Oilwatch monthly

Your coverage on the latest worldwide oil production developments

From this month onwards Indonesia is no longer included as a member of OPEC, as the country left OPEC at the end of 2008.

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ASPO Netherlands

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The Oil Drum
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

The size and type of oil stocks

Inventories of crude oil and oil products continue to increase as demand is dropping and cuts from the OPEC cartel are not enacted quickly enough to stabilize the market. Since August 2008 OECD stocks have continued to increase nearly every month. Reaching 966 million barrels for crude oil and 1409 million barrels for oil products in December 2008. More recent figures for the United States confirm further stock build-ups and traders continue to react bearishly on the news of oil stocks. Keeping oil prices at their level of 40 dollars per barrel.

Interestingly enough stocks are not really as high as they seem when compared to historical figures. Since 2005 crude oil stocks have hovered around 950 million barrels and oil product stocks around 1400 million barrels in OECD. During the majority of 2006 and 2007 crude oil and product stocks were significantly higher than they are today, and at the same time the price of crude oil prices kept on rising.

In the absolute sense then, stocks are not abnormally high and should, based on empirical data, not lead to any downward price pressure. Were it not that demand is now a little lower at around 84.5 million barrels per day in the 1st quarter of 2009, compared to 85.7 million barrels per day in 2008, and 86 million barrels per day in 2007. Stocks are hence in a relative sense when compared to world demand higher as was the case in 2007. Logically causing continued downward pressure on the oil price for now. A situation that will continue until the bottom of the demand decline hits, or OPEC cuts an additional 1+ million barrels.

When diving deeper into oil stock data, more interesting figures come to light. Gasoline and residual fuel stocks in OECD countries are actually at their lowest point relative to the past five years, while Jet Fuel stocks are at their highest, and middle distillates are at a normal point, not really high nor low. This highly unusual discrepancy between stocks is likely the effect of the economic fallout. Demand patterns are changing unevenly across OECD economies and between different sectors. Providing interesting opportunities for traders to look at the crack spread between crude oil and oil products.

Rembrandt Koppelaar

President ASPO Netherlands

Definitions

Crude Oil, petroleum found in liquid and semi liquid form including deepsea and lease condensates.

Liquids, all forms of liquid fuels including conventional, heavy, and extra heavy oil, oil shale, oil sands, natural gas liquids, lease condensates, gas-to-liquids, coal-to-liquids, and biofuels.

One Barrel of oil is equivalent to 159 litres

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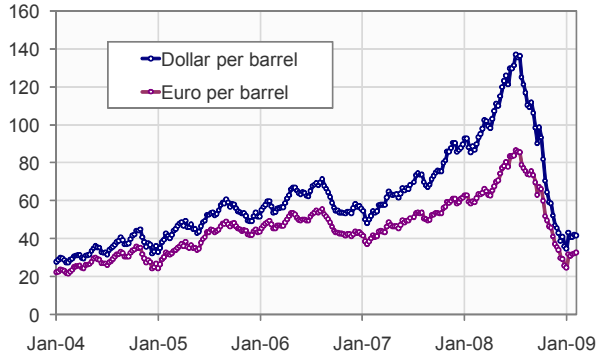
Chart 1: Oil Price Weighed Average of Blends



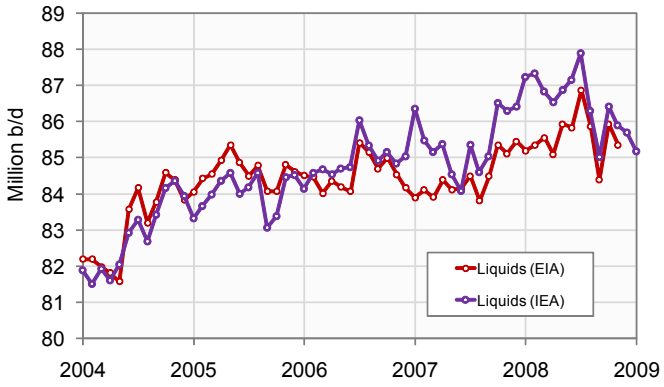
Source: Energy Information Admistration

World liquids production status

In January 2009 world production of total liquids decreased by 520,000 barrels per day from December according to the latest figures of the International Energy Agency (IEA). Resulting in total world liquids production of 85.17 million b/d.

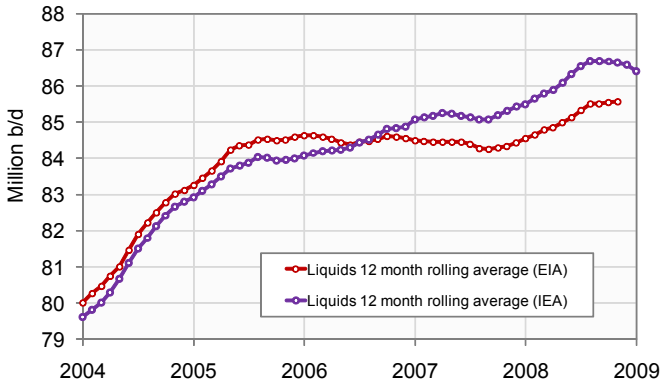
Average global production in 2008 was 86.59 million b/d according to the IEA. In 2007 an average of 85.41 million b/d was produced. The US Energy Information Administration (EIA) in their International Petroleum Monthly puts average global 2007 production at 84.43 million b/d and average liquids production from January to November 2008 at 85.57 million b/d.

Chart 2: World Liquids Production Jan. 2004 - January 2009



Source: Energy Information Admistration, International Energy Agency

Chart 3: World Liquids 12m rolling average Jan. 2004 - Jan. 2009

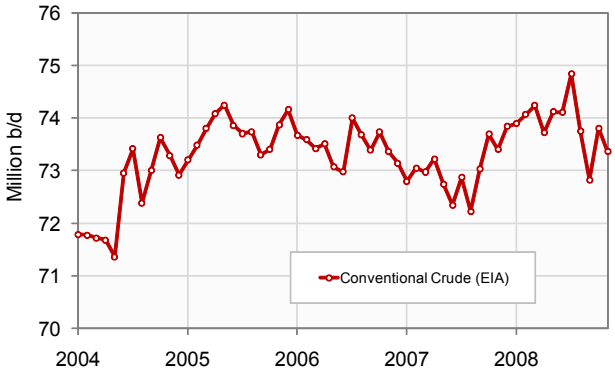


Source: Energy Information Administration, International Energy Agency

World crude oil production status

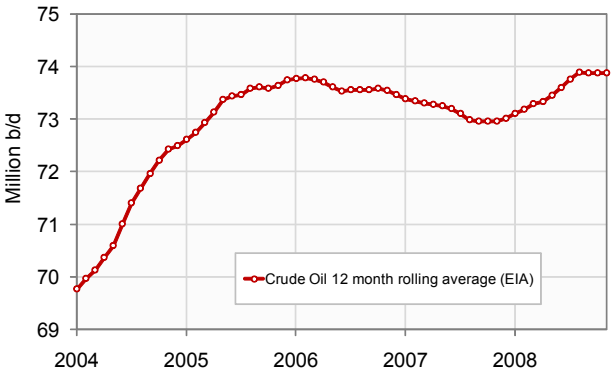
Latest available figures from the Energy Information Administration (EIA) show that crude oil production including lease condensates decreased by 445,000 b/d from October to November 2008. Resulting in a total production of crude oil including lease condensates of 73.36 million barrels per day. The all time high production record of crude oil stands at 74.83 million b/d reached in July 2008.

Chart 4: World Crude Oil Production January 2004 - Nov. 2008



Source: Energy Information Administration

Chart 5: World Crude 12m rolling average Jan. 2004 - Nov. 2008

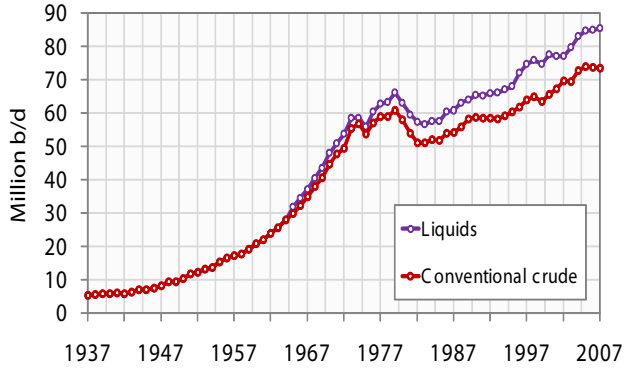


Source: Energy Information Administration

World conventional crude versus liquids production ratio

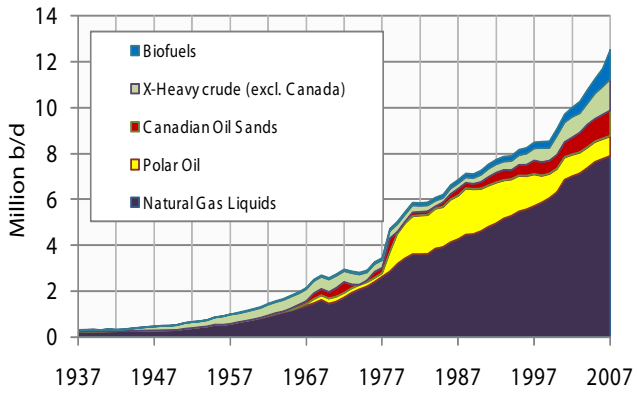
Approximately 86% of world liquids production in 2007 came from conventional crude oil including lease condensates. The remaining share of 14% was produced by other unconventional sources including Biofuels, Extra Heav Oil, Tar Sands, Polar Oil and Natural Gas Liquids. In absolute amounts unconventional production has increased steadily, from 4 million b/d at the end of the 1970's, to approximately 12 mb/d in 2007 excluding lease condensates.

Chart 6: World Crude and Liquids production 1937 - 2007



Source: Energy Information Administration, IHS Energy, International Energy Agency

Chart 7: World Unconventional Production 1937 - 2007

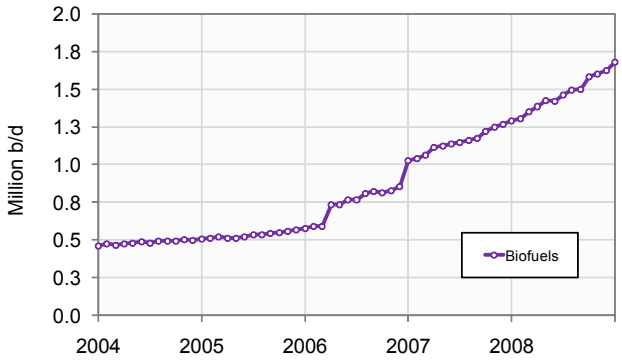


Source: Energy Information Administration, IHS Energy, International Energy Agency, Canadian Association of Petroleum Producers

World biofuel production status

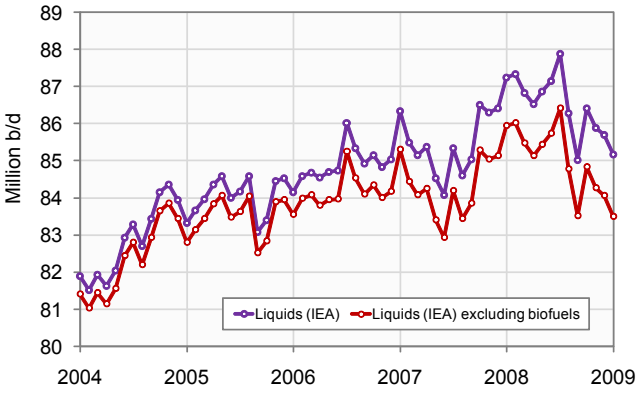
In January 2009 total world biofuel production was 1.68 million barrels per day according to statistics compiled from the Energy Information Administration, the International Energy Agency and the Brazilian ministry of Energy. With an estimated 680,000 b/d from the United States, 450,000 b/d from Brazil and 550,000 b/d from other countries.

Chart 8: World biofuels production Jan. 2004 - January 2009



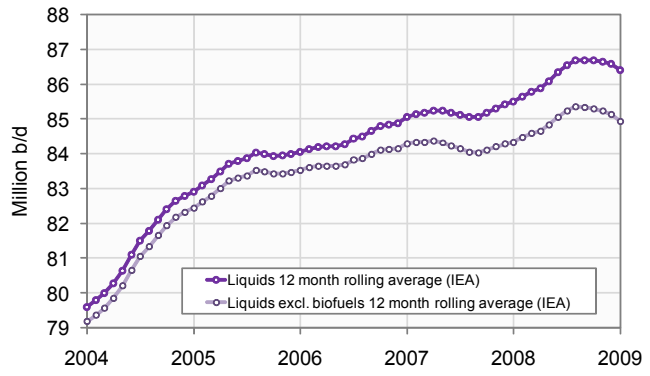
Source: Energy Information Administration, International Energy Agency, Brazilian Ministry of Energy

Chart 9: IEA Liquids vs liquids excl. biofuels Jan. 2004 - Jan. 2008



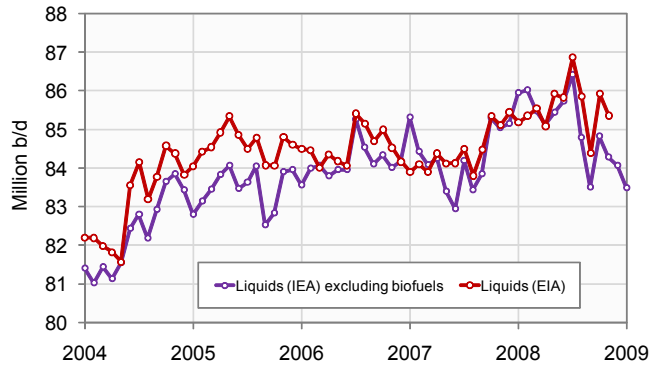
Source: Energy Information Administration, International Energy Agency, Brazilian Ministry of Energy

Chart 10: 12m rolling average of chart 9 Jan. 2004 - Januari 2009



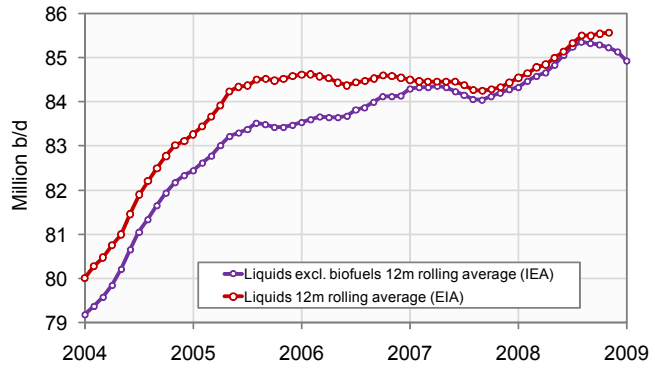
Source: Energy Information Administration, International Energy Agency, Brazilian Ministry of Energy

Chart 11: EIA liquids vs IEA excl. biofuels Jan. 2004 - Januari 2009



Source: Energy Information Administration, International Energy Agency, Brazilian Ministry of Energy

Chart 12: 12m rolling average of chart 11 Jan. 2004 - Januari 2009

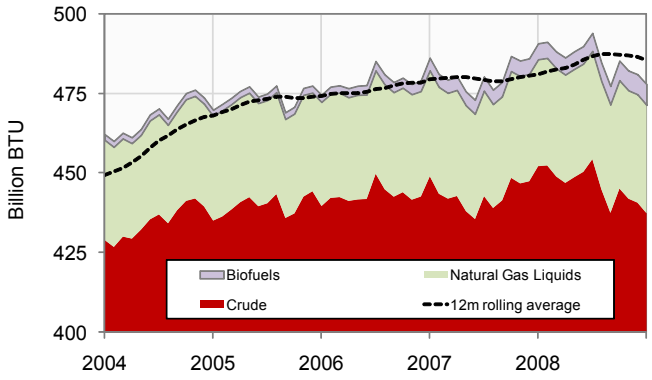


Source: Energy Information Administration, International Energy Agency, Brazilian Ministry of Energy

World gross & net energy available from liquids

In oil production statistics the barrel that gets counted is not the barrel that can be used by society. Different types of liquids that are aggregated as total 'oil' production, in the oilwatch monthly defined as total liquids, contain a different amount of energy per barrel. For example, a barrel of crude oil contains approximately 5.8 million BTU while a barrel of natural gas liquids contains 4.2 million BTU. In 2008 11 percent of total liquids production came from natural gas liquids and biofuels. When converting this number to actual energy values we learn that the energy available to society is 3.5% lower than all liquids production statistics counted in barrels suggests. This difference has been rising slightly over time, with 2.5% less energy available to society in 2002 when comparing a barrel to the BTU's in a barrel.

