

Fueling America: Key Facts and Figures

NACS ANNUAL FUELS REPORT 2011



Convenience stores sell approximately 80 percent of the fuels purchased in the United States. Here are some facts and figures related to the industry.

Demand

U.S. gasoline demand is projected to average 9.12 million barrels per day in 2011.

Americans are expected to travel 8.27 billion miles per day in 2011. This equates to an average of 33 miles per vehicle per day.

Petroleum Infrastructure

The U.S. petroleum distribution industry includes:

- 148 refineries
- 38 Jones Act vessels (U.S. flag ships that move products between U.S. ports)
- 3,300 coastal, Great Lakes and river tank barges
- 200,000 rail tank cars
- 1,400 petroleum product terminals
- 100,000 tanker trucks
- Approximately 200,000 miles of oil and refined product pipelines

Fueling Outlets

There were 159,006 total retail fueling sites in the United States in 2010.

A total of 117,297 convenience stores sell motor fuels in the United States. This represents 80 percent of the 146,341 convenience stores in the country.

Overall, 58 percent (67,504 stores) of the country's 117,297 convenience stores selling fuels are one-store operations. By contrast, about 1 percent are owned and operated by the integrated oil companies, of which only two (ChevronTexaco and Shell) still are committed to selling fuel at the retail level.

Fuels Sales

The gross margin (or markup) on gasoline in 2010 was 16.3 cents/gallon, or 5.6 percent.

Motor fuels sales in convenience stores totaled \$328.7 billion in 2009. Motor fuels sales accounted for 68 percent of the convenience store industry's sales in 2009. However, because of low margins, motor fuels sales contributed only 27 percent of total store gross margins dollars.

The average convenience store in 2009 sold 121,000 gallons of motor fuels per month — approximately 4,000 gallons per day.

Fuels Expenses

The federal excise tax on gasoline is 18.4 cents per gallon and 24.4 cents per gallon for diesel fuel.

In January 2011, motor gasoline taxes averaged 48.1 cents per gallon and diesel fuel taxes averaged 53.1 cents per gallon.

Factoring in all gasoline sales in 2009 transactions — whether the customer paid by cash, check or by either debit or credit card — credit and debit card fees averaged 4.7 cents per gallon.

Sources for this information include the U.S. Energy Information Administration, American Petroleum Institute, National Petroleum News, OPIS, National Petrochemical and Refiners Association, Association of Oil Pipe Lines, Nielsen TDLinx and NACS.

Who Sells America's Fuel?



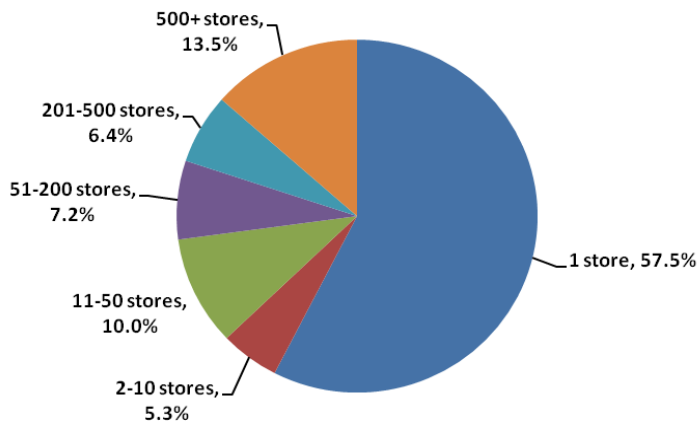
Americans, on average, fuel up their cars about five times every month at one of the country's nearly 160,000 fueling locations. So who owns and operates these stations that fuel America?

Small Businesses Fuel America

There are 117,297 convenience stores selling fuel in the United States. These retailers sell an estimated 80 percent of all the fuel purchased in the country. Overall, nearly 58 percent of the convenience stores selling fuel are single-store operators.

These small businesses often don't have the resources to brand their stores as anything beyond the brand of fuel they sell, often leading to consumer misperceptions that they are owned and operated by a major oil company.

Ownership of convenience stores selling fuel

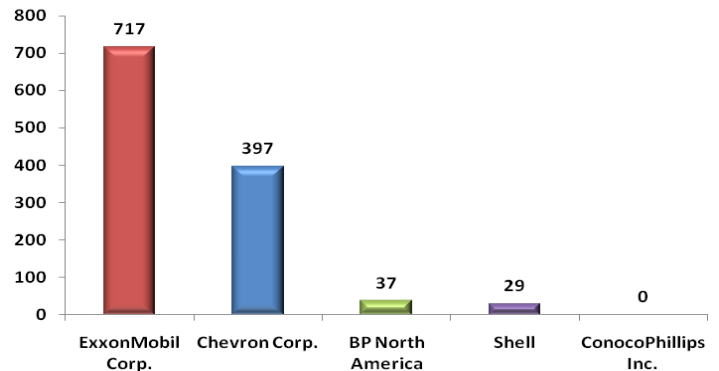


(Source: NACS/Nielsen TDLinx 2011 Convenience Industry Store Count)

Big Oil Continues to Exit Retail

Large integrated oil companies, especially since late 2007, have exited the retail business to focus more on resource production and refining operations. ExxonMobil, Shell, BP and ConocoPhillips have either begun or completed the process of selling off all of their directly operated facilities. Of the 117,297 convenience stores selling fuels, about 1,180 – 1 percent – are owned the one of the five major oil companies.

Major oil-operated retail outlets

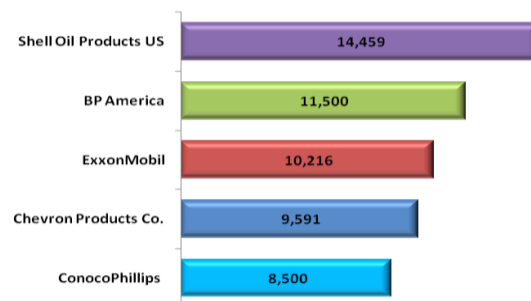


(Source: Nielsen TDLinx, May 2010)

Major Oil Keeps Its Brand Presence

While the major oil companies are withdrawing from retail, their brands remain. In fact, approximately 50 percent of retail outlets sell fuel under the brand of their refiner-supplier. Virtually all of these branded locations are operated by independent entrepreneurs who have signed a supply contract with a particular refiner/distributor to sell a specific brand of fuel, but these retailers do not share in the profit/loss of their suppliers. Of the 159,006 fueling stations in the country, approximately 34 percent have a major oil company brand, and another 18 percent carry the brand of a refining company. The remainder – 48 percent – sell a private brand. These outlets are independent business owners who have established their own fuel brand (i.e., QuikTrip, 7-Eleven) and purchase fuels either on the open market or via unbranded contracts with a refiner/distributor.

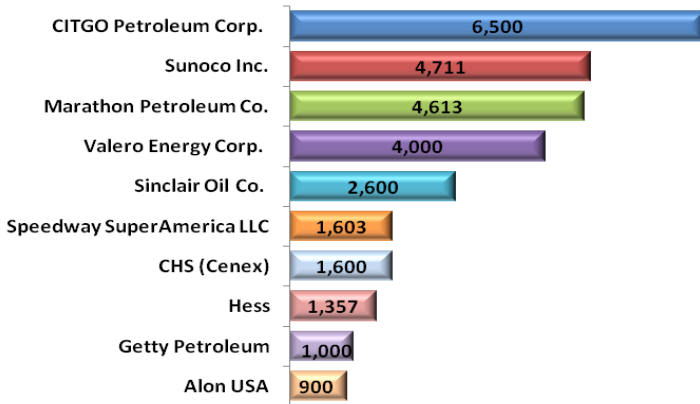
Major oil-branded retail outlets



54,266 total sites – 34 percent of fueling locations
(Source: National Petroleum News' MarketFacts 2010)



Top refiner-branded retail outlets



28,884 total sites – 18 percent of fueling locations

(Source: National Petroleum News' MarketFacts 2010)

Other Retail Channels Sell Fuels

Convenience stores sell an estimated 80 percent of the fuels purchased in the United States, and their dominance continues to grow.

In the past decade, the overall number of fueling locations (including convenience stores) has dropped 9.6 percent – from 175,941 to 159,006 sites. Meanwhile, the number of convenience stores selling fuels has increased 25.5 percent – from 93,444 to 117,297 stores.

The remainder of fuels sales in the United States is roughly split equally between traditional service stations without convenience operations and big-box retailers that sell fuels (such as Costco, Walmart and a number of grocery chains).



Retail gasoline prices are among the most recognizable price point in American commerce, yet they are among the least understood. What goes into the price of a gallon of gasoline? Here is a primer on what causes prices to go up or down and vary from store to store.

Ownership and Supply Arrangements

Two key factors that influence retail motor fuels prices are who owns the store and how they get their supplies.

Unlike a few decades ago, when the major oil companies owned and operated a significant percentage of the fueling locations, today only about 1 percent of all stores are owned by one of the major oil companies.

