



## Tech Talk - The BP View of the Future

Posted by [Heading Out](#) on April 21, 2013 - 9:10am

I suspect I should apologize. Here I am talking about the future projections for energy production made by companies such as [ExxonMobil](#) and [Shell](#), as though they were still the key and only players in the world. Yet [in reality](#), Saudi Aramco (12.5 mbdoe), Gazprom (9.7 mbdoe) and National Iranian Oil (6.4 mbdoe) appear in the list before ExxonMobil arrives (at 5.3 mbdoe), and then there is PetroChina (at 4.4 mbdoe) before BP arrives (at 4.1 mbdoe), and it is only then that we find Shell, which lies 7th at 3.9 mbdoe.

So the projections of the ExxonMobil's of the world are of somewhat lesser value than they might have been at one time. (For those curious, the list continues with Pemex (at 3.6 mbdoe), Chevron (at 3.5 mbdoe) and Kuwait Petroleum Co (3.2 mbdoe). This not only rounds out the top ten, it also closes out the list of those producing more than 3 mbdoe. (Abu Dhabi comes next at 2.9 mbdoe).

Yet with those caveats, and recognizing that Saudi Arabia now produces only slightly less than ExxonMobil, Shell and BP combined, let me review the BP forecast, having already completed that for ExxonMobil and Shell. While the latter two looked sufficiently far into the future as to obfuscate a little their shorter-term projections, BP is still focusing on the relatively short-term that [runs to 2030](#).

Within that time frame, BP expects overall energy demand to grow by 36%, though like the ExxonMobil projection, BP expects that a "tremendous increase" in energy efficiency will continue to develop, thereby slowing the need for future resources. They point out that without this improvement in efficiency, global energy supply will need to double by 2030 in order to sustain economic growth.

This is particularly true for the United States, which BP sees approaching self-sufficiency in Energy, while it is the continued growth in demand from countries such as China, India and the Asian Pacific countries that provide most of additional need. Comparing their [view from 2 years ago](#) with the present there does not appear to be much change in the overall forecast. (Note that after the first two figures all the remainder come from the 2030 BP Energy Outlook).

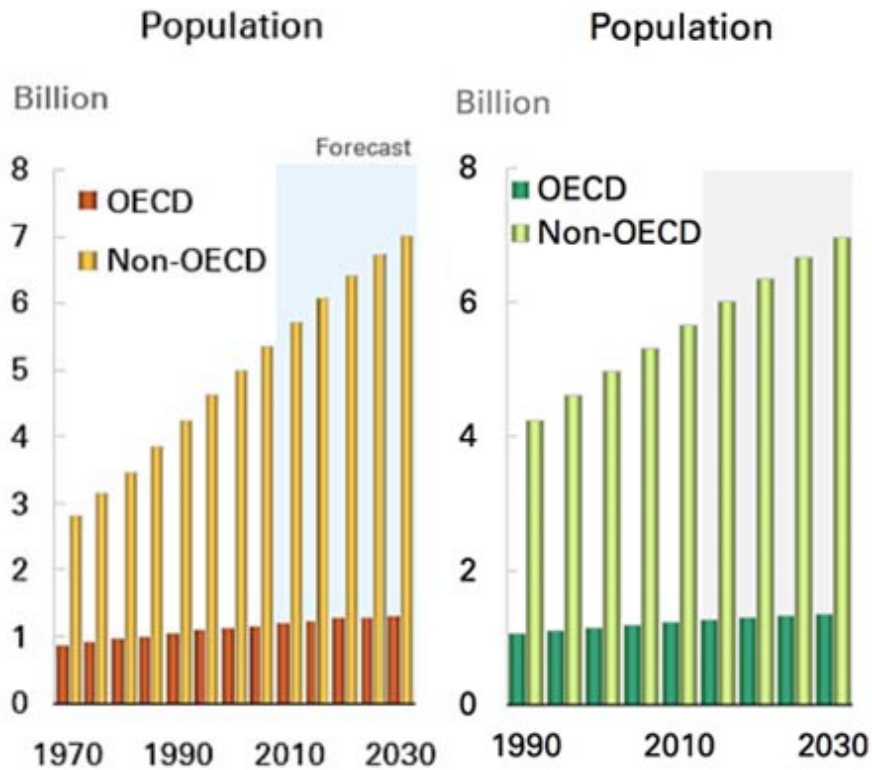


Figure 1. Comparison of BP data and projections for population growth between their 2011 report (left) and that for 2013. (right)

