

Oilwatch monthly

Your coverage on the latest worldwide oil production developments



21 & 22 January Amsterdam: the permanent oil crisis conference - www.permanentoilcrisis.com

The unexpected effects of an oil price drop

From 150 dollars to 40 dollars in just five months time. This unprecedented drop in oil prices is now the topic of the day in the corridors of oil and energy experts. Some expect oil prices to drop even further due to an intensification of the global economic recession that we are in. Others assume that the market is balancing itself out. That OPEC will cut supply so significantly that the present oversupply of oil will turn into undersupply. A similar situation as was the case before economic recession hit.

The main factor in this dispute over future oil prices is what is going to happen to demand. Some institutes expect oil consumption to increase slightly in 2009 while others foresee a continuation of the drop in consumption that is currently taking place. Depending on the actual level of demand in 2009, and how much production the OPEC oil cartel cuts in an attempt to prop up the price, oil prices will either remain at 40 dollars per barrel or lower, or rise quickly to 75 dollars per barrel. On the medium term, if the economy stabilizes and demand growth becomes more robust again, perhaps around 2011, oil prices will undoubtedly rise to new heights and remain at higher levels. This is enclosed in the present as investment has been lacking in recent years in new oil fields. Declines in ageing oil fields are simply too severe to be offset by planned investments. This decline and investment pattern has recently been analyzed by the International Energy Agency, which concluded in its recent World Energy Outlook 2008 that oil production can only rise to a maximum of 88 million b/d between now and 2015, a level that is only slightly higher than oil production today.

The IEA picture was made up based on figures from before the current economic crisis. As the oil price has declined to 40 dollars per barrel a more pessimistic picture is emerging. Many of the investments that were planned and included in the IEA report in more expensive regions have now been postponed. Their profitability is in doubt at current oil prices, hence oil companies will wait for more certainty to bring these projects to the investment table. These postponed investments, according to recent research by Cambridge Energy Research Associates, means 5 million barrels per day less that will be pumped of the ground in five years time. In other words, the maximum available supply in 2015 will not be 88 million but 83 million barrels per day or lower. Or in qualitative instead of quantitative terms, world oil production has peaked as of 2008.

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Definitions

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

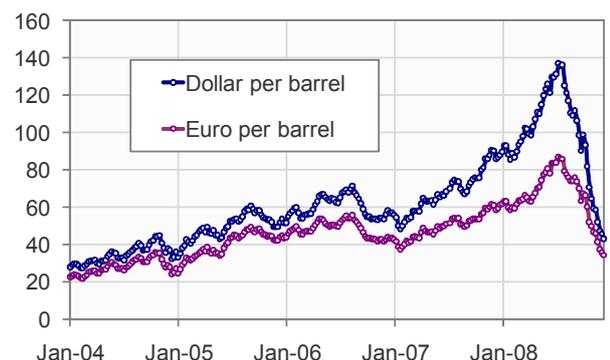
Liquids, all forms of liquid fuels including conventional, heavy, and extra heavy oil, oil shale, oil sands, natural gas liquids, lease condensates, gas-to-liquids, coal-to-liquids, and biofuels.

One Barrel of oil is equivalent to 159 litres

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Chart 1: Oil Price Weighed Average of Blends

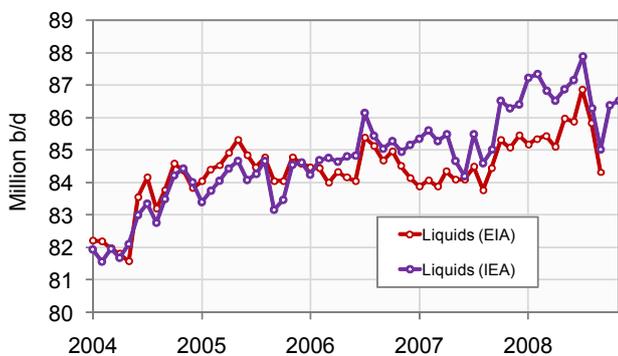


Source: Energy Information Administration

World liquids production status

In November world production of total liquids increased by 160,000 barrels per day from October according to the latest figures of the International Energy Agency (IEA). Resulting in total world liquids production of 86.53 million b/d.

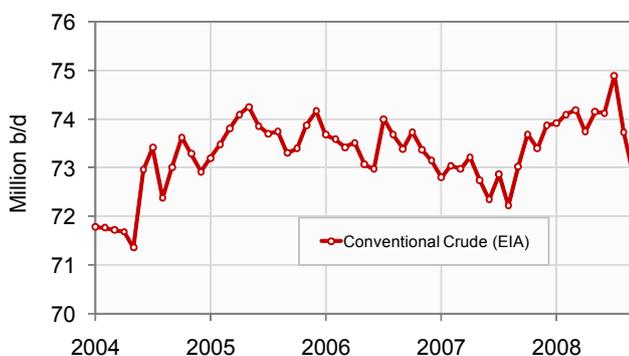
Average global production in 2007 was 85.41 million b/d according to the IEA. In 2008 an average of 86.73 million b/d has been produced from January to November. The US Energy Information Administration (EIA) in their International Petroleum Monthly puts average global 2007 production at 84.40 million b/d and average liquids production from January to September 2008 at 85.54 million b/d.

Chart 2: World Liquids Production Jan. 2004 - November 2008


Source: Energy Information Administration, International Energy Agency

World crude oil production status

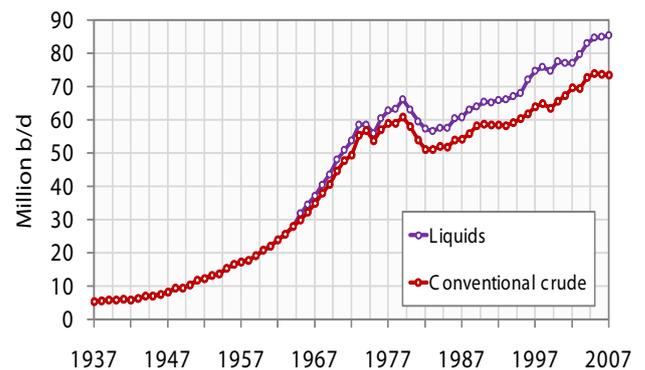
Latest available figures from the Energy Information Administration (EIA) show that crude oil production including lease condensates decreased by 907,000 b/d from August to September. Resulting in a total production of crude oil including lease condensates of 73.80 million barrels per day. The all time high production record of crude oil now stands at 74.86 million b/d reached in July 2008.

Chart 3: World Crude Oil Production January 2004 - Okt. 2008


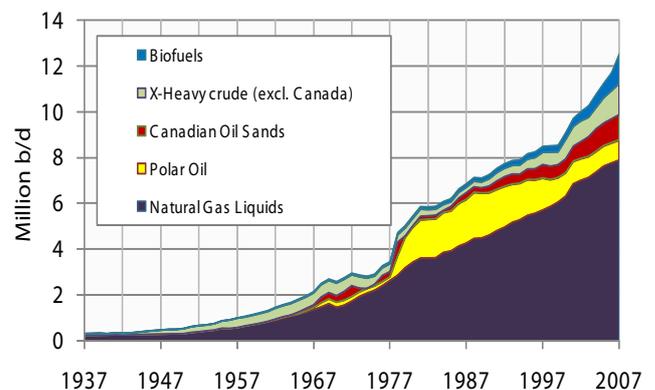
Source: Energy Information Administration

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 Heavy 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 4: World Crude and Liquids production 1937 - 2007


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

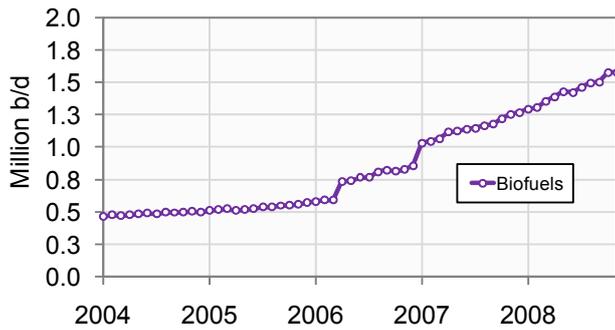
Chart 5: World Unconventional Production 1937 - 2007


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

World biofuel production status

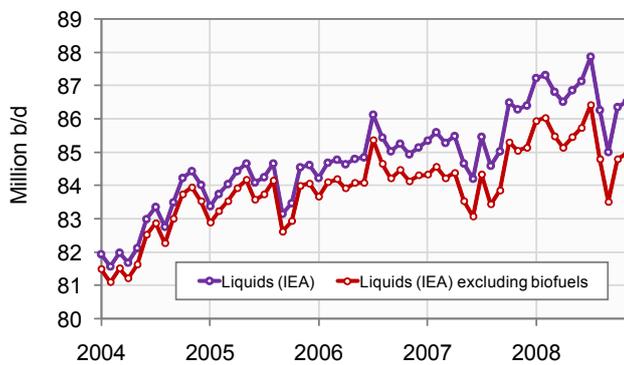
In November total world biofuel production was 1.56 million barrels per day according to statistics compiled from the Energy Information Administration, the International Energy Agency and the Brazilian ministry of Energy. With an estimated 695,000 b/d from the United States, 415,000 b/d from Brazil and 520,000 b/d from other countries.

Chart 6: World biofuels production Jan. 2004 - November 2008



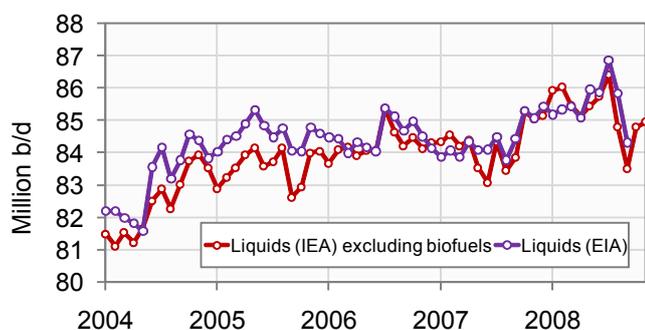
Source: Energy Information Administration, International Energy Agency, Brazilian Ministry of Energy

Chart 7: Liquids vs liquids excl. biofuels I Jan. 2004 - Nov. 2008



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

Chart 8: Liquids vs. liquids excl. biofuels II - Jan. 2004 - Nov. 2008

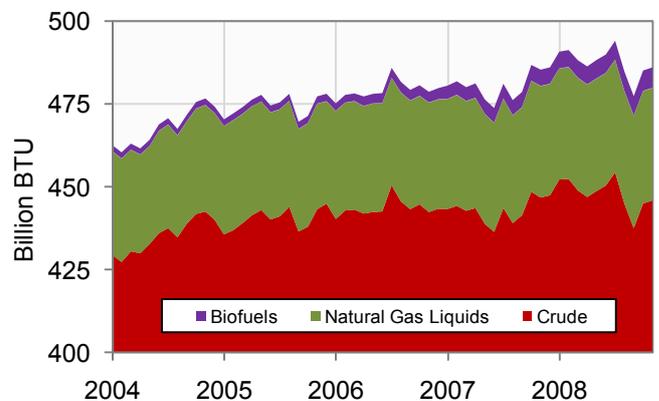


Source: Energy Information Administration, International Energy Agency, Brazilian Ministry of Energy

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 different amounts 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 comes from natural gas liquids and biofuels. When converting 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 9: Gross Energy available from liquids Jan. 2004 - Nov. 2008

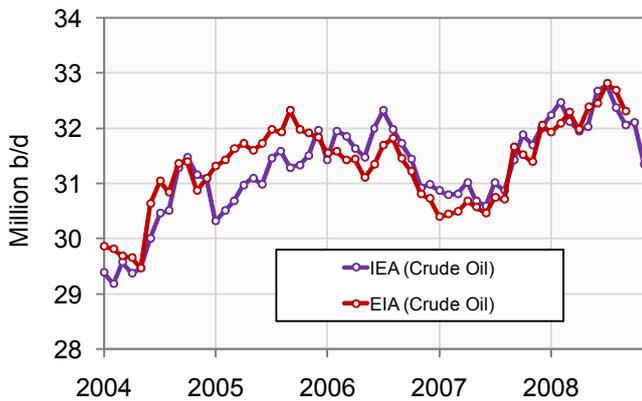


Source: Energy Information Administration, International Energy Agency

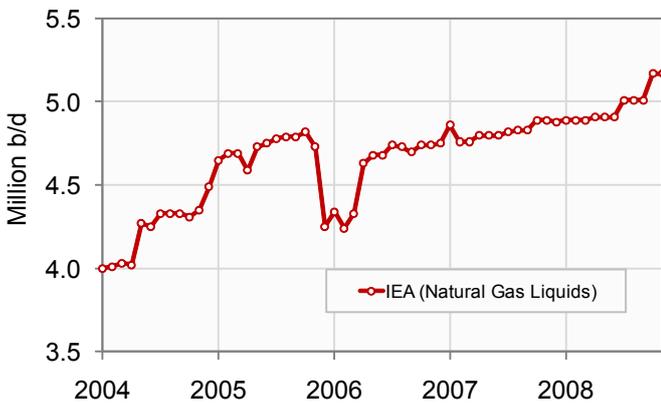
The actual energy available for society to consume is lower than shown in chart 9, however, because an incremental amount is needed to bring the oil out of the ground as the oil industry has to drill deeper at more extreme locations which costs more energy. Next to the additional energy needed in processing oil to deliver a useful product due to a decline in quality from conventional to more unconventional oil. Studies by Professor Charles Hall and his science group at State University New York show that the energy that is 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 not known to what percentage this amount of energy comes from oil, gas or coal, the main energy inputs for the oil and gas industry.

