

Is future oil demand being overstated and with what implications?



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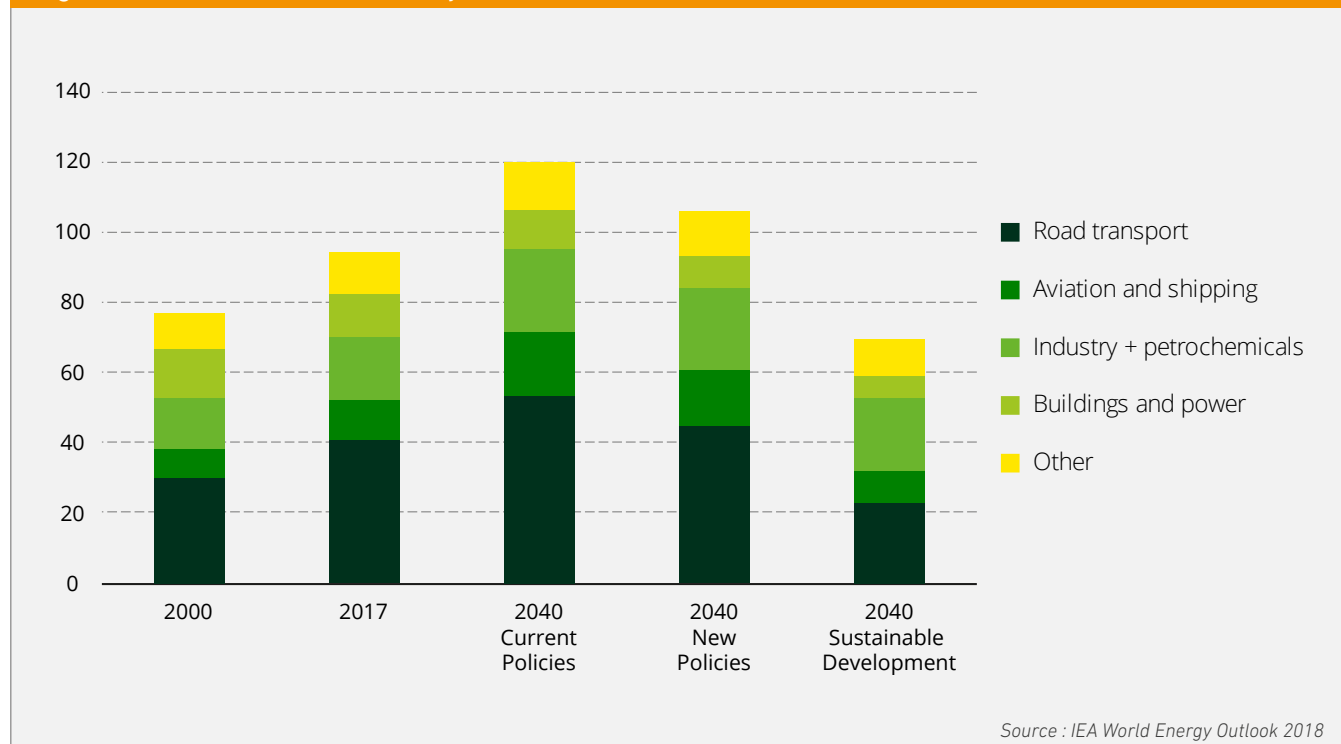
A conventional view of future oil demand is coming out of the 'energy establishment', which refers to a mixture of international agencies such as the International Energy Agency (IEA), the US Energy Information Administration (EIA), the OPEC Secretariat and the large oil companies. They all continue to show an important role for oil in the future energy mix. Figure 1 below provides a typical view of such thinking from the IEA. Thus their 'New Policies Scenario' shows a significant increase in oil demand between 2017 and 2040. Such a view is common amongst others from the 'energy establishment'.

However, such views would appear to be underestimating the energy transition currently underway. An energy transition is when an economy switches from one main source of energy to another. There is a long history of such transitions ranging from the switch from wood to coal in the USA between 1865 and 1900 or the switch from oil and coal to nuclear in France between 1974 and the 1980s. From the history of such transitions at national level, certain patterns of the process can be identified. It starts with a trigger. Once the trigger has been

pulled then a whole series of reinforcing factors come into play revolving around changes in technology that alter relative fuel prices. This process can be driven by market forces or by government policy or by a mixture of both.

