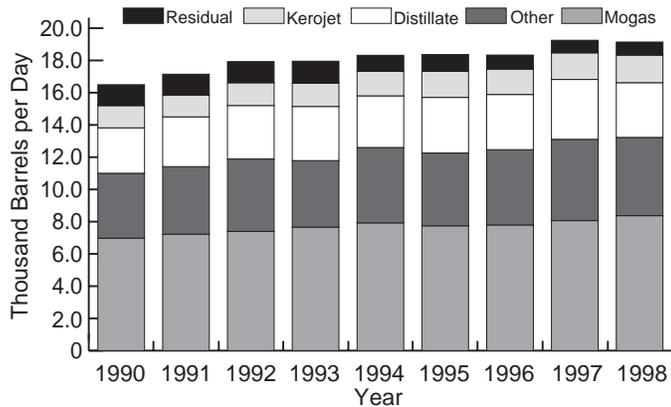


Highlights

Data collected by the National Oceanic Atmospheric Administration (NOAA) during the month show that temperatures in the U.S. remained warmer than usual during December. On average, temperatures were over 12 percent warmer than normal and more than 9 percent warmer than this time last year.¹ The latest economic figures for December show that the U.S. economy remained strong, setting a record 93 consecutive months of growth.² While the strong economy has led to high levels of demand for refined petroleum products the moderate weather has left a glut of heating fuel stocks.

During the year, total demand for refined petroleum products (measured as products supplied) averaged 18.7 million barrels per day. This reflects the highest daily average since the record was established back in 1978 at 18.8 million barrels. For December 1998³, total demand for refined petroleum products averaged 19.1 million barrels per day (Table & Figure H1), slightly less than this time last year.

Figure H1. Total Demand, 1990-Current, Comparison in December for Petroleum Products



Source: Energy Information Administration, *Petroleum Supply Annual*, DOE/EIA-0340 (various issues), and *Petroleum Supply Monthly*, DOE/EIA-0109 (various issues).

December and 1998 highlights include:

- **Demand** for finished motor gasoline averaged 8.4 million barrels per day, a record December high. For the year, demand also set a new record at an average of 8.2 million barrels per day. Finished motor gasoline **production** set records not only for the month, but also for the year at averages of 8.3 million barrels per day and 8.0 million barrels per day, respectively. **Imports** of finished motor gasoline were at their highest average for December since 1985, averaging 323 thousand barrels per day and **stocks** ended the month totaling 167.9 million barrels.

¹“Heating Degree Day Data Monthly Summary, Monthly Data for December 1998”, *National Oceanic Atmospheric Administration*, accessible via the Internet at <http://nic.fb4.noaa.gov>.

²“U.S. Job Market Booms, Clinton Hails Economy”, *Reuters*, January 8, 1999, accessible via the Internet at <http://dailynews.yahoo.com>.

³December 1998 data are monthly-from-weekly estimates based on the Energy Information Administration’s Weekly Petroleum Supply Reporting System.

- Distillate fuel oil **demand** averaged 3.4 million barrels per day during the month compared to 3.7 million barrels per day last December. **Production** of distillate fuel oil averaged 3.5 million barrels per day, only 100 thousand barrels per day below the record for the month. For the year, both distillate demand and production set record high averages at 3.4 million barrels per day. **Imports** during the month reached the highest average in over a year at 234 thousand barrels per day. Distillate fuel oil **stocks** ended the year 15.5 million barrels higher than last December at 153.9 million barrels.
- **Demand** for residual fuel oil averaged 810 thousand barrels per day for the month and 819 thousand barrels per day for the year; both were above last year’s respective means. Production of residual fuel oil during 1998 was at its highest average in three years at 762 thousand barrels per day. Exports of residual fuel during the year averaged 141 thousand barrels per day, the highest average since 1992. Ending the month at 43.9 million barrels, **stocks** of residual fuel oil were 3.4 million barrels above this time last year.
- **Demand** for kerosene-type jet fuel jumped to an average of 1.7 million barrels per day in December, **an all-time high**. **Production** of kerosene-type jet fuel, averaging 1.6 million barrels per day, **set a record high for the month that is also one of the highest levels ever**. Total jet fuel **imports**, which includes naphtha and kerosene-type, soared to their highest average for the month since 1994.
- Propane inventories ended the month at 65.4 million barrels, **the highest December total in 17 years**.
- Domestic **production** of crude oil averaged 6.4 million barrels per day for the month and averaged 6.3 million barrels per day for the year. These are the lowest averages for both December and for a year since 1954. The downward trend in crude oil field production in Alaska continued for both the month and year. **Imports** of crude oil set a record high average for the month at 8.7 million barrels per day. Over the last 12 months, imports of crude oil have **increased 4 percent from the prior high** to an average of 8.6 million barrels per day. Net imports of crude oil (gross imports minus exports) were at a record pace in December, averaging 8.6 million barrels per day. Crude oil **stocks**, excluding the Strategic Petroleum Reserve (SPR), ended the year at the highest December level since 1994 at 321.8 million barrels.

