



EU oil imports set to grow by 29% by 2012

Posted by [Euan Mearns](#) on October 3, 2006 - 10:30am in [The Oil Drum: Europe](#)

Topic: [Demand/Consumption](#)

Tags: [consumption](#), [eu](#), [oil prices](#), [peak oil](#) [[list all tags](#)]

An oil production, consumption, import-export model for the 25 EU states (plus Norway, Iceland and Switzerland) is presented, based on data published in the [2006 BP statistical review](#).

Applying a 0.5% growth in consumption and a 8% production decline rate points to EU oil imports growing from 9.8 million barrels per day (bpd) in 2005 to 12.6 million bpd by 2012 - an increase of 29% over the next 6 years.

The EU will have to "fight" for these additional resources in an oil import market already hot with competition from the USA, China and other developing countries.

The European Union

The European Union, with a population of around 460 million, consumes over 15 million barrels of oil per day and is the world number two oil consumer after the USA. This article looks at EU oil production and consumption with the aim of establishing future import trends and EU energy security. A recent report has highlighted the fact that EU energy imports are rising and this is happening at a time when Russia is tightening State control over its oil and gas assets.

The EU has 25 member states and has grown in stages since it was formed in 1957:

1957 Belgium, France, West Germany, Italy, Luxembourg, The Netherlands

1973 Denmark, Ireland, UK

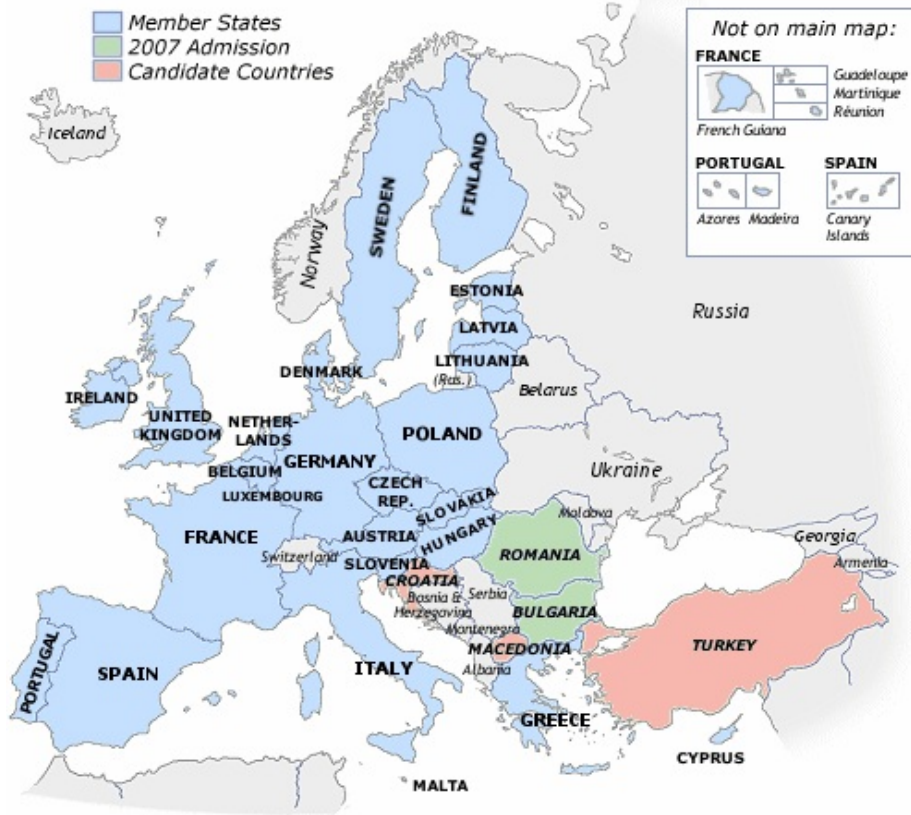
1981 Greece

1986 Portugal, Spain

1990 "East Germany"

1995 Austria, Finland, Sweden

2004 Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia



[The European Union](#)