OPEC production status

Total crude oil production including lease condensates of the OPEC cartel decreased by 760,000 b/d to a level of 31.35 million b/d, from October to November, according to the latest available estimate of the IEA. Natural Gas Liquids production remained stable at 5.17 million b/d from October to November. Average total liquids production in OPEC countries in 2008 from January to November was 37.18 million b/d, versus 35.96 million b/d in 2007 and 35.71 million b/d in 2006.

Chart 10: OPEC Crude Oil Production January 2004 - Nov. 2008


Source: Energy Information Administration & International Energy Agency

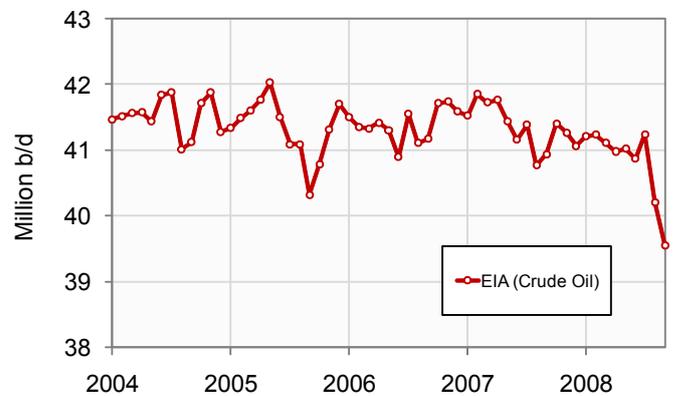
Chart 11: OPEC Natural Gas Liquids Prod. Jan. 2004 - Nov. 2008


Source: International Energy Agency

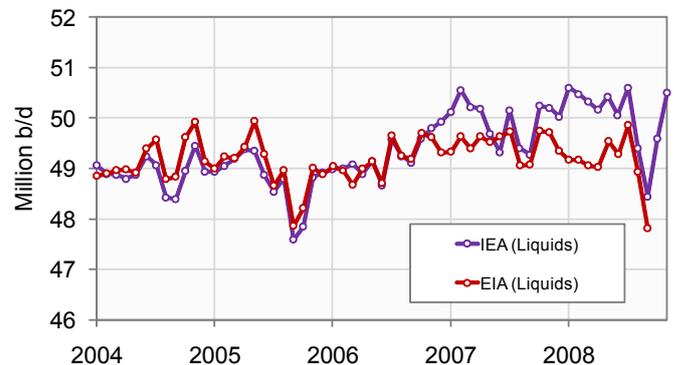
Non-OPEC production status

Total crude oil production including lease condensates of non-OPEC decreased by 653,000 b/d from August to September to a level of 39.55 million b/d, according to the latest available estimate of the EIA. Average crude oil production of Non-OPEC from January to September 2008 was 40.82 million b/d, versus 41.35 million b/d in 2007 and 41.41 million b/d in 2006.

Total non-OPEC liquids production increased by 920,000 b/d to a level of 50.01 million b/d from October to November, according to the latest figures of the IEA. Average total liquids production of non-OPEC in 2008 from January to November was 49.55 million b/d, versus 49.45 million b/d in 2007 and 48.75 million b/d in 2006.

Chart 12: Non-OPEC Crude Oil Production Jan. 2004 - Sept. 2008


Source: Energy Information Administration

Chart 13: Non-OPEC Liquids Production Jan. 2004 - Nov. 2008


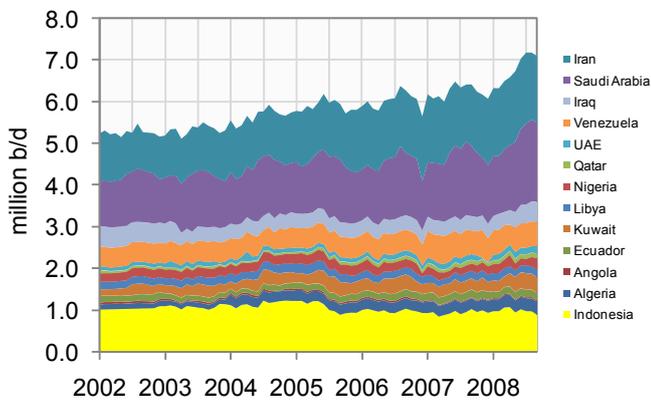
Source: International Energy Agency & Energy Information Administration

OPEC liquids demand developments

In 2002 OPEC-13 (including Iraq and Indonesia) consumed 5.26 million b/d according to the JODI database. OPEC-13 demand has increased by 1.2 million b/d to 6.46 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.

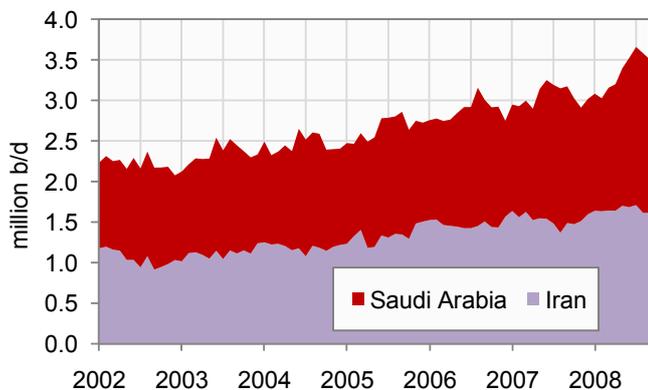
In 2008 this pace of growth has continued until July 2008. Since then liquids consumption in Saudi Arabia and Iran has declined by respectively 58,000 b/d and 96,000 b/d. Average consumption in Saudi-Arabia from January to September 2008 was 1.7 million b/d and in Iran 1.65 million b/d. Average consumption in the same period of 2007 in Saudi Arabia was 1.55 million b/d and in Iran 1.53 million b/d.

Chart 14: OPEC-13 Liquids Demand January 2002 - Sept. 2008



Source: JODI Database

Chart 15: Iran & S. Arabia Liquids Demand Jan. 2002 - Sept. 2008



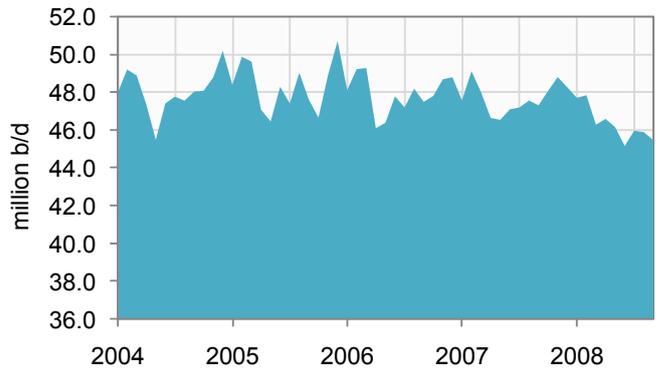
Source: JODI Database

Non-OPEC 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.

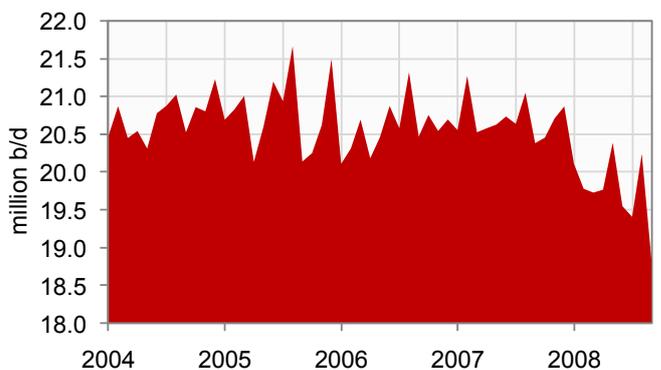
The decline in OECD consumption is accelerating much faster in 2008. Consumption in September 2008 was 45.46 million b/d, a decline of 1.85 million b/d year on year. Average consumption from January to September 2008 was 46.34 million b/d, which is 1.11 million b/d lower than consumption in the same period in 2007. The decline is mainly a result of a decrease in oil consumption in the United States. Consumption is 951,000 b/d lower on average in the US from January to September 2008 than in the same period last year. In comparison, Mexican and Canadian consumption are almost flat relative to 2007 consumption.

Chart 16: OECD Liquids Demand Jan. 2004 - Sept. 2008



Source: Energy Information Administration

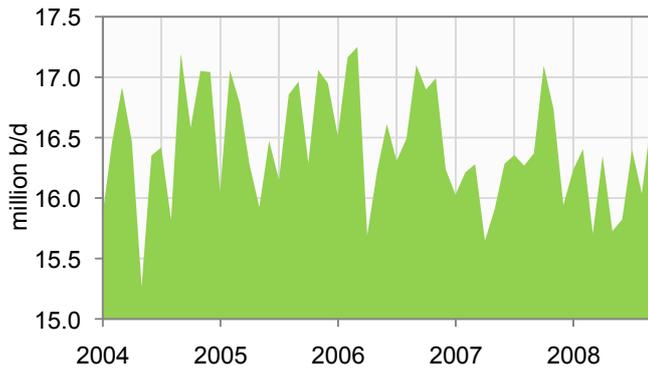
Chart 17: United States Liquids Demand Jan. 2004 - Sept. 2008



Source: JODI Database

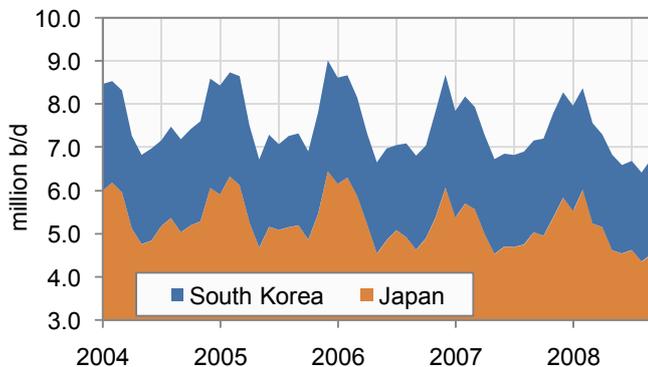
In the 27 countries of the European Union the decline in consumption apparent in recent years appears to have halted for now. From January to September 2008 16.15 million b/d were consumed on average, relative to 16.15 million b/d in the same period in 2007.

Chart 18: EU-27 Liquids Demand January 2004 - Sept. 2008



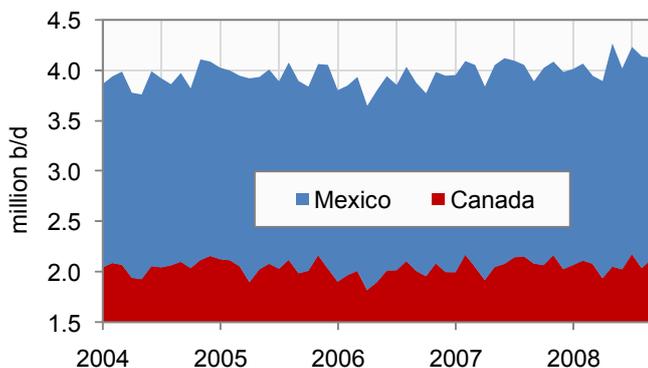
Source: JODI Database

Chart 19: S. Korea & Japan Liquids Demand Jan. 2002 - Sept. 2008



Source: JODI Database

Chart 20: Mexico & Canada Liquids Demand Jan. 2004 - Sept. 2008



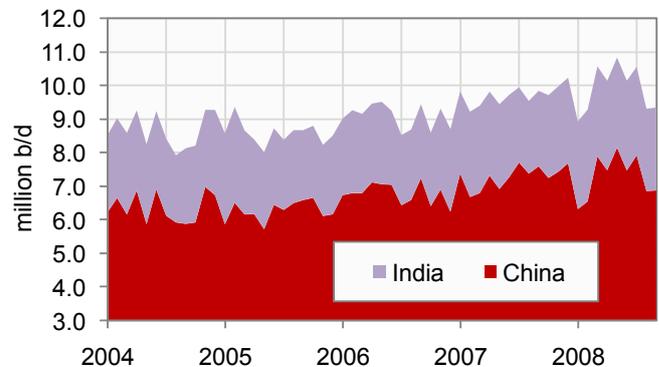
Source: JODI Database

India & China liquids demand developments

Chinese liquids consumption averaged 7.28 million b/d from January to September 2008 according to the JODI database. An increase of only 50,000 b/d versus average 2007 January to September consumption of 7.23 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 has also been impacted here since July. Liquids consumption in September was 1.04 million b/d lower than in July.