Table H1. Petroleum Supply Summary
(Million Barrels per Day, Except Where Noted)

| Category | 1998 | | | 1997 | January - December | |
|--|--------------------|----------|-------------------------|----------|--------------------|------|
| | Estimated December | November | Difference ^a | December | 1998 | 1997 |
| Products Supplied | 19.1 | 18.5 | 0.6 | 19.3 | 18.7 | 18.6 |
| Finished Motor Gasoline..... | 8.4 | 8.1 | 0.2 | 8.1 | 8.2 | 8.0 |
| Distillate Fuel Oil..... | 3.4 | 3.3 | 0.1 | 3.7 | 3.4 | 3.4 |
| Residual Fuel Oil | 0.8 | 0.8 | (s) | 0.8 | 0.8 | 0.8 |
| Jet Fuel..... | 1.7 | 1.6 | 0.1 | 1.6 | 1.6 | 1.6 |
| Other Petroleum Products ^b | 4.9 | 4.7 | 0.2 | 5.0 | 4.7 | 4.8 |
| Crude Oil Inputs | 15.0 | 14.8 | 0.2 | 14.9 | 14.9 | 14.7 |
| Operating Utilization Rate (%) | 96.2 | 97.5 | -1.3 | 98.5 | 96.7 | 96.5 |
| Imports | 10.6 | 10.6 | (s) | 9.3 | 10.4 | 10.2 |
| Crude Oil | 8.7 | 8.8 | -0.1 | 7.7 | 8.6 | 8.2 |
| Strategic Petroleum Reserve | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other..... | 8.7 | 8.8 | -0.1 | 7.7 | 8.6 | 8.2 |
| Products | 1.9 | 1.8 | 0.1 | 1.7 | 1.8 | 1.9 |
| Finished Motor Gasoline..... | 0.3 | 0.2 | 0.1 | 0.3 | 0.3 | 0.3 |
| Distillate Fuel Oil..... | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 |
| Residual Fuel Oil | 0.3 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 |
| Jet Fuel..... | 0.1 | 0.1 | (s) | 0.1 | 0.1 | 0.1 |
| Other Petroleum Products ^c | 1.0 | 1.1 | -0.2 | 0.9 | 1.1 | 1.1 |
| Exports | 1.0 | 0.8 | 0.2 | 1.2 | 0.9 | 1.0 |
| Crude Oil | 0.1 | 0.1 | (s) | 0.1 | 0.1 | 0.1 |
| Products | 0.9 | 0.7 | 0.2 | 1.1 | 0.8 | 0.9 |
| Total Net Imports | 9.5 | 9.8 | -0.2 | 8.1 | 9.5 | 9.2 |
| Stock Change^d | -0.5 | 0.7 | -1.2 | -1.3 | 0.3 | 0.1 |
| Crude Oil | -0.3 | 0.3 | -0.6 | -0.6 | 0.1 | 0.1 |
| Products | -0.2 | 0.4 | -0.6 | -0.7 | 0.2 | 0.1 |
| Total Stocks | 1,628 | 1,674 | -47 | 1,560 | — | — |
| (million barrels) | | | | | | |
| Crude Oil | 890 | 906 | -16 | 868 | — | — |
| Strategic Petroleum Reserve ^e | 569 | 569 | (s) | 563 | — | — |
| Other..... | 322 | 338 | -16 | 305 | — | — |
| Products | 737 | 768 | -31 | 692 | — | — |
| Finished Motor Gasoline..... | 168 | 167 | (s) | 166 | — | — |
| Distillate Fuel Oil..... | 154 | 155 | -1 | 138 | — | — |
| Residual Fuel Oil | 44 | 42 | 2 | 40 | — | — |
| Jet Fuel..... | 45 | 46 | -1 | 44 | — | — |
| Other Petroleum Products ^c | 327 | 359 | -32 | 302 | — | — |