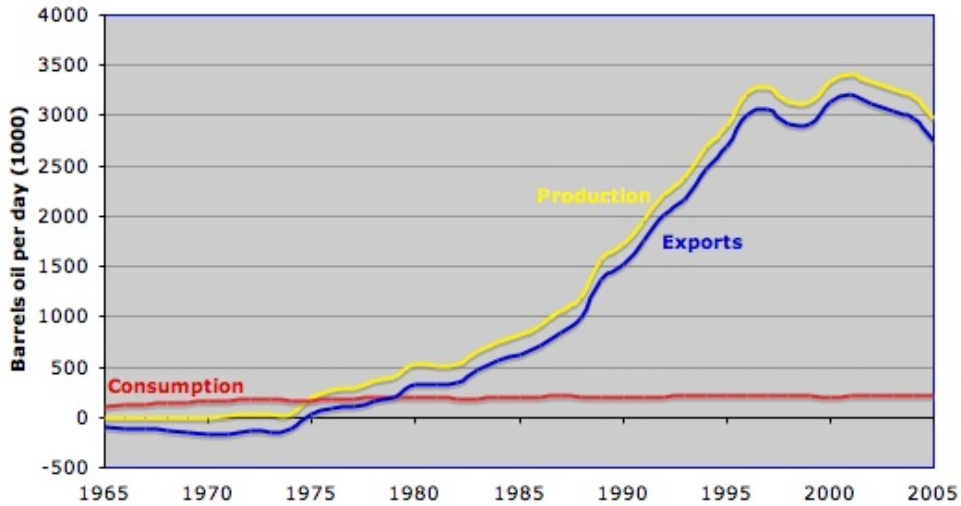
Norway, Iceland and Switzerland are not formally a part of the EU. But these countries are part of the EU trading block and given Norway's strategic importance as an oil and gas exporter to the EU, these countries are included within the statistics reported here. All of the oil import and export figures are taken from the [2006 BP statistical review](#). This does not provide data listed separately for Latvia, Estonia, Malta, Cyprus and Slovenia. These small countries, therefore, are not included in the database. However, they are so small that their exclusion will not affect any of the conclusions.

Oil production

Including Norway, the EU has 4 significant oil producers - Norway, the UK, Denmark and Italy.

Norway is by far the most important oil export country, with 2005 average production of 3 million bpd, compared with consumption of only 213,000 bpd, Norway is a significant oil export land. Of great significance, however, is the fact that Norwegian oil production peaked in 2001 and is now undergoing rapid decline - 7% in 2005.

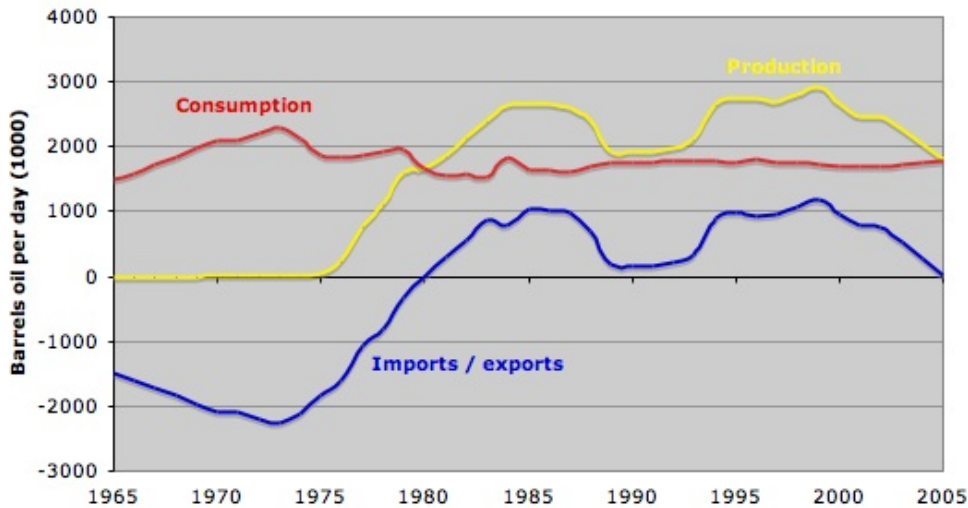
Norway oil exports



Norway: Production, consumption and exports

[The UK turned net oil exporter to net oil importer during 2006.](#) The UK therefore, has changed from being part of the EU oil security solution to being part of the oil security problem.