About another 4 percent are owned by a refining company like Valero, Sunoco or Hess. Instead, the vast majority – about 95 percent of stores – are owned by independent convenience store companies, whether one-store operators or large regional chains.

Each business has a number of factors that could impact its sales price. They include:

- **Branded or unbranded fuels:** Typically, stores that sell a branded fuel pay a premium for that fuel, which covers marketing support and signage, as well as the proprietary additive package.
- **Dealer tank wagon or rack:** Retailers who purchase fuel via dealer tank wagon may pay a higher price than those who get their fuel at “the rack” or terminal. However, rack prices may experience more volatility.
- **Length of contract:** Even if they sell unbranded fuels, retailers may have a long-term contracts with a specific refiner. The length of the contract – which can be 20 years, sometimes longer – can affect the price that retailers pay for fuels.
- **Volume:** As in virtually every other business, retailers may get a better deals based on the amount of fuel that they purchase, whether based on volume per store or total number of stores.

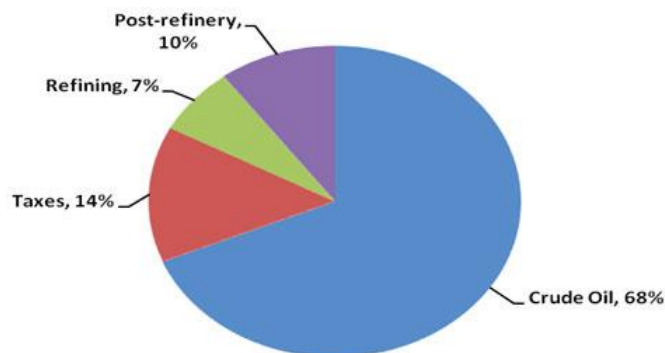
Even within a specific company, stores may not each have the same arrangements, since companies often sell multiple brands of fuels, especially if they have acquired sites with existing supply contracts.

Crude Oil Prices Most Affect Retail Prices

There are four factors that make up the price of retail fuels: Crude oil costs, taxes, refining costs and distribution and marketing (which accounts for all costs after the fuel leaves the refinery).

Crude oil prices have, by far, the biggest effect over the retail price of fuels. For one, crude oil costs are responsible for about two-thirds of the cost of a gallon of gasoline. In 2010, crude oil costs were 68 percent of the retail price of gasoline. Second, while there may be slight variations in the costs of refining or distributing and retailing fuels, crude oil prices can experience huge swings. (Taxes are largely static, unless they are based on prices and not set per gallon. Refining and marketing margins have a much less significant impact on prices, and are often a function of wholesale prices.)

Costs in a gallon of gasoline



(Source: U.S. Energy Information Administration, cumulative 2010 monthly averages. Figures do not add up to 100 percent due to rounding.)

Given there are 42 gallons in a barrel, a rough calculation is that retail prices ultimately move approximately 2.5 cents for every \$1 change in the price of crude oil. In short, as crude prices change, so does the price of retail gasoline.



Cost of Goods Sold Leads Retail

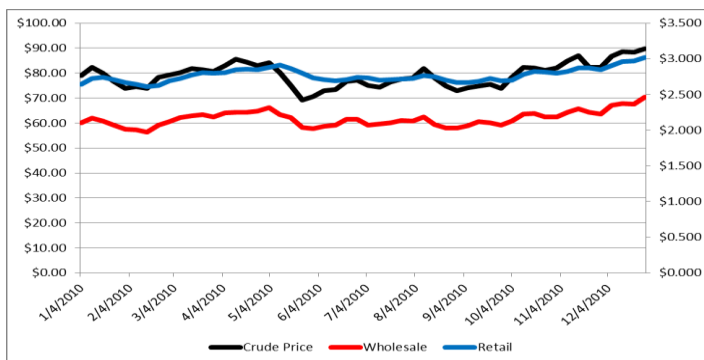
Retail prices are set according to a complex analysis of competitive pressures and the ever-changing wholesale cost of gasoline. Due to differences in supply arrangements, contract terms and delivery schedules, retailers often pay different prices at different times for the gasoline they sell at retail. Retailers must set a price that best balances their need to cover their costs with the need to remain competitive and attract consumers, who are very price sensitive and will shop somewhere else for a difference of a few cents per gallon.

Consequently, retailers often cannot always adjust retail prices to fully compensate for changes in their wholesale costs because they must remain competitive with nearby stores who may not have incurred similar changes in costs.

When prices go up, retailers may reduce their markup to remain competitive with nearby stores. Likewise, when prices go down, retailers may be able to extend their markup and recover lost profits.

In the end, the annual average retail mark-up (the difference between retail price and wholesale cost) has averaged 15 cents per gallon over the past five years.

Wholesale and retail gasoline prices track oil prices



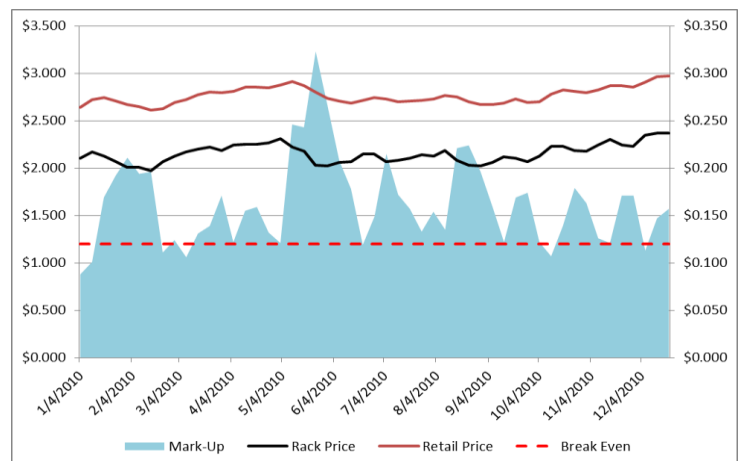
(Sources: OPIS "Retail Fuel Watch"; U.S. Energy Information Administration)

Retail Profitability Measured Over Time

The pattern of retail profitability is the opposite of what most consumers think. Due to the volatility in the wholesale price of gasoline and the competitive structure of the market, fuels retailers typically see profitability decrease as prices rise, and increase when prices fall. On average, it costs a retailer about 12 cents to sell a gallon of gasoline. Using the five-year average markup of 15 cents, the typical retailer averages about 3 cents per gallon in profit. In 2010, the average national retail markup was 16.3 cents, delivering an average profitability of 4 to 5 cents per gallon.

Over the course of a year, retail profits (or even losses) on fuels can vary wildly. In some cases, a few great weeks can make up for an otherwise dreadful year – or vice versa.

Retail fuel margins experience wild variation over time



(Sources: U.S. Energy Information Administration; NACS)

With its extreme volatility, fuels retailing is not for the faint of heart – or those with limited access to capital. Perhaps that is why that since 1994, while overall fuels demand in the United States has increased, the overall number of fueling locations has decreased from over 200,000 to less than 160,000 sites.



DEMAND

Oil

Demand for oil is expected to increase to 88.0 million barrels per day worldwide in 2011. World oil consumption was 86.6 million barrels a day in 2010. This reversed the losses of the previous two years and surpassed the 2007 level of 86.3 million barrels per day.¹

All of the expected growth in demand for oil will come from non-Organization for Economic Cooperation and Development countries, most notably China, the Middle East and Brazil.²

The United States uses petroleum more for transportation needs (70 percent of total demand) than heat and power. As a result, demand peaks in the summer as people travel more, the opposite of most of the rest of the world where demand for oil peaks in the coldest months.³

U.S. petroleum consumption averaged an estimated 19.13 million barrels per day in 2010, and in 2011 that figure is expected to increase to 19.29 million barrels per day.⁴

West Texas Intermediate spot oil prices averaged \$79.40 per barrel in 2010, up from \$66.16 per barrel in 2009. They are expected to average \$90.30 in 2011.⁵

Motor fuels

There were 248.2 million registered vehicles in the United States in 2008, of which 137.1 million were passenger vehicles.⁶

The average passenger car used 522 gallons, traveled 11,788 miles and had a fuel economy of 22.6 miles per gallon in 2008.⁷

U.S. gasoline demand averaged 9.06 million barrels per day in 2010 — approximately 380 million gallons per day, or about 42 million fill-ups per day (based on a 9-gallon fill-up) — and is projected to be 9.12 million barrels per day in 2011.⁸

Americans travelled 8.22 billion miles per day in 2010, and are expected to travel 8.27 billion miles per day in 2011. This equates to an average of 33 miles per vehicle per day.⁹

Battery-operated vehicles (like the Nissan Leaf) are projected to have annual sales in 2020 of 100,000 units in the U.S. and 1.3 million worldwide — 1.8 percent of the 71 million cars expected to be sold in 2020. Another 3.9 million plug-ins and hybrids will be sold worldwide, bringing the total electric and hybrid market to about 7 percent of all cars sold in 2020.¹⁰