Chart 13: Gross energy available from liquids Jan. 2004 - Jan. 2009



Source: Energy Information Admistration, International Energy Agency

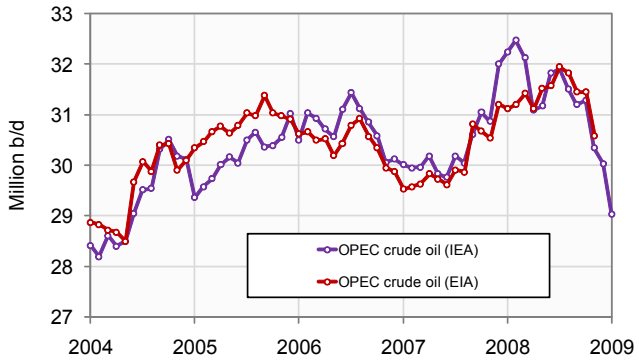
The actual energy available for society to consume is lower than shown in chart 13, however, because an incremental amount is needed to bring the oil out of the ground. The oil industry has to drill deeper at more extreme locations which costs more energy. Additional energy is thus needed to reach the oil. Also more energy is needed to process it to a useful product due to a decline in quality from conventional to increasingly unconventional oil. Studies by Professor Charles Hall and his science group at State University New York show that the energy necessary to draw a barrel of 159 liters of oil out of the ground from conventional oil, has increased from approximately 3 liters of oil equivalent in the beginning of the 1990s to 6 liters of oil equivalent now. It is unknown how much of this energy input comes from oil, gas or coal, the main energy inputs to the oil and gas industry.

OPEC production status

From this month onwards Indonesia is no longer counted as a member of OPEC in these statistics, as the country left the cartel at the end of 2008.

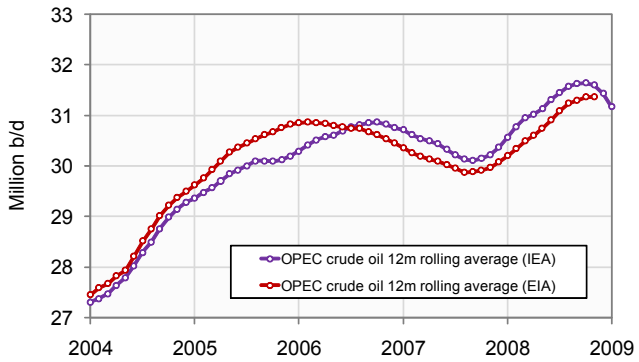
Total crude oil production excluding lease condensates of the OPEC cartel decreased by 1.0 million b/d to a level of 29.03 million b/d, from December to January 2008, according to the latest available estimate of the IEA. OPEC natural gas liquids production decreased by 100,000 b/d from December to January to a level of 4.68 million b/d. Average total liquids production in OPEC countries in 2008 was 36.09 million b/d, versus 35.02 million b/d in 2007 and 35.13 million b/d in 2006.

Chart 14: OPEC Crude Oil Production January 2004 - Jan. 2009



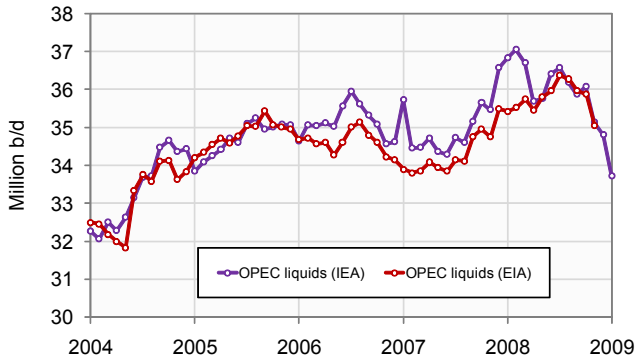
Source: Energy Information Admistration & International Energy Agency

Chart 15: OPEC Crude 12m rolling average Jan. 2004 - Jan. 2009



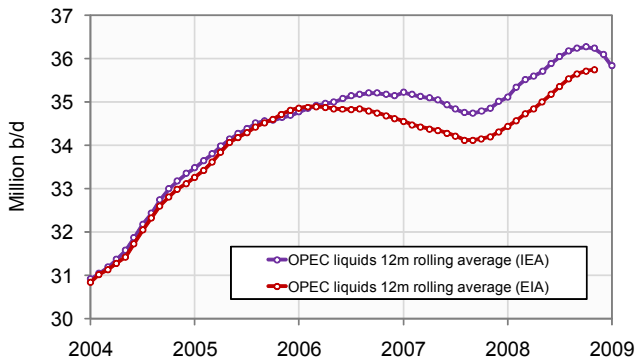
Source: Energy Information Admistration & International Energy Agency

Chart 16: OPEC Liquids Production January 2004 - January 2009



Source: Energy Information Admistration & International Energy Agency

Chart 17: OPEC Liquids 12m rolling average Jan. 2004 - Jan. 2009

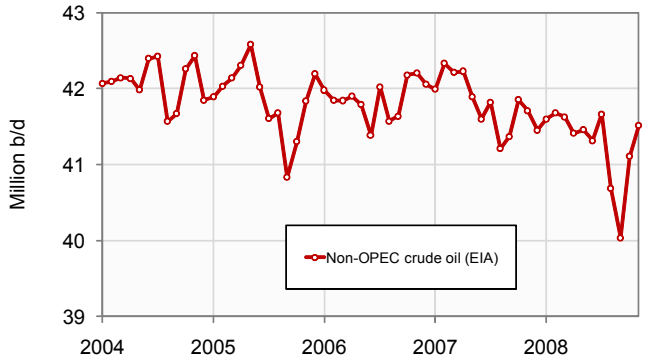


Source: Energy Information Admistration & International Energy Agency

Non-OPEC crude oil production status
From this month onwards Indonesia is counted as a member of non-OPEC in these statistics, as the country left the OPEC cartel at the end of 2008.

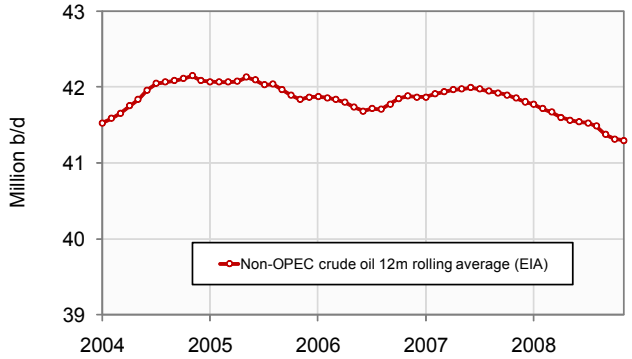
Total crude oil production including lease condensates of non-OPEC increased by 403,000 b/d from October to November 2008 to a level of 41.51 million b/d, according to the latest available estimate of the EIA. Average crude oil production of non-OPEC from January to November 2008 was 41.28 million b/d, versus 41.81 million b/d in 2007 and 41.87 million b/d in 2006.

Chart 18: Non-OPEC Crude Oil Production Jan. 2004 - Nov. 2008



Source: Energy Information Admistration

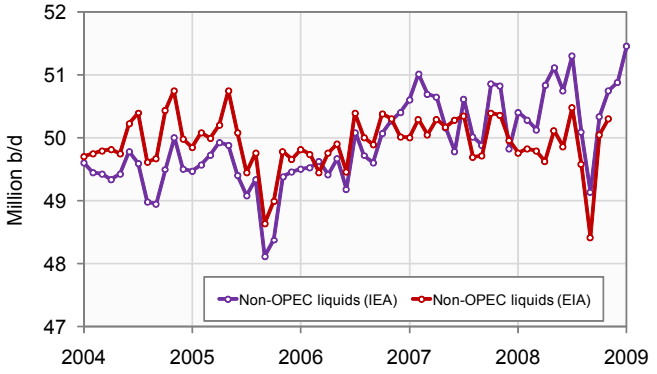
Chart 19: 12m rolling average of chart 18 Jan. 2004 - Nov. 2008



Source: International Energy Agency & Energy Information Administration

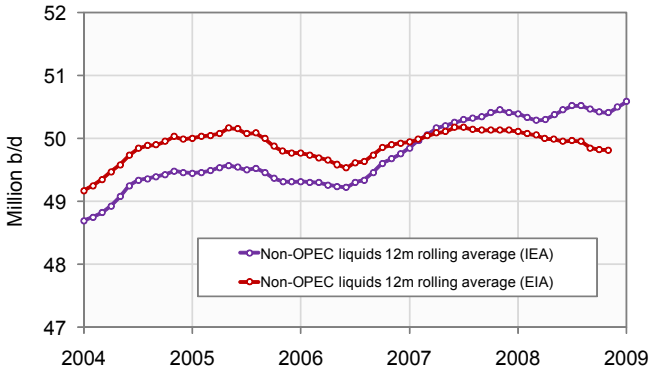
Non-OPEC liquids production status
Total non-OPEC liquids production increased by 580,000 b/d to a level of 51.46 million b/d from December to January 2008, according to the latest figures of the IEA. Average total liquids production of non-OPEC in 2008 was 50.5 million b/d, versus 50.41 million b/d in 2007 and 49.76 million b/d in 2006.

Chart 20: Non-OPEC Liquids Production Jan. 2004 - Jan. 2009



Source: International Energy Agency & Energy Information Administration

Chart 21: 12m rolling average of chart 20 Jan. 2004 - January 2009



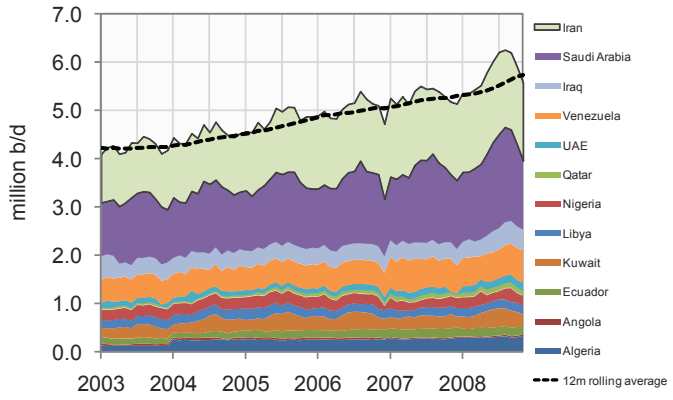
Source: International Energy Agency & Energy Information Administration

OPEC liquids demand developments

In 2002 OPEC-12 (including Iraq and Indonesia) consumed 4.23 million b/d according to the JODI database. OPEC-12 demand increased by 1.07 million b/d to 5.30 million b/d from 2002 to 2007. The increase was mainly caused by higher consumption in Iran and Saudi Arabia, which increased by 476,000 and 357,000 b/d between respectively 2002 and 2007.

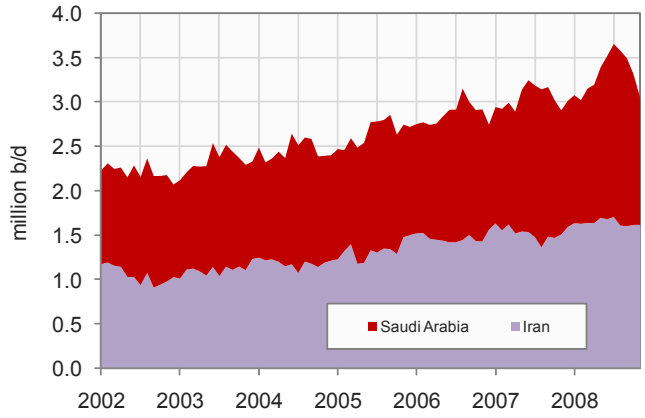
In 2008 this pace of growth continued until July. Since then until the last know figures of November 2008, liquids consumption in Saudi Arabia and Iran has declined by respectively 517,000 b/d and 88,000 b/d according to the JODI database. Average consumption in Saudi-Arabia from January to November 2008 was 1.67 million b/d and in Iran 1.64 million b/d. Average consumption in the same period of 2007 in Saudi Arabia was 1.53 million b/d and in Iran 1.52 million b/d.

Chart 22: OPEC-12 Liquids Demand January 2002 - Nov. 2008



Source: JODI Database

Chart 23: Iran & S. Arabia Liquids Demand Jan. 2002 - Nov. 2008



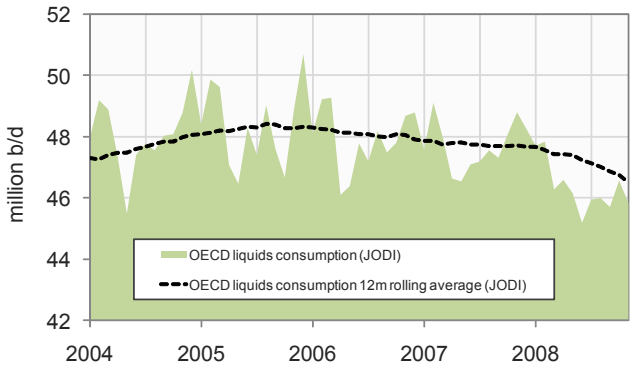
Source: JODI Database

OECD liquids demand developments

In 2005 the group of OECD countries consumed an average of 48.34 million b/d, which declined to 47.93 million b/d in 2006. Of the total 2006 OECD consumption decline, 315,000 b/d came from North America and 156,000 b/d from other OECD countries while consumption in OECD Europe increased by 56,000 b/d. In 2007 OECD liquids consumption decline continued by 241,000 b/d to an average of 47.68 million b/d. This decline was caused by a consumption decline of 350,000 b/d in OECD Europe and a decline of 157,000 b/d in OECD Asia. Consumption in OECD North America grew by 267,000 b/d.

The decline in OECD consumption has accelerated in 2008. Consumption in November 2008 was 45.84 million b/d, a decline of 2.95 million b/d year on year. Average consumption from January to November 2008 was 46.35 million b/d, which is 1.28 million b/d lower than consumption in the same period in 2007.

Chart 24: OECD Liquids Demand Jan. 2004 - Nov. 2008

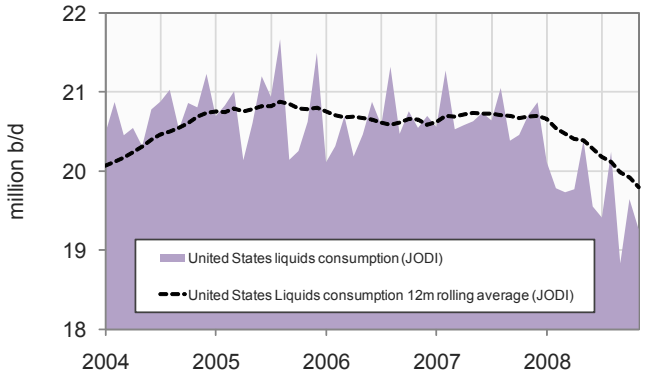


Source: Energy Information Administration

North America liquids demand developments

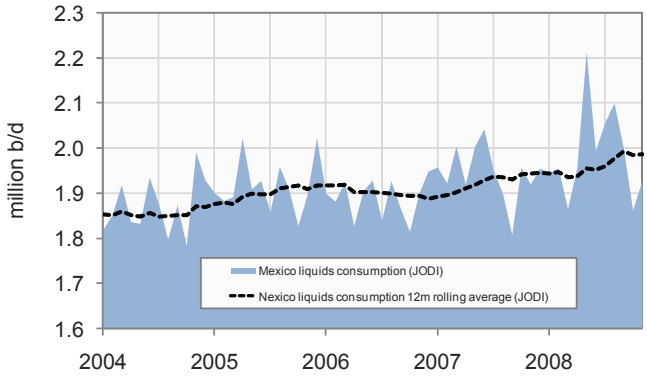
The decline of consumption in OECD is mainly a result of a decrease in oil consumption in the United States. Consumption is 986,000 b/d lower on average in the US from January to November 2008 than in the same period last year. In comparison, Mexican and Canadian consumption has slightly increased from January to November 2008 relative to the same period in 2007.