Consumption in India was 2.62 million b/d from January to September 2008, versus an average of 2.43 million b/d in 2007 and 2.29 million b/d in 2006.

Chart 21: India & China Liquids Demand Jan. 2002 - Sept. 2008



Source: JODI Database

Total OECD crude oil and oil product stocks status

Industrial inventories of crude oil in the OECD in October increased to a level of 968 million barrels from 942 million barrels in September according to IEA statistics.

Chart 22: OECD Crude Oil Stocks January 2002 - October 2008

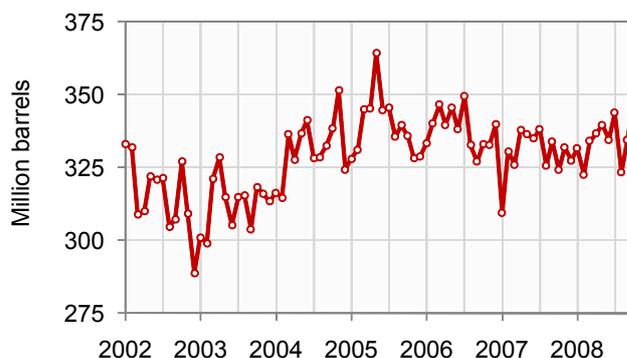


Source: International Energy Agency

OECD Europe crude oil and oil product stocks status

Industrial inventories of crude oil in OECD Europe increased in October to a level of 349 million barrels from 334 million barrels in September according to IEA statistics.

Chart 24: Europe Crude Oil Stocks January 2002 - October 2008



Source: International Energy Agency

Total industrial product stocks in the OECD were 1410 million barrels in October 2008, an increase of 18 million barrels from a stock level of 1393 million barrels in September. Total product stocks stand slightly higher than the five year average of 1382 million barrels.

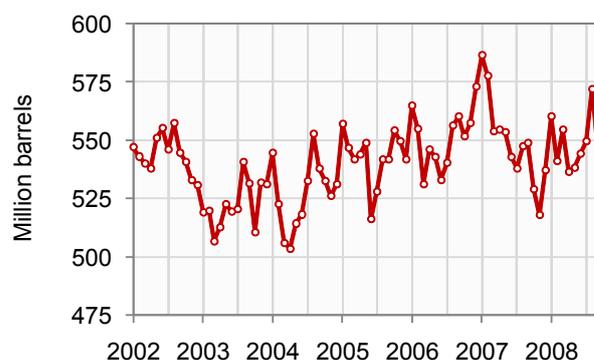
Chart 23: OECD Product Stocks Jan. 2002 - October 2008



Source: International Energy Agency

Total industrial product stocks in OECD Europe were 539 million barrels in October 2008, a decrease of 7 million barrels from a stock level of 546 million barrels in September. Total product stocks stand slightly higher than the five year average of 542 million barrels.

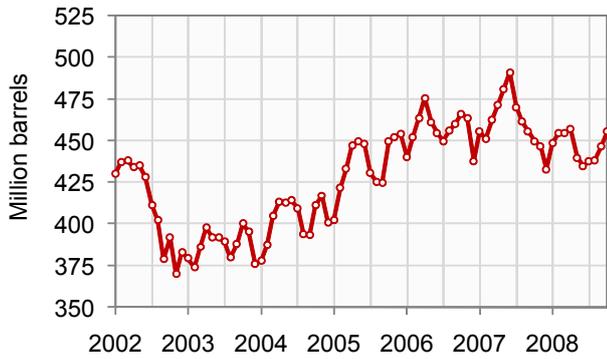
Chart 25: Europe Product Stocks January 2002 - October 2008



Source: International Energy Agency

OECD America crude oil and oil product stocks status

Industrial inventories of crude oil in OECD America increased in October to a level of 456 million barrels from 447 million barrels in September according to IEA statistics.

Chart 26: North America Crude Oil Stocks Jan. 2002 - Oct. 2008


Source: International Energy Agency

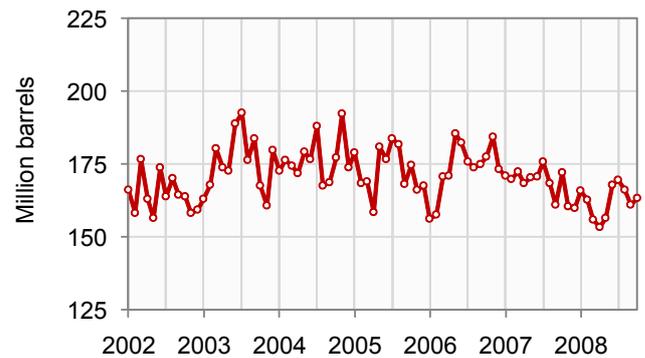
Total industrial product stocks in OECD America were 680 million barrels in October 2008, an increase of 25 million barrels from a stock level of 655 million barrels in August. Total product stocks stand slightly higher than the five year average of 659 million barrels.

Chart 27: N. America Product Stocks January 2002 - Oct. 2008


Source: International Energy Agency

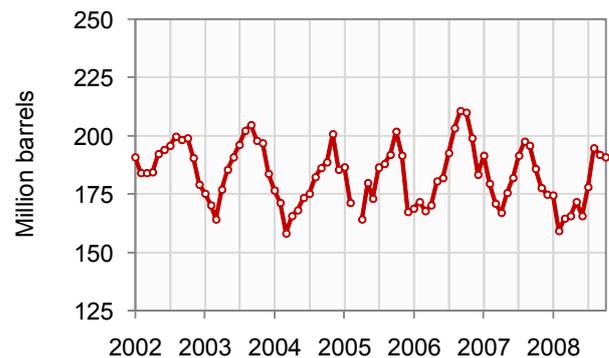
OECD Pacific crude oil and oil product stocks status

Industrial inventories of crude oil in OECD Pacific increased in October to a level of 163 million barrels from 161 million barrels in September according to IEA statistics.

Chart 28: Pacific Crude Oil Stocks January 2002 - Oct. 2008


Source: International Energy Agency

Total industrial product stocks in OECD Pacific were 191 million barrels in August 2008, a decrease of 1 million barrels over a stock level of 192 million barrels in August. Total product stocks stand slightly higher than the five year average of 182 million barrels.

Chart 29: Pacific Product Stocks January 2002 - Oct. 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 where it is refined into usable products. These usable products are then imported back to the country where 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 September 2008 the estimate suggests average world exports amounted to 47.56 million b/d.

Chart 30: World Liquids Exports Estimate Jan. 2002 - Sept. 2008



Source: derived from the IEA, EIA and JODI Database

From January to September 2008 average non-OPEC exports were estimated to be 17.15 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 31: Non-OPEC Liquids Exports January 2002 - Sept. 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 declining to 29.46 million b/d in 2007. From January to September 2008 OPEC exports amounted to an average level of 30.41 million b/d.

Chart 32: OPEC Liquids Exports January 2002 - August 2008

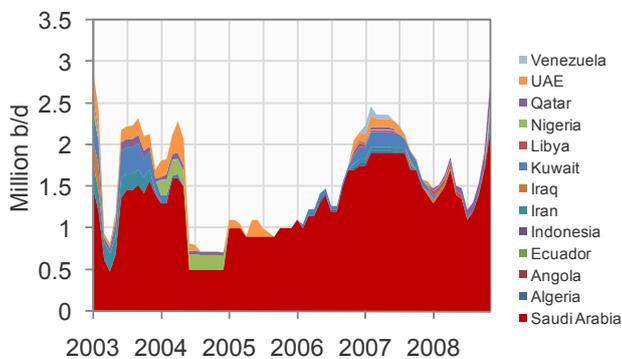


Source: derived from the IEA, EIA and JODI Database

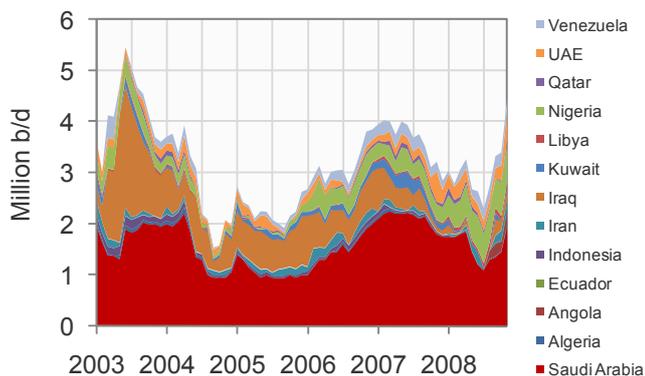
OPEC spare capacity

Total OPEC spare production capacity increased to 2.71 million b/d in November from a level of 1.94 million b/d in October according to the Energy Information Administration. Of total spare capacity 2.15 million b/d comes from Saudi Arabia, 0.23 million b/d from Qatar and 0.33 million b/d from other countries.

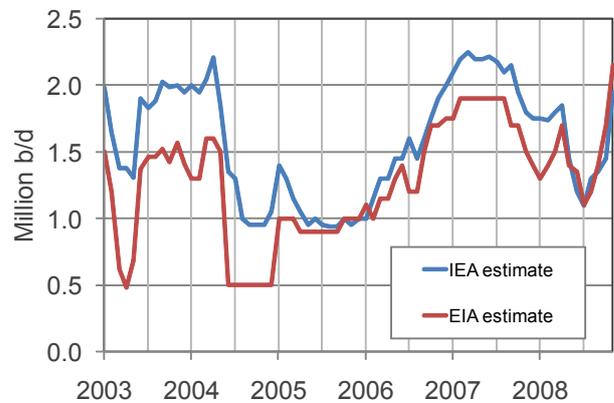
According to the International Energy Agency total effective spare capacity (excluding Indonesia, Iraq, Venezuela and Nigeria) increased to 3.24 million b/d in November from a level of 2.28 million b/d in October. The IEA estimates Saudi Arabia to be capable of producing an additional 1.95 million b/d within 90 days, the United Arab Emirates 0.57 million b/d, Angola 0.26 million b/d, Iran 0.2 million b/d, Libya 0.1 million b/d, Qatar 0.07 million b/d, and three remaining other countries 0.19 million b/d.

Chart 33: EIA OPEC Spare Capacity Jan. 2003 - November 2008


Source: Energy Information Administration

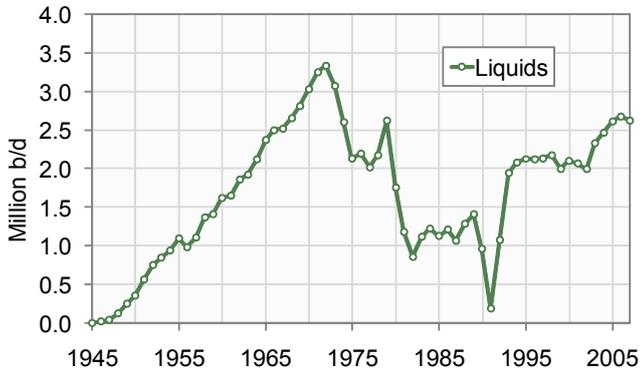
Chart 34: IEA OPEC Spare Capacity Jan. 2003 - November 2008


Source: International Energy Agency

Chart 34a: Saudi Arabia Spare Capacity Jan. 2003 - Nov. 2008


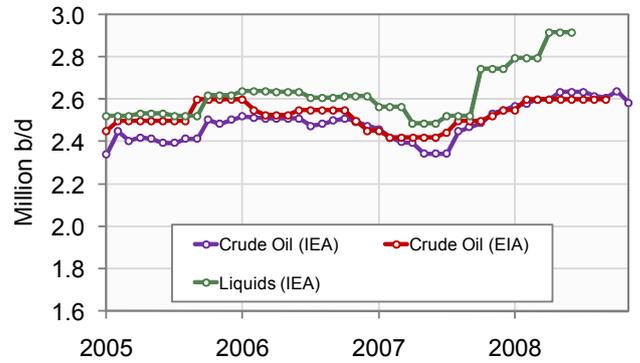
Source: Energy Information Administration, International Energy Agency

Chart 35: Kuwait Production 1945 - 2007



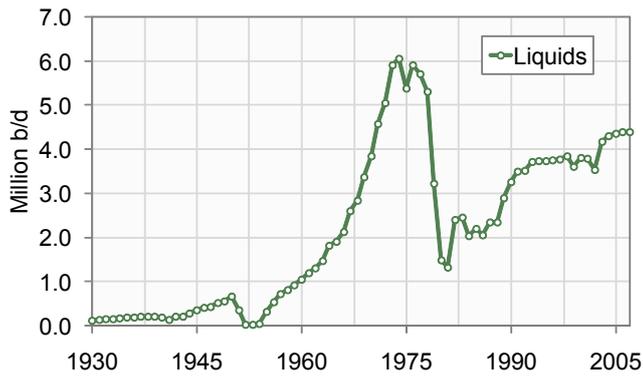
Source: ASPO Ireland & BP Statistical Review