U.S. monthly demand for gasoline increases beginning every March, and peaks in August. In 2010, weekly demand was at its lowest the week of Feb. 12 (8.63 million barrels/day) and at its highest the week of July 30 (9.41 million barrels/day).¹¹

¹ (U.S. Energy Information Administration, *Short-Term Energy Outlook*, released Jan. 11, 2011)

² (U.S. Energy Information Administration, *Short-Term Energy Outlook*, released Jan. 11, 2011)

³ (U.S. Energy Information Administration)

⁴ (U.S. Energy Information Administration, *Short-Term Energy Outlook*, released Jan. 11, 2011)

⁵ (U.S. Energy Information Administration, *Short-Term Energy Outlook*, released Jan. 11, 2011)

⁶ (U.S. Federal Highway Administration)

⁷ (U.S. Energy Information Administration)

⁸ (U.S. Energy Information Administration, *Short-Term Energy Outlook*, released Jan. 11, 2011)

⁹ (U.S. Energy Information Administration, *Short-Term Energy Outlook*, released Jan. 11, 2011)

¹⁰ (J.D. Power & Associates: "Drive Green 2020: More Hope Than Reality")

¹¹ (U.S. Energy Information Administration)



Gasoline Demand for 2010 (per Month)

Month	Gasoline Demand (million barrels/day)	Change from month prior
January	8.793	-2.4%
February	8.707 (low)	-0.97%
March	8.940	+2.7%
April	9.156	+2.4%
May	9.174	+0.2%
June	9.221	+0.5%
July	9.368	+1.6%
August	9.411 (high)	+0.5%
September	9.222	-2.0%
October	9.023	-2.2%
November	9.016	-0.0%
December	9.129	+1.2% ¹²

SUPPLY

U.S. oil production in 2010 was an estimated 5.51 million barrels per day and is expected to decrease to 5.49 million barrels per day in 2011 and 5.36 million barrels per day in 2012.¹³

In the U.S., ethanol accounted for 0.86 million barrels per day of the country's 19.13 million barrels per day of supply. Ethanol production will increase slightly to 0.91 million barrels per day in 2011 and 0.92 million barrels per day in 2012.¹⁴

U.S. Imports

The U.S. imported 11.97 million barrels per day of crude oil and finished petroleum products in 2010. Imports accounted for 62.6 percent of U.S. petroleum supply.¹⁵

The top five importers of petroleum (crude oil and finished products) to the United States in 2010 were:

- Canada (2.54 million barrels per day)
- Mexico (1.25 million barrels per day)
- Saudi Arabia (1.09 million barrels per day)
- Nigeria (1.06 million barrels per day)
- Venezuela (1.01 million barrels per day)¹⁶

¹² (U.S. Energy Information Administration, *Weekly Average U.S. Product Supplied of Finished Motor Gasoline*)

¹³ (U.S. Energy Information Administration, *Short-Term Energy Outlook*, released Jan. 11, 2011)

¹⁴ (U.S. Energy Information Administration, *Short-Term Energy Outlook*, released Jan. 11, 2011)

¹⁵ (American Petroleum Institute, *Jan.-Sept. 2010 average*)

¹⁶ (American Petroleum Institute, *Jan.-Sept. 2010 average*)

The United States imports more than half of its oil from non-OPEC countries: 42 percent of total imports came from OPEC; only 15 percent of total imports came from Persian Gulf countries.¹⁷

Stocks and Inventories

There are 7 to 8 billion barrels of oil tied up in worldwide stocks at any given time, from the wellhead to the consumer, filling tankers, pipelines, railcars, trucks and linking all of the markets.¹⁸

Holding inventory costs money — approximately \$1.50 a barrel per month for oil if a company owns the tank storage facility and \$4 per barrel per month if the storage is rented. For gasoline, the costs are approximately \$2 and \$6, or about 1 cent per gallon per month if the storage space is rented. Thus, companies try to manage their inventories as efficiently as possible.¹⁹

Strategic Petroleum Reserve

The U.S. Strategic Petroleum Reserve (SPR) is the largest stockpile of government-owned emergency crude oil in the world. It was established in 1975 in the aftermath of the 1973-74 oil embargo to provide emergency crude oil supplies for the U.S. The oil is stored in underground salt caverns in Texas and Louisiana — plus a planned expansion in Mississippi.²⁰

On December 27, 2009, the SPR completed its fill program to a record 726.6 million barrels, the amount it has in storage today. Its current storage capacity is 727 million barrels. Based on net petroleum estimates from 2009, this stockpile would provide 75 days of import protection.²¹

The maximum drawdown capability of the SPR is 4.4 million barrels per day. It would take 13 days from the time a presidential decision were made to tap the reserves for oil to enter the U.S. market.²²

¹⁷ (American Petroleum Institute, *Jan.-Sept. 2010 average*)

¹⁸ (U.S. Energy Information Administration)

¹⁹ (U.S. Energy Information Administration)

²⁰ (U.S. Department of Energy)

²¹ (U.S. Department of Energy)

²² (U.S. Department of Energy)



Electric Vehicle Charging

13,000 public chargers are expected to be in the ground by the end of 2011.²³

REFINING

The largest refinery in the United States is the ExxonMobil Baytown, Texas, facility, which processes 557,000 barrels of crude oil per day. However, in 2006, Royal Dutch Shell announced that it intended to make the Motiva refinery in Port Arthur, Texas, the largest in the United States. The company said it intended to increase capacity to 610,000 barrels per day by 2010, but has now pushed back the completion date until 2012.²⁴

Planned periodic shutdowns of refineries, called “turnarounds,” allow for the regular maintenance, overhaul, repair, inspection, and testing of plants and their process materials and equipment. They are scheduled at least 1 to 2 years in advance, and usually when demand for refined product is at its lowest level, typically early in the year. At this time, refineries also convert their “crackers” so that they can refine summer-blend fuel.²⁵

The length of a refinery turnaround is typically 1 to 4 weeks, depending on the unit and the amount of maintenance that needs to be done. The industry average is about four years between turnarounds for catalytic cracking units.²⁶

The total number of U.S. refineries has been significantly reduced since 1980. Approximately half of the U.S. refineries have closed since then; in 2009 there, there were 148 operational refineries in United States. The last major refinery built in the United States was in 1976.²⁷

Despite the precipitous drop in the number of refineries operating in the United States, domestic refining capacity has not declined by an equal percentage. Increases in facility size and improvements in

efficiencies have offset much of the lost physical capacity of the industry. In 1982 (the earliest data provided), the United States operate 301 refineries with a combined capacity of 17.9 million barrels of crude oil each calendar day. In 2010, there were 149 operable U.S. refineries with a combined capacity of 17.6 million barrels per calendar day.²⁸

DISTRIBUTION

U.S. Infrastructure

The U.S. petroleum distribution industry includes:

- 38 Jones Act vessels (U.S. flag ships that move products between U.S. ports)
- 3,300 coastal, Great Lakes and river tank barges
- 200,000 rail tank cars
- 1,400 petroleum product terminals
- 100,000 tanker trucks²⁹

Tankers

Shipping oil from Venezuela to the U.S. takes approximately 6-8 days (roundtrip); shipping oil from the Middle East to the United States takes between 40 and 45 days (roundtrip). During this journey, the price — and ownership — of the oil can change a number of times.³⁰

Crude oil from the Middle East is moved mainly by Very Large Crude Carriers (VLCCs) capable of delivering 2 million barrels per trip.³¹

Pipelines

The first oil pipeline in the United States was built in 1865, following the 1859 discovery of oil in Pennsylvania. Today, pipelines are the most important petroleum supply line in the United States for transporting crude oil, refined fuel and raw materials. Pipelines move nearly two-thirds (66 percent) of the ton-miles of oil transported annually. The rest is transported via water carriers (28 percent), trucks (4 percent) or rail (2 percent).³²

²³ (“Charged for Battle”: Jan. 3-9, 2011, Bloomberg BusinessWeek)

²⁴ (U.S. Energy Information Administration, published news reports)

²⁵ (American Petroleum Institute)

²⁶ (American Petroleum Institute)

²⁷ (U.S. Energy Information Administration)

²⁸ (U.S. Energy Information Administration)

²⁹ (National Petrochemical and Refiners Association)

³⁰ (American Petroleum Institute)

³¹ (U.S. Energy Information Administration)

³² (Association of Oil Pipe Lines)



Product pipelines, which range in size from eight inches to over 30 inches, transport more than 50 refined petroleum products such as: various grades of motor gasoline, home heating oil, diesel fuel, aviation fuel, jet fuels and kerosene.³³

Interstate pipelines deliver more than 540 billion gallons of petroleum each year, of which 59 percent is crude oil; the remaining is refined product. The cost to transport a barrel of refined gasoline from Houston to the New York harbor is about \$1, which equates to about 2.5 cents per gallon.³⁴

The Colonial Pipeline is the major product pipeline that stretches from Texas to New Jersey, transporting almost 40 different formulations of gasoline alone – different grades of each mandated type of gasoline, the requirements for which vary seasonally and regionally. Liquefied ethylene, propane, butane, and some petrochemical feedstocks are also transported through oil pipelines.³⁵

Product moves through pipelines at three to eight miles per hour (roughly walking pace) depending upon line size, pressure, and other factors such as the density and viscosity of the liquid being transported. At these rates, it takes from 14 to 22 days to move liquids from Houston to New York City.³⁶

There are approximately 200,000 miles of oil and refined product pipelines in the United States; they are in all 50 states.³⁷

TYPES OF FUEL SALES

Petroleum products may be sold at any of the following levels:

- Spot market – refers to the one-time sale of a quantity of product “on the spot,” in practice typically involving quantities in thousands of barrels at a convenient transfer point, such as a refinery, port, or pipeline junction. Spot prices

are commonly collected and published by a number of price reporting services.