Chart 25: United States liquids demand Jan. 2004 - Nov. 2008



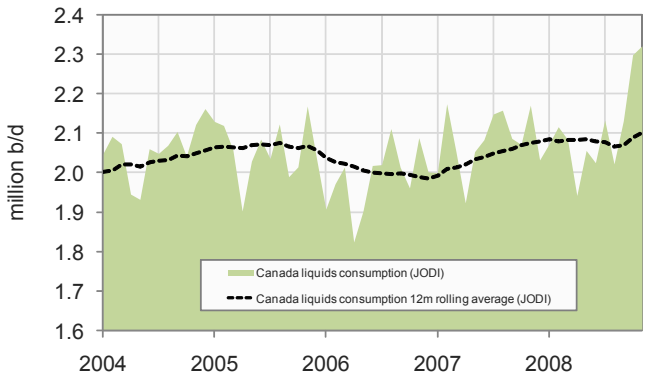
Source: JODI Database

Chart 26: Mexico liquids demand January 2004 - November 2008



Source: JODI Database

Chart 27: Canada liquids demand January 2004 - November 2008

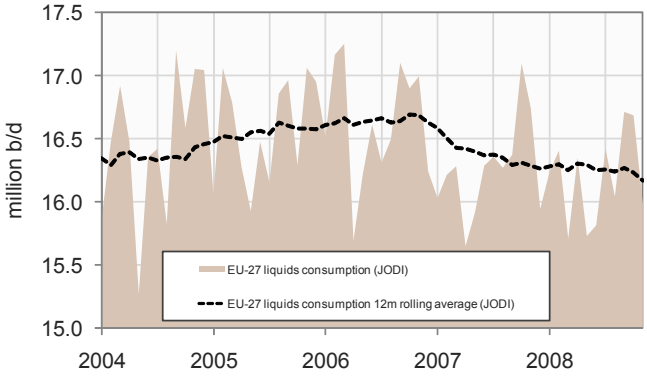


Source: JODI Database

Europe liquids demand developments

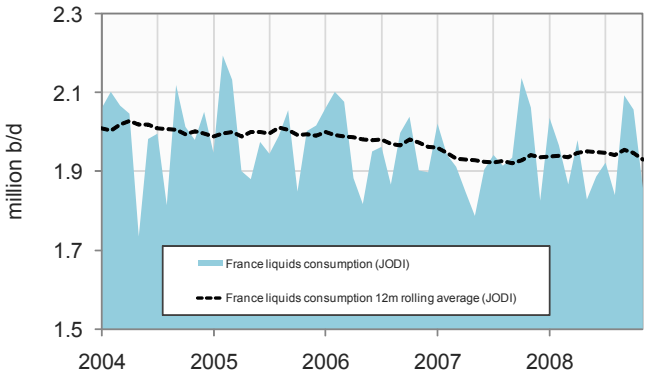
In the 27 countries of the European Union oil consumption declined significantly from 16.68 million b/d in October to 15.96 million b/d in November 2008. Average consumption from January to November 2008 was 16.19 million b/d, relative to 16.29 million b/d in the same period in 2007.

Chart 28: EU-27 liquids demand January 2004 - Nov. 2008



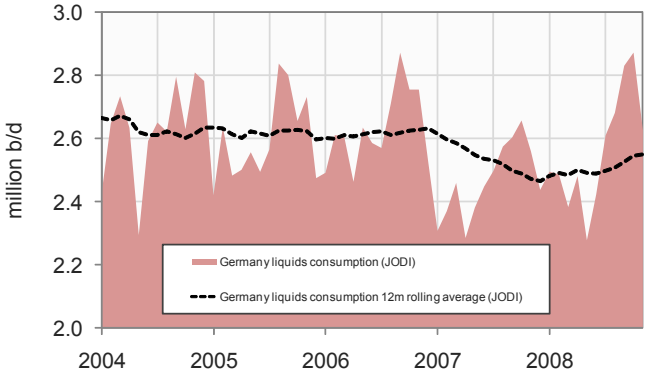
Source: JODI Database

Chart 29: France liquids demand January 2004 - Nov. 2008



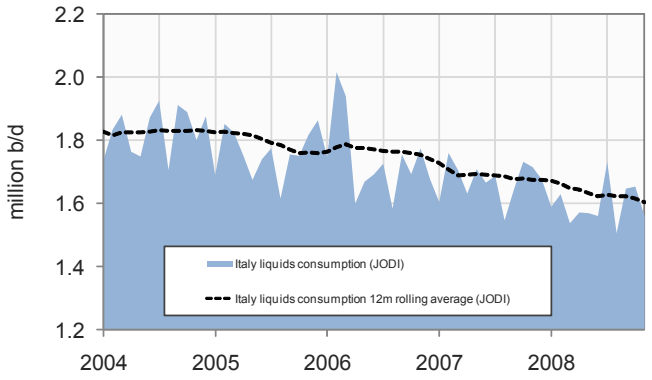
Source: JODI Database

Chart 30: Germany liquids demand January 2004 - Nov. 2008



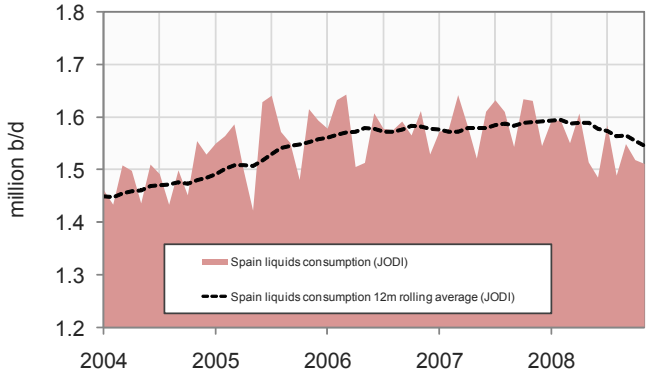
Source: JODI Database

Chart 31: Italy liquids demand January 2004 - Nov. 2008



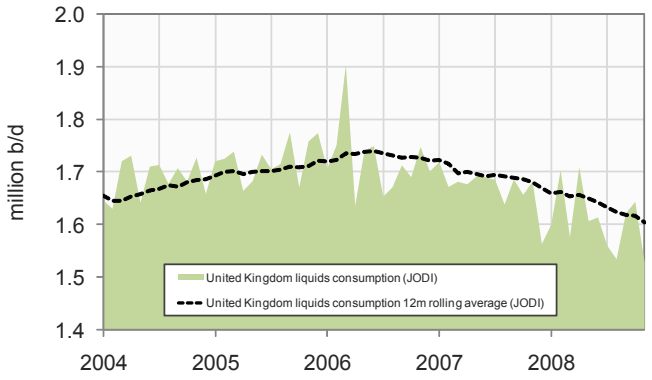
Source: JODI Database

Chart 32: Spain liquids demand January 2004 - Nov. 2008



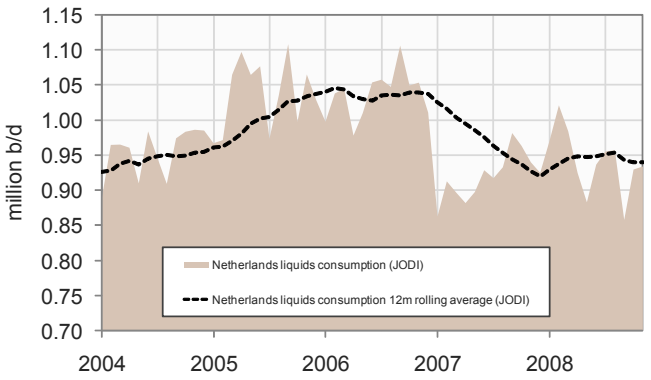
Source: JODI Database

Chart 33: UK liquids demand January 2004 - November 2008



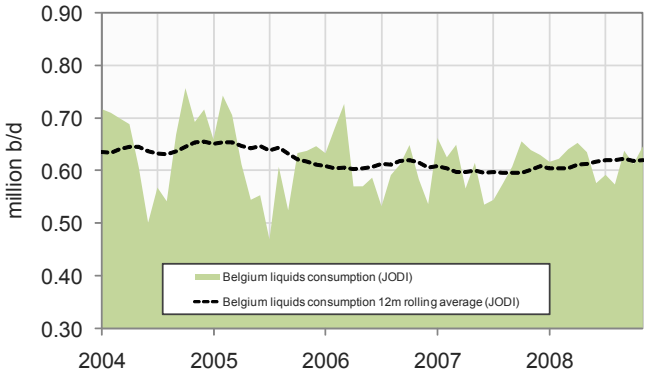
Source: JODI Database

Chart 34: Netherlands liquids demand Jan. 2004 - Nov. 2008



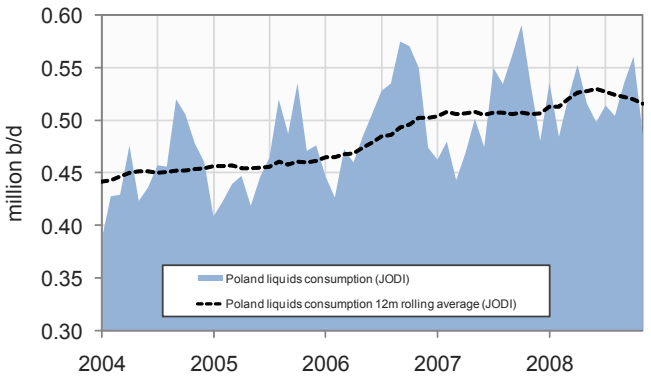
Source: JODI Database

Chart 35: Belgium liquids demand January 2004 - Nov. 2008



Source: JODI Database

Chart 36: Poland liquids demand January 2004 - Nov. 2008

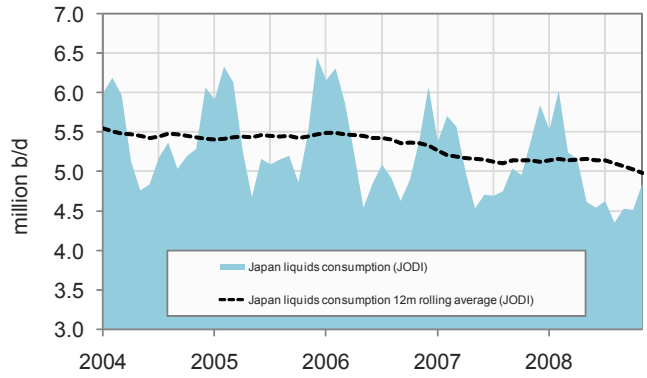


Source: JODI Database

South Korea & Japan liquids demand developments
Japanese liquids consumption averaged 4.91 million b/d from January to November 2008 according to the JODI database. A decrease of 154,000 b/d versus average 2007 January to November consumption of 4.91 million b/d.

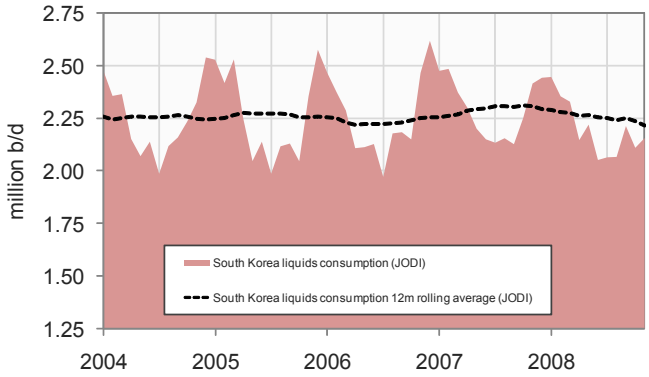
Consumption in South Korea was 2.20 million b/d from January to November 2008, versus an average of 2.29 million b/d in 2007 and 2.25 million b/d in 2006.

Chart 37: Japan liquids demand Jan. 2002 - Nov. 2008



Source: JODI Database

Chart 38: South Korea liquids demand Jan. 2002 - Nov. 2008

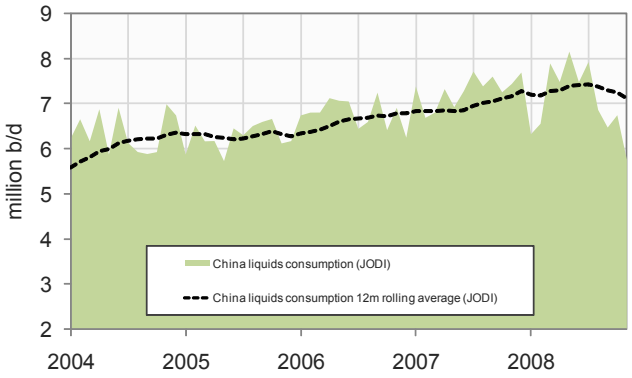


Source: JODI Database

India & China liquids demand developments
Chinese liquids consumption averaged 7.09 million b/d from January to November 2008 according to the JODI database. A decrease of 110,000 b/d versus average 2007 January to November consumption of 7.25 million b/d. In 2005 China consumed on average 6.27 million b/d, growing to 6.78 million b/d in 2006 and 7.29 million b/d in 2007. But growth was impacted since July 2008 . Liquids consumption in November was 986,000 b/d lower than in October

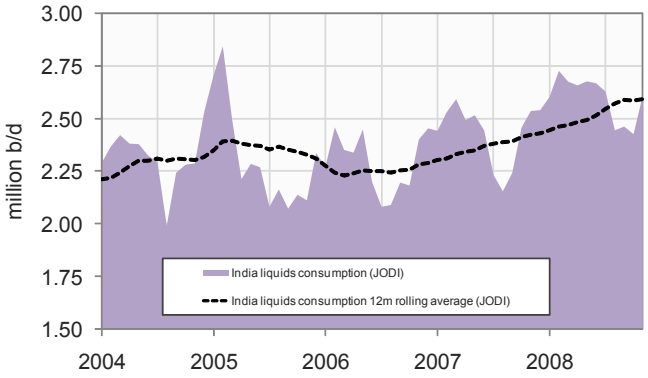
Consumption in India was 2.6 million b/d from January to November 2008, versus an average of 2.43 million b/d in 2007 and 2.29 million b/d in 2006.

Chart 39: China liquids demand Jan. 2002 - Nov. 2008



Source: JODI Database

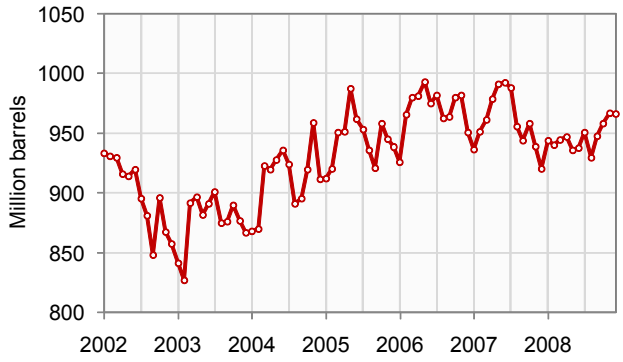
Chart 40: India liquids demand Jan. 2002 - Nov. 2008



Source: JODI Database

Total OECD crude oil and oil product stocks status
Industrial inventories of crude oil in the OECD in December 2008 decreased to a level of 966 million barrels from 967 million barrels in November according to IEA statistics.

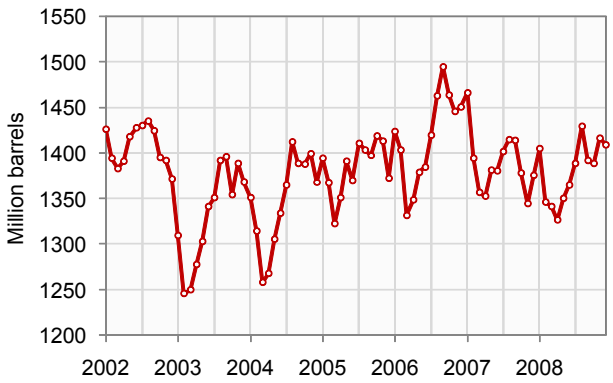
Chart 41: OECD Crude Oil Stocks January 2002 - Dec. 2008



Source: International Energy Agency

Total industrial product stocks in the OECD were 1409 million barrels in December 2008, a decrease of 7 million barrels from a stock level of 1416 million barrels in November. Total product stocks stand slightly higher than the five year average of 1383 million barrels.