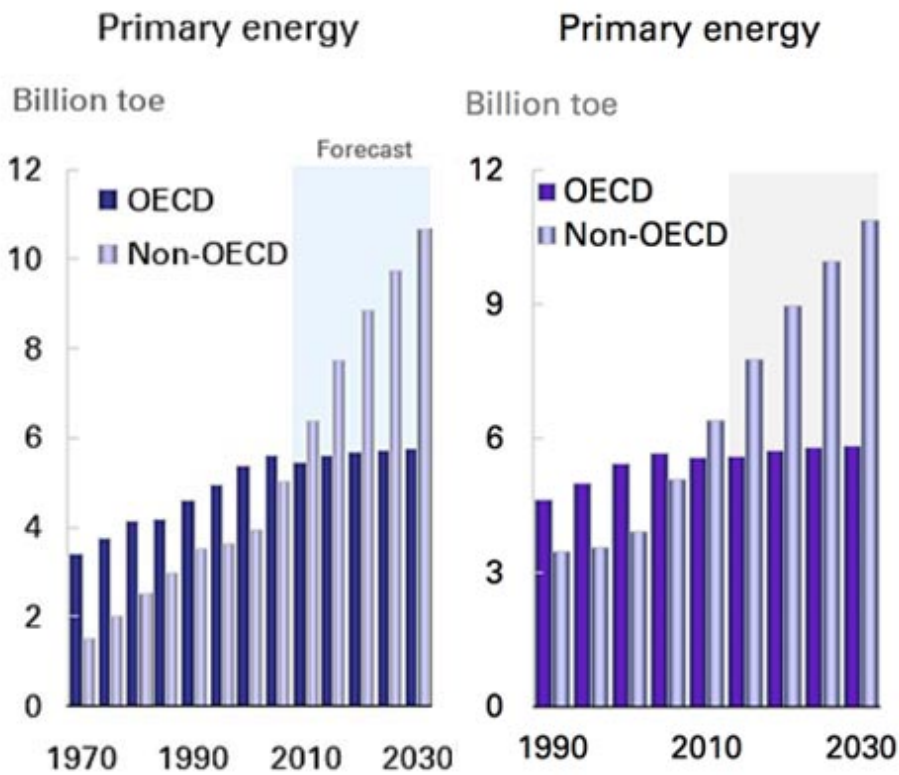


Figure 2. Comparison of current and anticipated energy demand through 2030, from 2011 (left) and 2013 (right) BP reports.

There is a small increase in the overall demand from non-OECD countries in the more recent

projection, but not a great difference. But this increase in demand reduces from a growth averaging 2.1% in the 2010-2020 time frame, to a growth of 1.3% in the following decade.

Within the period to 2030, BP anticipates that all major energy sources will continue to see an increase in overall energy production.

The fastest growing fuels are renewables (including biofuels) with growth averaging 7.6% p.a. 2011-30. Nuclear (2.6% p.a.) and hydro (2.0% p.a.) both grow faster than total energy. Among fossil fuels, gas grows the fastest (2.0% p.a.), followed by coal (1.2% p.a.), and oil (0.8% p.a.).