- Terminal, or “rack” – sales of product by the truckload (typically about 8,000 to 9,000 gallons) at the loading rack of a product terminal, supplied from a refinery, pipeline, or port.
- Dealer tank wagon, or “DTW” – sales of a truckload or less of product, delivered into storage at a retail outlet.
- Retail – sales to the consumer, normally occurring at a service station, convenience store, or other retail outlet. (Larger consumers, such as commercial or government vehicle fleets, may buy directly from wholesalers in larger quantities.)³⁸

TAXES

The federal excise tax on gasoline is 18.4 cents per gallon and 24.4 cents per gallon for diesel fuel. Motor gasoline taxes averaged 48.1 cents per gallon in January 2011, including the 18.4 cents per gallon in federal taxes.³⁹

Diesel fuel taxes averaged 53.1 cents per gallon in January 2011, from a high of 76.0 cents per gallon in California to a low of 32.4 cents per gallon in Alaska.⁴⁰

The states with the highest gasoline taxes, as of January 2011, are:

- California (66.1 cents per gallon)
- New York (65.6 cents per gallon)
- Hawaii (64.2 cents per gallon)

The states with the lowest gasoline taxes, as of January 2011, are:

- Alaska (26.4 cents per gallon)
- Wyoming (32.4 cents per gallon)
- New Jersey (32.9 cents per gallon)⁴¹

³³ (Association of Oil Pipe Lines)

³⁴ (Association of Oil Pipe Lines)

³⁵ (Association of Oil Pipe Lines)

³⁶ (Association of Oil Pipe Lines)

³⁷ (Association of Oil Pipe Lines)

³⁸ (“Gasoline Price Pass-through,” published January 2003 by the U.S. Energy Information Administration)

³⁹ (American Petroleum Institute)

⁴⁰ (American Petroleum Institute)

⁴¹ (American Petroleum Institute)



RETAIL

Prices

With 42 gallons in each barrel of oil, a \$1 change in the price of a barrel of oil roughly translates to a 2.4-cent change per gallon at the pump.

U.S. retail (regular) gasoline prices averaged \$2.78 in 2010, and are expected to average \$3.17 per gallon in 2011.

On-road diesel fuel averaged \$2.99 per gallon in 2010 and is expected to increase to \$3.40 per gallon in 2011.⁴²

Estimates showed that the price “pass-through” from the spot to the retail market is complete within two-and-one-half months, with about 50 percent of the change occurring within two weeks and 80 percent within four weeks.

The average speed of pass-through is significantly more rapid for diesel fuel, possibly reflecting fewer middlemen, on average, transacting for each gallon of diesel fuel as opposed to gasoline.⁴³

Price volatility has been extreme the past nine years. Crude oil prices have fluctuated between a low of \$18.28 in November 2001 to a high of \$147.27 per barrel in July 2008.

Gasoline prices fluctuated between a low of \$1.06 in December 2001 to a high of \$4.11 in July 2008.⁴⁴

Since final implementation of the Clean Air Act Amendments in 2000, the seasonal transition to summer-blend fuel has helped gasoline prices significantly before they reached their peak, from a low of a 20-cent increase in 2003 to a high of a \$1.13 increase in 2008.

The average annual increase since 2000 is 52 cents.

Year	Date	Price	Peak Date	Price	Increase
2010	Feb. 1	\$2.661	May 10	\$2.905	\$0.244
2009	Feb. 2	\$1.892	June 22	\$2.691	\$0.799
2008	Feb. 4	\$2.978	July 21	\$4.104	\$1.126
2007	Feb. 5	\$2.191	May 21	\$3.218	\$1.027
2006	Feb. 6	\$2.342	May 15	\$2.947	\$0.605
2005	Feb. 7	\$1.909	April 11	\$2.280	\$0.371
2004	Feb. 2	\$1.616	May 24	\$2.064	\$0.448
2003	Feb. 3	\$1.527	Mar. 17	\$1.728	\$0.201
2002	Feb. 4	\$1.116	Apr. 8	\$1.413	\$0.297
2001	Feb. 5	\$1.443	May 14	\$1.713	\$0.270
2000	Feb. 7	\$1.325	June 19	\$1.681	\$0.356 ⁴⁵

Branding

While half of the more than 117,000 convenience stores selling gasoline are “branded” outlets selling a specific major oil company's brand of fuel, three (ExxonMobil, BP and Conoco Phillips) of the five major integrated oil companies are in the process of selling all of their retail assets, leaving only Shell and ChevronTexaco owning stores. NACS estimates that today less than 2 percent of all convenience stores are owned by major oil companies, and once the sale of these stores is complete, less than one percent will be owned by the major integrated oil companies.

The major oil companies own very few retail fueling outlets, but many stations do have contracts to sell a specific brand of fuel.

The top branded retail outlets by company in 2009 were:

- Shell Oil Products U.S. (14,459 sites)
- BP America Inc. – including ARCO (11,500 sites)
- ExxonMobil (10,216 sites)
- Chevron Products Co (9,591 sites)
- ConocoPhillips (8,500 sites)
- (Note: These figures include all gasoline retailers, not just convenience stores)⁴⁶

⁴² (U.S. Energy Information Administration, *Short-Term Energy Outlook*, released Jan. 11, 2011)

⁴³ (“Gasoline Price Pass-through,” published January 2003 by the U.S. Energy Information Administration)

⁴⁴ (AAA/U.S. Energy Information Administration data)

⁴⁵ (U.S. Energy Information Administration)

⁴⁶ (National Petroleum News’ MarketFacts 2010)



Fueling Sites

There were 159,006 total retail fueling sites in the United States in 2010. This is a steep and steady decline since 1994, when the station count topped 202,800 sites.⁴⁷

As of December 31, 2010, there were 117,297 convenience stores selling motor fuels in the United States. This represents 80 percent of the 146,341 convenience stores in the country.⁴⁸

Convenience stores sell approximately 80 percent of the fuels purchased in the United States.⁴⁹

Most convenience stores selling motor fuels are one-store operations. 58 percent (67,504 stores) of the country's 117,297 convenience stores selling fuels are one-store operations. By contrast, less than 2 percent are owned and operated by the integrated oil companies, of which only two (ChevronTexaco and Shell) still are committed to selling fuel at the retail level.⁵⁰

In addition to convenience stores and gas stations, there are a number of big-box retailers that sell fuel, including Walmart, Costco and a number of grocery chains. As of July 2010, hypermarket companies in the United States operated more than 4,800 "hypermarket" sites (big-box retailers) and sold 16.4 billion gallons of gasoline. These sites sell approximately 262,000 gallons per month, about twice the volume of a traditional fuel retailer. Overall, the fuel site growth for hypermarkets has slowed down, but recently developed alliance and newly formed partnerships yield an expected growth potential to more than 11,000 retail locations.⁵¹

Margins

The gross margin (or markup) on gasoline in 2010 was 16.3 cents/gallon, or 5.9 percent.⁵²

In 2008, retailers experienced record gross margins — 18.1 cents per gallon. This is because retailers generally

make more money when prices fall and often lose money when they rise. In 2008, prices rose about \$1.00 per gallon (from \$3.109 per gallon on January 7 to \$4.114 on July 7), and then fell \$2.50 per gallon (\$4.114 per gallon on July 7 to \$1.613 on December 29).⁵³

Sales

Motor fuels sales in convenience stores totaled \$328.7 billion in 2009.⁵⁴ Motor fuels sales accounted for more than two-thirds of the convenience store industry's sales in 2009 (68.4 percent). However, because of low margins, motor fuels sales contributed less than one-third of total store gross margins dollars (27.3 percent).⁵⁵

The average convenience store in 2009 sold 121,000 gallons of motor fuels per month, which translates into approximately 4,000 gallons per day.⁵⁶

Sales of premium and mid-grade have declined over the past decade as consumers trade down octane levels when prices increase. This leads to some consumers not returning to higher octanes as prices decline. The sale of mid-grade and premium has declined from 30.2 percent of gasoline gallons purchased in 1998 to 15.9 percent by 2006, before bouncing back slightly in the ensuing years as more vehicles require higher octanes.