The current energy transition, which is global, is from hydrocarbon molecules to electrons and was triggered by environmental concerns. This initially was driven by concerns over climate change and the need to move to much lower carbon intensities in the economy. However, more recently, issues of urban air quality and particulate pollution have joined such concerns. You don't need a panel of international scientists to tell you this is bad news, just try walking down the street or, even more potently, get your children to walk down the street! As with other transitions, since these environmental triggers have been pulled, reinforcing factors are beginning to speed up the transition. These range from the dramatic fall in the cost of renewable electricity, the rise of electric vehicles and other technical changes associated with the so-called Fourth Industrial Revolution. These include artificial intelligence, big data and block chain operations. To these

Figure 1: IEA future oil demand by sector and scenario (mb/d)





reinforcing factors might be added the prospect of a war in the Middle East leading to a major geopolitically driven oil outage and as a result a major oil price shock forcing consumer governments to adopt policies that will speed up a move away from oil as the oil prices shocks of the 1970s did for the OECD countries.

There is much debate over the speed of this transition. The energy establishment appears to be very conservative about the speed as can be seen from Figure 2 with hydrocarbons continuing to make a major contribution to global energy growth between 2015 and 2035. The problem is that there are very strong vested interests working. Large oil companies can hardly say to their shareholders "It's been nice knowing you but the party is coming to an end!"

However, others, including this author and much of the financial community, would argue they are seriously underestimating the speed with which renewables will replace hydrocarbons. That they are underestimating the speed of the transition appears to be confirmed by their continual upward revisions to renewable and electric vehicle (EV) penetration.

Thus, it is likely that their forecasts for future oil demand are being considerably over-stated. Where they acknowledge potential declines in oil demand they offset it by claiming that petrochemicals will fill much of the void. For example, the IEA projects that one-third of the growth in oil demand by 2030 will come from petrochemicals, rising to almost 50 per cent by 2050. However, plastics are rapidly seen as increasingly toxic and are becoming the new tobacco. There is a growing groundswell of opinion in favour of using much less plastic. This possibility is reinforced when one realises that 40 per cent of plastics are used for