Chart 36: Kuwait Production January 2005 - November 2008



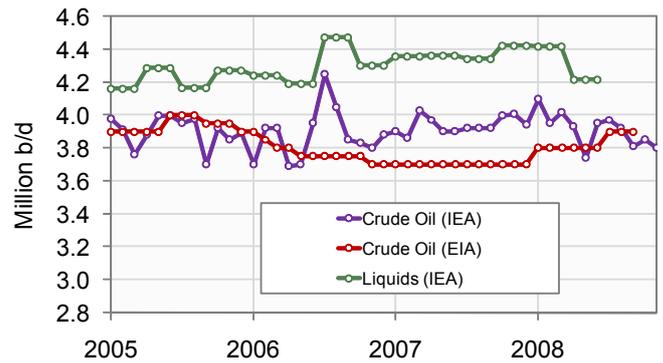
Source: Energy Information Administration & International Energy Agency

Chart 37: Iran Production 1930 - 2007



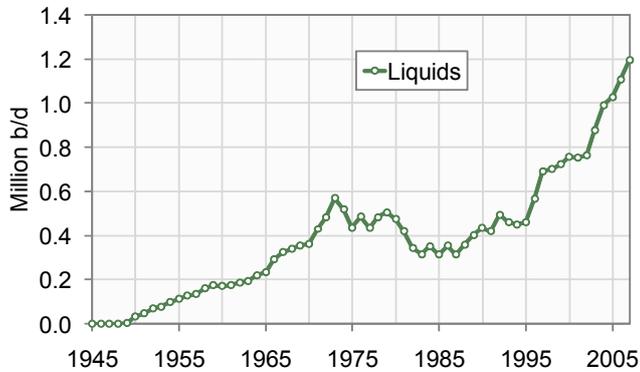
Source: ASPO Ireland & BP Statistical Review

Chart 38: Iran Production January 2005 - November 2008



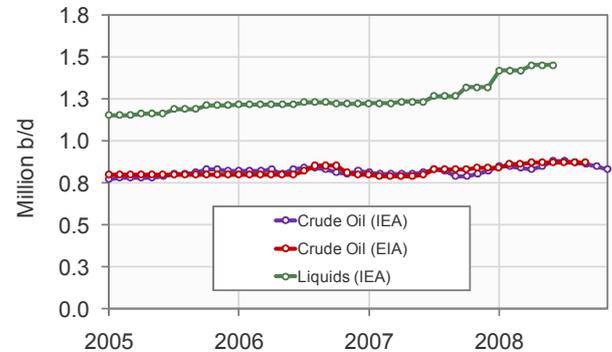
Source: Energy Information Administration & International Energy Agency

Chart 39: Qatar Production 1945 - 2007

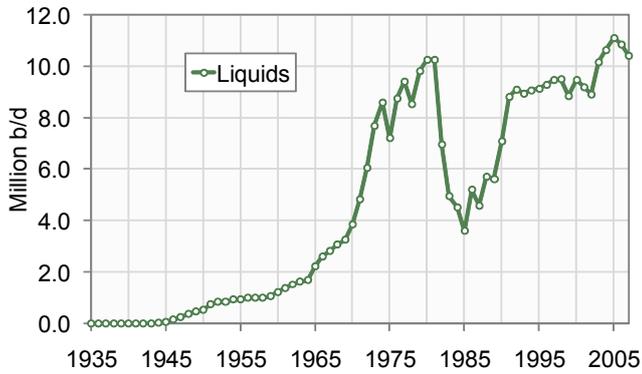


Source: ASPO Ireland & BP Statistical Review

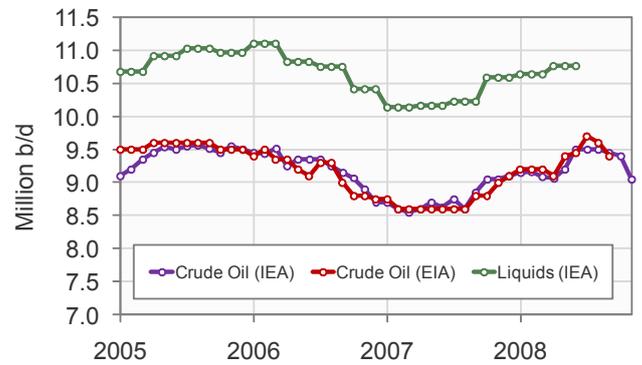
Chart 40: Qatar Production January 2005 - November 2008



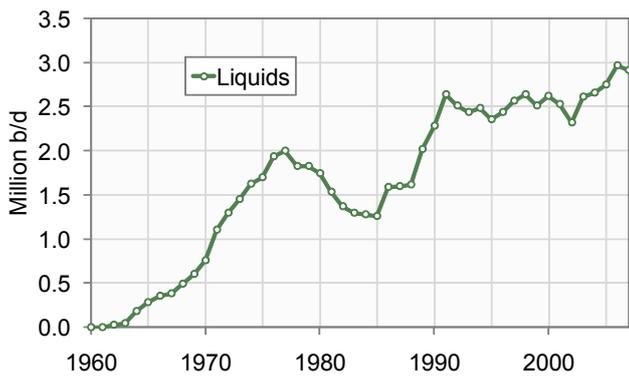
Source: Energy Information Administration & International Energy Agency

Chart 41: Saudi Arabia Production 1935 - 2007


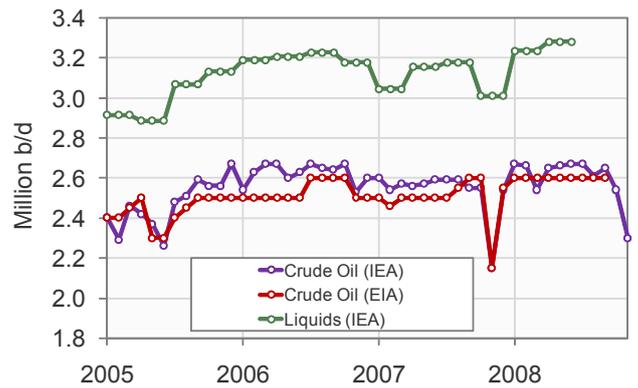
Source: ASPO Ireland & BP Statistical Review

Chart 42: Saudi Arabia Production January 2005 - Nov. 2008


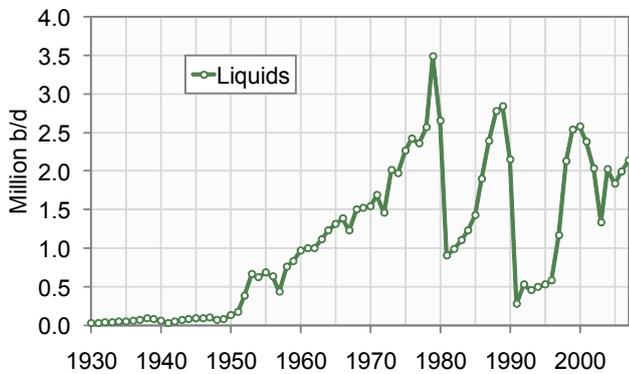
Source: Energy Information Administration & International Energy Agency

Chart 43: UAE Production 1960 - 2007


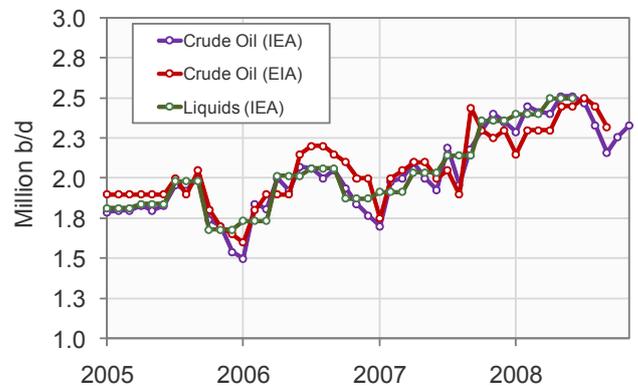
Source: ASPO Ireland & BP Statistical Review

Chart 44: UAE Production January 2005 - November 2008


Source: Energy Information Administration & International Energy Agency

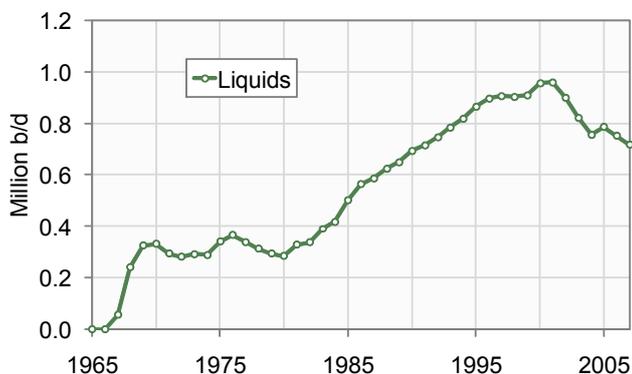
Chart 45: Iraq Production 1930 - 2007


Source: ASPO Ireland & BP Statistical Review

Chart 46: Iraq Production January 2005 - November 2008


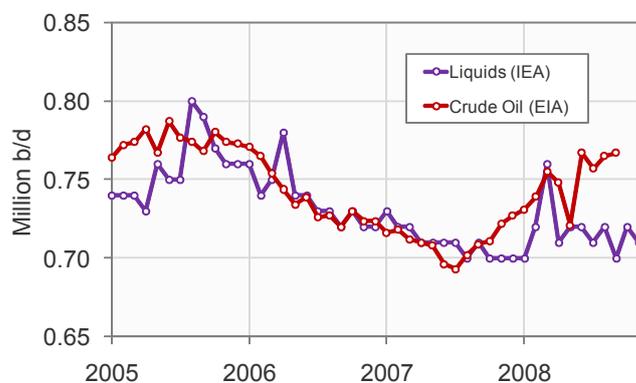
Source: Energy Information Administration & International Energy Agency

Chart 47: Oman Production 1965 - 2007



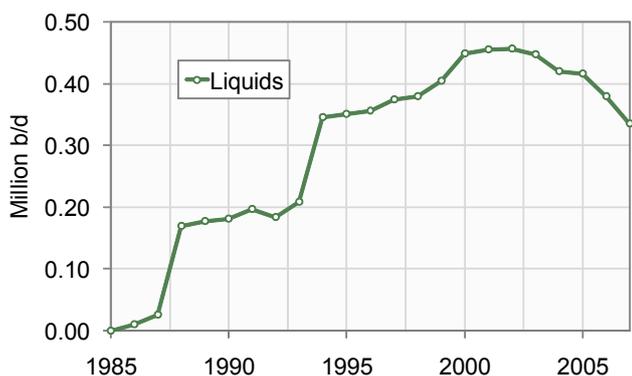
Source: Energy Information Administration & International Energy Agency

Chart 48: Oman Production January 2005 - November 2008



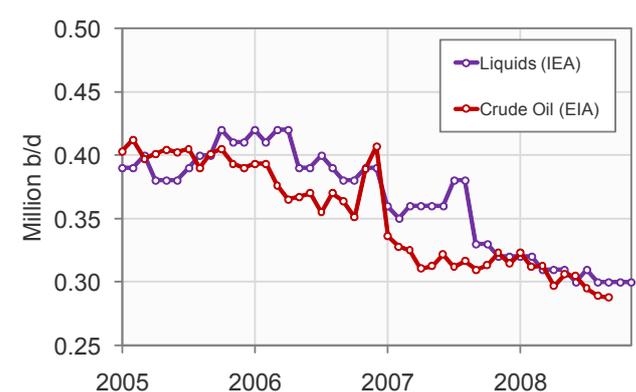
Source: Energy Information Administration & International Energy Agency

Chart 49: Yemen Production 1985 - 2007



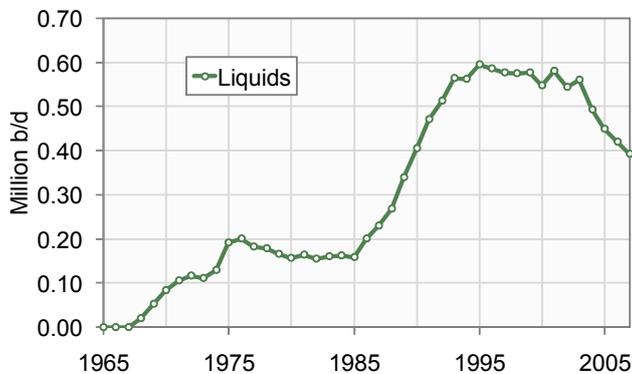
Source: Energy Information Administration & International Energy Agency

Chart 50: Yemen Production January 2005 - November 2008



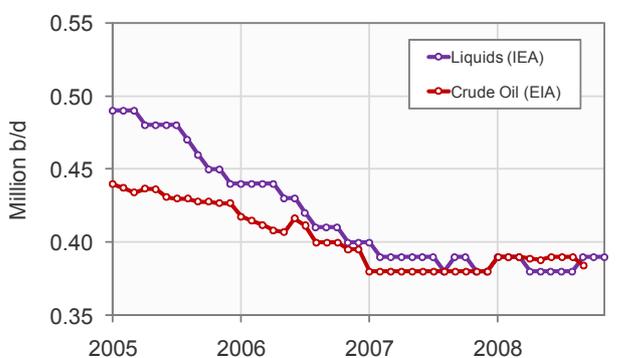
Source: Energy Information Administration & International Energy Agency