Percent of Total Gasoline Gallons Sold

Year	Regular	Mid-Grade	Premium
2009	83.2	11.7	5.2
2008	82.9	10.4	6.7
2007	81.5	11.0	7.5
2006	84.1	9.3	6.6
2005	81.2	10.7	7.7
2004	81.4	10.2	7.2
2003	78.5	12.1	9.4
2002	77.3	13.0	9.7
2001	79.2	12.5	8.3
2000	78.1	13.1	8.8
1999	73.3	14.4	12.4
1998	69.8	15.4	14.8 ⁵⁷

⁴⁷ (National Petroleum News' MarketFacts 2010)

⁴⁸ (NACS/Nielsen TDLinx)

⁴⁹ (NACS estimate)

⁵⁰ (NACS/Nielsen TDLinx)

⁵¹ (Energy Analysts International)

⁵² (OPIS)

⁵³ (OPIS, U.S. Energy Information Administration)

⁵⁴ (NACS data)

⁵⁵ (NACS data)

⁵⁶ (NACS data)



In 2009, gasoline theft cost the U.S. convenience store industry \$89 million, a steady decline from the record \$300 million reported in 2005. Gas theft cost the industry \$109 million in 2008 and \$134 million in 2007. The average loss per store in 2009 was \$761, and that figure is conservative, since it only includes reported thefts and is based on all convenience stores that sell gasoline, including those in states that mandate full-serve (New Jersey and Oregon) and stores in areas where prepay is the norm. Gasoline theft has declined since September 2005 (post-Hurricane Katrina when gasoline rapidly increased and topped \$3 per gallon) when more stations began mandating prepay for fuel.⁵⁸

Credit Card Fees

Factoring in all gasoline sales in 2009 transactions — whether the customer paid by cash, check or by either debit or credit card — credit and debit card fees averaged 4.7 cents per gallon.⁵⁹

In 2009, convenience store industry credit card fees (\$7.4 billion) were again more than convenience store industry profits (\$4.8 billion).⁶⁰

Between 60 and 70 percent of all transactions at the pump are by plastic — either debit or credit card — but many markets see credit usage at 80 percent or more, with some stores seeing 100 percent payment by plastic.⁶¹

GLOSSARY OF TERMS

Balkanization: The end-result of the patchwork quilt of unique fuels required throughout the United States. Unique fuel regulations have created gasoline zones across the U.S. where only certain fuels can be sold. This “Balkanization” of the fuel supply has made it more expensive and difficult to produce and deliver gasoline.

Boutique fuels: Unique gasoline blends required for a specific region or metropolitan area of the U.S. Prior to 1990, six types of gasoline were sold in the U.S. Today, there are approximately 20 unique gasoline

formulations manufactured for, and sold within, specific markets throughout the United States that are mandated by federal, state, and local governments. These “boutique” fuels are not interchangeable with fuel blends sold in other areas of the country. Federal law limits the number of boutique fuels authorized for use in the nation, but does not include state biofuel mandates in its definition of “boutique fuels.”

Consequently, states have proceeded to require the use of certain biofuel products. These mandates pose similar challenges to the motor fuel supply and distribution system as other types of regulated “boutique fuels.”

Branded retail outlet: A retailer that sells a motor fuel with the name of a major oil company, but is not necessarily owned (and is usually not owned) by that oil company. Branded retailers benefit from marketing and advertising support, consumer brand loyalty, and priority access to gasoline supplies. Lately, a new benefit has emerged, with branded stations participating in loyalty programs with grocery chains, in particular. In return, the branded marketer pays a surcharge for the use of the brand and the benefits that come with it.

E10, E15, E85, etc.: Denotes the percentage of ethanol in a fuel blend — i.e., E10 is 90 percent gasoline and 10 percent ethanol. E10 is approved for use in all new U.S. automobiles. In October 2010, the U.S. Environmental Protection Agency approved the use of E15 in vehicles in the fleet of 2007 or later, and in January 2010 extended that to include vehicles made since 2001. However, a number of issues — including retailers’ concerns over liability and demand — may limit the growth of these higher-blend sales.

Federal Reformulated Gasoline: Also known as RFG. The 1990 Clean Air Act required the nation’s most polluted metropolitan areas to sell a special blend of gasoline during summer months in order to reduce the emissions of ozone forming volatile organic compounds (VOCs) and toxic air pollutants. The regulations require specific fuel content levels for oxygen, benzene and aromatics and set performance standards for nitrogen oxides, VOCs and toxics.

⁵⁷ (NACS data)

⁵⁸ (NACS data)

⁵⁹ (NACS data)

⁶⁰ (NACS data)

⁶¹ (NACS 2009 Consumer Fuels Report, member surveys)



Fungible: Interchangeable. The U.S. gasoline system was designed to facilitate the efficient flow of gasoline to all regions of the nation, allowing the same gasoline formulation to be sold in all markets. The system is no longer fungible, with approximately 20 unique gasoline formulations required in specific markets throughout the United States.

OPEC: The Organization of Petroleum Exporting Countries. OPEC is an international organization of 11 developing countries — from Africa, Asia, the Middle East, and Latin America — that are heavily reliant on oil revenues as their main source of income. OPEC's members — Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates and Venezuela — collectively supply about 40 percent of the world's oil output, and possess more than three-quarters of the world's total proven crude oil reserves. Twice a year, or more frequently if required, the oil and energy ministers of OPEC member countries meet to decide on its output level, and consider whether any action to adjust output is necessary in the light of recent and anticipated oil market developments.

PADD: Petroleum Administration for Defense Districts. The U.S. Department of Energy divides the United States into five regions for planning purposes. The result is a geographic aggregation of the 50 states and the District of Columbia into five Districts, each operating essentially as its own market. The five districts are: PADD I (East Coast, PADD II (Midwest), PADD III (Gulf Coast), PADD IV (Rocky Mountain) and PADD V (West Coast).



(Graphic courtesy of Association of Oil Pipe Lines)

Pass-through: The time from which wholesale price changes fully reach consumers. Wholesale gasoline price increases — or decreases — paid by retailers are not immediately passed on to consumers, but are spread over a period of time.

A large portion of the price change is passed through immediately, with the rest spread over a period of time that could be as long as eight weeks. Pass-throughs help minimize the price volatility of gasoline.

Refinery: Where crude oil is refined into a specific blend of gasoline or other fuels (such as diesel, kerosene, etc.) or for other oil-based applications. There are currently 148 operable refineries in the U.S. — less than half the number 20 years ago. In addition, production capacity has decreased from 18.6 to 17.6 million barrels per day since 1981. No major new refinery has been built in the United States since 1976.

Replacement costs: The cost to acquire the next shipment of fuel. This price is almost always different than the cost of the gas that retailers have in their tanks. Because of the enormous volume of fuel sold — a typical store sells more than 120,000 gallons of gas a month — retailers must price their fuel based on their estimated cost of the next delivery. Even slight wholesale price variations can increase a retailer's replacement cost by hundreds — or even thousands — of dollars.

The importance of replacement costs is particularly acute for smaller businesses, which have less cash on hand to meet payments.

Retailer: Refers to convenience stores that sell motor fuels. As of Dec. 31, 2010, a total of 117,297 convenience stores were selling motor fuels in the U.S. (80 percent of country's 146,341 convenience stores). These fuels retailers are also referred to as "petroleum marketers."

Spot market: This market is usually comprised made up of motor fuel that has not been pre-allocated to the integrated or branded outlets. Retailers and other fuel distributors purchase fuel at terminals, or "racks," where costs fluctuate based on current prices.



Summer-fuel blends: Several state and local governments have developed fuel regulations to control for the formation of smog during summer months. These generally require that gasoline sold during the summer have a lower Reid vapor pressure (RVP), which measures the gasoline's potential to emit vapors, which contribute to the formation of smog.

Tight supplies: Describes a situation in which demand for gasoline — or crude oil — exceeds the supply

available, and prices rise based on this supply/demand imbalance. Also known as “market shorts” or “upsets.”

Ultra Low Sulfur Diesel (ULSD): ULSD is a clean-burning diesel fuel that is defined by the United States Environmental Protection Agency (EPA) to have a maximum sulfur content of 15 parts per million (ppm). It was phased into use between 2006 and 2010.



It took two decades from Karl Benz's 1885 invention of the first gasoline-powered automobile (which had only three wheels) for the first gas station to open. In the ensuing 100-plus years there have been a number of developments that have helped shape the petroleum retailing industry to what it is today.

1905: In St. Louis, Automobile Gasoline Co., a subsidiary of Shell of California, opens what is believed to be the first gas station. Some other accounts suggest that the first gas station was opened by SOCAL in Seattle in 1907. At these early stations, shopkeepers fill a five-gallon can from behind the store and bring it to the customer's car to fill it.

1908: While there are already approximately 300,000 automobiles on the road, the introduction of the first affordable Model T leads to a rapid growth in automobile sales within several years.