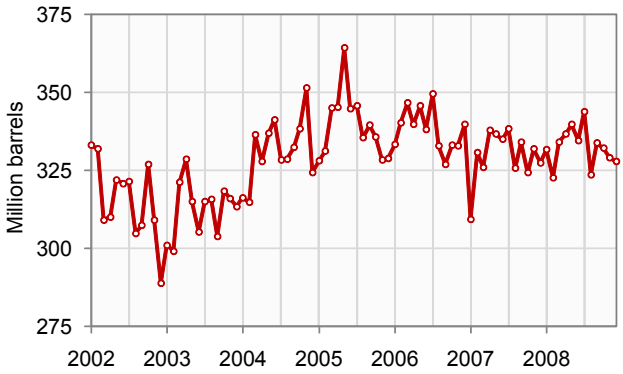
Chart 42: OECD Product Stocks Jan. 2002 - December 2008



Source: International Energy Agency

Industrial inventories of crude oil in OECD Europe decreased in December 2008 to a level of 328 million barrels from 329 million barrels in November according to IEA statistics.

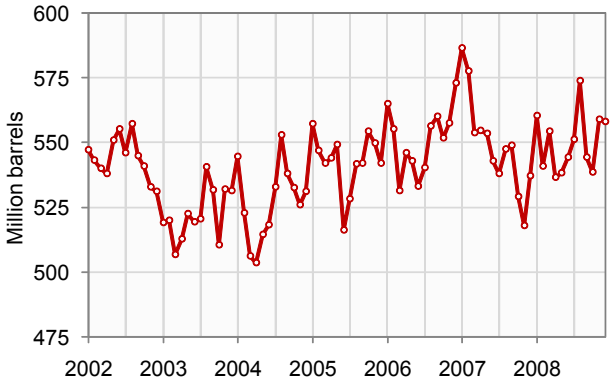
Chart 43: Europe Crude Oil Stocks January 2002 - Dec. 2008



Source: International Energy Agency

Total industrial product stocks in OECD Europe were 558 million barrels in December 2008, stable from November levels. Total product stocks are slightly higher than the five year average of 544 million barrels.

Chart 44: Europe Product Stocks January 2002 - Dec. 2008



Source: International Energy Agency

OECD Europe crude oil and oil product stocks status

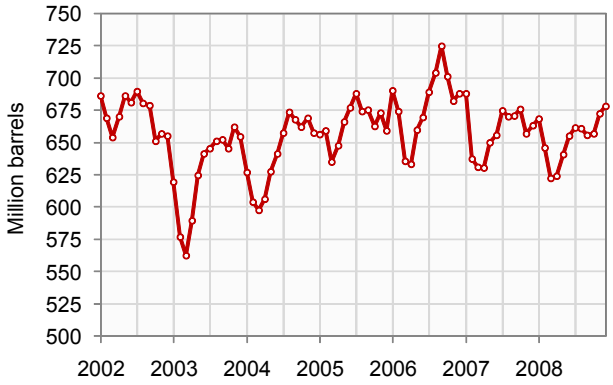
OECD America crude oil and oil product stocks status
Industrial inventories of crude oil in OECD America increased in December 2008 to a level of 474 million barrels from 472 million barrels in November according to IEA statistics.

Chart 45: North America Crude Oil Stocks Jan. 2002 - Dec. 2008

Source: International Energy Agency

Total industrial product stocks in OECD America were 678 million barrels in November 2008, an increase of 6 million barrels from a stock level of 672 million barrels in November. Total product stocks stand slightly highter than the five year average of 659 million barrels.

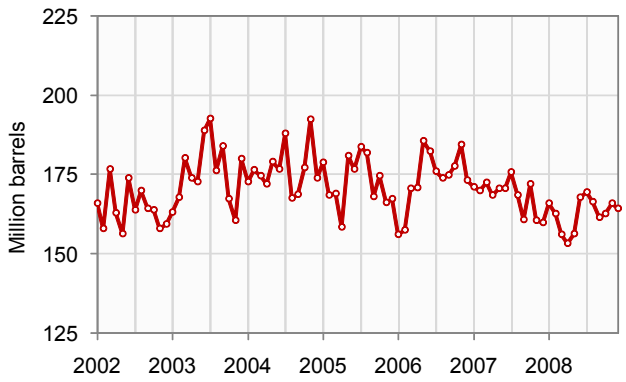
Chart 46: N. America Product Stocks January 2002 - Dec. 2008



Source: International Energy Agency

OECD Pacific crude oil and oil product stocks status
Industrial inventories of crude oil in OECD Pacific decreased in December 2008 to a level of 164 million barrels from 166 million barrels in November according to IEA statistics.

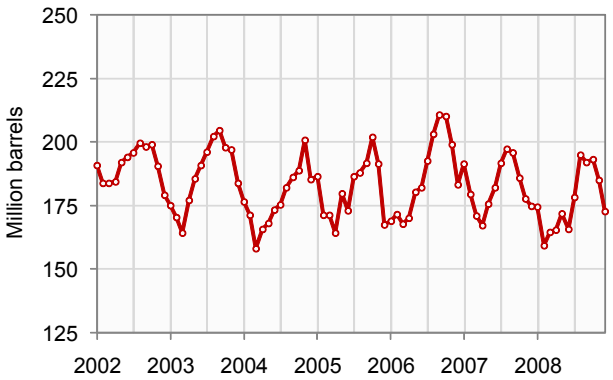
Chart 47: Pacific Crude Oil Stocks January 2002 - Dec. 2008



Source: International Energy Agency

Total industrial product stocks in OECD Pacific were 173 million barrels in November 2008, a decrease of 12 million barrels over a stock level of 185 million barrels in November. Total product stocks stand slightly higher than the five year average of 181 million barrels.

Chart 48: Pacific Product Stocks January 2002 - Dec. 2008



Source: International Energy Agency

World crude oil export status

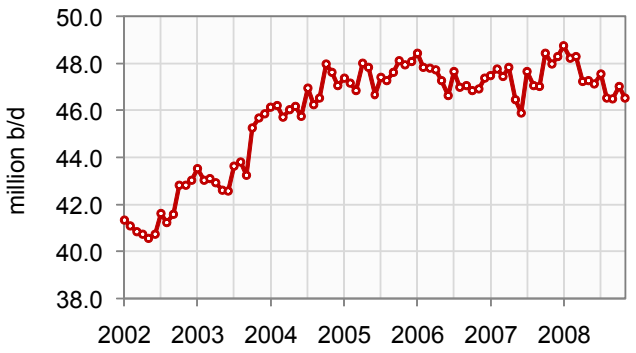
The series was derived by subtracting the consumption of oil products, refinery fuel and direct crude oil sales from liquids production in producer countries. Data comes from the Joint Oil Data Initiative (JODI) for demand and the International Energy Agency (IEA) and Energy Information Agency (EIA) for supply. Biofuels are not included in consumption data but are included in production data. Because biofuels are not identified in the production data it is not possible to separate this flow. Given that net energy biofuel production has increased by approximately 50,000 to 100,000 b/d annually in recent years, the series is slightly optimistic.

This method gives a crude approximation of the export market because it assumes that all producers refine their own oil products to satisfy internal market needs. In reality not all oil producers have their own refineries to meet internal product demand. Therefore, more crude will be exported to foreign countries were it is refined into usable products. These usable products are then imported back to the country were the crude oil came from. To derive precise export statistics one would need to combine four components for each individual oil producing country: 1) crude oil export flows, 2) crude oil import flows, 3) total product export flows, 4) total product import flows. Statistics that show only crude oil exports or total product imports on an aggregate basis only reveal one component of the equation, and cannot be taken at face value.

Unfortunately, data on all four components is not readily available for countries outside the OECD. At the moment the statistics shown are purely based on the method of subtracting the consumption of oil products, refinery fuel and direct crude oil sales from liquids production in producer countries, unless otherwise noted.

From 2005 to 2006, worldwide liquids production increased by nearly 1 million b/d from 84.1 million b/d in 2005 to 85 million b/d in 2006 according to the IEA. The exports database, which uses the methodology outlined above, shows that annual worldwide exports are roughly in the order of 46.3 million b/d, 47.5 million b/d, 47.4 and 47.3 million b/d in 2004, 2005, 2006 and 2007 respectively. From January to November 2008 the estimate suggests average world exports amounted to 47.37 million b/d.

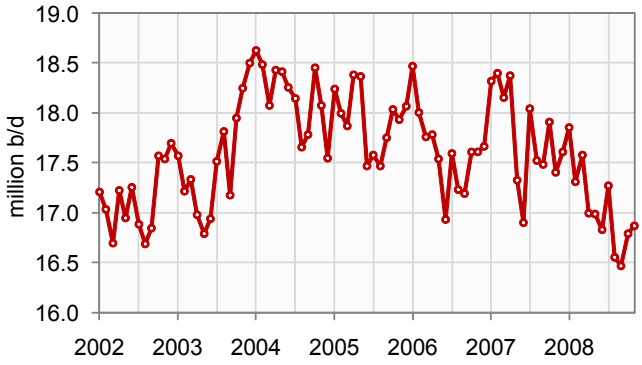
Chart 49: World Liquids Exports Estimate Jan. 2002 - Nov. 2008



Source: derived from the IEA, EIA and JODI Database

From January to November 2008 average non-OPEC exports were estimated to be 17.05 million b/d. An estimate of exports for 2003 gives a figure of 17.42 million b/d, increasing to 17.93 million b/d in 2004 and subsequently declining to 17.75 million b/d in 2005 and 17.68 million b/d in 2006. In 2007 non-OPEC exports increased to 17.89 million b/d.

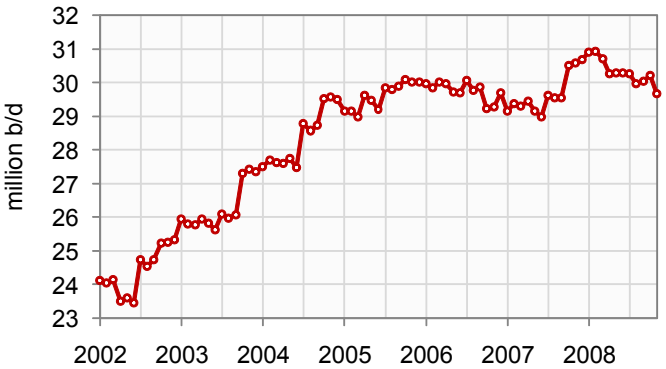
Chart 50: Non-OPEC Liquids Exports January 2002 - Nov. 2008



Source: derived from the IEA, EIA and JODI Database

An estimate of exports for OPEC 13 (including Iraq and Indonesia) for 2004 gives a figure of 28.37 million b/d, increasing to 29.60 million b/d in 2005, 29.76 million b/d in 2006 and decling to 29.46 million b/d in 2007. From January to November 2008 OPEC exports amounted to an average level of 30.32 million b/d.

Chart 51: OPEC Liquids Exports January 2002 - Nov. 2008

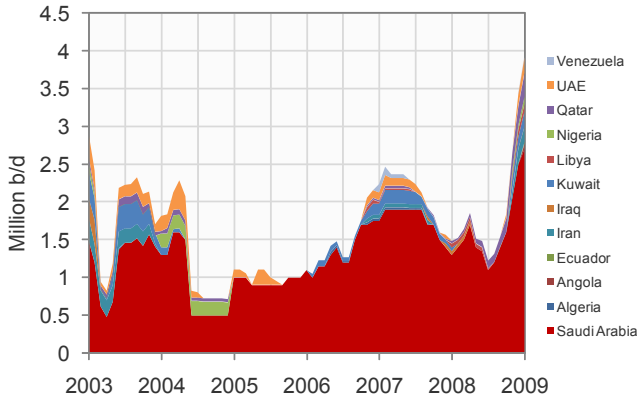


Source: derived from the IEA, EIA and JODI Database

OPEC spare capacity
Total OPEC spare production capacity increased to 3.9 million b/d in January 2009 from a level of 3.42 million b/d in December according to the Energy Information Administration. Of total spare capacity 2.7 million b/d is estimated to come from Saudi Arabia, 0.31 million b/d from Qatar. 0.2 million b/d from Iran, and 0.69 million b/d from other countries.

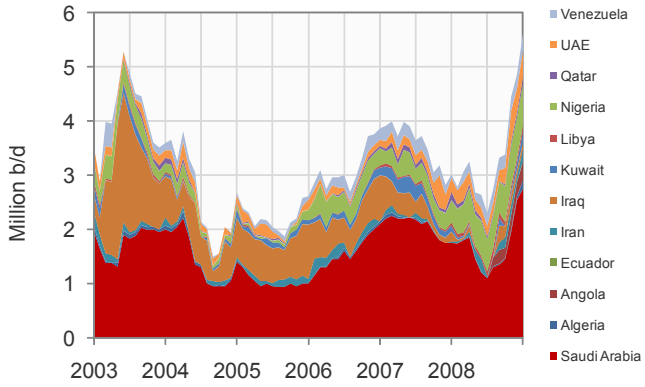
According to the International Energy Agency total effective spare capacity (excluding Iraq, Venezuela and Nigeria) increased to 4.32 million b/d in January 2009 from a level of 3.74 million b/d in December. The IEA estimates Saudi Arabia to be capable of producing an additional 2.75 million b/d within 90 days, the United Arab Emirates 0.49 million b/d, Angola 0.34 million b/d, Iran 0.21 million b/d, Libya 0.12 million b/d, Qatar 0.12 million b/d, and the other remaining countries 0.29 million b/d.

Chart 52: EIA OPEC spare capacity Jan. 2003 - January 2009



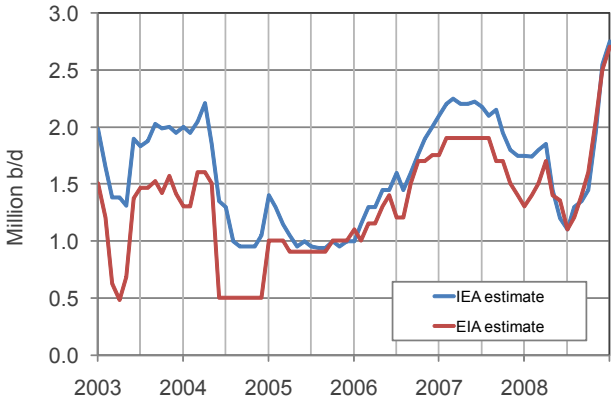
Source: Energy Information Administration

Chart 53: IEA OPEC spare capacity Jan. 2003 - January 2009



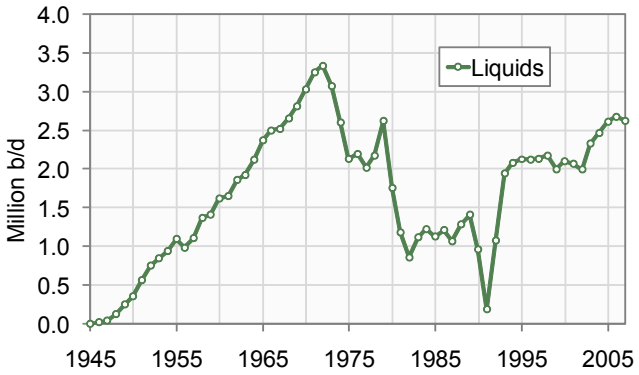
Source: International Energy Agency

Chart 54: Saudi Arabia spare capacity Jan. 2003 - January 2009



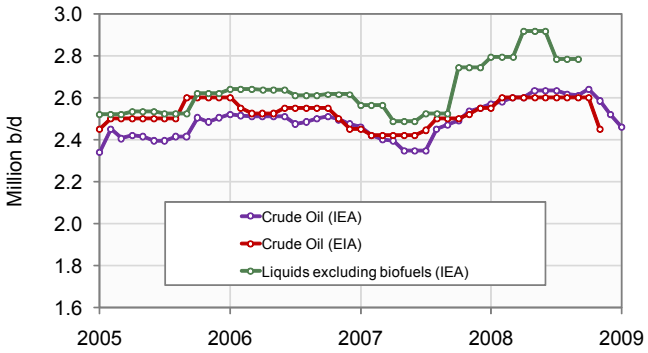
Source: Energy Information Administration, International Energy Agency

Chart 55: Kuwait production 1945 - 2007



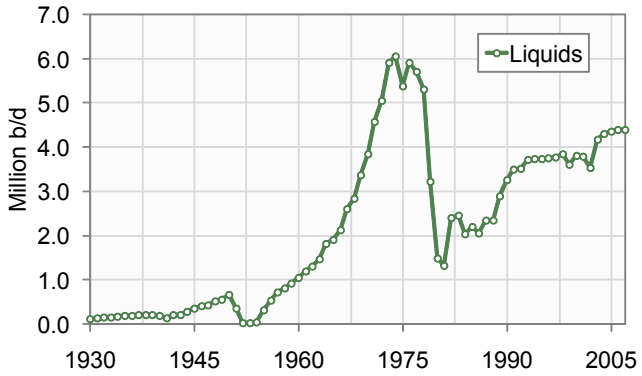
Source: ASPO Ireland & BP Statistical Review