Chart 51: Syria Production 1965 - 2007

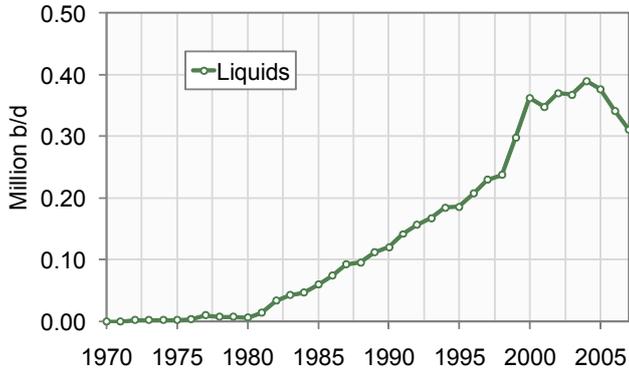


Source: Energy Information Administration & International Energy Agency

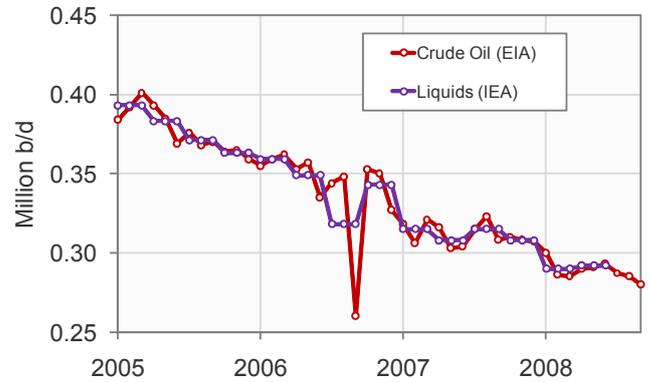
Chart 52: Syria Production January 2005 - November 2008



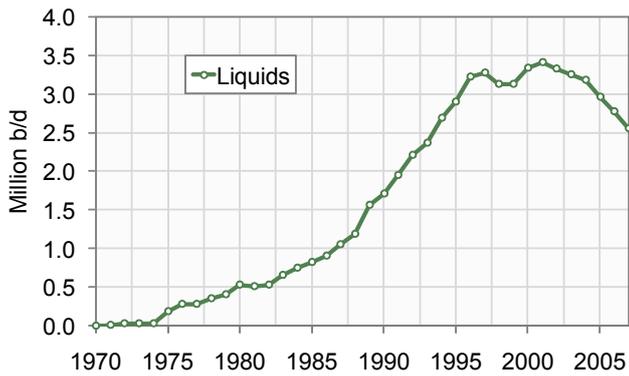
Source: Energy Information Administration & International Energy Agency

Chart 54: Denmark Production 1970 - 2007


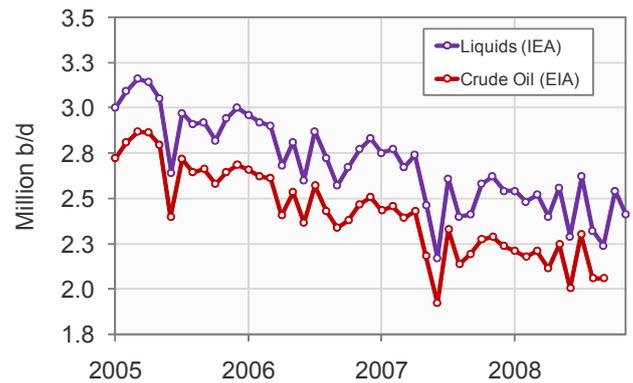
Source: ASPO Ireland & BP Statistical Review

Chart 54: Denmark Production January 2005 - September 2008


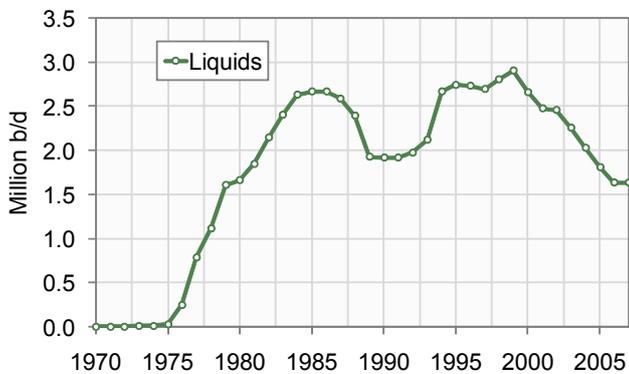
Source: Energy Information Administration & International Energy Agency

Chart 55: Norway Production 1970 - 2007


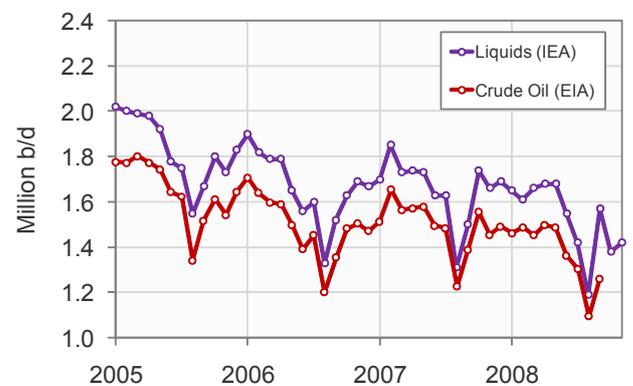
Source: ASPO Ireland & BP Statistical Review

Chart 56: Norway Production January 2005 - November 2008


Source: Energy Information Administration & International Energy Agency

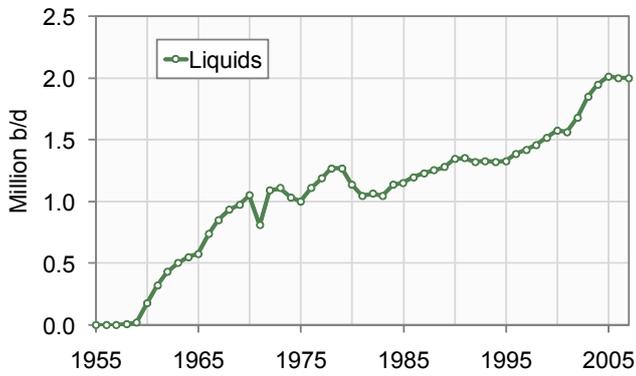
Chart 57: United Kingdom Production 1970 - 2007


Source: ASPO Ireland & BP Statistical Review

Chart 58: United Kingdom Production Jan. 2005 - Nov. 2008


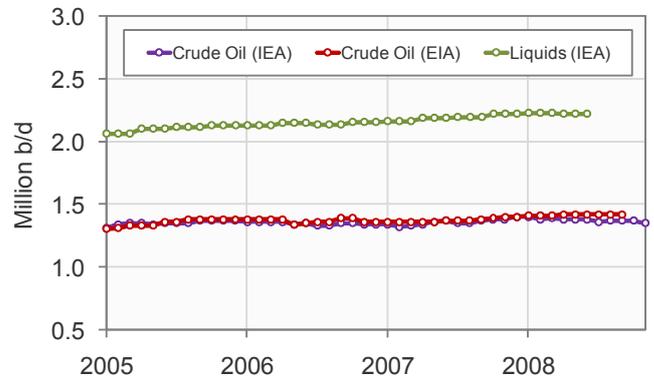
Source: Energy Information Administration & International Energy Agency

Chart 59: Algeria Production 1955 - 2007



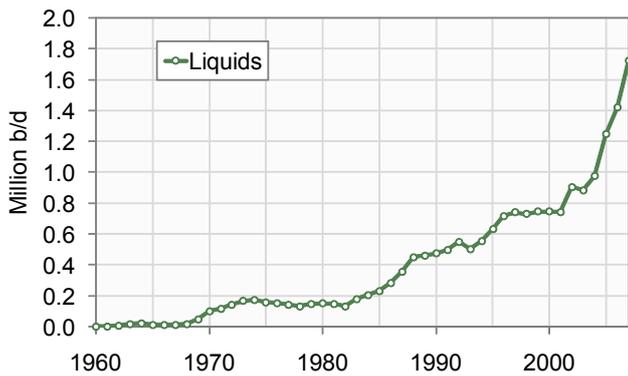
Source: ASPO Ireland & BP Statistical Review

Chart 60: Algeria Production January 2005 - November 2008



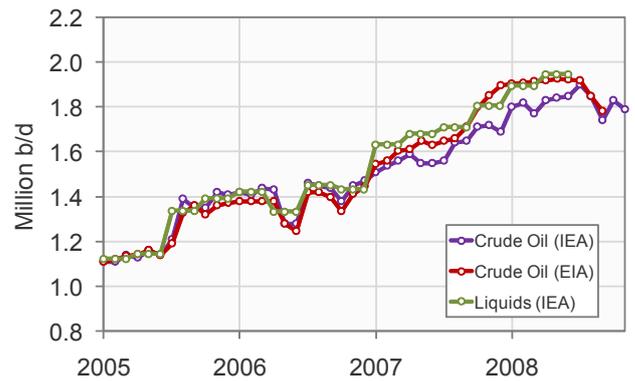
Source: Energy Information Administration & International Energy Agency

Chart 61: Angola Production 1960 - 2007



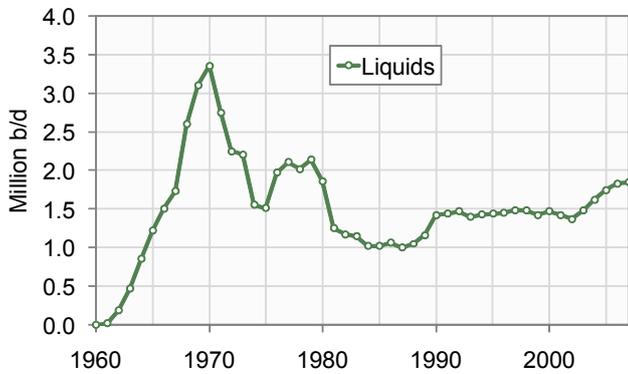
Source: ASPO Ireland & BP Statistical Review

Chart 62: Angola Production January 2005 - November 2008



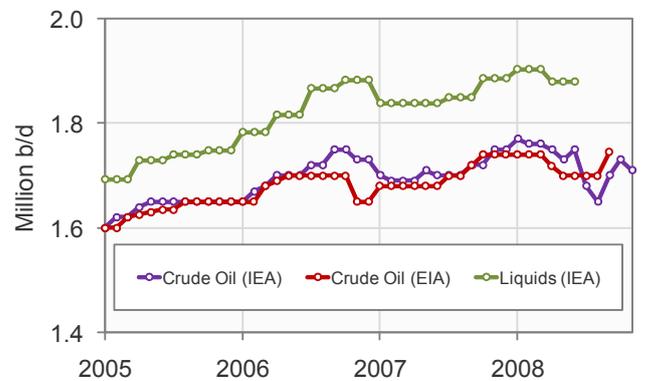
Source: Energy Information Administration & International Energy Agency

Chart 63: Libya Production 1970 - 2007

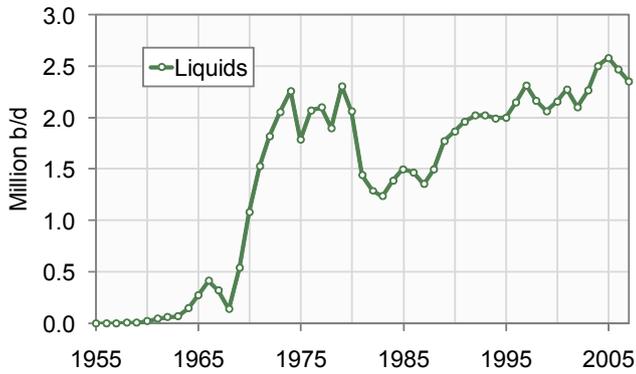


Source: ASPO Ireland & BP Statistical Review

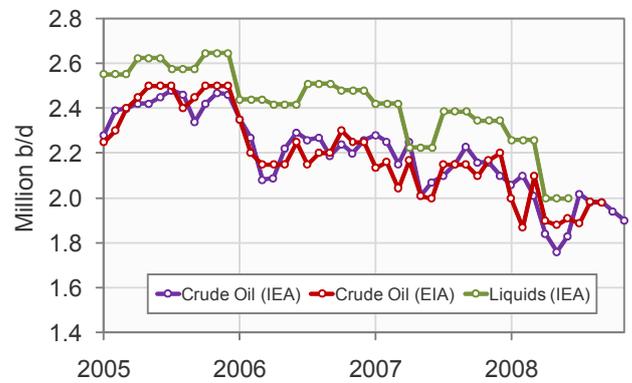
Chart 64: Libya Production January 2005 - November 2008