^a Difference is equal to volume for current month minus volume for previous month.

^b Includes crude oil product supplied, natural gas liquids, liquefied refinery gases (LRG's), other liquids, and all finished petroleum products except finished motor gasoline, distillate fuel oil, residual fuel oil, and jet fuel.

^c Includes natural gas liquids, liquefied refinery gases (LRG's), other liquids, and all finished petroleum products except motor gasoline, jet fuel, distillate fuel oil, and residual fuel oil.

^d A negative number indicates a decrease in stocks and a positive number indicates an increase.

^e Crude oil stocks in the Strategic Petroleum Reserve include non-U.S. stocks held under foreign or commercial storage agreements.

(s) = Less than 0.05 million barrels per day, or less than 0.05 percent, or less than 0.5 million barrels.

Note: Totals may not equal sum of components due to independent rounding.

Source: Energy Information Administration (EIA), 1996, *Petroleum Supply Annual*, Volume II; appropriate issues of the *Petroleum Supply Monthly* and the *Weekly Petroleum Status Report*.

Data for the current month are preliminary estimates, based on weekly submissions. For an explanation of estimation methodology and accuracy, see Appendix A of *Weekly Petroleum Status Report* and the article, "Accuracy of Petroleum Supply Data", published in the December 1997, *Petroleum Supply Monthly*.

Table H2. U.S. Refinery Inputs, Capacities¹ and Utilization Rates: 1997-1998
(Thousand Barrels per Day, Except Where Noted)

| Item | Jan | Feb | Mar | April | May | June | July | Aug | Sept | Oct | Nov | Dec |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1997 | | | | | | | | | | | | |
| Gross Refinery Inputs | 13,771 | 13,601 | 14,156 | 14,465 | 15,232 | 15,300 | 15,190 | 15,465 | 15,533 | 15,127 | 14,939 | 15,188 |
| Operating Refinery Capacity ² | 15,168 | 15,205 | 15,233 | 15,229 | 15,449 | 15,461 | 15,462 | 15,452 | 15,464 | 15,464 | 15,452 | 15,424 |
| Idle Capacity ³ | 284 | 247 | 399 | 387 | 167 | 177 | 177 | 189 | 139 | 139 | 150 | 204 |
| Idle Three Months or Less | 197 | 160 | 220 | 180 | 0 | 10 | 10 | 22 | 12 | 12 | 12 | 66 |
| Idle More than Three Months | 87 | 87 | 179 | 207 | 167 | 167 | 167 | 167 | 127 | 127 | 139 | 139 |
| Operable Refinery Capacity | 15,452 | 15,452 | 15,632 | 15,616 | 15,616 | 15,638 | 15,639 | 15,641 | 15,602 | 15,602 | 15,602 | 15,628 |
| Utilization Rate (percent) | | | | | | | | | | | | |
| Operating Capacity | 90.8 | 89.5 | 92.9 | 95.0 | 98.6 | 99.0 | 98.2 | 100.1 | 100.4 | 97.8 | 96.7 | 98.5 |
| Operable Capacity | 89.1 | 88.0 | 90.6 | 92.6 | 97.5 | 97.8 | 97.1 | 98.9 | 99.6 | 97.0 | 95.7 | 97.2 |
| 1998 | | | | | | | | | | | | |
| Gross Refinery Inputs | 14,655 | 14,340 | 14,851 | 15,170 | 15,305 | 15,651 | 15,704 | 15,806 | 15,041 | 14,241 | 15,089 | |
| Operating Refinery Capacity ² | 15,538 | 15,555 | 15,547 | 15,587 | 15,617 | 15,687 | 15,695 | 15,689 | 15,703 | 15,346 | 15,481 | |
| Idle Capacity ³ | 167 | 158 | 184 | 144 | 144 | 135 | 135 | 143 | 129 | 537 | 449 | |
| Idle Three Months or Less | 41 | 20 | 46 | 0 | 0 | 0 | 0 | 14 | 0 | 420 | 369 | |
| Idle More than Three Months | 127 | 138 | 138 | 144 | 144 | 135 | 135 | 129 | 129 | 117 | 80 | |
| Operable Refinery Capacity | 15,705 | 15,713 | 15,732 | 15,732 | 15,761 | 15,822 | 15,830 | 15,832 | 15,832 | 15,883 | 15,930 | |
| Utilization Rate (percent) | | | | | | | | | | | | |
| Operating Capacity | 94.3 | 92.2 | 95.5 | 97.3 | 98.0 | 99.8 | 100.1 | 100.7 | 95.8 | 92.8 | 97.5 | |
| Operable Capacity | 93.3 | 91.3 | 94.4 | 96.4 | 97.1 | 98.9 | 99.2 | 99.8 | 95.0 | 89.7 | 94.7 | |

