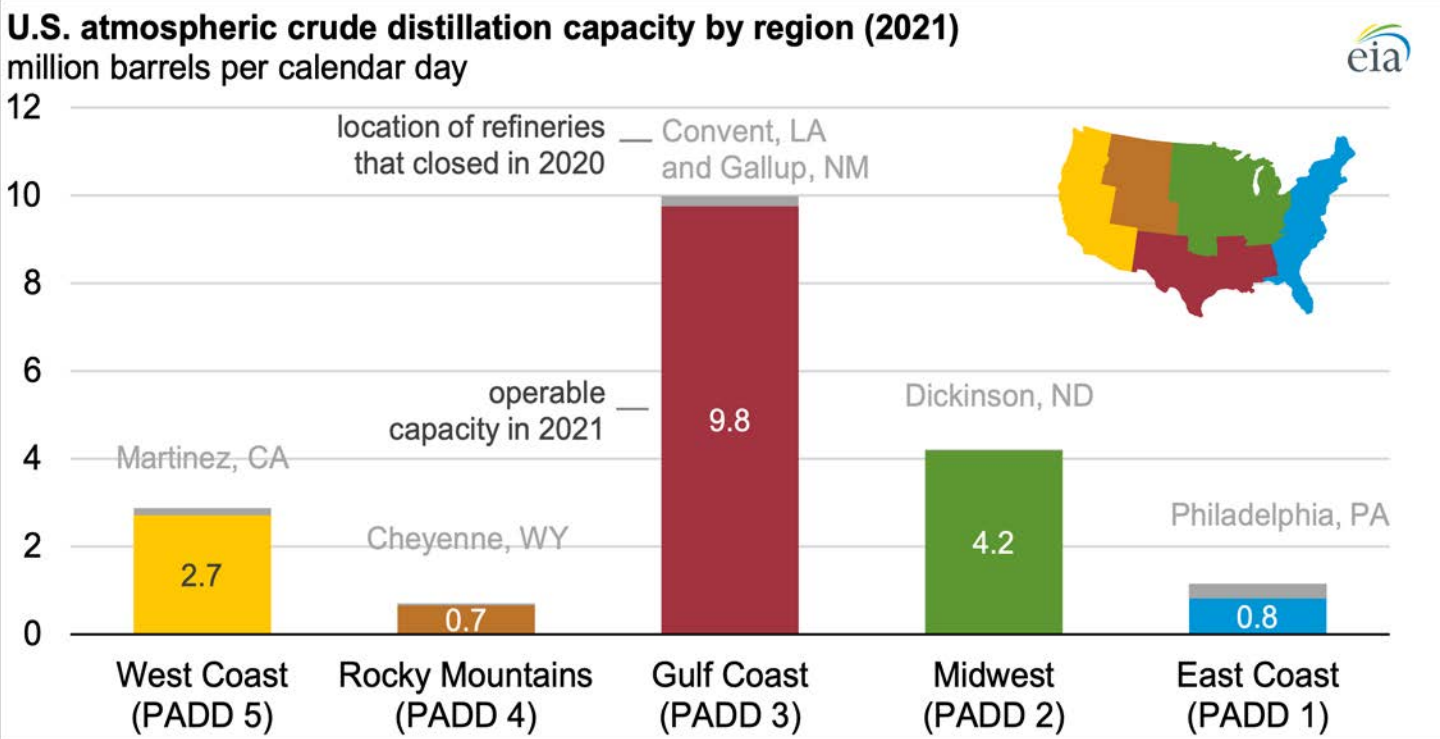
Should demand continue to rise, a new threat may pose some challenges, especially in the spring. Several refinery shutdowns occurred in 2020 at the height of the pandemic in response to weak demand; they generally were at a disadvantage compared to others, and when coupled with the severe downturn in demand during 2020, it led to their demise.