Chart 56: Kuwait production January 2005 - January 2009



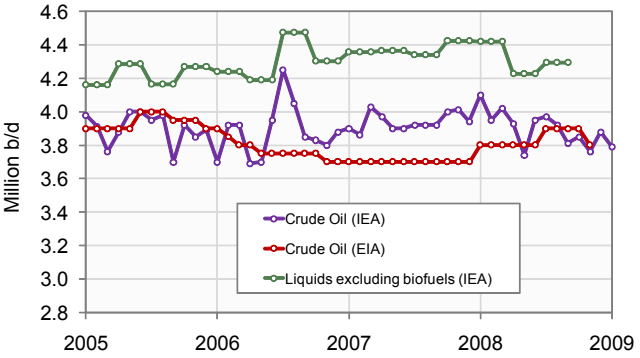
Source: Energy Information Admistration & International Energy Agency

Chart 57: Iran production 1930 - 2007



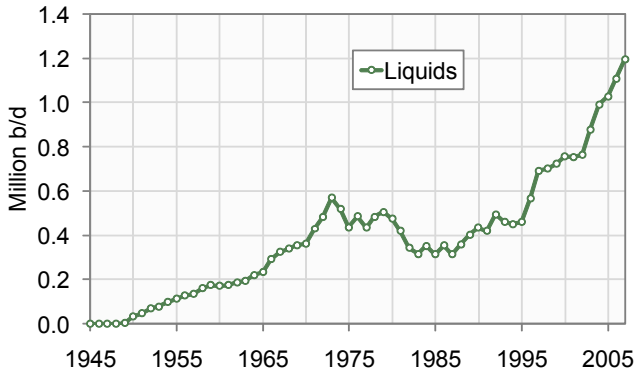
Source: ASPO Ireland & BP Statistical Review

Chart 58: Iran production January 2005 - January 2009



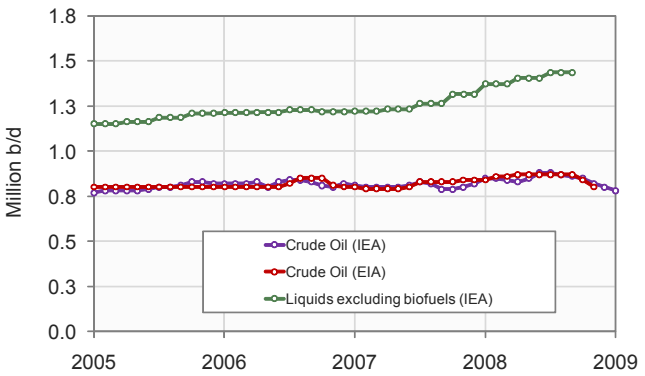
Source: Energy Information Admistration & International Energy Agency

Chart 59: Qatar production 1945 - 2007



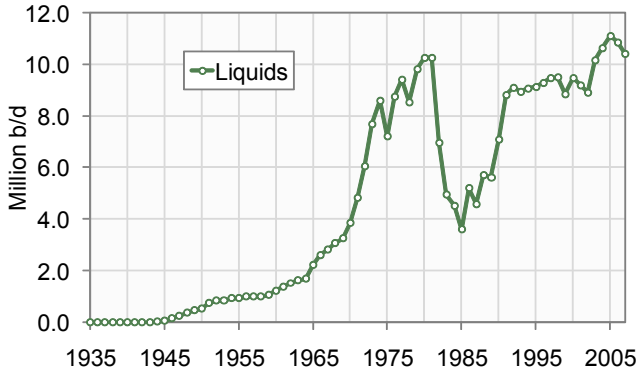
Source: ASPO Ireland & BP Statistical Review

Chart 60: Qatar production January 2005 - January 2009



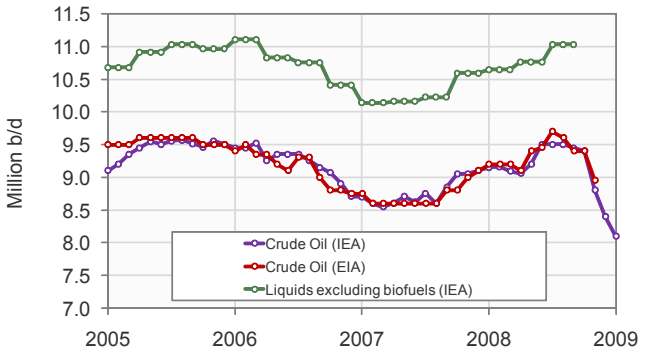
Source: Energy Information Admistration & International Energy Agency

Chart 61: Saudi Arabia production 1935 - 2007



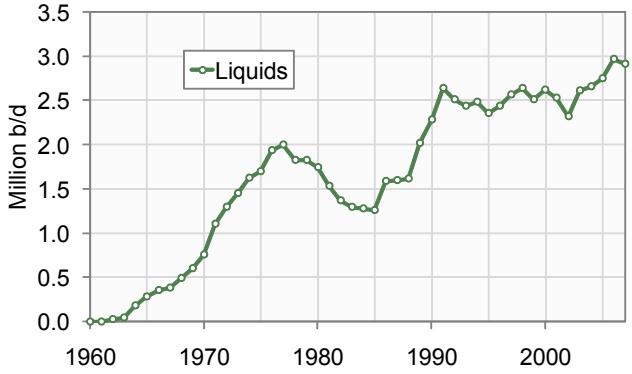
Source: ASPO Ireland & BP Statistical Review

Chart 62: Saudi Arabia production January 2005 - Jan. 2009



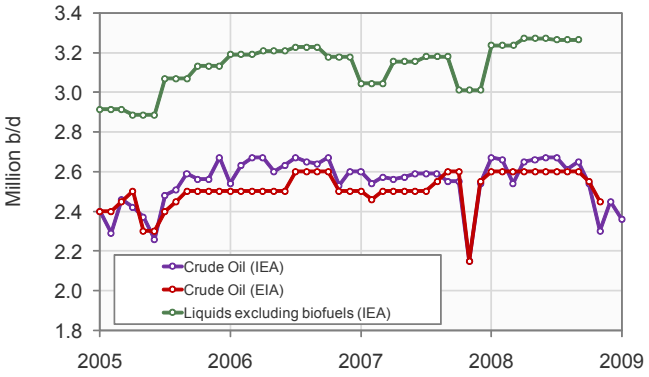
Source: Energy Information Admistration & International Energy Agency

Chart 63: UAE production 1960 - 2007



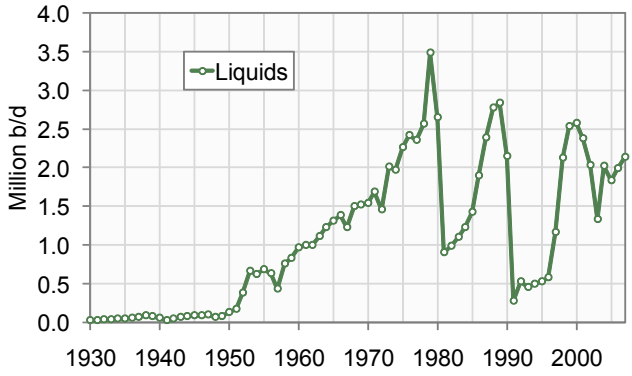
Source: ASPO Ireland & BP Statistical Review

Chart 64: UAE production January 2005 - January 2009



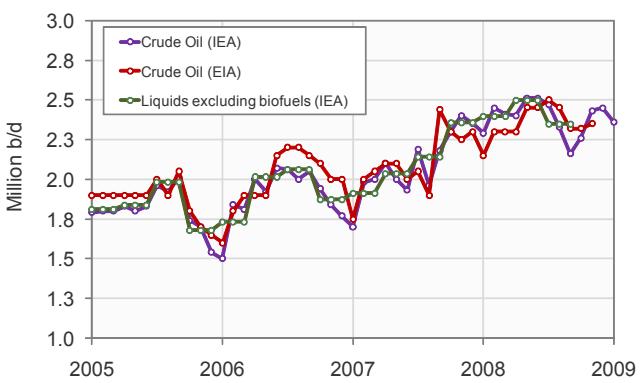
Source: Energy Information Admistration & International Energy Agency

Chart 65: Iraq production 1930 - 2007



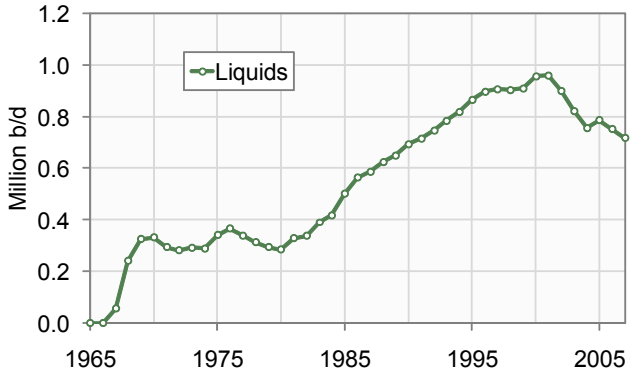
Source: ASPO Ireland & BP Statistical Review

Chart 66: Iraq production January 2005 - January 2009



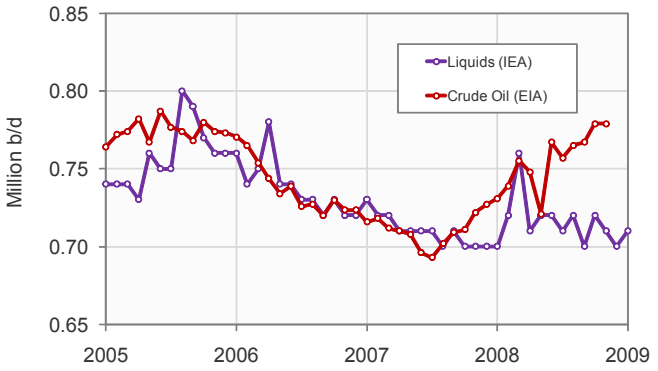
Source: Energy Information Admistration & International Energy Agency

Chart 67: Oman production 1965 - 2007



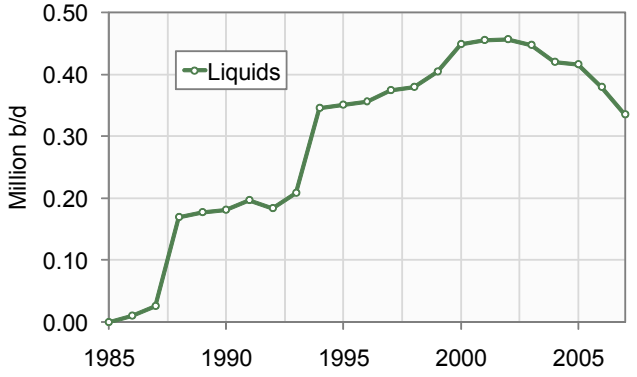
Source: Energy Information Admistration & International Energy Agency

Chart 68: Oman Production January 2005 - January 2009



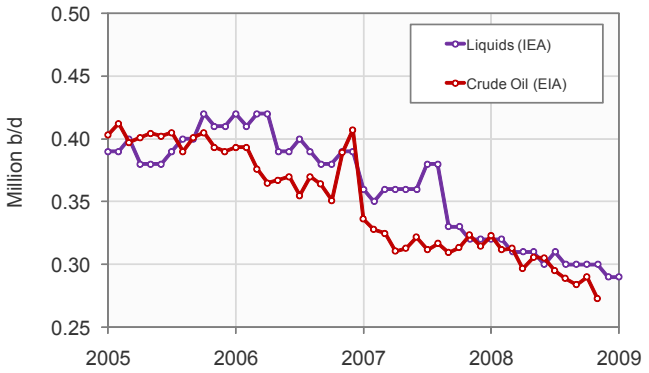
Source: Energy Information Admistration & International Energy Agency

Chart 69: Yemen Production 1985 - 2007



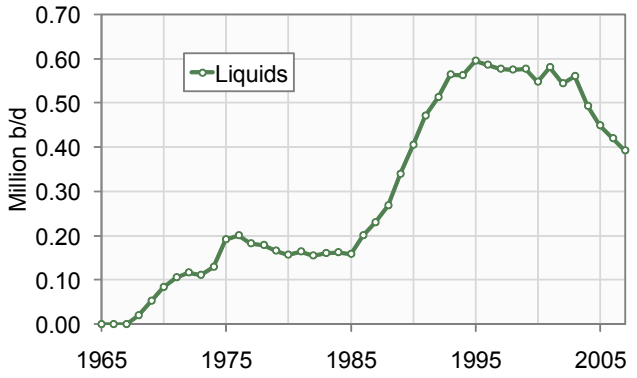
Source: Energy Information Admistration & International Energy Agency

Chart 70: Yemen Production January 2005 - January 2009



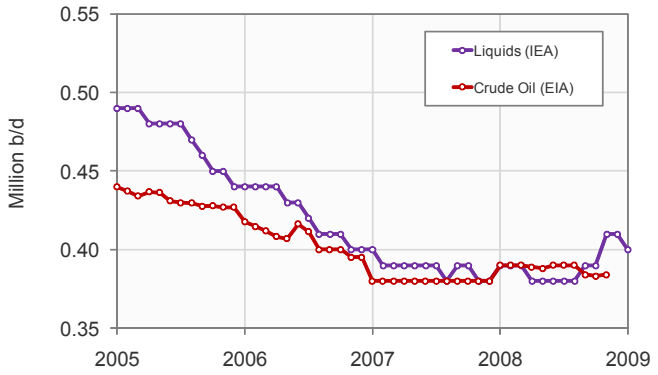
Source: Energy Information Admistration & International Energy Agency

Chart 71: Syria Production 1965 - 2007



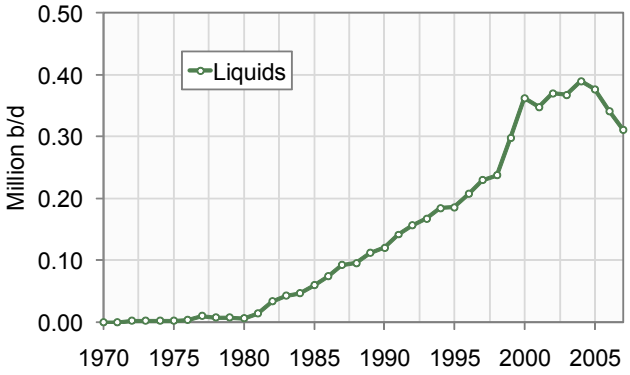
Source: Energy Information Admistration & International Energy Agency

Chart 72: Syria production January 2005 - January 2009



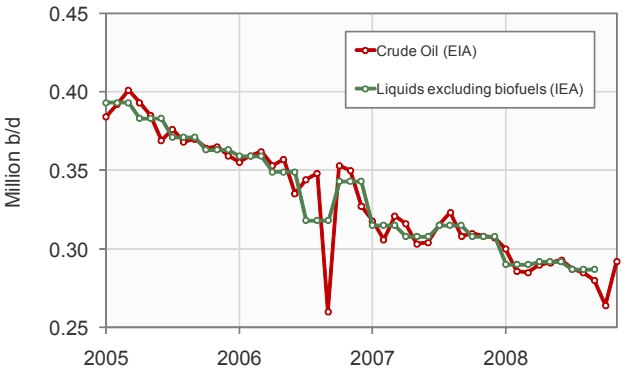
Source: Energy Information Admistration & International Energy Agency

Chart 73: Denmark production 1970 - 2007



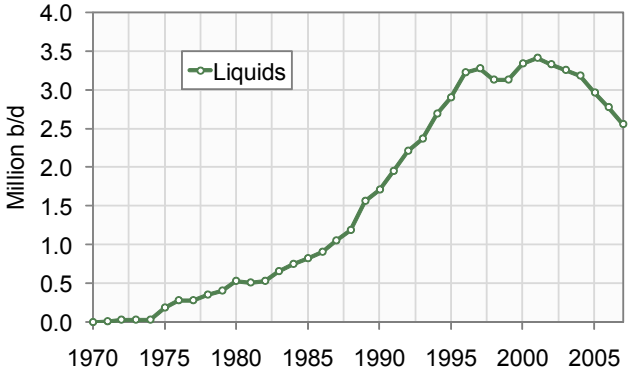
Source: ASPO Ireland & BP Statistical Review