¹Capacities are on a calendar day basis.

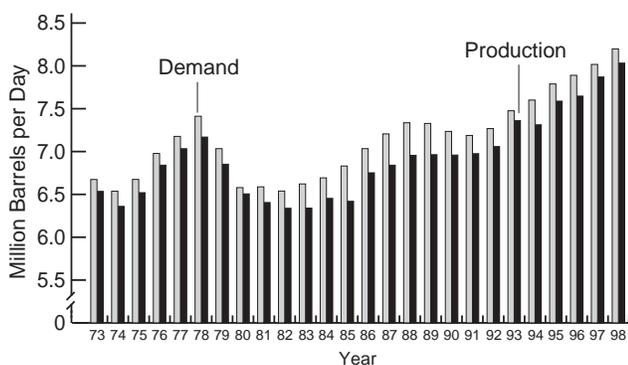
²Operating capacity equals the operable capacity less the total idle capacity.

³ Idle capacity is the component of operable capacity that is not in operation and not under active repair, but is capable of being placed in operation within 30 days; and capacity not in operation but is under active repair that can be completed within 90 days.

Note: Totals may not equal sum of components due to independent rounding.

Sources: Energy Information Administration (EIA), 1997, *Petroleum Supply Annual*, Volume 2, Table 16; EIA, *Petroleum Supply Monthly*, 1998 data issue, Table 28.

Figure H2. Finished Motor Gasoline, Year-to-Date December Comparisons, 1973-1998



Source: Energy Information Administration, *Petroleum Supply Annual*, DOE/EIA-0340 (various issues), and *Petroleum Supply Monthly*, DOE/EIA-0109 (various issues).

Motor Gasoline

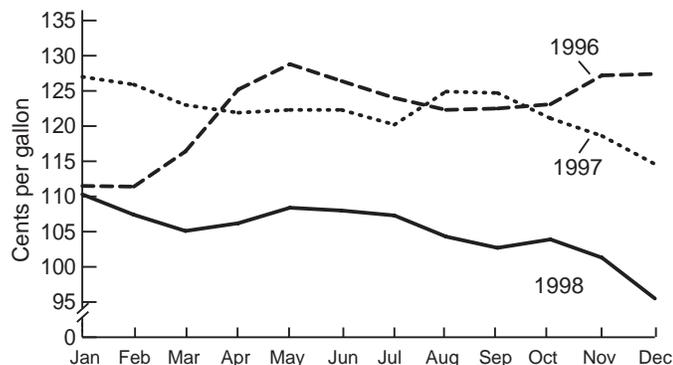
For the first time in years, the retail price for conventional motor gasoline (Figure H3) dropped below a dollar per gallon in December, averaging only \$0.955 a gallon (including taxes).⁴