In addition, in late 2021, several other refineries were facing shut down, including Phillips 66 refiner in Belle Chasse, Louisiana as a result of hurricane damage. The 270,000bpd refinery instead was likely to be converted to a terminal in 2022. The off-and-on St. Croix refinery that had been shut in previous years still may make a recovery after failing to restart earlier in the pandemic after a massive cash infusion amidst a new buyer. Bringing some of these refineries back online may ease any spikes in prices should demand outpace supply in the year ahead. Fewer refineries, on the other hand, could lead to supply challenges, especially in the spring as refiners make the transition to mandated summer fuels.

Fuel Outlook Commentary

Should demand surge again this spring like it did in 2021, refiners may struggle to keep pace with demand, which is a factor in our forecast. We anticipate a wider range of possible prices in March and April due to refinery maintenance. Some regions of the country may be more prone to spikes: regions where capacity is lower, there are fewer refineries, or areas that lack a "relief valve," like the West Coast, where few pipelines can offer product that flows east to west.



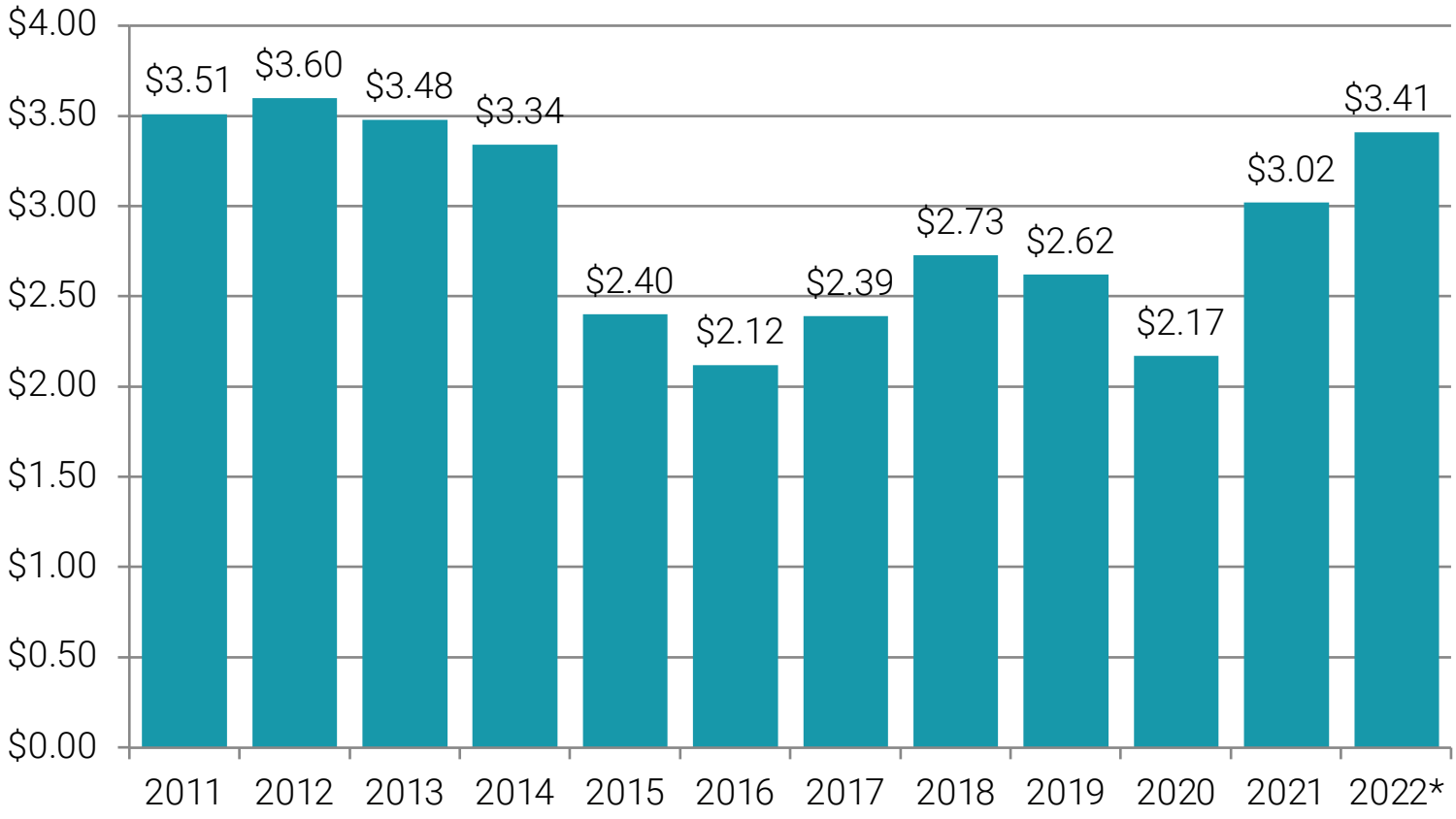
The West Coast and Rockies both saw periods of the year where average state gasoline prices eclipsed the norms between the national average. The Rocky Mountain region saw tight inventories all summer, while the West Coast saw refinery issues that plagued output. While the East Coast is also susceptible to price spikes because of refinery shutdowns, imports from Europe and the Gulf Coast may reach the area relatively quickly, offering relief. The Gulf Coast and Midwest remain the areas of the country that are less prone to price spikes from refinery outages, since these areas have the largest refining capacity.