1911: The U.S. Supreme Court declares John D. Rockefeller's Standard Oil Trust to be an "unreasonable" monopoly. The trust, which controlled much of the production, transport, refining and retailing of petroleum products in the United States, is broken up into a number of distinct companies, including:

- Standard Oil of Ohio (Sohio), now part of BP
- Standard Oil of Indiana (Stanolind), renamed Amoco, now part of BP
- Standard Oil of New York (Socony), merged with Vacuum, renamed Mobil, now part of ExxonMobil
- Standard Oil of New Jersey (Esso), renamed Exxon, now part of ExxonMobil
- Standard Oil of California (Socal), renamed Chevron, now part of ChevronTexaco
- Atlantic and Richfield, merged to form Atlantic Richfield (Arco), now part of BP (Atlantic operations were spun off and bought by Sunoco)
- Standard Oil of Kentucky (Kyso) was acquired by Standard Oil of California, now part of ChevronTexaco
- Continental Oil Company (Conoco), now part of ConocoPhillips

1913: Gulf Refining Co. opens in Pittsburgh what is believed to be the nation's first drive-up service station. On its first day it sells 30 gallons of gasoline at 27 cents per gallon. This is also the first architect-designed station and the first to distribute free road maps.

1916: The first canopy is introduced, as Standard Oil of Ohio unveils a prefabricated canopy prototype.

1927: The Southland Ice Company introduces the first convenience store in May in Dallas. "Uncle Johnny" Jefferson Green, who ran the Southland Ice Dock in Oak Cliff, realized that customers sometimes needed to buy things such as bread, milk and eggs after the local grocery stores were closed. Unlike the local grocery stores, his store was already open 16 hours a day, seven days a week, so he decided to stock a few of those staples in addition to items he was already offering.

Late 1920s: By the end of the decade, 24-hour service stations already are in operation, serving the needs of, among others, the commercial trucking industry. The first 24-hour convenience store didn't open until 1962.

1932: Congress enacts the first excise tax on gasoline, a one-cent-per-gallon tax, with the proceeds going into the general fund. Since 1997, the federal tax on gasoline has been 18.4 cents per gallon, with the bulk of revenues going to the highway account. Virtually every state already had its own additional gasoline tax at this time; the first state gasoline taxes go back to the 1910s.

1947: Frank Ulrich opens the first modern self-serve gas station, at the corner of Jilson and Atlantic in Los Angeles. (The 20-store Hoosier Petroleum Co. tried self-serve in 1930 but the state fire marshal stopped it, calling it a fire hazard.) With the slogan "Save 5 cents, serve yourself, why pay more?" Ulrich's station sells more than 500,000 gallons its first month. A number of other independent stations begin to offer self-serve, primarily in California, the Southwest and the Southeast, but the total number of stations offering self-serve remain less than 3,000 until the early 1970s. By 1973, self-serve was permitted in 42 states. The 1973 energy crisis helped spur additional consumer demand



for self-service, which is now available in 48 states. (New Jersey and Oregon still require full-service operations – New Jersey’s law was enacted in 1949; Oregon’s in 1951.)

1950: Frank McNamara and Ralph Schneider introduce the concept of a credit card with their Diners Club Card. In 1958, American Express and BankAmericard are introduced. Today, an estimated two-thirds of all gasoline purchases at convenience stores are paid by plastic.

1960: OPEC – the Organization of Petroleum Exporting Countries – is founded by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. The five founding members were later joined by Qatar (1961), Indonesia (1962), Socialist Peoples Libyan Arab Jamahiriya (1962), United Arab Emirates (1967), Algeria (1969), and Nigeria (1971). Ecuador (1973-1992) and Gabon (1975-1994) also were OPEC members.

1961: The National Association of Convenience Stores is founded to give the industry a much-needed voice. At the time, total industry sales were an estimated \$480 million and very few stores sold fuels; in 2009 industry sales were \$511 billion. By 1971, only 6.8 percent of all convenience stores sold motor fuels; today, more than 80 percent of convenience stores sell fuel, and U.S. convenience stores sell an estimated 80 percent of all the motor fuels purchased in the country.

1973: The U.S. Environmental Protection Agency (EPA) issues regulations calling for the incremental reduction of tetraethyl lead (TEL) in gasoline. TEL had helped reduce engine knock and spurred the way for the development of high-power, high-compression engines. Starting with the 1975 model year, U.S. automakers respond by equipping new cars with pollution-reducing catalytic converters designed to run only on unleaded fuel.

1973: OPEC announces an oil embargo against countries (including the United States) that supported Israel during the October 1973 Yom Kippur War. Arab nations cut production by 5 million barrels per day, but increased production in other countries adds 1 million barrels of day back into the system. Still, the net loss of 4 million barrels a day represents 7 percent of the free

world production and causes oil prices to shoot up from \$3.01 to \$11.65 per barrel by December. In January 1974, President Nixon tells Americans that “the American people cannot afford to pay such prices (to address concerns over \$1/gallon gasoline), and I can assure you that we will not have to pay for them.” The combination of short supply and price controls initiated by President Nixon to stem inflation lead to the closing of thousands of stations. By March 1974, the embargo ends and the shortage abates.

1974: A national speed limit of 55 miles per hour is enacted (some states are later permitted to increase the limit to 65 MPH on rural interstates). Ten years later, Sammy Hagar’s song, “I Can’t Drive 55” is a hit. In 1995, President Clinton signs a bill lifting federal control over speed limits. Today some states have speed limits of as much as 75 MPH.

1976: The last major grassroots refinery in the United States is built in Garyville, Louisiana. It begins operations in 1977.

1977: The Strategic Petroleum Reserve, the world’s largest supply of emergency crude oil, is established. As of late December 2009, it held 726.6 million barrels of oil in underground salt caverns in Texas and Louisiana. With a capacity of 727 million barrels, it is considered to be “full.”

1979-1981: In February 1979, the revolution in Iran begins, and in November the U.S. Embassy in Iran is stormed and hostages are taken. Midway through the year, Saudi Arabia cuts production and the price of crude oil soars. The Iran/Iraq war also reduces production in both countries. The world price of crude oil jumps from around \$14 per barrel at the beginning of 1979 to more than \$35 per barrel in January 1981 before stabilizing. In 1979, the average gas price tops \$1 per gallon for the first time. Gasoline prices peak in March 1981 at \$1.42 per gallon.

1981: The U.S. Government responds to the oil crisis by removing price and allocation controls on the oil industry. For the first time since the early 1970s, market forces replaced regulatory programs and domestic crude oil prices were allowed to rise to a market-



clearing level. Decontrol also set the stage for the relaxation of export restrictions on petroleum products.

1986: Pay-at-the-pump is introduced in the United States (it was introduced in Europe in 1982), with dispensers featuring a built-in credit/debit card reader system. Only 13 percent of convenience stores have the technology by 1994, but 80 percent of convenience stores are using the technology by 2002, and virtually all stores do today. In 2004, Sheetz is the first to use touch-screen kiosks at the pump where customers can also order in-store foodservice items that they pick up after fueling.

1988: Underground storage tank (UST) regulations are passed, requiring all operators to upgrade their storage tank systems with spill-prevention and leak-detection equipment within a decade. While convenience store owners invest millions of dollars to ensure that their underground storage tanks are compliant with current regulations, many local, state and federal government owners and operators, as well as some tribes and commercial fleets, continue to dispense fuel from non-compliant tanks.

1990: Congress passes the Clean Air Act Amendments of 1990, which contain six provisions to be implemented by the U.S. Environmental Protection Agency (EPA) in stages between November 1, 1992, and January 1, 2000. Among the provisions is one for the Reformulated Gasoline Program, requiring the most polluted metropolitan areas, representing more than one-fifth of the nation's population, to sell a reformulated gasoline; other areas may "opt in" to the program by applying to the EPA. This program introduces into widespread use the additives MTBE and ethanol to satisfy the oxygen content requirement.

1990-1991: In August 1990, Iraq invades Kuwait. The United Nations approves an embargo on all crude oil and products originating from either Iraq or Kuwait, creating concern over supply shortages that leads to a run-up in crude oil prices. Within a month, the price of crude oil climbs from about \$16 per barrel to more than \$28 per barrel. The price escalates to a high of about \$36 per barrel in September 1990. The Gulf War begins in January 1991, but by then oil prices had already stabilized.

Early 1990s: Hypermarkets selling fuel begin to make inroads in the United States as H-E-B is among the stores selling fuel in the Southwest. Interestingly, the concept was first introduced to the United States in the 1960s when a number of supermarket chains and retailers like Sears tried to sell fuel, but it did not generate sufficient consumer interest. Wal-Mart is the largest hypermarket selling fuel, with about 1,100 locations offering fueling. Today there are approximately 4,500 hypermarket stores selling fuel, representing an estimated 14 billion gallons sold each year.

1996: Wallis Companies, a convenience store chain based in Cuba, MO, serves as the test market for the introduction of Speedpass. In tests, Speedpass reduced the average three- to four-minute fueling time by 30 seconds. Within five years, more than 5 million customers were considered regular Speedpass users at Mobil-, Esso- or Exxon-branded stations.