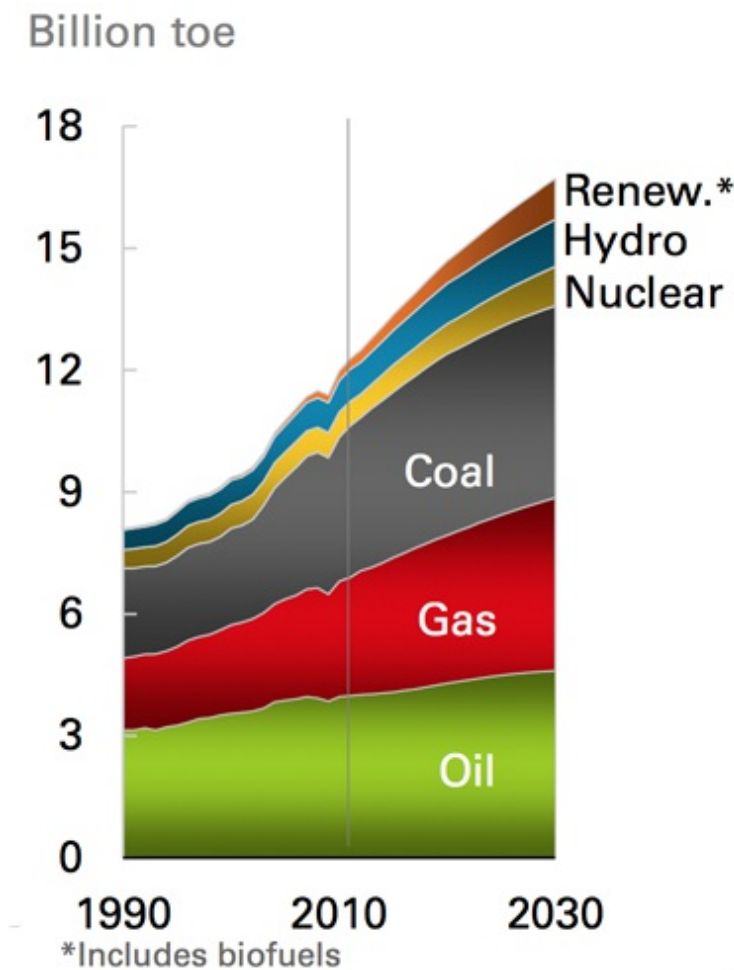


Figure 3. Growth in different energy sources through 2030

However, there is a change in the ranking of the different fossil fuels from the earlier projection. While BP were projecting two years ago that coal, oil and natural gas would virtually tie in terms of market share by 2030, coal is now given a more dominant role, with natural gas falling below oil.

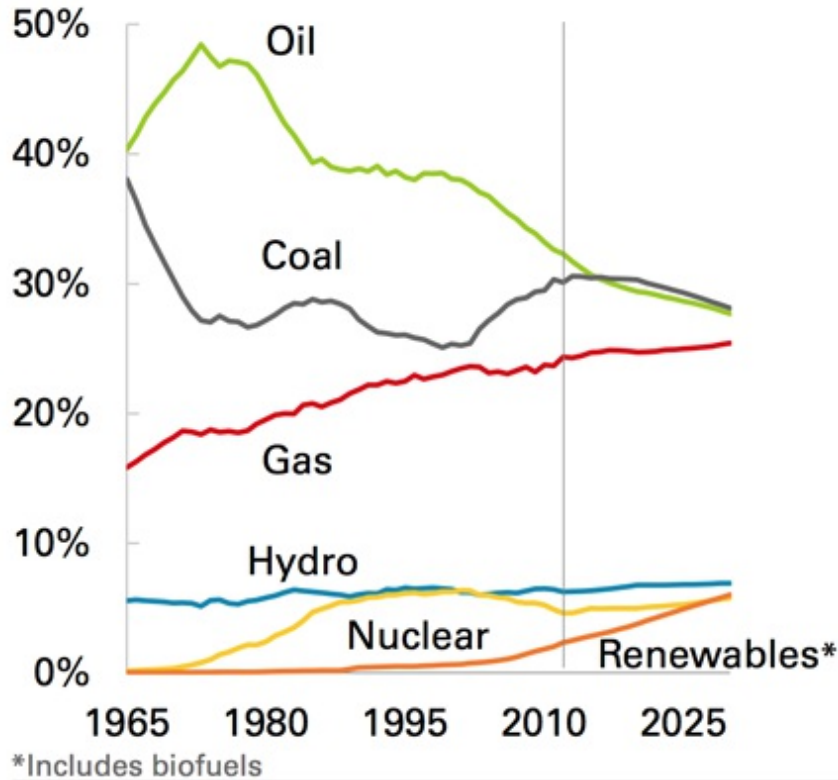


Figure 4. Change in market share for the different energy sources.

Within this time frame, coal is not really bounded by available supply, though BP anticipate that more will be produced indigenously in the Asian Pacific than at present. One assumes that this is partly necessary for financial reasons, although it will also be a need-based growth as the countries increasingly need electric power.