Chart 74: Denmark production January 2005 - November 2008



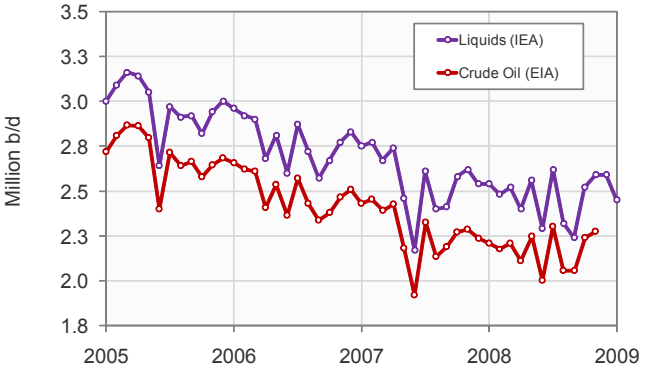
Source: Energy Information Admistration & International Energy Agency

Chart 75: Norway production 1970 - 2007



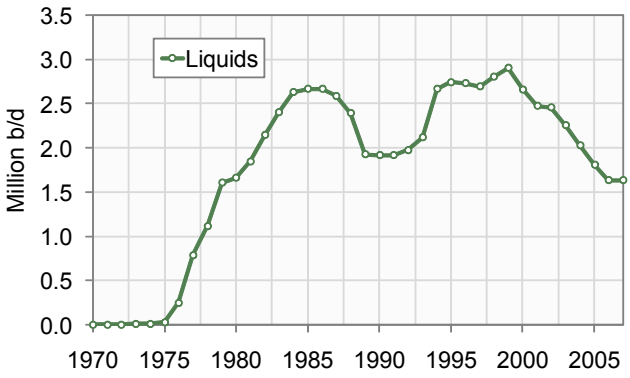
Source: ASPO Ireland & BP Statistical Review

Chart 76: Norway production January 2005 - January 2009



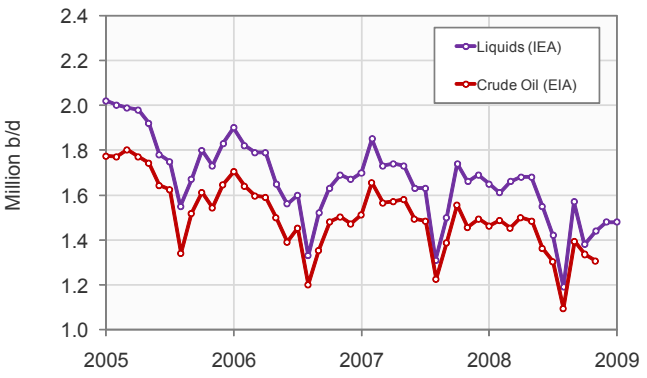
Source: Energy Information Admistration & International Energy Agency

Chart 77: United Kingdom production 1970 - 2007



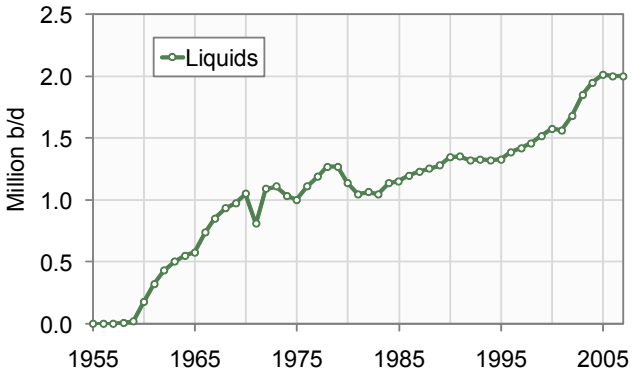
Source: ASPO Ireland & BP Statistical Review

Chart 78: United Kingdom production Jan. 2005 - January 2009



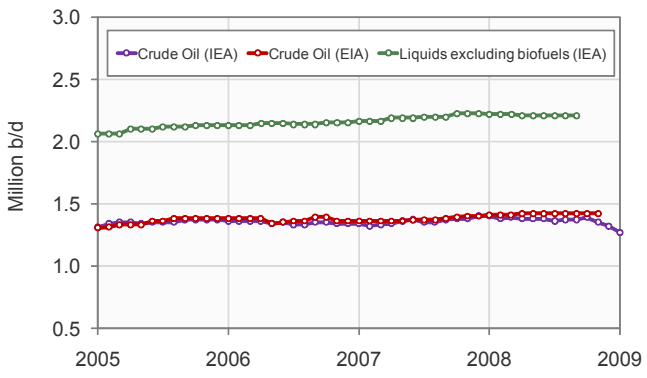
Source: Energy Information Admistration & International Energy Agency

Chart 79: Algeria production 1955 - 2007



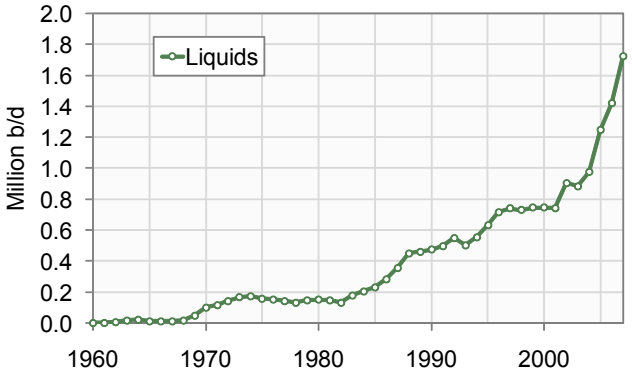
Source: ASPO Ireland & BP Statistical Review

Chart 80: Algeria production January 2005 - January 2009



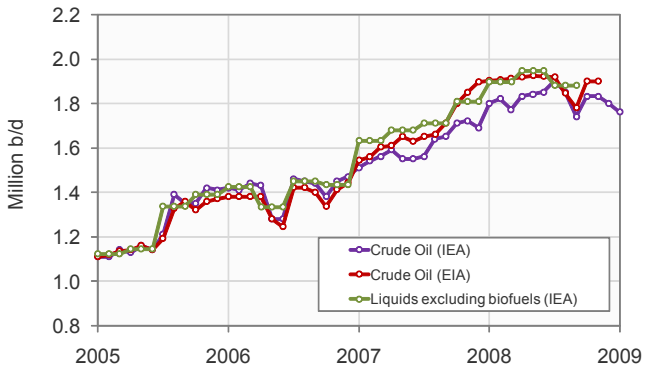
Source: Energy Information Admistration & International Energy Agency

Chart 81: Angola production 1960 - 2007



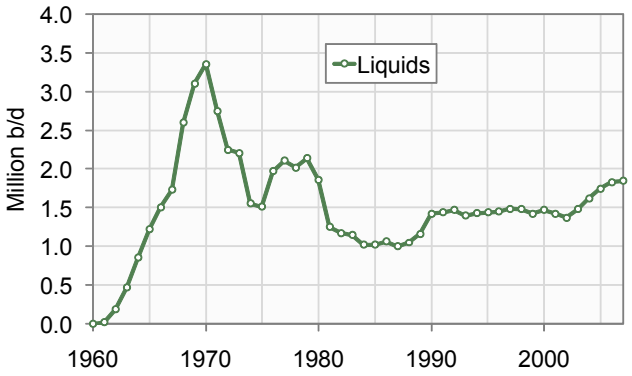
Source: ASPO Ireland & BP Statistical Review

Chart 82: Angola production January 2005 - January 2009



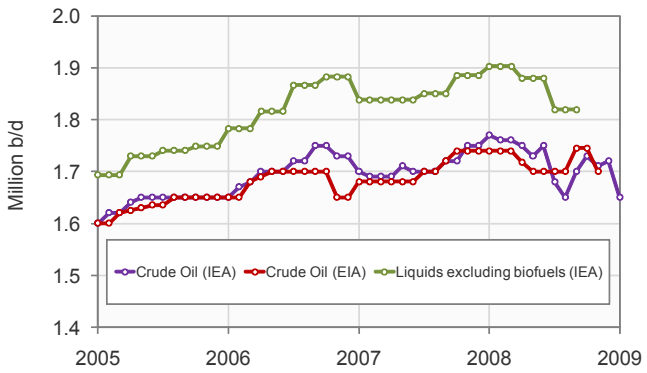
Source: Energy Information Admistration & International Energy Agency

Chart 83: Libya production 1970 - 2007



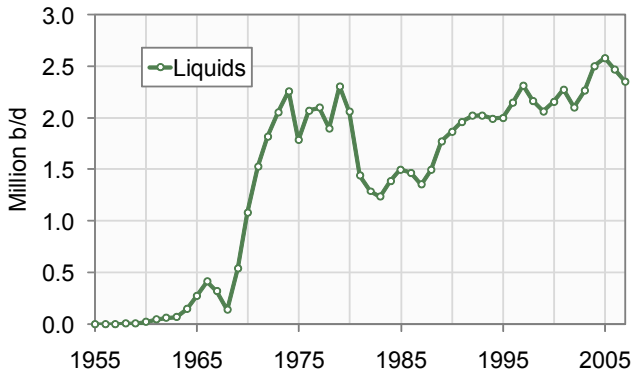
Source: ASPO Ireland & BP Statistical Review

Chart 84: Libya production January 2005 - January 2009



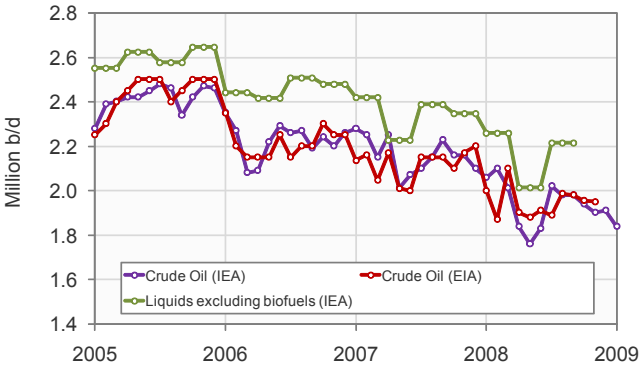
Source: Energy Information Admistration & International Energy Agency

Chart 85: Nigeria production 1955 - 2007



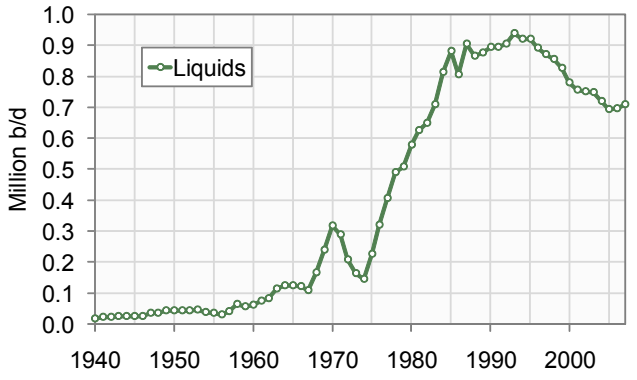
Source: ASPO Ireland & BP Statistical Review

Chart 86: Nigeria Production January 2005 - January 2009



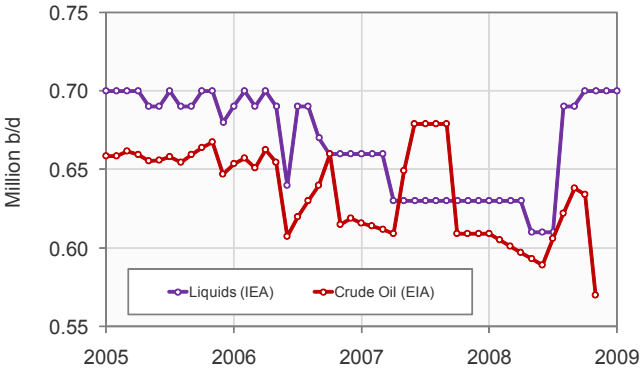
Source: Energy Information Admistration & International Energy Agency

Chart 87: Egypt production 1940 - 2007



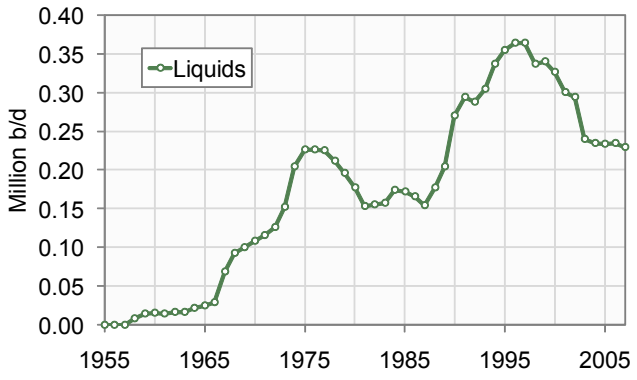
Source: ASPO Ireland & BP Statistical Review

Chart 88: Egypt production January 2005 - January 2009



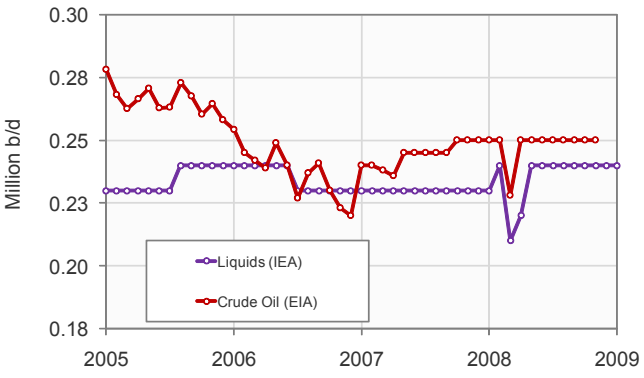
Source: Energy Information Administration & International Energy Agency

Chart 89: Gabon production 1955 - 2007



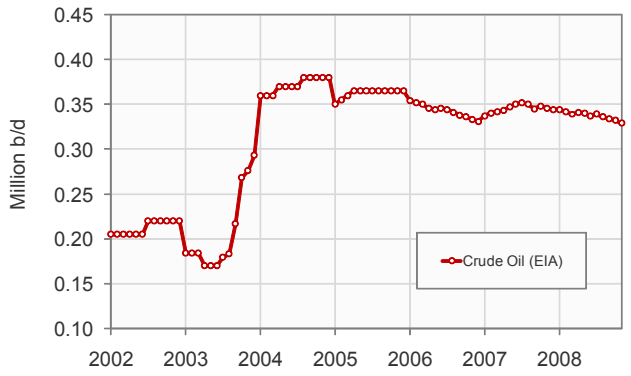
Source: ASPO Ireland & BP Statistical Review

Chart 90: Gabon production January 2005 - January 2009



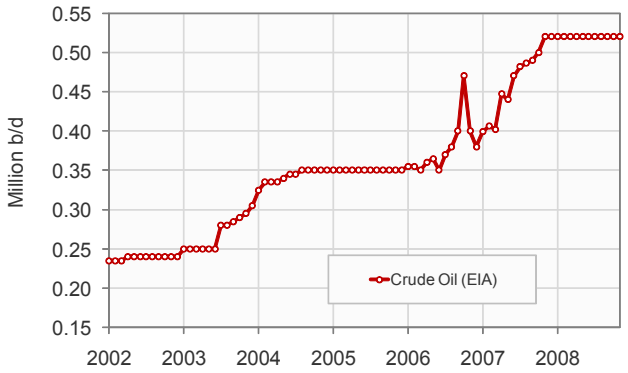
Source: Energy Information Administration & International Energy Agency