1999: Consolidation of the industry begins with the merger of British Petroleum and Amoco, and, later that year, Exxon and Mobil. In 2001, Chevron and Texaco merged, and Conoco and Phillips merged in 2002.

2001: Terrorists strike the United States on September 11. The market reacts to a rapid decline in demand for crude oil and petroleum products prompted by reduced air traffic. Crude oil prices drop from nearly \$28 per barrel on September 7 to \$17.50 on November 15. Gasoline prices, likewise, drop from \$1.52 per gallon on September 10 to \$1.06 December 17, with many areas of the country seeing gasoline prices under \$1.00 per gallon.

2002-03: A general strike in Venezuela beginning on December 2, 2002, deprives the United States of a critical source of imported crude oil and refined petroleum product for several months. (Venezuela supplied approximately 8 percent of total U.S. petroleum products.) Crude oil prices increase from a pre-strike level of \$26.83 to a mid-February 2003 level of \$35.50 per barrel. Domestic crude oil stocks drop to their lowest level since October 1975. Meanwhile, gasoline prices increase from \$1.36 per gallon for the week the strike begins to \$1.73 per gallon by mid-March 2003.



2004: In May, the average gasoline price tops \$2 per gallon for the first time.

2005: Hurricane Katrina makes landfall on August 29 and significantly disrupts the country's petroleum infrastructure. Oil prices hit a record \$70.85 per barrel on August 30. Wholesale retail gasoline prices rise sharply, and the average retail price of gas jumps from \$2.61 per gallon on August 29 to \$3.07 on September 5, the first time gasoline prices top \$3 per gallon. By year's end, the average gasoline price is back below \$2.20 per gallon.

2006: Gasoline prices begin to take off in April with the rapid elimination of MTBE as a fuel additive, and diesel fuel is affected by the transition to Ultra Low Sulfur Diesel. Crude oil prices again rise, hitting a record \$78.40 per barrel on July 14. Also, more nontraditional fuel retailers begin selling fuel, including a drug store chain in upstate New York and The Home Depot in at several locations in the Southeast. While originally looking at opening hundreds of fueling stores, today The Home Depot today has six Fuel Centers.

2007: Both gasoline and oil prices again hit new highs. Gasoline prices peak at \$3.21 per gallon on May 28. Meanwhile, oil prices climb later that summer topping \$80 per barrel for the first time on September 13. They continue to increase for the rest of the year, flirting with \$100 (futures on Nymex peak at \$99.29 on November 21) before retreating.

2008: Oil prices briefly top \$100 per barrel in midday trading on January 3 (\$100.09), but within three weeks dropped to the mid \$80s. Oil and gasoline prices continue to climb throughout the spring and summer.

In June, the average gasoline price tops \$4 per gallon for the first time. Oil peaks at \$147.27 a barrel on July 11. On July 17, gasoline (\$4.11) and diesel (\$4.85) hit record highs. But just as many analysts predict even higher prices, the economic meltdown occurs and prices plummet. Oil drops more than \$100 a barrel and gas prices bottom out at \$1.61 a gallon by December. In June, ExxonMobil announces it will sell its retail assets, and ConocoPhillips makes a similar announcement in August, joining BP, which in 2007 announced it was getting out of retail. This leaves ChevronTexaco and Shell as the only integrated oil companies still planning to sell motor fuels at the retail level.

2009: The fallout from the recession and the economic meltdown continues, as global demand for oil decreases for the second straight year – the first two-year decline since 1983. U.S. demand decreases for all petroleum products, except for gasoline, which sees a small increase of 0.1 percent.

2010: The BP-owned Deepwater Horizon drilling rig explodes in the Gulf of Mexico on April 20 and is not capped until July 15. During that time, an estimated 4.9 million barrels of oil spill in the Gulf, causing significant environmental problems and leading to protests targeting BP-branded (but not owned) stations. In October, the U.S. Environmental Protection Agency issues a partial waiver to allow E15 (15 percent ethanol) fuel in model 2007 and later vehicles. The Nissan Leaf is introduced and is the first mass-produced electric vehicle to hit the market. In December, gasoline prices top \$3 per gallon, the highest prices ever reached for the month.

NACS Consumer Fuels Report: Consumer Price Sensitivity

NACS ANNUAL FUELS REPORT 2011



Overview

Fuels retailers know that consumers are price sensitive. But to what degree? NACS sought to quantify price sensitivity by surveying consumers about their behavior related to gas prices. While there may be a difference between what consumers say and what they do, the results clearly confirm that consumers will change their behavior to save just a few cents a gallon, validating the common retailer strategy to fight for customers by trimming margins (the average gross margin on gasoline in 2010 was 16.3 cents per gallon, before expenses). Below are excerpts from surveys conducted by the

National Association of Convenience Stores (NACS) in early 2009, 2008 and 2007. To receive a full report contact NACS Vice President of Communications Jeff Lenard at jlennard@nacsonline.com, (703) 518-4272.

Methodology

NACS commissioned Penn, Schoen and Berland Associates LLC to conduct 1,100 telephone interviews with adult Americans. The margin of error for the entire sample is +/- 2.8 at the 95% confidence interval and higher for subgroups.

Consumer preference

Price is clearly the most important factor in why a consumer selects a fueling location. More than two-thirds of all consumers surveyed said it is the most important factor.

Q: When buying gas, which of the following factors is most important to you?

	2009	2008	2007
Price	70	73	66
Location of store/station	19	16	22
Brand	9	10	9
Other	1	1	1
Don't know/refused	1	1	1
All of the above	1	Not Asked	Not Asked

About two-thirds of consumers pay for their gas with plastic. A total of 62 percent of consumers said they paid by plastic in 2009. And even higher percentage (65 percent) said they paid by plastic in 2008, when gasoline prices topped \$4 per gallon.

Q: How do you typically pay for gas? Do you typically pay with...

	2009	2008	2007
Credit card	37	37	44
Cash	35	38	34
Debit card	27	23	21
Don't know/refused	1	1	2



How do consumers react to an increase in gas prices?

Consumers change their purchase behavior when gas prices increase. The sometimes “hedge” to anticipate price increases, they displace the pain by increasingly putting the purchase on plastic and they shop around more.

Q: When gas prices rise, would you say you are more likely to...

	2009	2008	2007
Spend the same amount of money but buy less gas	38	39	29
Buy the same amount of gas and spend more money	44	59	69
Buy more gas per visit in anticipation of higher prices tomorrow	11	Not Asked	Not Asked
Don't know/refused	7	3	2

Q: When gas prices rise are you...

	2009	2008	2007
Much more likely to use a debit or credit card	47	36	47
Somewhat more likely to use a debit or credit card	12	15	10
Somewhat more likely to pay with cash	5	8	6
Much more likely to pay with cash	28	31	29
Don't know/refused	8	10	8

Q: When gas prices rise are you ...

	2009	2008
More likely to shop around for the lowest price	68	40
Less likely to shop around for the lowest price	6	32
Neither	25	28
Don't know/refused	1	1

How much of a discount do we have to offer consumers to get them to change their behavior?

More than half (52 percent) of all consumers say they would alter the way they pay for gas to save 3 cents per gallon. Forty-five percent would take a left-hand turn across a busy intersection to save 3 cents per gallon. More than one-quarter (26 percent) would drive 10 minutes out of their way to save 3 cents per gallon. (Such a move, factoring in a 20-minute roundtrip and travelling 45 MPH in a vehicle getting 30 MPG, would burn 0.5 gallons of gas. At \$3.00/gallon, this means the consumer would use \$1.50 of gas and would need to fill up with at least 50 gallons to break even for this behavior.)



Q: IF YOU TYPICALLY USE CREDIT, DEBIT (64% in 2009, 61% in 2008): Pay with cash inside instead of using a debit or credit card. (Note: Totals are not cumulative but actual responses)

	2009	2008
1 cent per gallon of gas save...instead of using a debit card	38	31
2 cents per gallon of gas	7	8
3 cents per gallon of gas	7	10
4 cents per gallon of gas	6	6
5 cents per gallon of gas	14	13
10 cents per gallon of gas	10	13
25 cents per gallon of gas	5	7
I would never take this action	5	4
Don't know/refused	8	7

Q: Take a left hand turn across a busy street? (Note: Totals are not cumulative but actual responses)

	2009	2008
1 cent per gallon of gas save...instead of using a debit card	26	32
2 cents per gallon of gas	8	11
3 cents per gallon of gas	11	8
4 cents per gallon of gas	6	6
5 cents per gallon of gas	15	11
10 cents per gallon of gas	13	10
25 cents per gallon of gas	5	5
I would never take this action	6	7
Don't know / refused	10	11

Q: Drive 10 minutes out of your way? (Note: Totals are not cumulative but actual responses)

	2009	2008
1 cent per gallon of gas save...instead of using a debit card	9	15
2 cents per gallon of gas	4	5
3 cents per gallon of gas	13	9
4 cents per gallon of gas	7	7
5 cents per gallon of gas	18	14
10 cents per gallon of gas	19	22
25 cents per gallon of gas	13	13
I would never take this action	14	10
Don't know / refused	3	4

Challenges Remain Before E15 Usage Is Widespread

NACS ANNUAL FUELS REPORT



The Environmental Protection Agency's announcements that retailers are authorized to sell E15 may not have any near-term effect because there are still a number of significant retailer concerns related to liability, upgrade costs and demand.