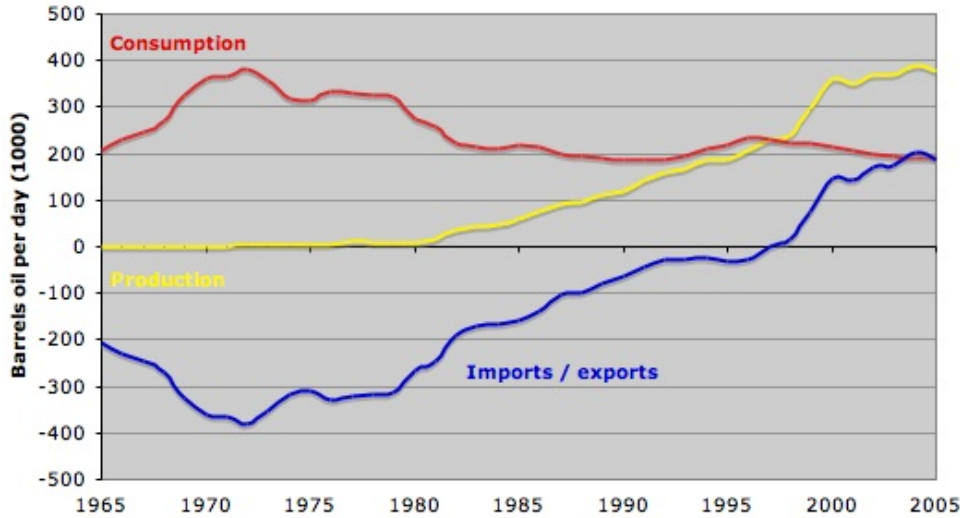
UK oil imports / exports



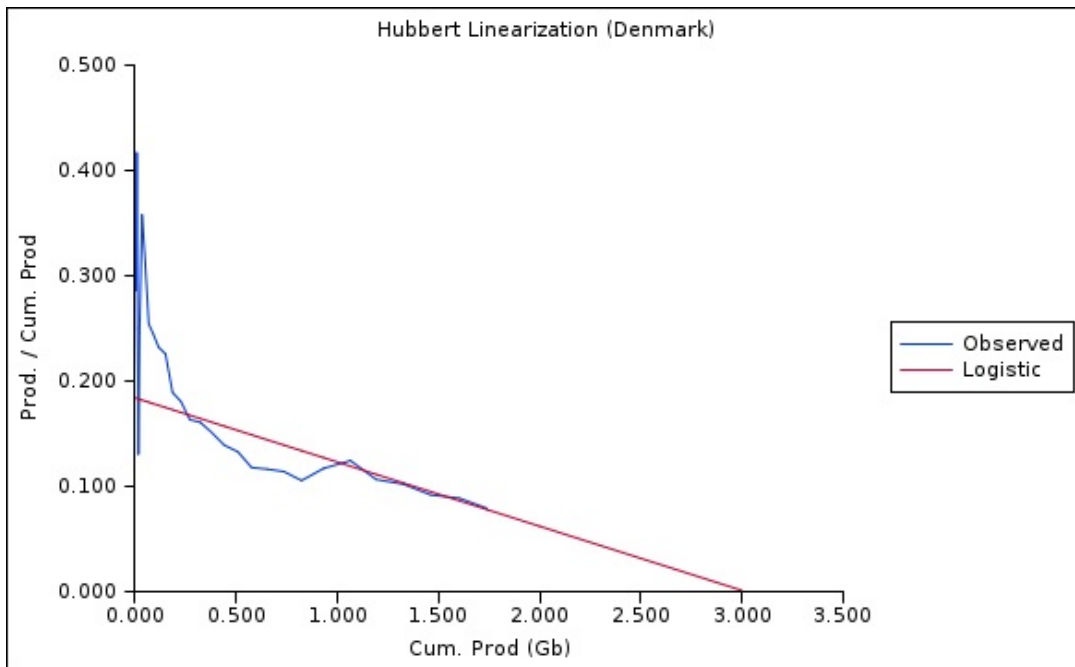
UK: Production, consumption, imports and exports

Denmark, in many ways is a small-scale version of the UK oil story. With a smaller population (5.4 million) and lower oil production than the UK (377,000 bpd average during 2005) Denmark is a significant second tier producer that has exported oil since 1997. However, Danish Oil production looks like it may be peaking. [A Hubbert Linearization \(HL\) performed by Khebab](#) (note that this link goes to Khebab's edit grid spread sheet), points to ultimate recoverable reserves (URR) in Denmark of 3.05 billion barrels of which 1.74 billion have already been produced. Produced oil represents 57% of estimated total recoverable oil and a decline in Danish production may be anticipated in the near future. In 2004, Denmark had produced 50% of the indicated URR