Chart 91: Equatorial Guinea production Jan. 2002 - Nov. 2008



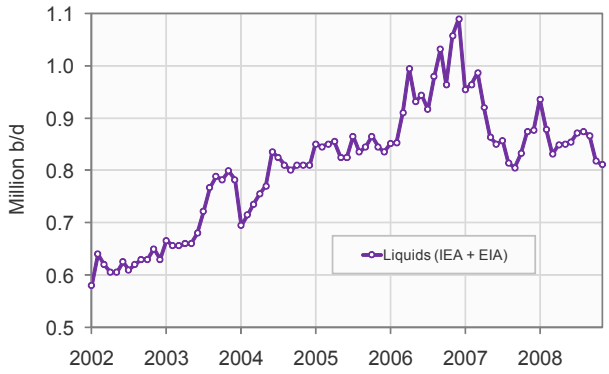
Source: Energy Information Admistration

Chart 92: Sudan Production January 2002 - November 2008



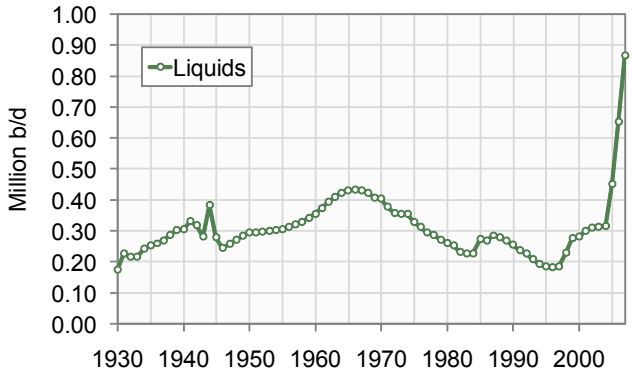
Source: Energy Information Admistration

Chart 93: Other Africa Production January 2002 - Nov. 2008



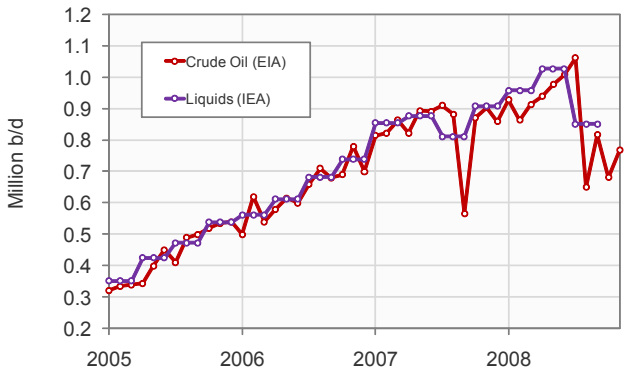
Source: Energy Information Admistration & International Energy Agency

Chart 94: Azerbaijan production 1930 - 2007



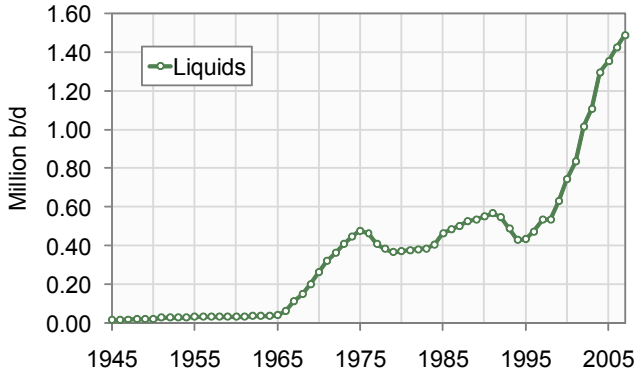
Source: ASPO Ireland & BP Statistical Review

Chart 95: Azerbaijan production January 2005 - Nov. 2008



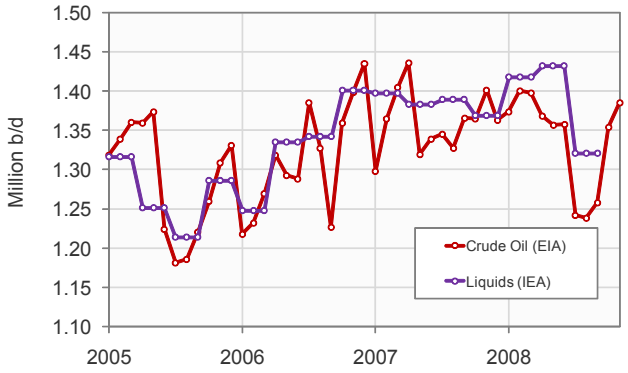
Source: Energy Information Administration & International Energy Agency

Chart 96: Kazakhstan production 1945 - 2007



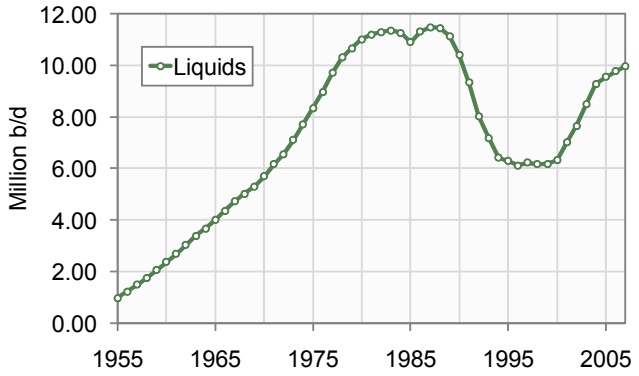
Source: ASPO Ireland & BP Statistical Review

Chart 97: Kazakhstan production January 2005 - Nov. 2008



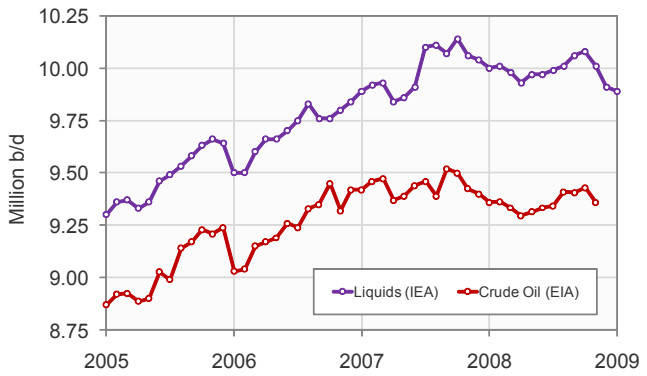
Source: Energy Information Administration & International Energy Agency

Chart 98: Russia production 1955 - 2007



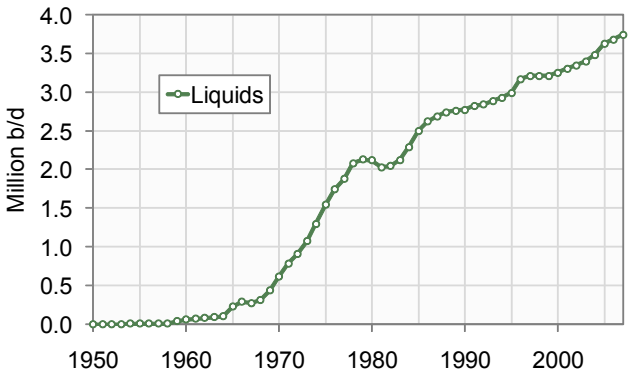
Source: ASPO Ireland & BP Statistical Review

Chart 99: Russia production January 2005 - January 2009



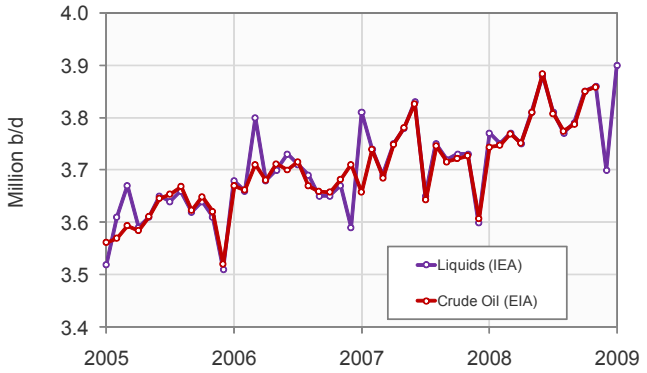
Source: Energy Information Administration & International Energy Agency

Chart 100: China production 1950 - 2007



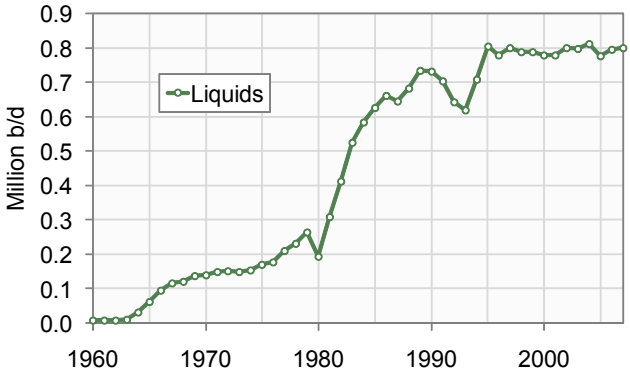
Source: ASPO Ireland & BP Statistical Review

Chart 101: China production January 2005 - January 2009



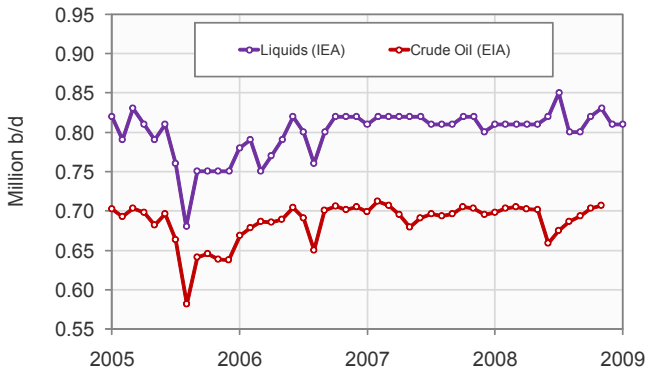
Source: Energy Information Administration & International Energy Agency

Chart 102: India production 1960 - 2007



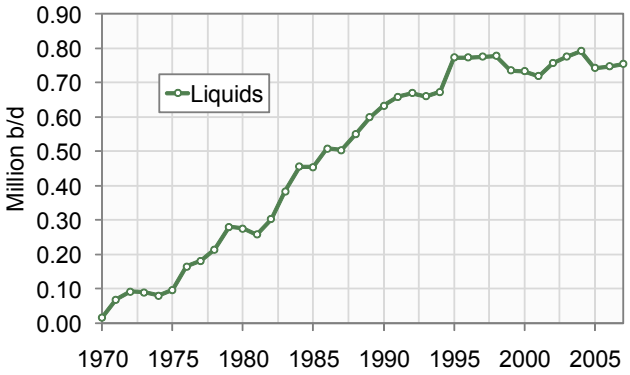
Source: ASPO Ireland & BP Statistical Review

Chart 103: India Production January 2005 - January 2009



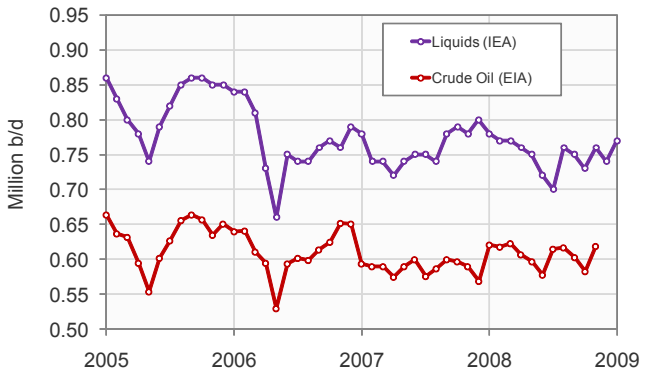
Source: Energy Information Administration & International Energy Agency

Chart 104: Malaysia production 1955 - 2007



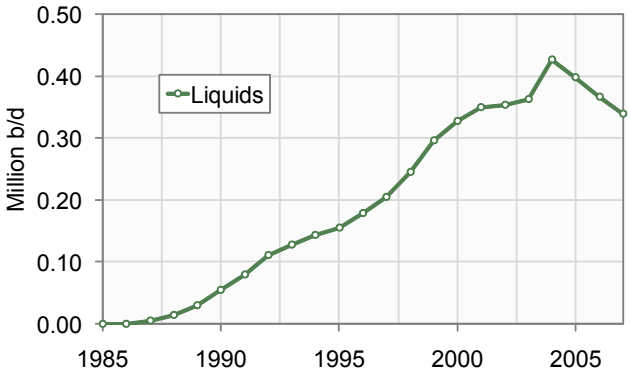
Source: ASPO Ireland & BP Statistical Review

Chart 105: Malaysia production January 2005 - January 2009



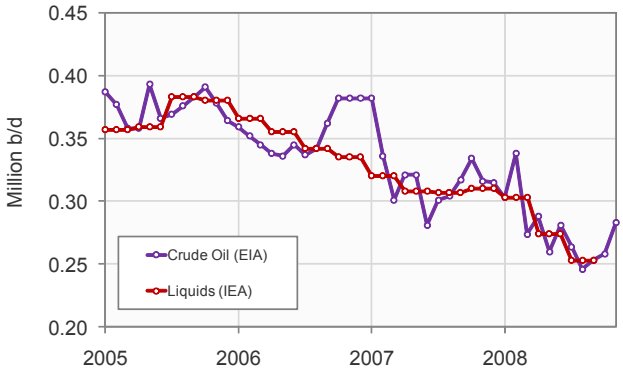
Source: Energy Information Administration & International Energy Agency

Chart 106: Vietnam production 1985 - 2007



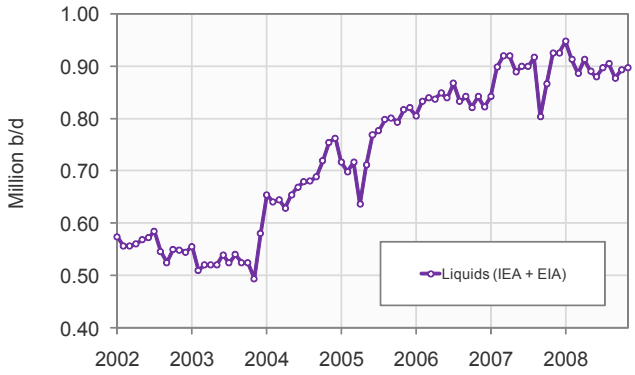
Source: ASPO Ireland & BP Statistical Review

Chart 107: Vietnam production January 2005 - November 2008



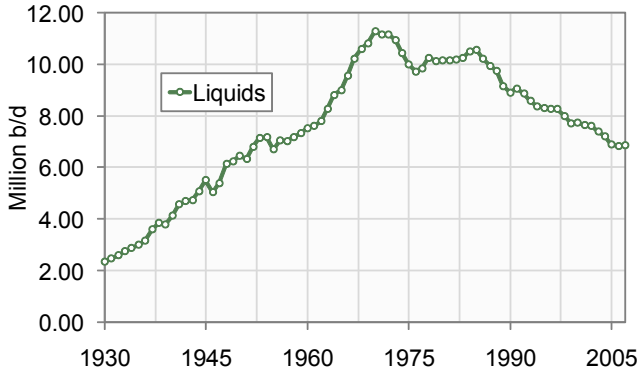
Source: Energy Information Administration & International Energy Agency

Chart 108: Other Asia production January 2002 - Nov. 2008



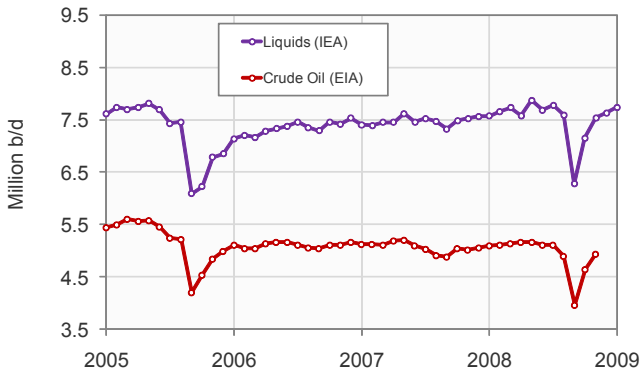
Source: Energy Information Admistration & International Energy Agency

Chart 109: United States production 1930 - 2007



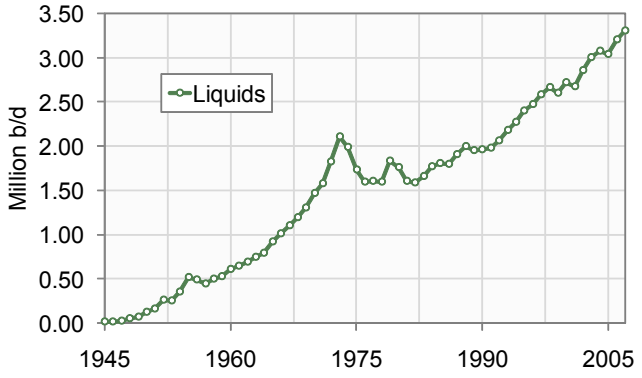
Source: ASPO Ireland & BP Statistical Review