Demand for finished motor gasoline set a **record high for the month** at an average of 8.4 million barrels per day. Demand for finished motor gasoline has **grown this year at a rate of over two percent** from last year, averaging 8.2 million barrels per day (Figure H2). The continuing popularity of sport utility vehicles and trucks is one factor contributing to an increased demand for motor gasoline this year and maybe in the future.⁵ Continued low gas prices offer no incentive for drivers to look for smaller engines or more efficient vehicles, helping drive demand to new highs. **Production** of finished motor gasoline **set record high averages for the month and the year** at 8.3 million barrels per day and 8.0 million barrels per day, respectively. Despite the high production level for finished motor gasoline, **imports**, averaging 323 thousand barrels per day, reached the highest daily average for December since 1985. Imports of finished motor gasoline for the year were slightly below last year's average, **marking their second year-to-year decline**. **Exports** of finished motor gasoline were also down for the year to an average of 123 thousand barrels per day. Despite the record demand for finished motor gasoline, the combination of record production and high imports left **stocks** totaling 167.9 million barrels, an **increase of 1.5 million barrels compared to last December**.

⁴"Table 16. U.S. Retail Motor Gasoline and On-Highway Diesel Fuel Prices, 1997 to Present", *Weekly Petroleum Status Report*, January 1, 1999, p. 27.

⁵"Crude Fritters Away Gains, Could Stage Further Move Down This Week", *The Oil Daily*, December 14, 1998, p. 2 & 3.

Figure H3. Prices for Conventional Motor Gasoline (including taxes), 1996-current



Source: Energy Information Administration, *Weekly Petroleum Status Report*, DOE/EIA-0208 (various issues).

Distillate Fuel Oil

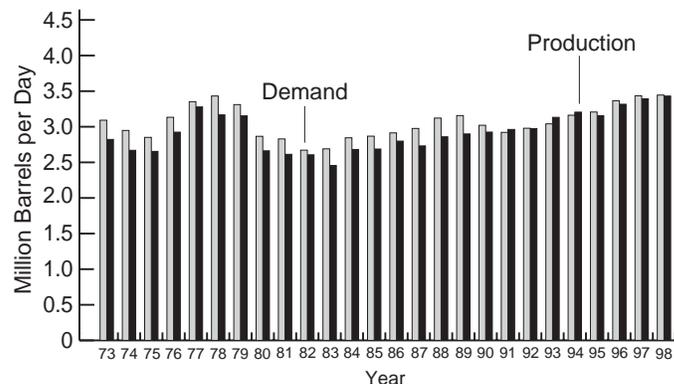
With weather warmer than normal over much of the country, demand for high-sulfur distillates, or heating fuel, has been lackluster at best. Distillate fuel oil **demand** averaged 3.4 million barrels per day in December, down 0.3 million barrels per day from last year. Demand for distillate fuel oil did, however, set a record high average for the year, led by a vigorous economy which meant increases in fuel requirements for the commercial transportation industry. U.S. railroads had a banner year, setting several records despite problems early in the year.⁶ Over the last 12 months, demand for distillates managed to surpass last year's level to an average of 3.4 million barrels per day. **Production** of distillate fuel oil in December averaged 3.5 million barrels per day, 0.1 million barrels per day below the December record (Figure H4). For the year, production of distillate fuel oil set a record high average at 3.4 million barrels per day. Higher domestic production has shifted the balance of dependence on foreign refined products; imports of distillates during 1998 dropped to a two-year low with an average of 195 thousand barrels per day. Distillate fuel oil **imports** averaged 234 thousand barrels per day in December. This year, exports of distillate fuel oil dropped to the lowest average since 1990 at 127 thousand barrels per day.