Denmark oil imports - exports



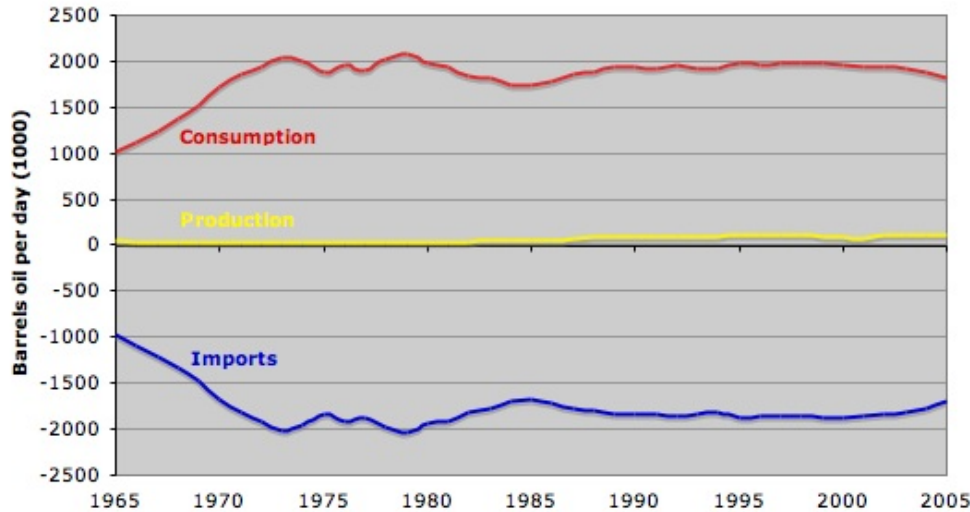
Denmark: Production, consumption, imports and exports



[Hubbert linearisation for Denmark provided by Khebab](#)

Italy, is a large industrial nation with a small amount of oil production - 118,000 bpd in 2005. This does not significantly impact upon oil imports in Italy or the EU.

Italy oil imports



Italy: Production, consumption and imports

Oil production decline model

EU oil production is dominated by the North Sea. The two big players there - the UK and Norway peaked in 1999 and 2001 respectively. Denmark looks like it may have peaked in 2004. These countries, therefore, dominate the oil decline model for the EU.

Norway declined at 7% in 2005.

The UK declined at >10% in 2004 and 2005 and has declined at around 13% so far this year.

Decline in Denmark looks like it is just about to begin.

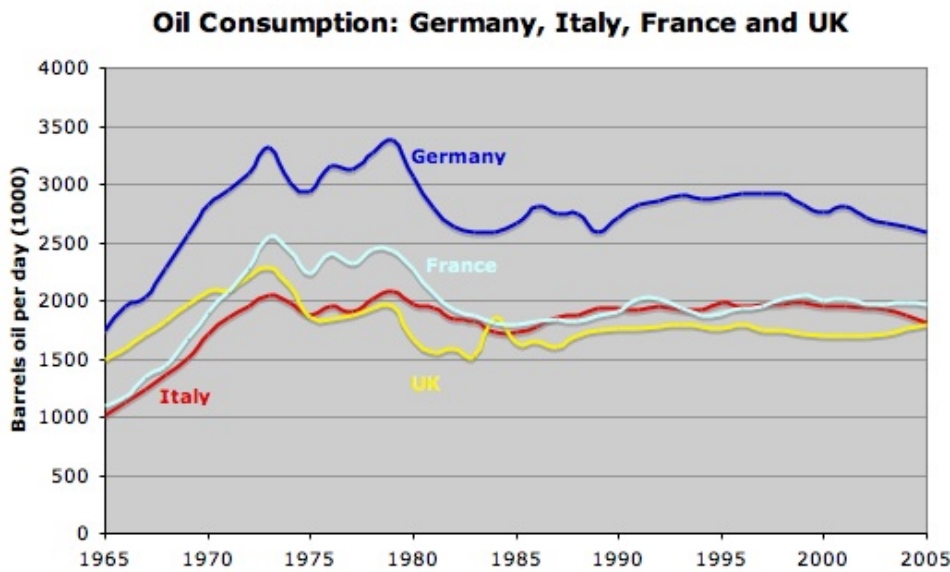
EU production declined at 8% in 2005.