Chart 110: United States production January 2005 - Jan. 2009



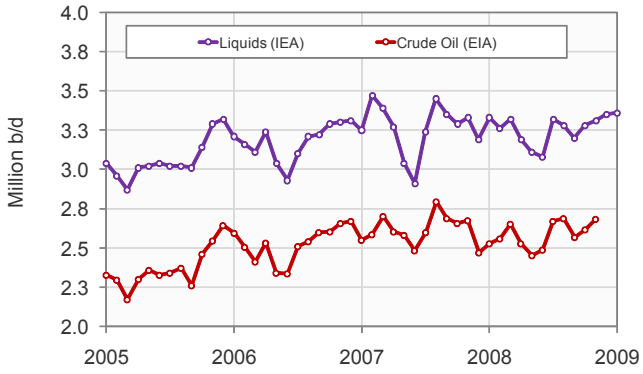
Source: Energy Information Administration & International Energy Agency

Chart 111: Canada production 1945 - 2007



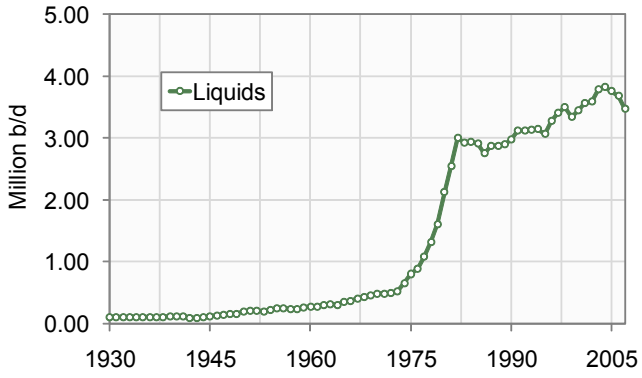
Source: ASPO Ireland & BP Statistical Review

Chart 112: Canada production January 2005 - January 2009



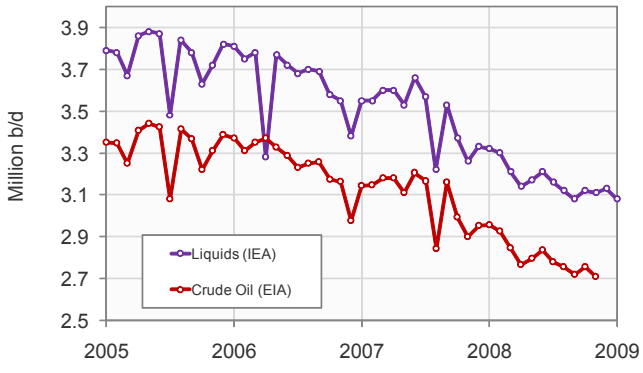
Source: Energy Information Administration & International Energy Agency

Chart 113: Mexico production 1930 - 2007



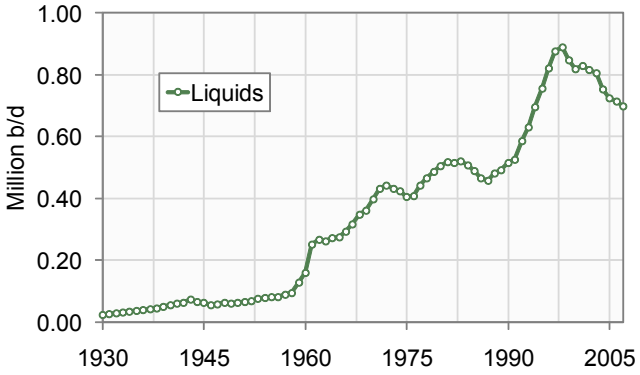
Source: ASPO Ireland & BP Statistical Review

Chart 114: Mexico production January 2005 - January 2009



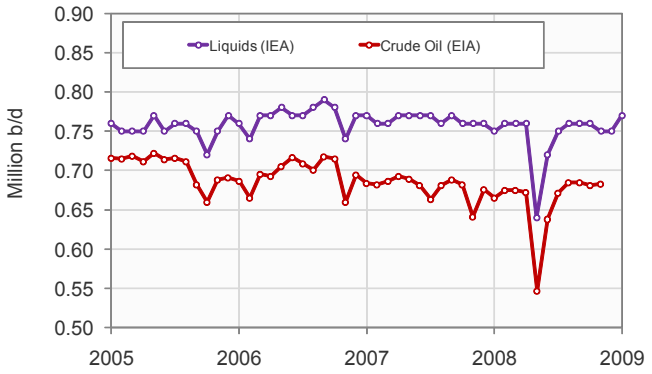
Source: Energy Information Administration & International Energy Agency

Chart 115: Argentina production 1930 - 2007



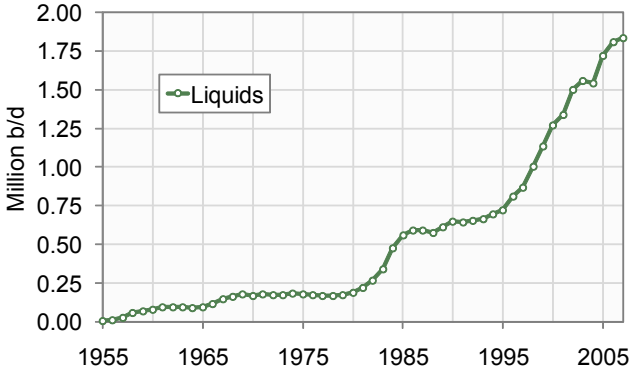
Source: ASPO Ireland & BP Statistical Review

Chart 116: Argentina production January 2005 - January 2009



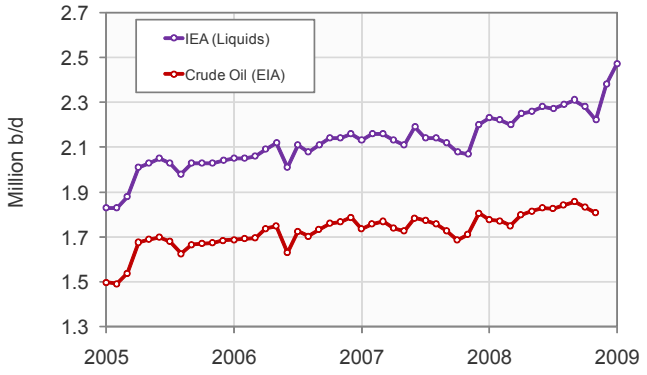
Source: Energy Information Administration & International Energy Agency

Chart 117: Brazil production 1955 - 2007



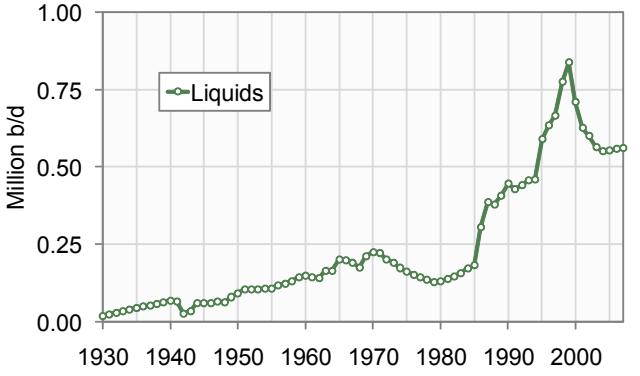
Source: ASPO Ireland & BP Statistical Review

Chart 118: Brazil production January 2005 - January 2009



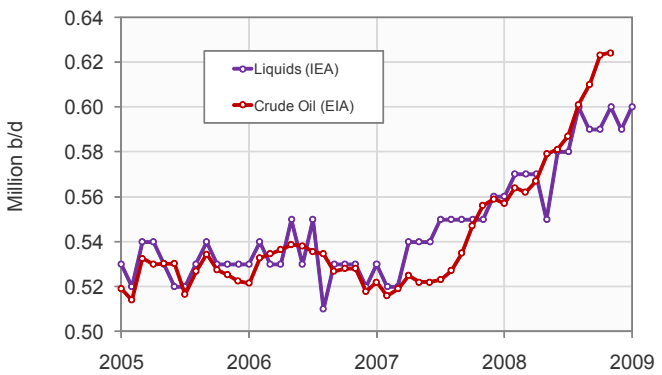
Source: Energy Information Administration & International Energy Agency

Chart 119: Colombia production 1930 - 2007



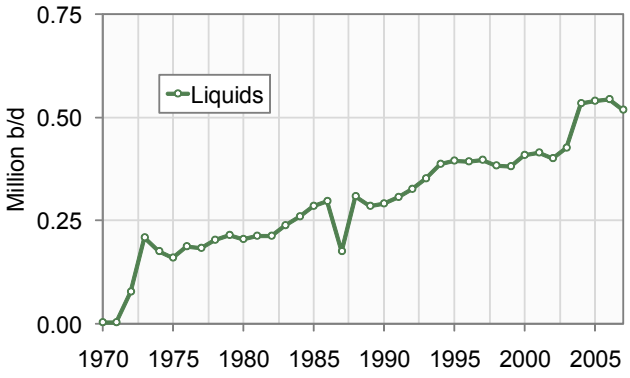
Source: ASPO Ireland & BP Statistical Review

Chart 120: Colombia production January 2005 - January 2009



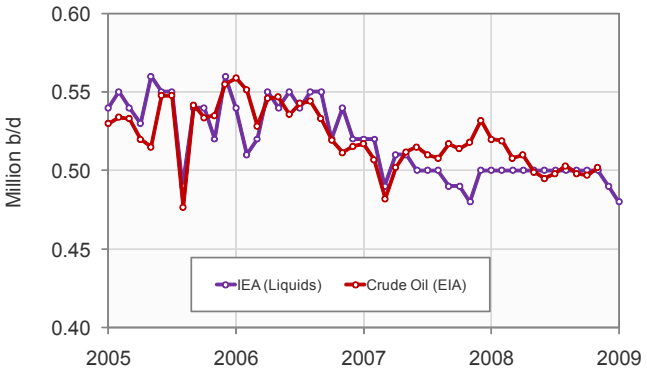
Source: Energy Information Administration & International Energy Agency

Chart 121: Ecuador production 1970 - 2007



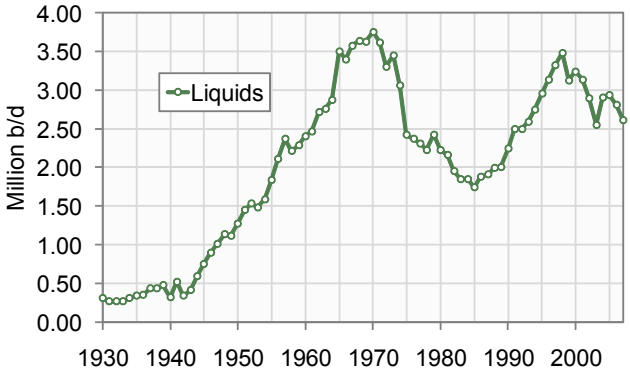
Source: ASPO Ireland & BP Statistical Review

Chart 122: Ecuador production January 2005 - January 2009



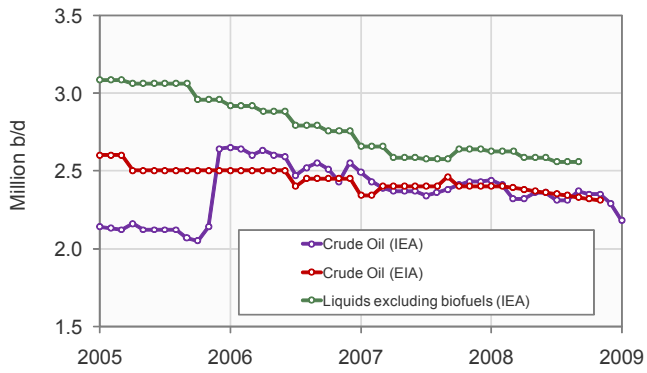
Source: Energy Information Administration & International Energy Agency

Chart 123: Venezuela production 1930 - 2007



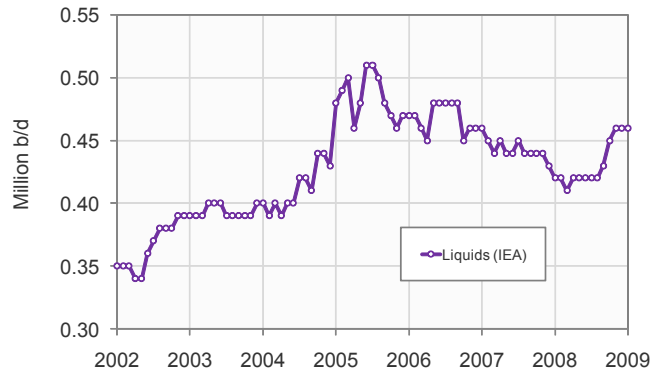
Source: ASPO Ireland & BP Statistical Review

Chart 124: Venezuela production January 2005 - January 2009



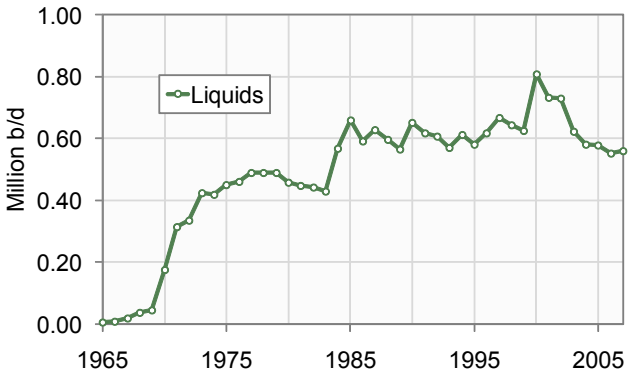
Source: Energy Information Admistration & International Energy Agency

Chart 125: Other S. America production Jan. 2002 - Jan. 2009



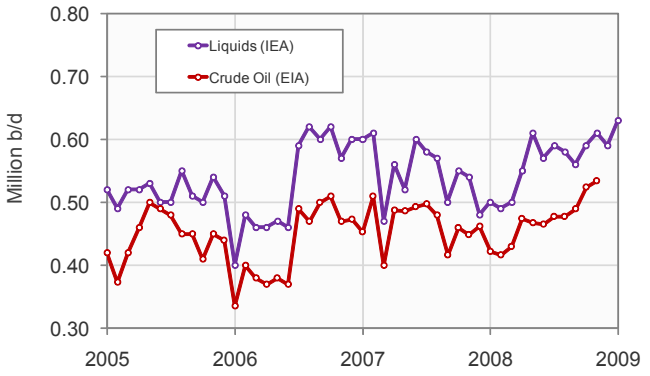
Source: International Energy Agency

Chart 126: Australia production 1970 - 2007



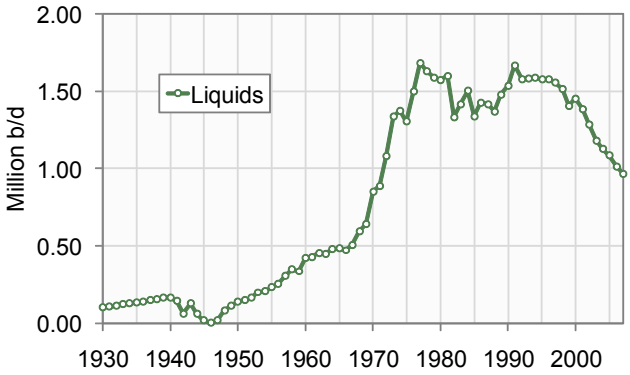
Source: ASPO Ireland & BP Statistical Review

Chart 127: Australia production January 2005 - December 2008



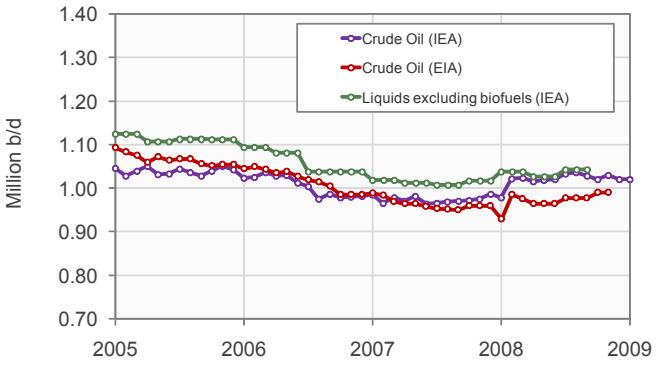
Source: Energy Information Administration & International Energy Agency

Chart 128: Indonesia production 1930 - 2007



Source: ASPO Ireland & BP Statistical Review

Chart 129: Indonesia production January 2005 - Dec. 2008



Source: Energy Information Administration & International Energy Agency