Figure 2: Contributions to energy consumption growth 2015-2035

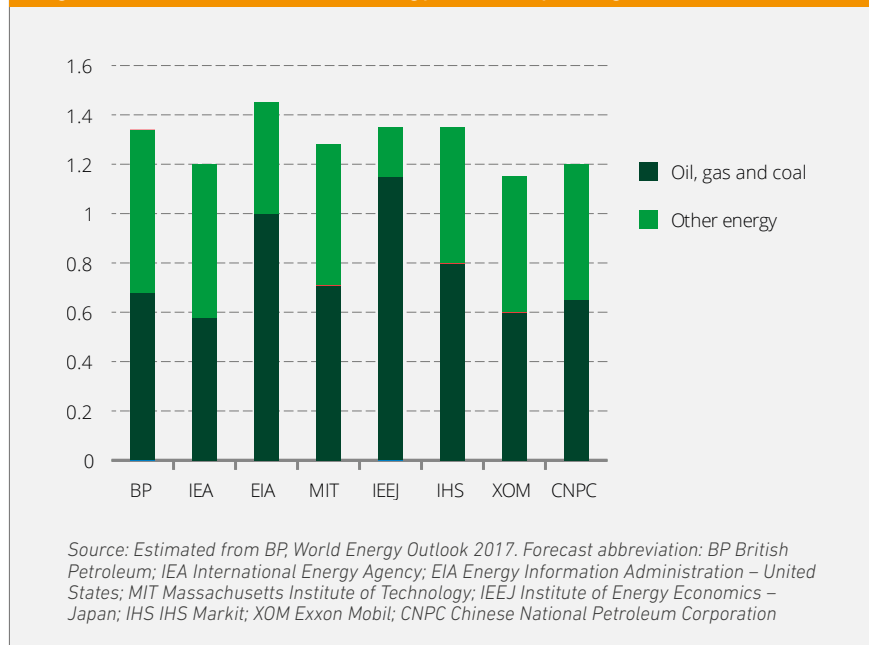
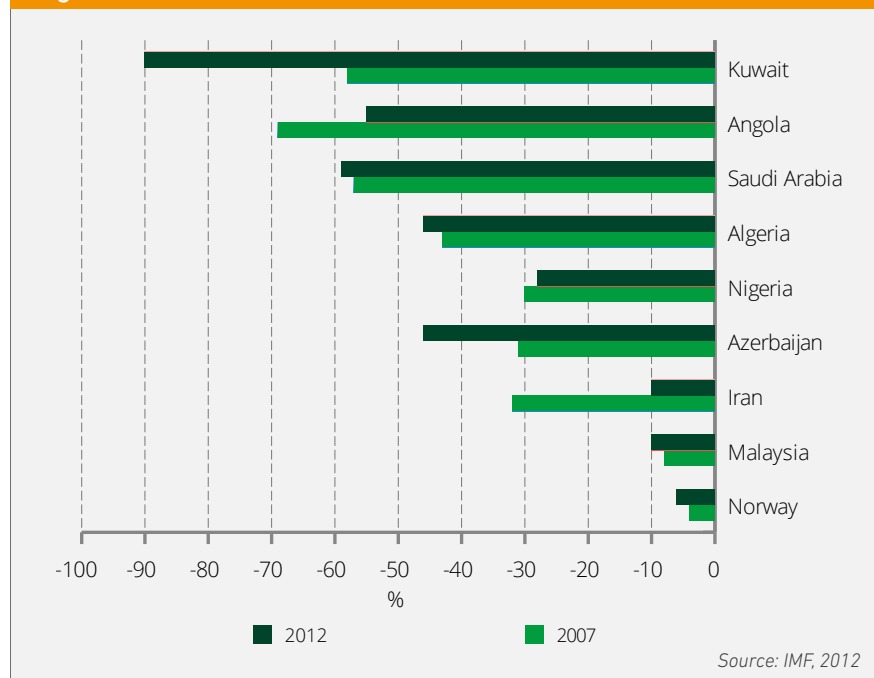


Figure 3: Non-oil fiscal deficit





packaging, much of which might reasonably be deemed a non-essential luxury.

This threat to growing oil demand presents serious problems for the oil exporting countries. Furthermore, the faster the transition, the greater will be the disruption and the less time to adjust. Most oil exporting countries have failed abysmally to diversify their economies away from oil. The reasons for this failure are many and complex. However, at its simplest it is because of the failure to encourage the private sector. The issue goes back to the Soviet Union at the time of President Gorbachev over whether it is possible to have perestroika – economic liberalisation – without glasnost – political liberalisation. In many oil-exporting countries the ruling elites stifle the private sector thereby inhibiting economic diversification. To effectively diversify will take major political reforms.

A good measure of diversification is the non-oil fiscal deficit. This is the proportion of the fiscal balance in the non-oil sector paid for by the fiscal surplus in the oil sector. The higher the proportion is, the higher the dependence. Figure 3 illustrates the situation for a number of countries.

Thus, only Iran, Malaysia and Norway have successfully diversified while Kuwait, Saudi Arabia, Algeria and Azerbaijan have become even more oil dependent between 2007 and 2012. Attempts to diversify away from oil could cause serious political upheavals. Figure 4 shows 16 countries where hydrocarbon exports are at least 50 per cent of merchandise exports. In other words they are highly oil dependent. These countries together represent around 56 per cent of global oil exports and 52 per cent of global proven oil reserves.

However, of these 16, only five are classified as politically stable and of these, Qatar faces potential short term problems because of disputes with immediate neighbours.

Many oil exporters face serious challenges when seeking diversification. At some point, sooner rather than later, oil demand will peak. This will generate growing competition for shares in a future declining oil market and lower government revenues. Greater instability either because of falling revenues or competition for oil market share could well lead to an oil price spike. This would be a significant incentive to consumer governments to speed up the transition, adding even further to disruption.

Figure 4: Vulnerability and political stability of major hydrocarbon exporters 2017



Sources: Fuel exports: World Bank, 2018 Political stability: Global Economy.Com, 2018