It looks like decline in Denmark and Norway may accelerate. However, until more data become available with the passage of time, last year's average decline of 8% is applied to the EU production data going forward to 2020. This may turn out to be conservative and may need to be revised in light of new data as it becomes available.

Oil consumption

Two major events have shaped Europe's geo-political and economic development since the end of WWII. The first was the establishment of the EU in 1957 and the second was the fall of the Berlin Wall followed by the Soviet Union in 1989 / 1991. The EU has brought political stability and economic prosperity to Europe.

The big economies, Germany, the UK, France and Italy, all display similar patterns of oil consumption. Sharply rising consumption in the 1960s and early 1970s was curtailed by the twin oil shocks of 1973 and 1979. Following a period of adjustment and reduction in oil consumption (e.g. closing of oil fired power stations) oil consumption stabilised during the mid 1980s and has remained fairly constant ever since. The population of these countries is rising slowly, is aging and per capita consumption of oil is therefore falling slowly.



Oil consumption in the Big 4 EU economies

The big 4: Germany, the UK, France and Italy

Population 260,946,000

Group as % of EU = 56.2%

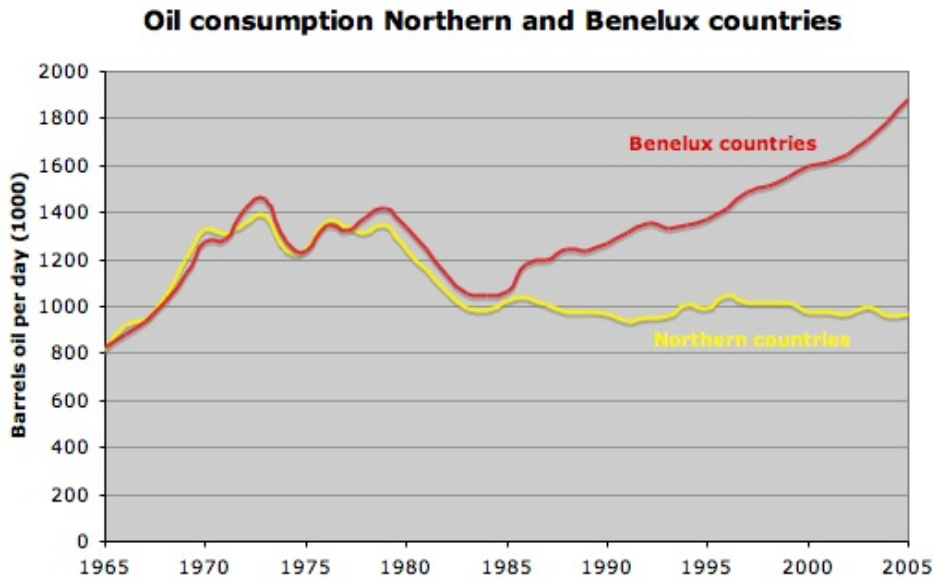
Oil consumption 2005 = 8,147,000 bpd

Per capita oil consumption = 11.4 barrels per annum

The per capita consumption of the Big 4, is significantly lower than most other groups and this may be related to more wide-spread poverty in large urban areas, higher population densities in the urban areas, economies of scale or redistribution of wealth from large to small countries.

It is note worthy that oil consumption in Germany, France and Italy has been falling in recent years. This may be related to on-going de-industrialisation combined with growing introduction of renewables and conservation related to environmental awareness. Economic growth has also been anaemic within the Euro currency zone that the UK is not a member of.

Between 1965 and 1985, the Northern and Benelux countries displayed a similar pattern of oil consumption to the Big 4 industrials described above. But, after 1985 a curious thing happens. Like the Big 4, the oil consumption in the Northern countries remained stable post 1985. However, consumption in the Benelux countries began to rise steadily. At the present day, oil consumption in the Benelux countries stands at 25.2 barrels per capita per annum - the highest in the EU by far. The reason for this steady growth in oil consumption is not clearly understood but it may be related to growth of petrochemical industries in The Netherlands and Belgium, the presence of large transport hubs such as Schipol airport and affluence flowing from the location of the European parliament in Brussels.