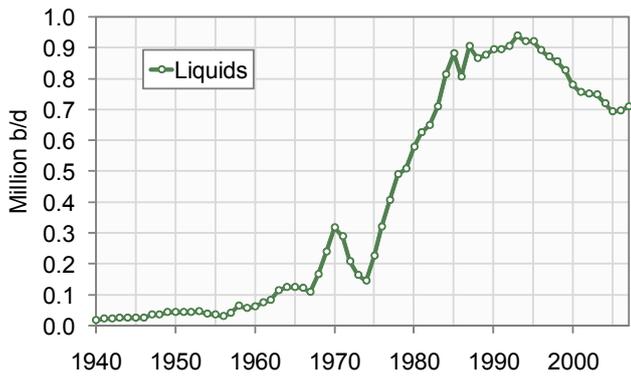
Source: Energy Information Administration & International Energy Agency

Chart 65: Nigeria Production 1955 - 2007


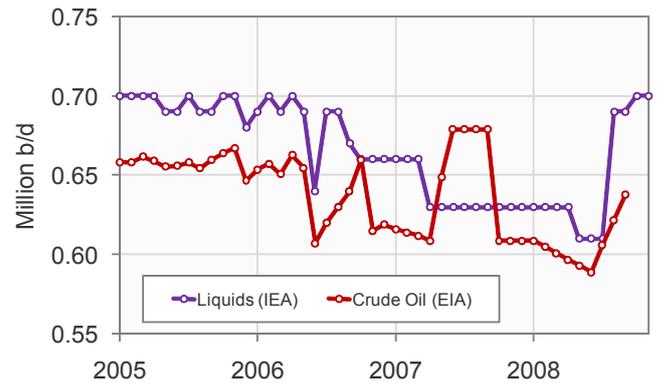
Source: ASPO Ireland & BP Statistical Review

Chart 66: Nigeria Production January 2005 - November 2008


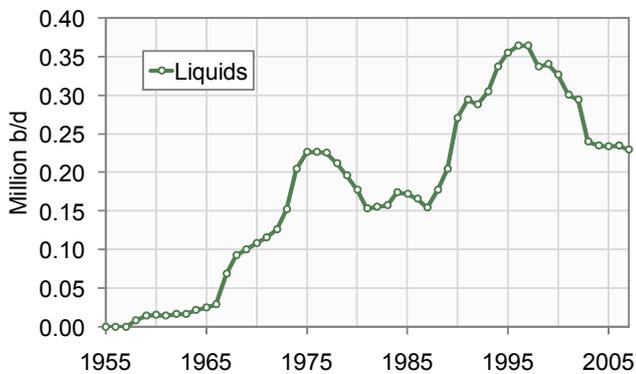
Source: Energy Information Administration & International Energy Agency

Chart 67: Egypt Production 1940 - 2007


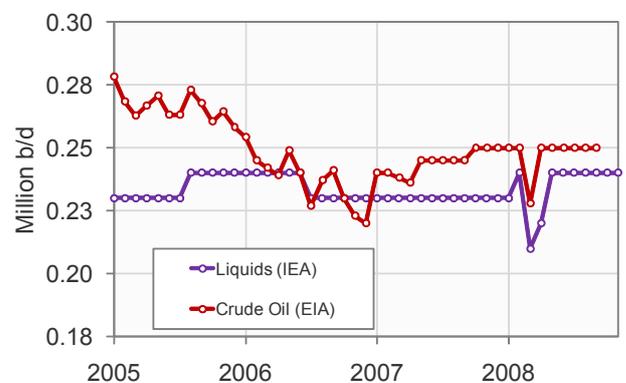
Source: ASPO Ireland & BP Statistical Review

Chart 68: Egypt Production January 2005 - November 2008


Source: Energy Information Administration & International Energy Agency

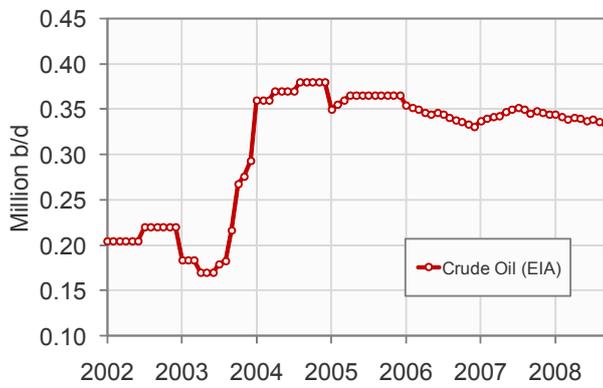
Chart 69: Gabon Production 1955 - 2007


Source: ASPO Ireland & BP Statistical Review

Chart 70: Gabon Production January 2005 - November 2008


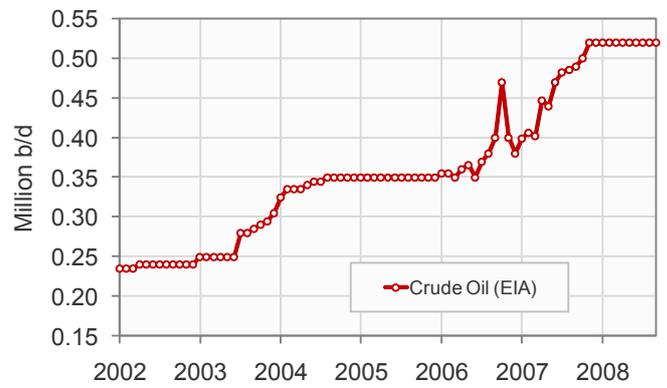
Source: Energy Information Administration & International Energy Agency

Chart 71: Equatorial Guinea Production Jan. 2002 - Sept. 2008



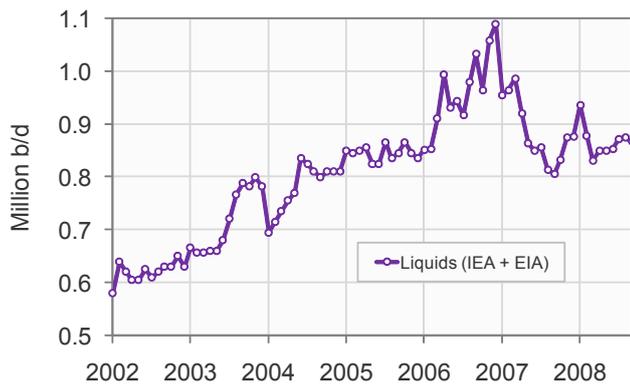
Source: Energy Information Administration

Chart 72: Sudan Production January 2002 - September 2008

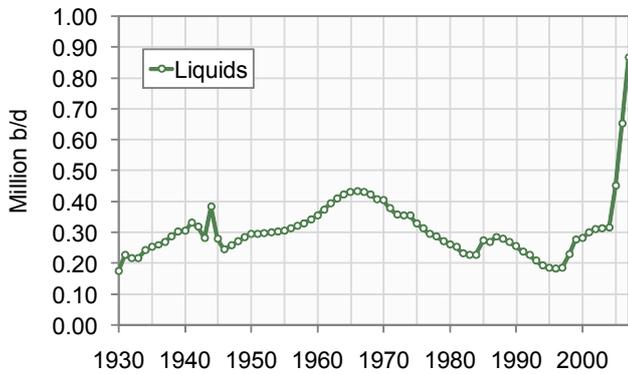


Source: Energy Information Administration

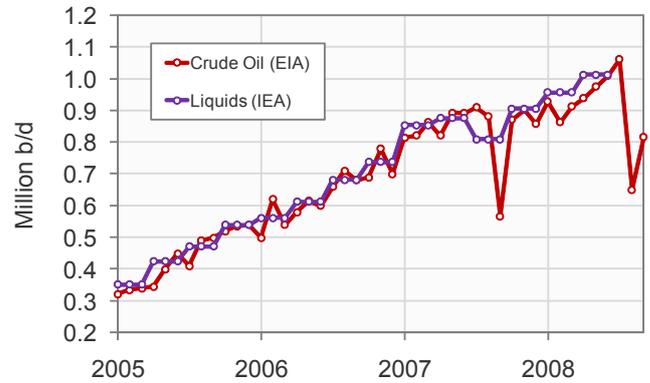
Chart 73: Other Africa Production January 2002 - Sept. 2008



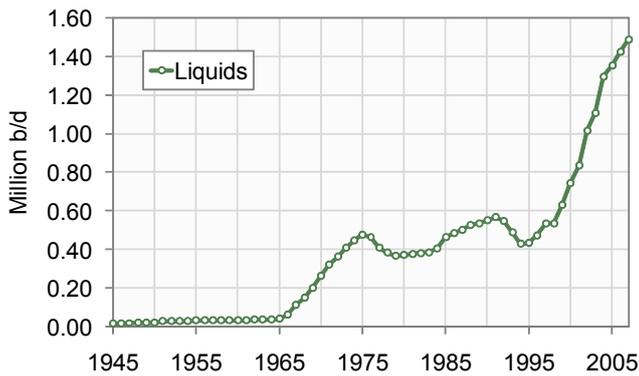
Source: Energy Information Administration & International Energy Agency

Chart 74: Azerbaijan Production 1930 - 2007


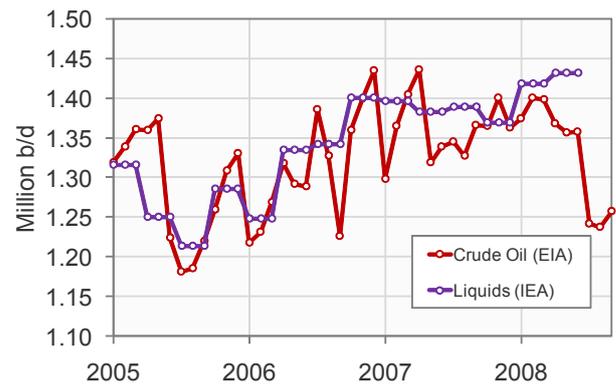
Source: ASPO Ireland & BP Statistical Review

Chart 75: Azerbaijan Production January 2005 - Sept. 2008


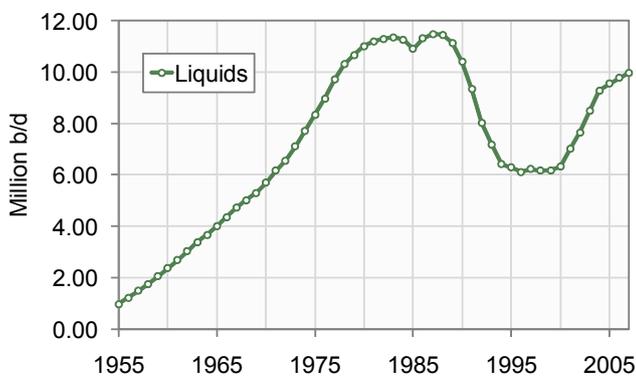
Source: Energy Information Administration & International Energy Agency

Chart 76: Kazakhstan Production 1945 - 2007


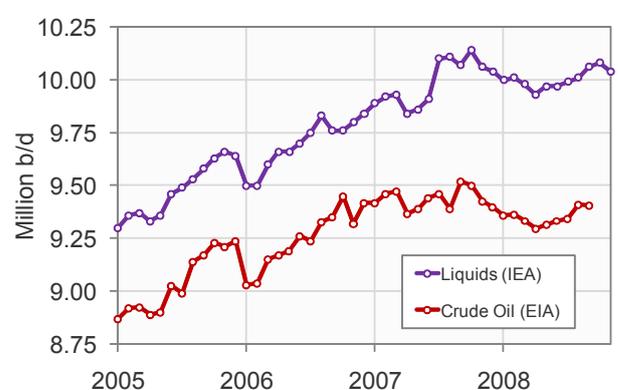
Source: ASPO Ireland & BP Statistical Review

Chart 77: Kazakhstan Production January 2005 - Sept. 2008


Source: Energy Information Administration & International Energy Agency

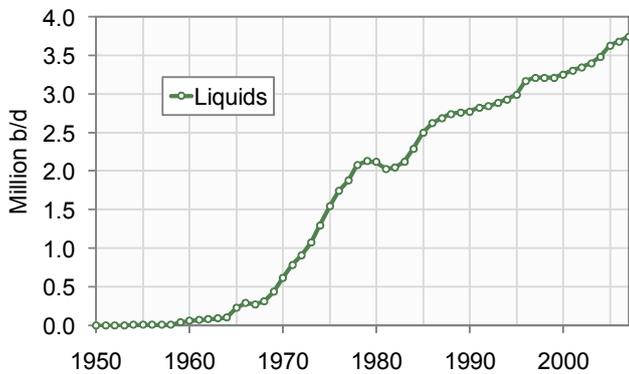
Chart 78: Russia Production 1955 - 2007


Source: ASPO Ireland & BP Statistical Review

Chart 79: Russia Production January 2005 - November 2008


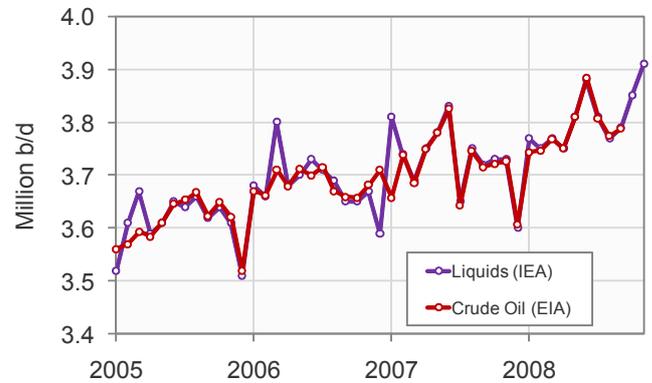
Source: Energy Information Administration & International Energy Agency