Fuel Outlook Commentary

GasBuddy projects that the yearly national average in 2022 will be $3.41 per gallon. The month of December (2022) will see the lowest prices at an average of $3.01 per gallon, while May will average around $3.79 per gallon with a chance of $4 happening, making it the priciest month of the year.

On a yearly basis, a total of $484.4 billion will be spent on gasoline in the United States, up $76 billion from the $408.4 billion spent in 2021. The increase in total gasoline spend comes due to oil production slowly rising against a sharp increase in global demand as vaccines have allowed some measure of life to return, leading to an imbalance and pushing oil prices higher. We anticipate that oil producers will slowly bring additional production online as the year progresses, easing gasoline prices even further toward the end of the year.

Yearly U.S. national average price of gasoline:



*Projected

Forecast Quotes

With the pandemic upending life as we knew it, consumer behavior continues to be as unpredictable, leading to yet another year of turbulence in oil and gasoline prices. While we are likely to eventually see relief at the pump as the year wears on, we likely will experience more pain at the pump than what we saw in 2021. With the national average potentially reaching $4/gal for just the second time in history and the first time in over a decade.

- Patrick De Haan, Head of Petroleum Analysis

President Biden is in the hot seat, taking blame from conservatives who cite the President's cancellation of the Keystone XL pipeline and issuing a drilling moratorium on federal land as the cause of rising prices. But the truth is we need more crude oil before any concern about pipeline capacity enters the equation, and the Department of Interior has been issuing new permits left and right as of late. We'd have seen a surge in gas prices no matter who was in the Oval Office.

- Patrick De Haan, Head of Petroleum Analysis

A reminder that between a President you're fond of or one you despise, oil is a global commodity, and the price is dictated by the world's 8 billion people and their consumption, not one President. The entirety of why prices are high remains that a pandemic led to a paradigm shift in the global economy, one that's proving hard to bounce back from without any bumps in the road, something that is affecting many areas of the economy, not just the price of oil and gasoline.

- Patrick De Haan, Head of Petroleum Analysis

2022 may be filled with curve balls and new challenges as motorists see their annual fuel expenses rise yet again, but there is some measure of relief that we will see. It's largely thanks to high oil prices incentivizing additional oil production from oil producers for eventual relief. The supply and demand system may not be perfect, but it works. Until then, motorists will be forced to chalk up more of their hard-earned money to keep up with their insatiable thirst for gasoline.

- Patrick De Haan, Head of Petroleum Analysis

About GasBuddy

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 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™ payments 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 nearly 100 million times.

Acquired by PDI Software 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.

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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, e-mail the contact below with your state or city and contact information.

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