In terms of natural gas and oil supply, questions are more urgent and BP provide the following answer:

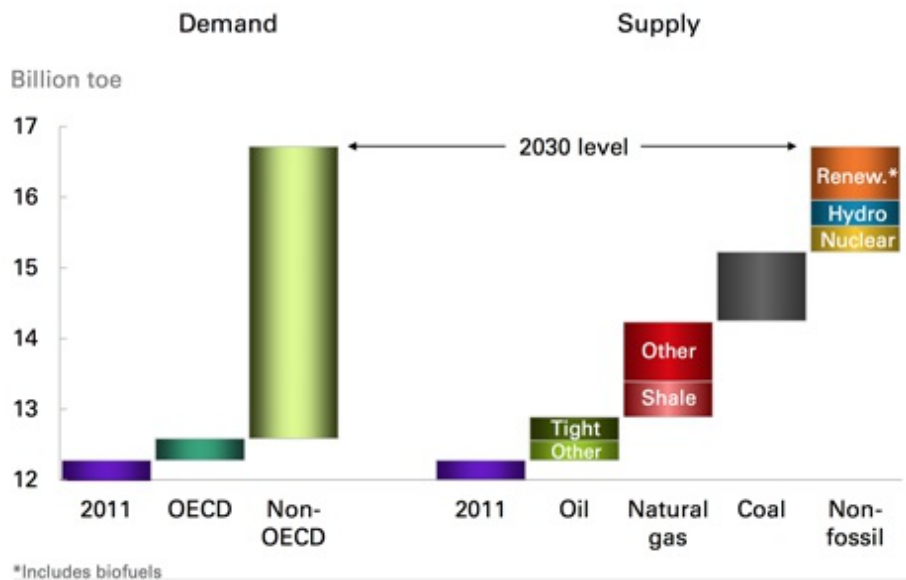
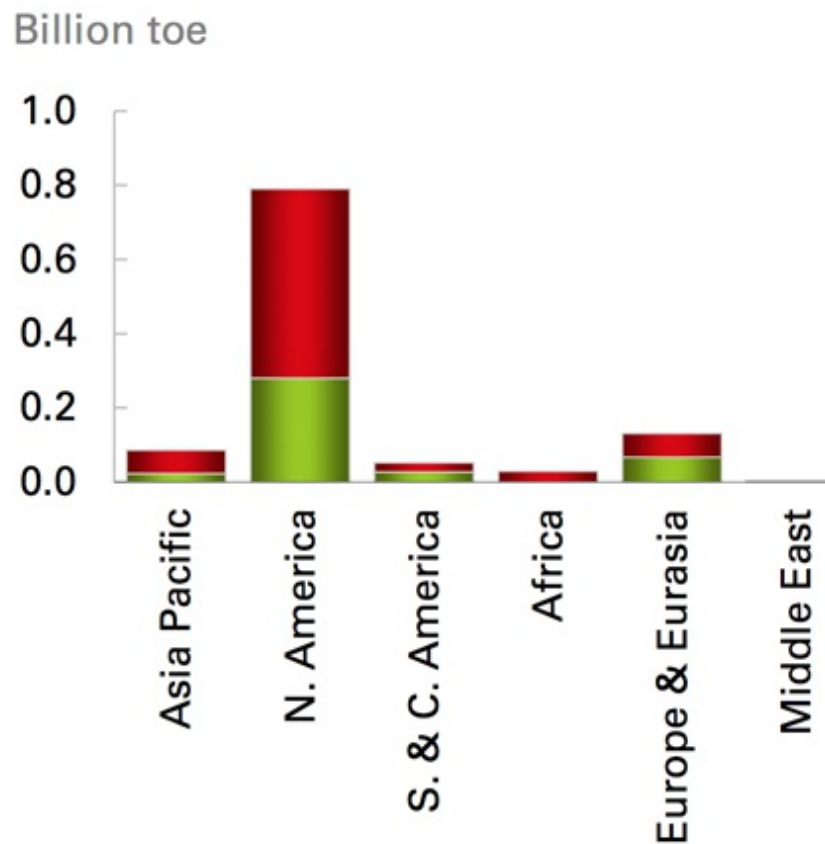


Figure 5. BP anticipated sources for the anticipated growth in demand for energy.

By far the largest production from the tight oil and gas shales will come from North America, where the current growth in production is anticipated to continue.