Stocks of distillate fuel oils ended the year totaling 153.9 million barrels, **an increase of 15.5 million barrels compared to this time last year**. Of these stocks, high-sulfur distillates accounted for 79.9 million barrels. High-sulfur distillates, typically considered heating fuels, ended the year **nearly 14 percent higher than a year ago**.

Residual Fuel Oil

After reaching the lowest annual level in decades during 1997, demand for residual fuel oil recovered in 1998 to grow at a rate of 3 percent. Demand for residual fuel oil averaged 819 thousand barrels per day in 1998 (Figure H5). Demand from electric utilities is estimated to have increased by more than 80 percent

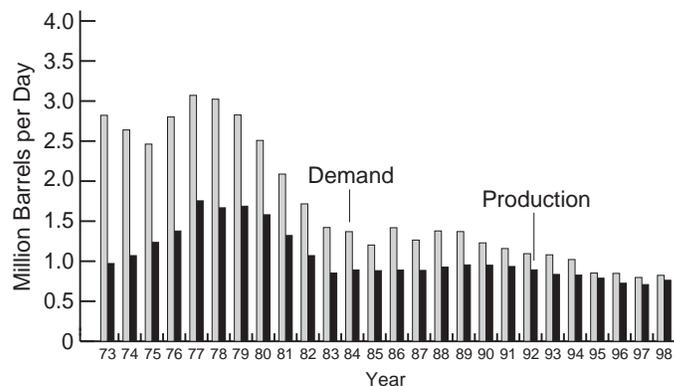
Figure H4. Distillate, Year-to-Date December Comparisons, 1973-1998



Source: Energy Information Administration, *Petroleum Supply Annual*, DOE/EIA-0340 (various issues), and *Petroleum Supply Monthly*, DOE/EIA-0109 (various issues).

from a comparable period last year.⁷ The reason for this change has been, in part, low crude oil prices which have kept the price of residual fuel low and more competitive than natural gas thereby the economical choice for utilities with spare oil burning capacity.⁸ **Demand** for residual fuel in December averaged 810 thousand barrels per day, an increase of 29 thousand barrels per day from this time last year. **Production** of residual fuel oil in December averaged 817 thousand barrels per day, about even with last year. The average for the year was 762 thousand barrels per day, the highest level in three years. Residual fuel oil **imports** were up both for the month and the year, averaging 255 thousand barrels per day and 211 thousand barrels per day, respectively. Exports of residual fuel oil have been exceptionally strong this year as Mexican demand has increased to supplement the loss of hydro power due to dryer weather.⁹ This year, **exports** of residual fuel oil reached **the highest daily average since 1992** at 141 thousand barrels. Residual fuel oil **stocks** were up 3.4 million barrels compared to the end of December last year totaling 43.9 million barrels.

Figure H5. Residual, Year-to-Date December Comparisons, 1973-1998



Source: Energy Information Administration, *Petroleum Supply Annual*, DOE/EIA-0340 (various issues), and *Petroleum Supply Monthly*, DOE/EIA-0109 (various issues).

⁶“U.S. Railroads Set Traffic Record”, *Association of American Railroads*, January 7, 1999, accessible via the Internet at <http://www.aar.org>.

⁷“Short-Term Energy Outlook, December 1998 Update”, *Energy Information Administration*, December 7, 1998.

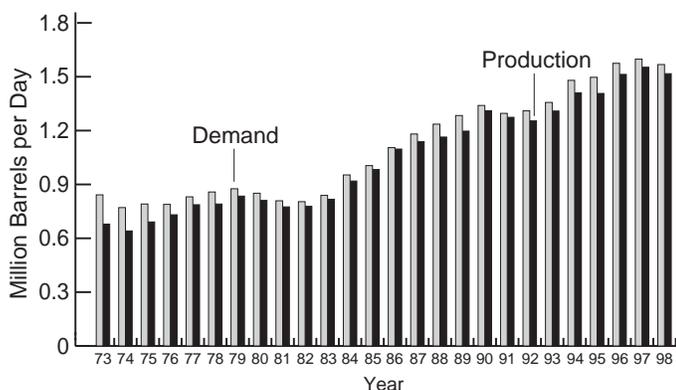
⁸“Group Warns of Roadblocks as Residual Fuel Oil Enjoys Banner Year”, *The Oil Daily*, December 11, 1998, p. 4.