Oil consumption in Northern and Benelux countries

Benelux countries: Belgium, The Netherlands and Luxembourg

Population 27,183,000

Group as % of EU = 5.8%

Oil consumption 2005 = 1,880,000 bpd

Per capita oil consumption = 25.2 barrels per annum

Northern countries: Iceland, Norway, Sweden, Finland and Denmark

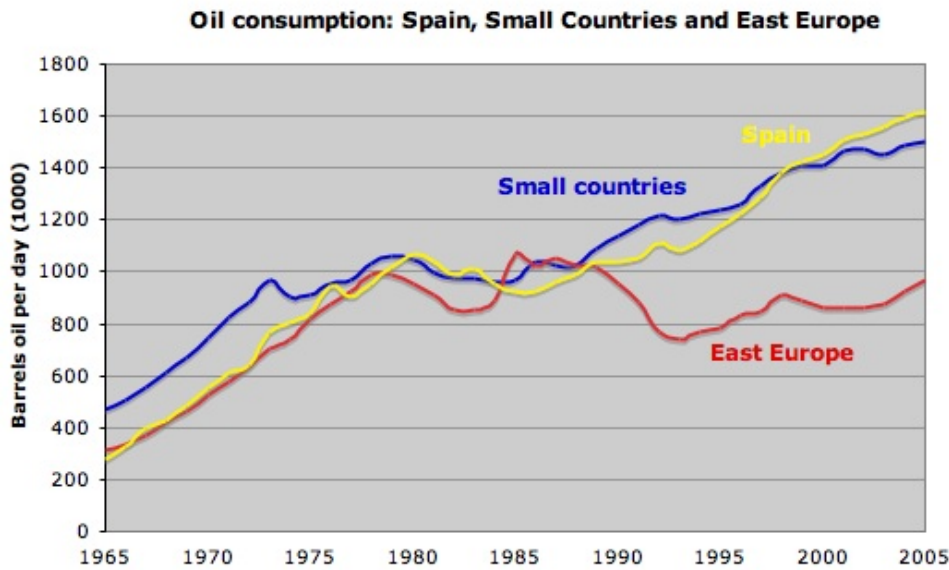
Population 24,636,000

Group as % of EU = 5.3%

Oil consumption 2005 = 968,000 bpd

Per capita oil consumption = 14.3 barrels per annum

Spain is treated separately from the other large European countries because it exhibits an oil consumption pattern that is quite different to the Big 4. Dictator General Franco ruled Spain until 1975. Following a period of adjustment after Franco's death, Spain was admitted to the EU in 1986. Spain's economy has benefited from EU membership, and the population is still growing steadily, in part due to migration from wealthy northern Europe. Oil consumption in Spain has been rising steadily for the last 20 years. The per capita consumption is now on a par with other wealthy European countries, but oil consumption may continue to rise with continued migration.



Oil consumption in Spain, Small countries and East European countries

Spain

Population 43,064,000

Group as % of EU = 9.3%

Oil consumption 2005 = 1,618,000 bpd

Per capita oil consumption = 13.7 barrels per annum

The small countries include Ireland, Portugal and Greece, who like Spain, have benefited from EU membership and have had steadily growing oil consumption for the last 20 years.