## Production in 2030



*Figure 6. Anticipated production of tight oil and shale gas by region in 2030.*

One of the drivers that BP see in the fall in oil demand comes from its continued high price. This has already significantly lowered the use of oil as a power generating fuel, and the continued high price will drive the move to vehicles of increasingly greater efficiency. Thus, although global liquid fuel demand will continue to grow, it will only be at the rate of 0.8% pa, reaching 104 mbd by 2030. The sources to meet this are various:

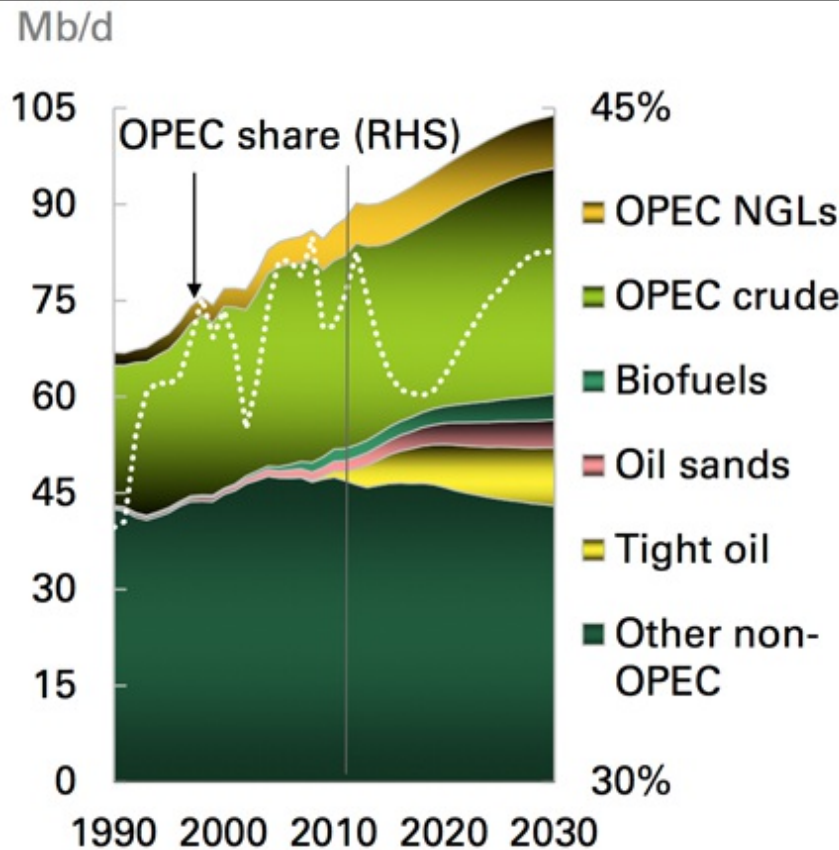


Figure 7. Liquid fuel supplies through 2030.

With the conventional supply of crude from non-OPEC countries diminishing, OPEC crude levels can be seen to increase over the next seventeen years while the major increase in production from tight oils is anticipated to come from North America. In 2030 it will provide 9% of overall demand, providing almost half of the 16.1 mbd of overall increase in production. The increase will, however, slow post 2020, as the costs of production and the limits of the resource base.

BP make the following prediction:

The US will likely surpass Russia and Saudi Arabia in 2013 as the largest liquids producer in the world (crude and biofuels) due to tight oil and biofuels growth, but also due to expected OPEC production cuts. Russia will likely pass Saudi Arabia for the second slot in 2013 and hold that until 2023. Saudi Arabia regains the top oil producer slot by 2027.

Other than tight oil, BP anticipates some increase in biofuel production, and from the oil sands, with significant increase in Iraqi production, and some gain from the remaining OPEC countries (one suspects Venezuela is included here) and from NGL production.

The largest increments of non-OPEC supply will come from the US (4.5 Mb/d), Canada (2.9 Mb/d), and Brazil (2.7 Mb/d), which offset declines in mature provinces such as Mexico and the North Sea. The largest increments of new OPEC supply will come from NGLs (2.5 Mb/d) and crude oil in Iraq (2.8 Mb/d).

In this regard, BP believe that currently OPEC has a spare capacity of around 6 mbd, but will continue to cut production to sustain prices over the decade.

BP see roughly a 7% p.a. increase in shale gas production with most coming from the United States, Mexico and Canada. This will bring total natural gas production to 459 bcf/day by 2030. Of this, North America will see a growth in production of 5.3% pa and by 2030 will be exporting roughly 8 bcf/d. In other countries the biggest growth will be in more conventional natural gas production, coming from the Middle East (31 bcf/d), Africa (15 bcf/d) and Russia (11 bcf/d).

This increase in supply, and the greater use of LNG tankers is likely to keep natural gas prices relatively stable.



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