⁹“Highlights”, *Petroleum Supply Monthly*, July 1998, p. xviii.

Kerosene-Type Jet Fuel

Kerosene-type jet fuel **demand** soared in December to an average of 1.7 million barrels per day establishing a **new all-time high**. For the year, kerosene-type jet fuel demand has averaged 1.6 million barrels per day, slightly below last year's record high average (Figure H6). **Production** reached not only a **record high for the month, but one of the highest monthly levels ever** with an average of 1.6 million barrels per day. **Imports** of kerosene and naphtha-type jet fuel were exceptionally strong in December, averaging 113 thousand barrels per day, **the highest average for the month since 1994**. **Exports** of total jet fuel for the year declined to an average of 26 thousand barrels per day, their lowest average in three years. Kerosene-type jet fuel **stocks** ended the year totaling 44.6 million barrels.

Figure H6. Kerojet, Year-to-Date December Comparisons, 1973-1998

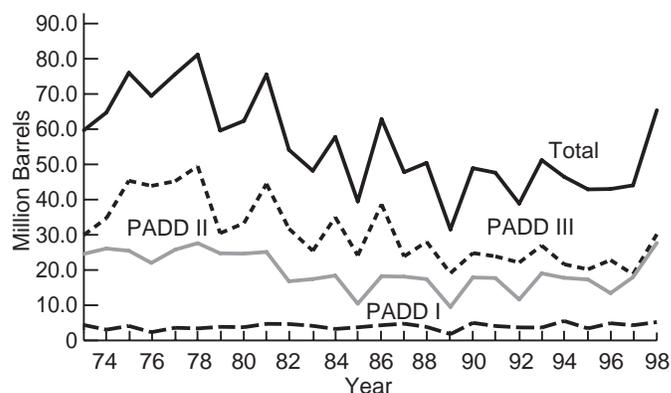


Source: Energy Information Administration, *Petroleum Supply Annual*, DOE/EIA-0340 (various issues), and *Petroleum Supply Monthly*, DOE/EIA-0109 (various issues).

Propane

End-of-month inventories remained substantially above the normal seasonal range for December, due mostly to high stock levels in the Midwest and Gulf Coast. Propane inventories ended the year at 65.4 million barrels, 21.3 million barrels higher than last December (Figure H7). Propane stocks declined 7.4 million barrels per day during the month as arctic temperatures pushed their way down across some of the U.S. near the end of the month. December's propane stock draw was in-line with the 5-year December average of 7.2 million barrels. The largest decline during the month was in the Midwest which dropped to 27.7 million barrels. Stocks in the Gulf Coast followed, totaling 30.2 million barrels. Propane inventories along the East Coast, which can be considered nearly full, ended the month at 5.2 million barrels. With temperatures above normal and stocks at such high levels, average residential propane prices remain below this time last year.¹⁰

Figure H7. Propane Stocks, Year-to-Year December Comparisons, 1973-1998



Source: Energy Information Administration, *Petroleum Supply Annual*, DOE/EIA-0340 (various issues), and *Petroleum Supply Monthly*, DOE/EIA-0109 (various issues).