Chart 80: China Production 1950 - 2007



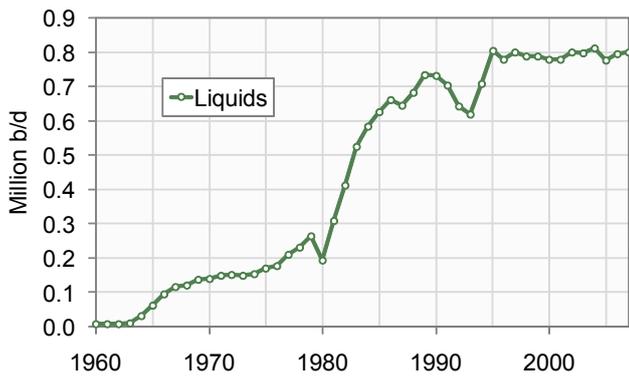
Source: ASPO Ireland & BP Statistical Review

Chart 81: China Production January 2005 - November 2008



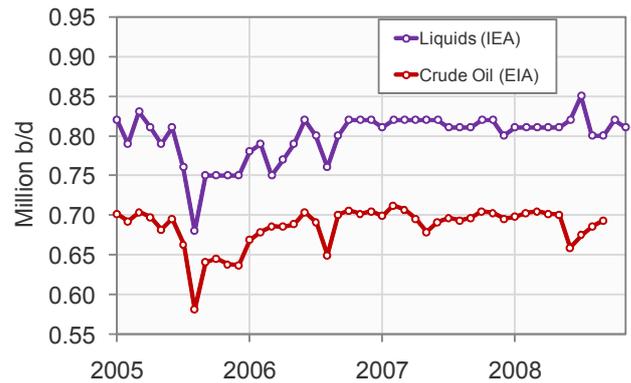
Source: Energy Information Administration & International Energy Agency

Chart 82: India Production 1960 - 2007



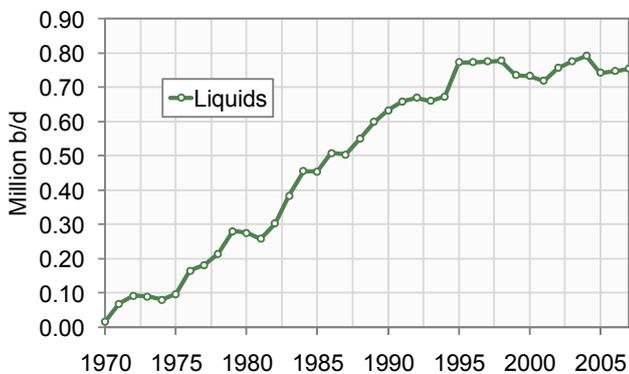
Source: ASPO Ireland & BP Statistical Review

Chart 83: India Production January 2005 - November 2008



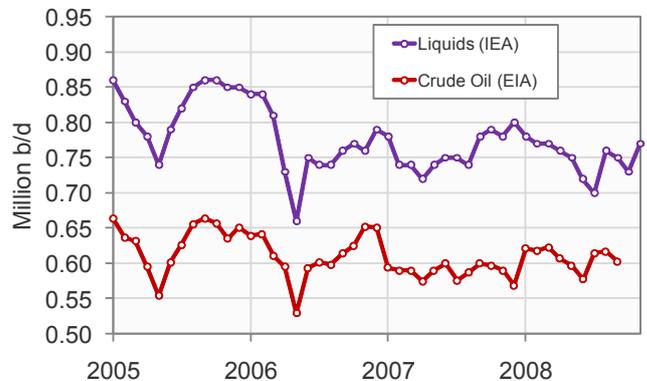
Source: Energy Information Administration & International Energy Agency

Chart 84: Malaysia Production 1955 - 2007

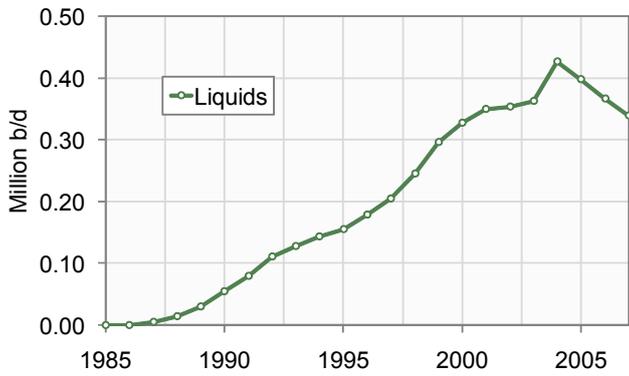


Source: ASPO Ireland & BP Statistical Review

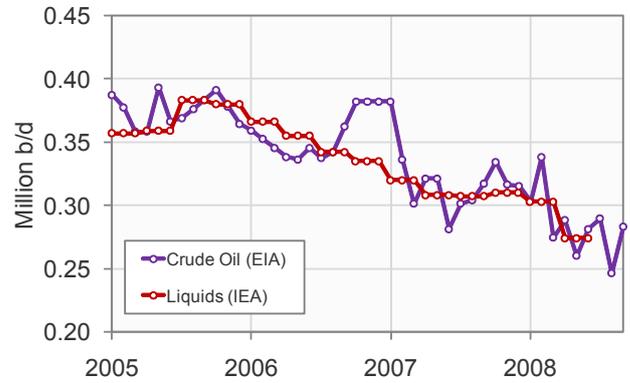
Chart 85: Malaysia Production January 2005 - November 2008



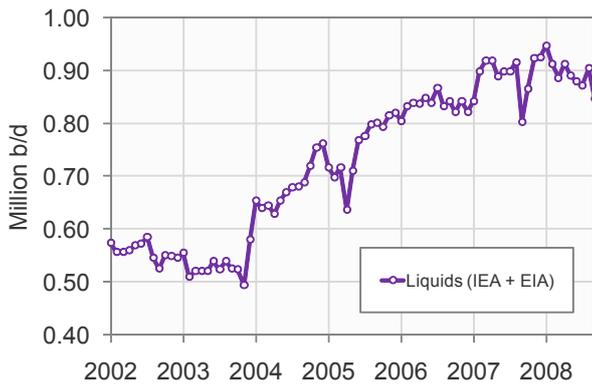
Source: Energy Information Administration & International Energy Agency

Chart 86: Vietnam Production 1955 - 2007


Source: ASPO Ireland & BP Statistical Review

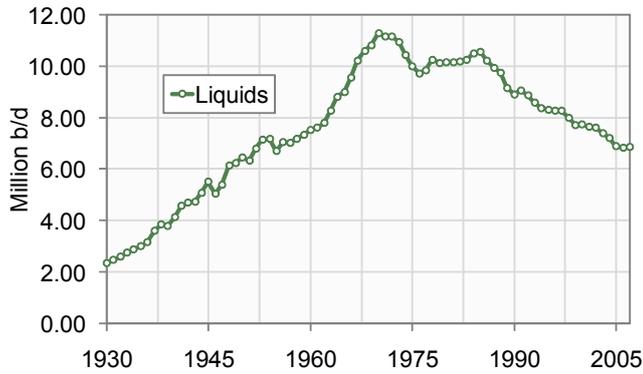
Chart 87: Vietnam Production January 2005 - September 2008


Source: Energy Information Administration & International Energy Agency

Chart 88: Other Asia Production January 2002 - Sept. 2008


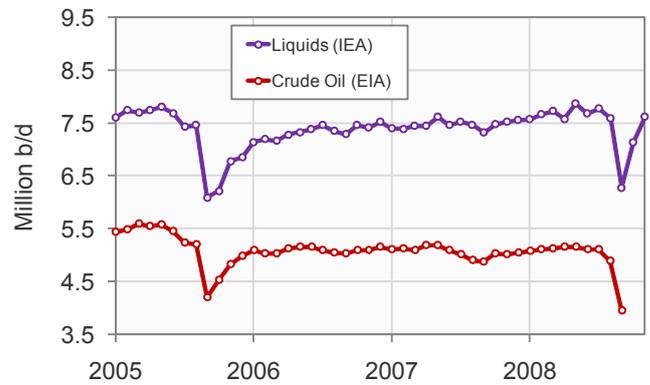
Source: Energy Information Administration & International Energy Agency

Chart 89: United States Production 1930 - 2007



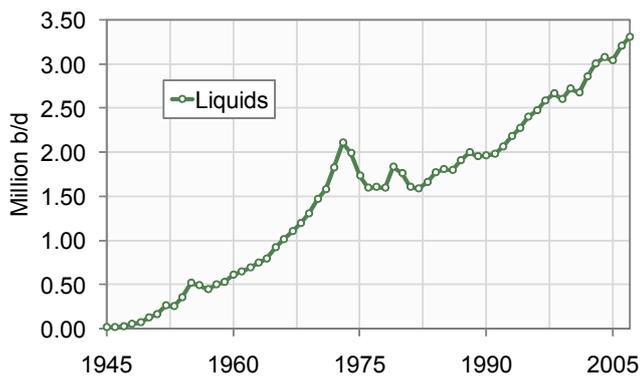
Source: ASPO Ireland & BP Statistical Review

Chart 90: United States Production January 2005 - Nov. 2008



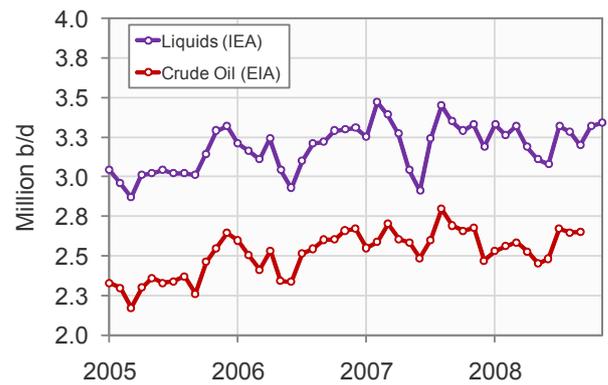
Source: Energy Information Administration & International Energy Agency

Chart 91: Canada Production 1945 - 2007



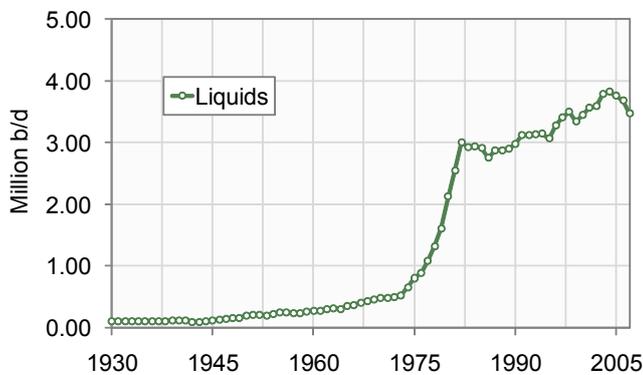
Source: ASPO Ireland & BP Statistical Review

Chart 92: Canada Production January 2005 - November 2008



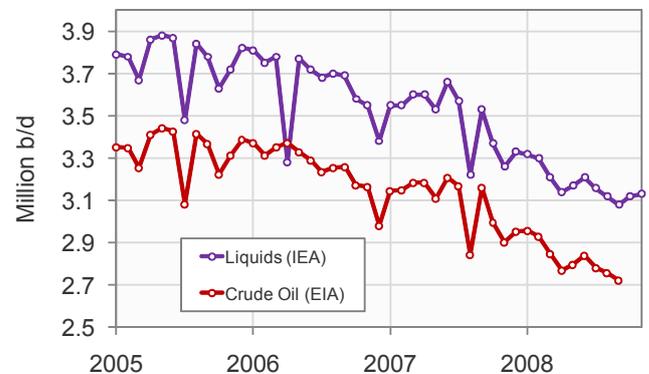
Source: Energy Information Administration & International Energy Agency