Small countries: Austria, Ireland, Portugal, Switzerland and Greece

Population 41,204,000

Group as % of EU = 8.9%

Oil consumption 2005 = 1,501,000 bpd

Per capita oil consumption = 13.3 barrels per annum

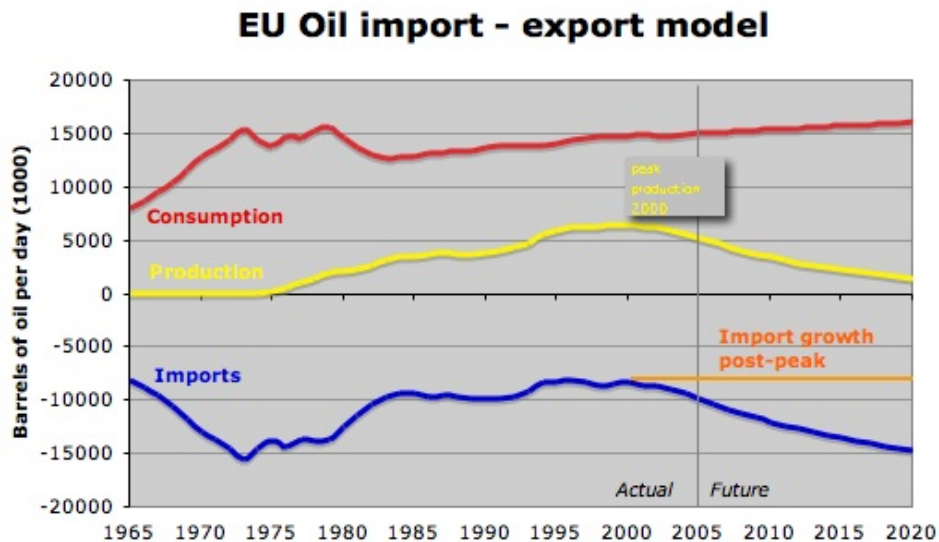
In terms of oil consumption, the East European group is perhaps the most significant. These six countries were admitted to the EU in 2004 (along with Latvia, Estonia and Slovenia). The oil consumption of these countries plunged with the fall of the Soviet Union and the introduction of market prices for fuel. Today their per capita consumption of oil, 5.2 barrels per annum, is less than half the EU average. With a population of nearly 68 million, and ambition to reach west European living standards, this group of countries represents a powerful driving force for EU oil demand. For East Europe to reach per capita consumption of 10 barrels per annum would add around 1 million barrels per day to EU oil consumption.

East Europe: Czech Republic, Slovakia, Hungary, Poland, and Lithuania
 Population 67,680,000
 Group as % of EU = 14.6%
 Oil consumption 2005 = 969,000 bpd
 Per capita oil consumption = 5.2 barrels per annum

Oil demand model

Attempting to forecast future demand for oil in Europe is in fact much more difficult than trying to forecast oil production decline. Two possible scenarios are envisaged. One where the status quo prevails and ample supplies of liquid fuel remain available at reasonable price for the foreseeable future. In this scenario, increasing awareness of climate change and introduction of more renewable energy (bio-fuels) may continue to slowly drive down demand for oil amongst the Big 4 and northern countries. This falling demand may be offset by rising demand in East Europe and the Mediterranean countries - Portugal, Spain and Greece. These trends have been established for several years and point to demand increasing at a rate of about 0.5% per annum and this is the demand growth used in the EU oil import model.

The second scenario is one where competition for fuel leads to sharply higher energy prices, inflation, recession and reduced demand. Only time will tell whether the status quo will prevail or not. Personally, I consider this latter scenario increasingly likely approaching 2012±3 years, which is when I believe the World will witness peak oil production.

