

The U.S. Petroleum Industry: Statistics & Definitions

NACS ANNUAL FUELS REPORT 2011



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.