Crude Oil

Global overproduction of crude oil has depressed crude oil prices to recent historical lows, in fact, the average OPEC "basket" price for 1998 dropped to the lowest average since 1986 when the "basket" was established.¹¹ Sustained low crude oil prices have led many domestic independent producers to either shut in or idle their wells this year.¹² Domestic crude oil **production** finished the year at an average **similar to the mid-1950's**, averaging 6.4 million barrels per day for the month and 6.3 million barrels per day for the year. Low crude oil prices have also been blamed for the year-on-year decline in Alaskan crude oil production and output in the near future is expected to continue this trend as drilling activity is forecast to be sharply scaled back.¹³ Field production of Alaskan crude oil averaged **about 100 thousand barrels per day less than last December** at 1.2 million barrels per day. Alaskan field production of crude oil for the year declined to an average of 1.2 million barrels, the lowest average since the Trans-Alaska Pipeline System was brought online. While domestic production continues to decline, imports of crude oil have been breaking record after record this year. Imports of crude oil came into the U.S. at an average of 8.6 million barrels per day during 1998, a **four percent increase over the prior high**. **Imports** of crude oil averaged 8.7 million barrels per day in December, a **record for the month**. **Exports** of crude oil increased this year to a daily average of 111 thousand barrels, the highest average since 1991. One measure of U.S. reliance on foreign crude oil is net imports, which in December were **over 1.0 million barrels per day higher than the prior record for the month**. Net imports of crude oil averaged 8.6 million barrels per day during December. For the year, net imports also set a record at an average of 8.5 million barrels per day (Figure H8).

Not including crude oil stocks held in the SPR, December's month-end total is the highest level for the month since 1994. Crude oil stocks, excluding the SPR, ended the month at 321.8 million barrels. Total crude oil stocks including the SPR which includes non-U.S. stocks held under foreign or **commercial storage agreements** ended the month at 890.4 million barrels.

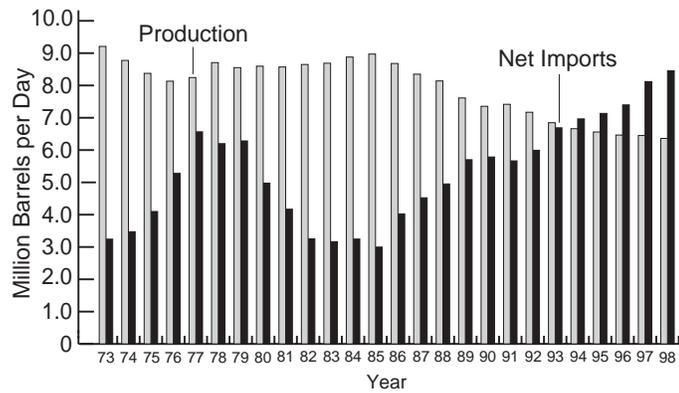
¹⁰"Propane Watch Summary", *Energy Information Administration*, January 6, 1999, via e-mail.

¹¹"OPEC FACT SHEET", *Energy Information Administration*, January 1999, accessible via the Internet at <http://www.eia.doe.gov>.

¹²"Trade Groups Pursue Strategies to Provide Hope for Beleaguered Independent Producers", *The Oil Daily*, December 9, 1998, p. 3 & 4.

¹³"Alaska drillers to slash rig count for 1999", *Platt's Oilgram News*, December 11, 1998, p. 4.

Figure H8. Crude Oil, Year-to-Date December Comparisons for Production and Net Imports



Source: Energy Information Administration, *Petroleum Supply Annual*, DOE/EIA-0340 (various issues), and *Petroleum Supply Monthly*, DOE/EIA-0109 (various issues).

Refinery Operations

Crude oil **inputs** averaged 15.0 million barrels per day, **the highest average for the month since the record set back in 1978**. Refinery inputs of crude oil this year have been averaging 14.9 million barrels per day, **surpassing the prior record set in 1978**. In an effort to capitalize on low crude oil prices, utilization rates have been kept high by refiners regardless of the already large stock overhangs.¹⁴ December's estimated refinery **operable utilization rate** (gross input divided by operable capacity) averaged 95.4 percent versus 97.2 percent a year ago. Over the last months, there have been many changes in the refining industry. Several refineries were shut down or idled and many of the majors were consolidated by mega-mergers or joint ventures. Among those joining forces were: Marathon and Ashland, Exxon and Mobil, Total Petroleum and Fina, Shell, Texaco and Saudi Aramco formed two joint ventures, then UDS and Phillips, and, finally, BP and Amoco agreed to a merger.

¹⁴"Refiners Due Overhang Hangover in New Year", *The Oil Daily*, December 23, 1998, p. 1 & 6.