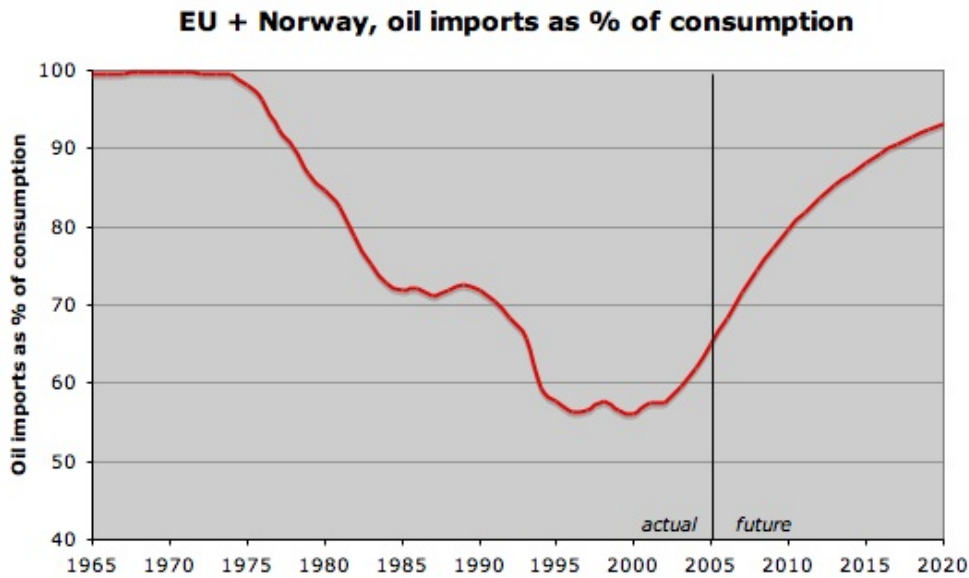


Oil import model for the EU + Norway

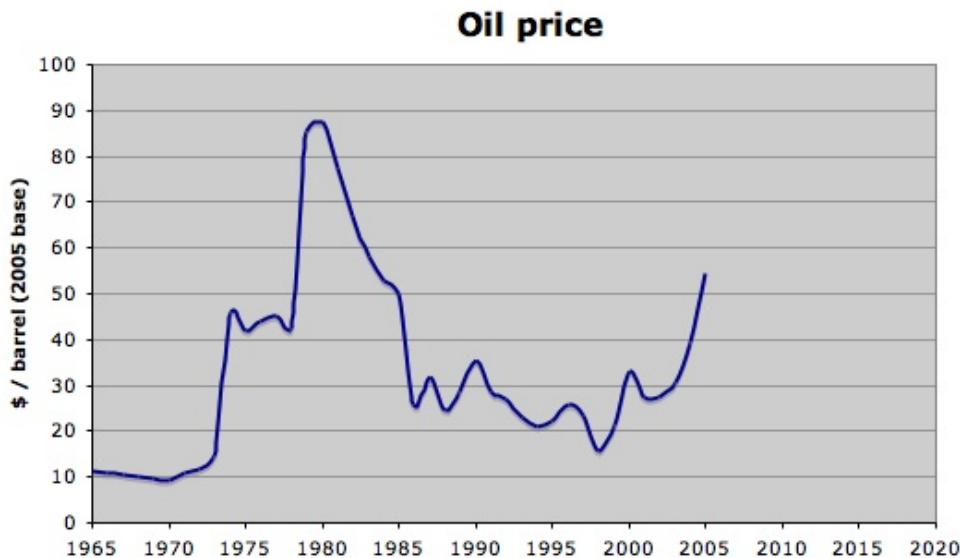
EU energy security linked to North Sea production

Prior to 1975 the EU states imported virtually all of their oil. With North Sea oil production, dependency upon imported oil had fallen to below 60% by the late 1990s. In the year 2000,

The Oil Drum: Europe | EU oil imports set to grow by 29% by 2012 <http://www.theoil Drum.com/story/2006/9/22/95855/4850> however, the import dependency curve turned and started to rise and will continue to rise sharply for the foreseeable future.



EU dependency upon imported oil fell during the 1980s and 90s. But the trend changed with peak EU oil production in 2000 and from now on, the EU will become increasingly dependent upon oil imports



Falling oil prices through the 1980s and 90s mirror decreasing dependency of the EU on imported oil. The turning point in oil prices and their recent rise is also mirrored by rising dependency of the EU on imported oil. The global oil market is obviously more complex than this, but falling North Sea production - which is set to continue - is one key factor that explains current high oil prices. Oil price data, annual averages, 2005 base, from BP 2006 statistical review.

In the period leading up to 1995 the World had ample surplus oil production capacity and EU dependency upon imports was falling. Now, surplus capacity has narrowed significantly and EU dependency upon imports is rising. If the status quo prevails, then the EU may need to import an additional 2.8 million bpd by 2012. This represents a rise of 29% in imported oil over a six year period that needs to be set against a backdrop of falling production in many oil export lands. The

EU will need to use its economic and diplomatic muscle to fight for new supplies from emerging export countries such as Kazakhstan, Azerbaijan and Angola where it has to be noted that BP and Total already have a significant presence.

Finally, it is worth noting that in a general sense, the fall in oil price from 1980 to 1998 correlates with falling dependency of the EU on oil imported from outside of Europe. The oil price low of 1998 falls close to the EU oil production peak in 2000 and the rise in oil prices since correlates with increasing dependency of the EU on imported oil. Of course there are many other variables that have contributed to the oil price evolution. However, at peak in the year 2000, the EU produced over 6.2 million bpd and I believe that when oil production in the world's number two consumer started to fall that this has had and will continue to have a significant influence upon the oil price. Put more simply, rising oil production in the North Sea correlates with falling oil prices, but since the North Sea peaked in 2000, oil prices have begun to rise again.



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