Chart 93: Mexico Production 1930 - 2007

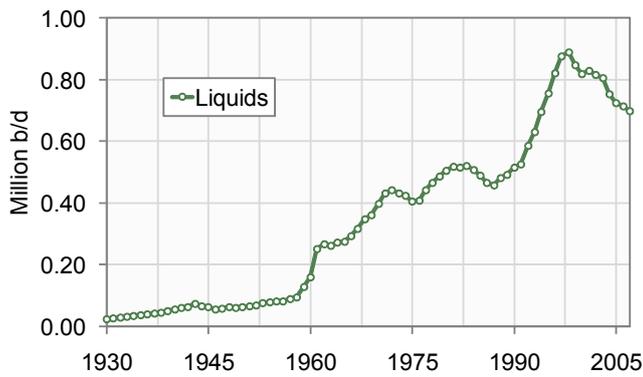


Source: ASPO Ireland & BP Statistical Review

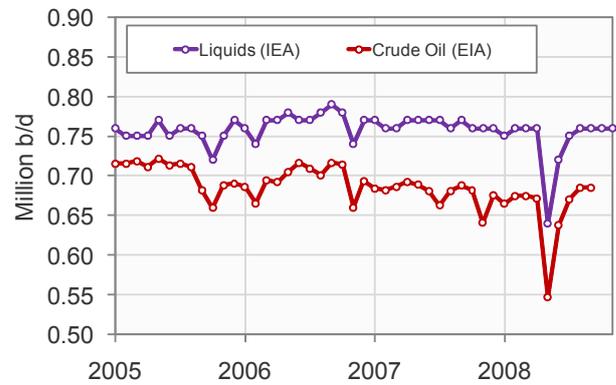
Chart 94: Mexico Production January 2005 - November 2008



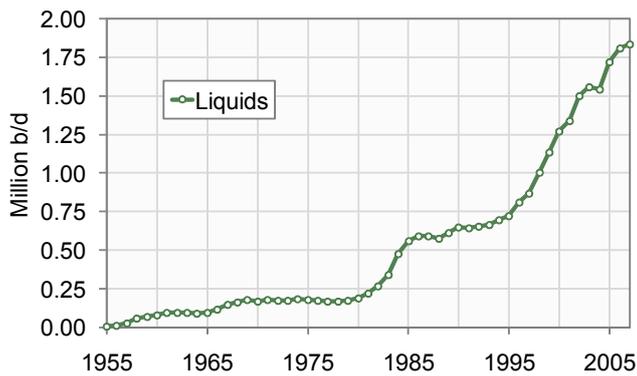
Source: Energy Information Administration & International Energy Agency

Chart 95: Argentina Production 1930 - 2007


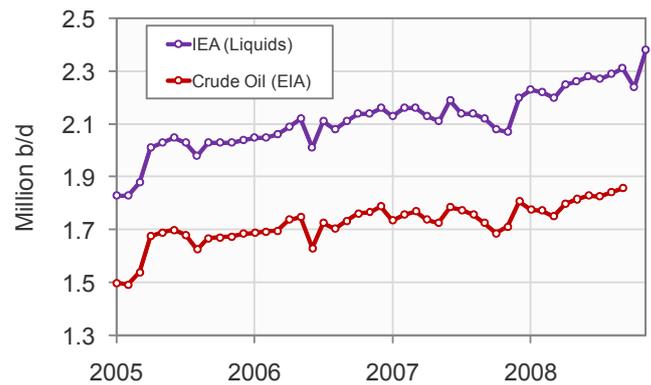
Source: ASPO Ireland & BP Statistical Review

Chart 96: Argentina Production January 2005 - November 2008


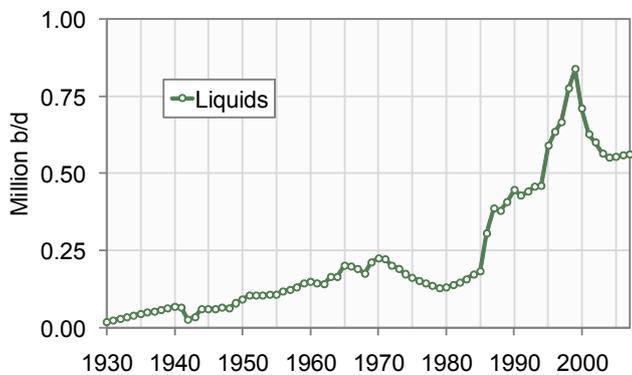
Source: Energy Information Administration & International Energy Agency

Chart 97: Brazil Production 1955 - 2007


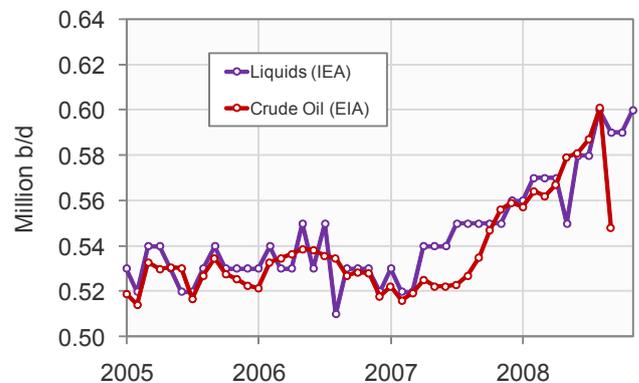
Source: ASPO Ireland & BP Statistical Review

Chart 98: Brazil Production January 2005 - November 2008


Source: Energy Information Administration & International Energy Agency

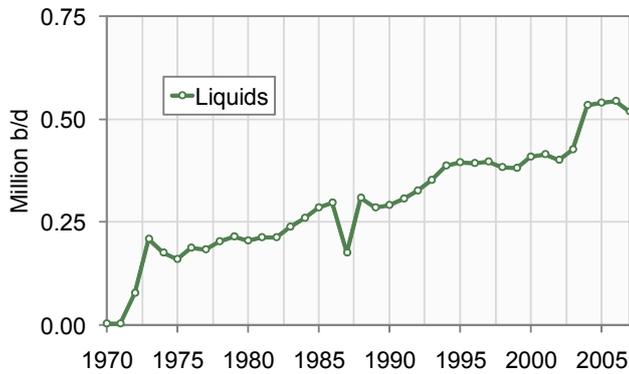
Chart 99: Colombia Production 1930 - 2007


Source: ASPO Ireland & BP Statistical Review

Chart 100: Colombia Production January 2005 - Nov. 2008


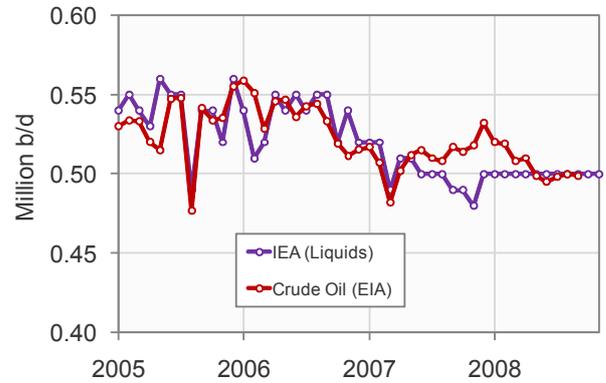
Source: Energy Information Administration & International Energy Agency

Chart 101: Ecuador Production 1970 - 2007



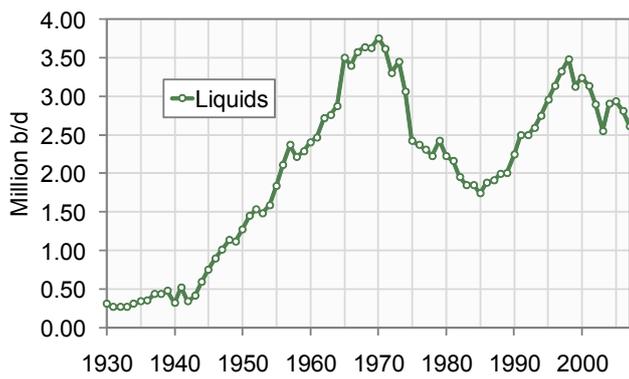
Source: ASPO Ireland & BP Statistical Review

Chart 102: Ecuador Production January 2005 - November 2008



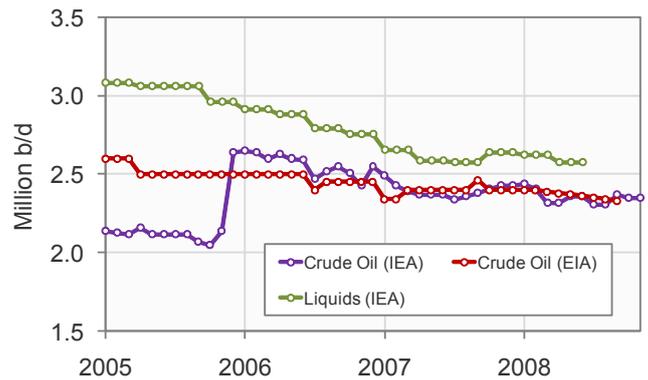
Source: Energy Information Administration & International Energy Agency

Chart 104: Venezuela Production 1930 - 2007



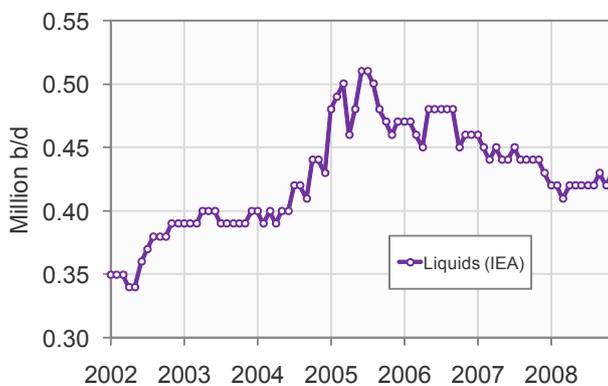
Source: ASPO Ireland & BP Statistical Review

Chart 105: Venezuela Production Jan. 2005 - November 2008

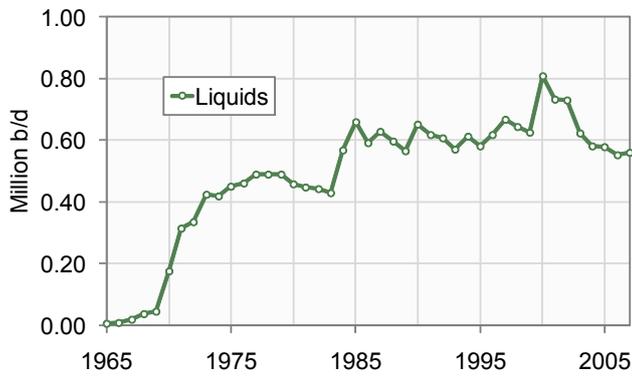


Source: Energy Information Administration & International Energy Agency

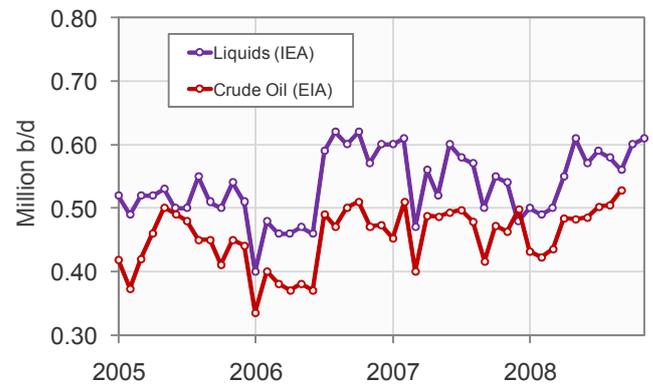
Chart 106: Other S. America Production Jan. 2002 - Nov. 2008



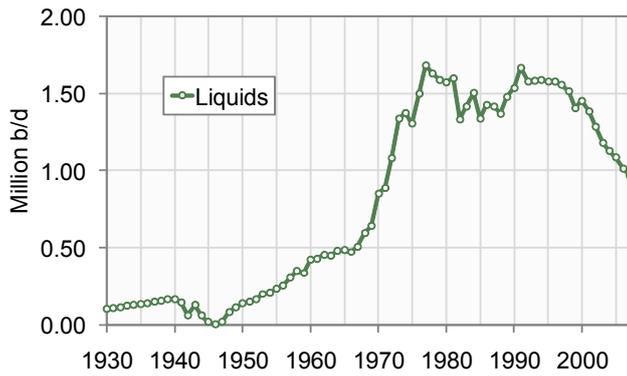
Source: International Energy Agency

Chart 108: Australia Production 1970 - 2007


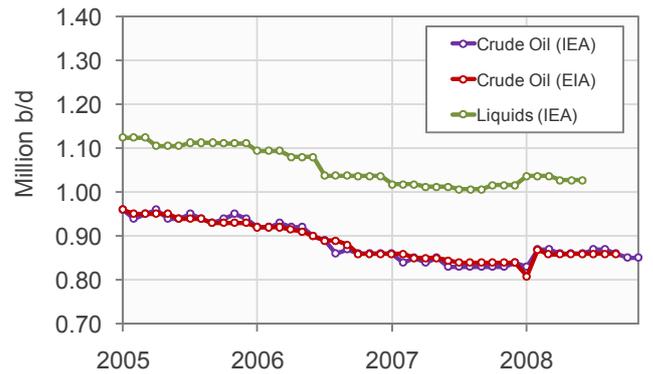
Source: ASPO Ireland & BP Statistical Review

Chart 109: Australia Production January 2005 - November 2008


Source: Energy Information Administration & International Energy Agency

Chart 110: Indonesia Production 1930 - 2007


Source: ASPO Ireland & BP Statistical Review

Chart 111: Indonesia Production January 2005 - Nov. 2008


Source: Energy Information Administration & International Energy Agency