The federal government requires the use of 36 billion gallons of renewable fuels in the U.S. market by 2022; virtually all of the renewable fuels available today in the United States is corn-based ethanol.

Until late 2010, fuels retailers were only authorized to sell fuel containing up to 10 percent ethanol (E10), and most vehicle warranties (except for flexible fuel vehicles) authorize fuels that contain no more than 10 percent ethanol. However, if every gallon of gasoline were blended with the legal maximum of 10 percent ethanol, the market would only be able to accommodate about 14 billion gallons of the mandate – and fall 22 billion gallons short of the mandate.

In an effort to shrink the gap, October 2010, the U.S. Environmental Protection Agency (EPA) issued a partial waiver that allows the use of fuel containing 15 percent ethanol (E15) for vehicles manufactured in model year 2007 and later. In January 2011, EPA expanded authorized use of E15 to include model year 2001 and later vehicles. It is estimated that 60 percent of the vehicles on the road today are affected by these waivers.

However, the National Association of Convenience Stores (NACS) has told retailers that they should exercise extreme caution when considering whether to sell E15.

The EPA announcements will not have immediate effect on the availability of E15 and may not have any measurable effect in the near term future, because there are still a number of significant concerns that retailers must consider related to liability, upgrade costs and demand.

Retailers Are Still Exposed to Liability

EPA's decision to allow the use of E15 in certain vehicles does nothing to remove retailers' obligations to ensure

that all of their equipment is lawfully certified to store and sell this product.

Federal law requires that motor fuels retailers must use equipment that has been listed by a nationally recognized testing laboratory, such as Underwriters Laboratories (UL), as compatible with the fuel that they store and dispense. Prior to March 2010, there were no dispensers in the country certified by UL as compatible with gasoline containing more than E10. This means that any retailer selling a mix of ethanol higher than E10 (including E85) through non-certified equipment is violating regulations of the U.S. Occupational Safety and Health Administration, tank insurance policies and bank loan covenants. In addition, the use of non-listed equipment could expose retailers to claims of gross negligence, which immediately triggers exemplary damages. A retailer that sells product through equipment not certified/listed could be found guilty of negligence per se and face business-ending litigation. It does not matter if the local fire marshal approved the fuel for the station; the retailer would still be violating the law.

Further, limiting E15 use to only vehicles manufactured since 2001 could expose retailers to significant liability risk if a consumer were to fuel a non-approved engine with E15. This includes vehicles made prior to 2001, as well as motorcycles, boats and gasoline-powered engines used in yard equipment like chainsaws, lawn mowers and leaf blowers.

For example, if a customer pulls up the pump in a 2000 Lexus and fuels with E15 (intentionally or not) that retailer may face serious consequences. The driver may sue the retailer for potential damage to his vehicle, or the EPA or an environmental group may sue the retailer for allowing the misfueling to occur in violation of the Clean Air Act – fines can be as much as \$37,500 per day.

Retailer concerns over liability from intentional misfueling are grounded in history. When regulations phased out lead from gasoline in the early 1980s, consumers went to extraordinary measures to bypass



the fill pipe-nozzle restrictions that were designed to prevent misfueling. The EPA then punished retailers for not physically preventing self-service consumers from introducing leaded gasoline into unleaded-only vehicles. Although the EPA has indicated it does not plan to pursue similar enforcement against retailers, the Clean Air Act includes a private right of action empowering citizens –including groups that are opposed to E15 – to sue retailers for such misfuelings.

To help mitigate concerns about misfueling, the EPA proposed a requirement that E15 dispensers be appropriately labeled according to specific EPA standards to ensure consumers are provided adequate notice regarding the fuel they are purchasing. However, as of February 2011 the label has not been finalized. Once it is, without additional legislation, a retailer could still be held liable for misfueling. This includes being fined or sued under the Clean Air Act for not physically preventing the consumer from misusing the fuel, as well as potentially being sued and held liable for any equipment damage, warranty voiding or personal injury that could occur as a result of misuse.

Finally, there are concerns about E15's compliance with various federal, state and local air control regulations. For example, conventional gasoline blended with 10 percent ethanol is allowed to exceed volatility control standards (measured in terms of Reid Vapor Pressure and expressed in pounds per square inch) by one pound. Federal law does not extend that one-pound waiver to fuels containing more than 10 percent ethanol, and that means retailers who choose to sell E15 are potentially liable for violating air quality control regulations.

Costs to Upgrade Equipment to Sell E15 Can Be Considerable

If equipment is not compatible with E15, there are considerable costs involved with replacing dispensers as well as underground equipment – including underground storage tanks, pipes from the tanks to the dispensers and the materials used to connect them such as the gaskets, glues and seals.

The vast majority of retail stations do not have equipment that is legally certified and listed by Underwriters Laboratories to store and sell anything

greater than E10. Retailers are not able to get their existing equipment certified, even if the same equipment they are using has been certified for other retailers. Instead, they must purchase new equipment that has been certified. The cost of a new fuel dispenser is approximately \$20,000. A typical store has four dispensers, so the cost could be as much as \$80,000 to upgrade the dispensers alone. (With 117,297 convenience stores selling motor fuels, the cost to the industry to upgrade dispensers alone would be around \$10 billion.) There are additional costs; if the retailer is uncertain of the compatibility of any equipment underground that generates costs of substantially higher levels. To replace underground equipment involves permitting and substantial costs would likely increase expenses ten-fold.

Is the Demand There?

Even if a retailer is able to accept the risks that accompany selling E15 and has obtained legal equipment to sell it, that retailer would also have to evaluate the real demand for the product.

Just because an estimated 60 percent of vehicles are allowed by the federal government to use E15 does not mean anybody will do so. In fact, because the automobile industry is not embracing the fuel or adjusting their warranties or recommendations for this fuel type, the potential for actual demand remains small. If E15 were less expensive in the market (which is possible with an increased tax credit for E15 vs. E10), that could boost interest but unless the automobile industry gets behind E15, it would be an uphill struggle.

Most retailers have two underground storage tanks (UST) for their fuel – one for premium gasoline and one for regular gasoline. (Mid-grade gasoline is typically blended underground from these two tanks.) A retailer looking to sell E15 would either have to add another UST or abandon the sale of mid-grade and premium gasoline, which have a known sales volume.

Nationwide, mid-grade and premium gasoline accounts for approximately 17 percent of all gasoline sales – or about one in every six customers. Meanwhile, potential demand and sales of E15 are unknown and somewhat unpredictable.



Next Steps

Several other laws and conditions have to be amended to allow E15 in certain markets. Some limitations include:

- Federal reformulated gasoline (RFG) limits ethanol to 10 percent. The EPA has issued proposals to revise this provision, but that will take time and a lot of regulatory work. RFG represents more than one-third of the market.
- The branded suppliers of fuels (i.e., the refiners) will not allow their branded outlets to sell more than E10 unless product liability reform is enacted to protect them from defective product liability claims. Branded outlets are about 50 percent of retail facilities.
- Any market that has clean air controls on the evaporative tendency of fuel (expressed as pounds per square inch of Reid vapor pressure, or RVP) will limit ethanol. Fuel with 9 to 10 percent ethanol can exceed the RVP limit by 1 pound per square inch. Beyond 10 percent, this 1 PSI waiver is gone. This must be extended for these markets to allow E15.
- California RFG does not allow more than E10, and there are no plans at this time to extend it.

The EPA has placed retailers in a very precarious position. By issuing these decisions before all testing has been completed, the EPA has bifurcated the engine market, creating a scenario in which misfueling could be rampant and retailers will be forced to pay the bill.

Further, by restricting the engines that are authorized to use E15, the EPA has implied that E15 may cause performance, emissions or safety issues in other engines, thereby increasing the potential liability to retailers of E15.

Finally, by issuing this decision before other laws and regulations could be amended to allow for the lawful sale of E15, the EPA has authorized a fuel that could trigger widespread violations and liability for retailers who decide to act on this decision.

NACS is working with members of Congress to re-introduce legislation this Congress (H.R. 5778) that will enable retailers to have their existing equipment evaluated and re-certified as compatible with new fuels, thus potentially removing the need to replace their equipment.

The legislation will also provide some protection in the event a consumer ignores the labels on the retailers' dispensers and fuels a non-approved engine with E15.

NACS will also support legislation that protects all parties in the supply chain from broad-based product liability.

Retailers should not be held liable for selling a fuel approved in accordance with today's laws if, in the future, a court decides that fuel should not have been approved and is defective.