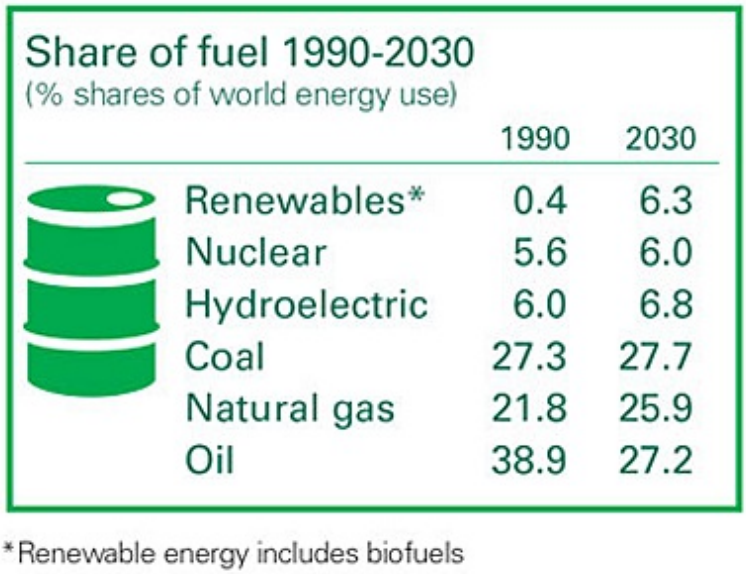
The Oil Drum
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

The 2012 BP Energy Outlook 2030

Posted by Heading Out on February 3, 2012 - 6:40am
Topic: Supply/Production
Tags: bp energy outlook, china, india, iraq, middle east, saudi arabia, transportation [list all tags]

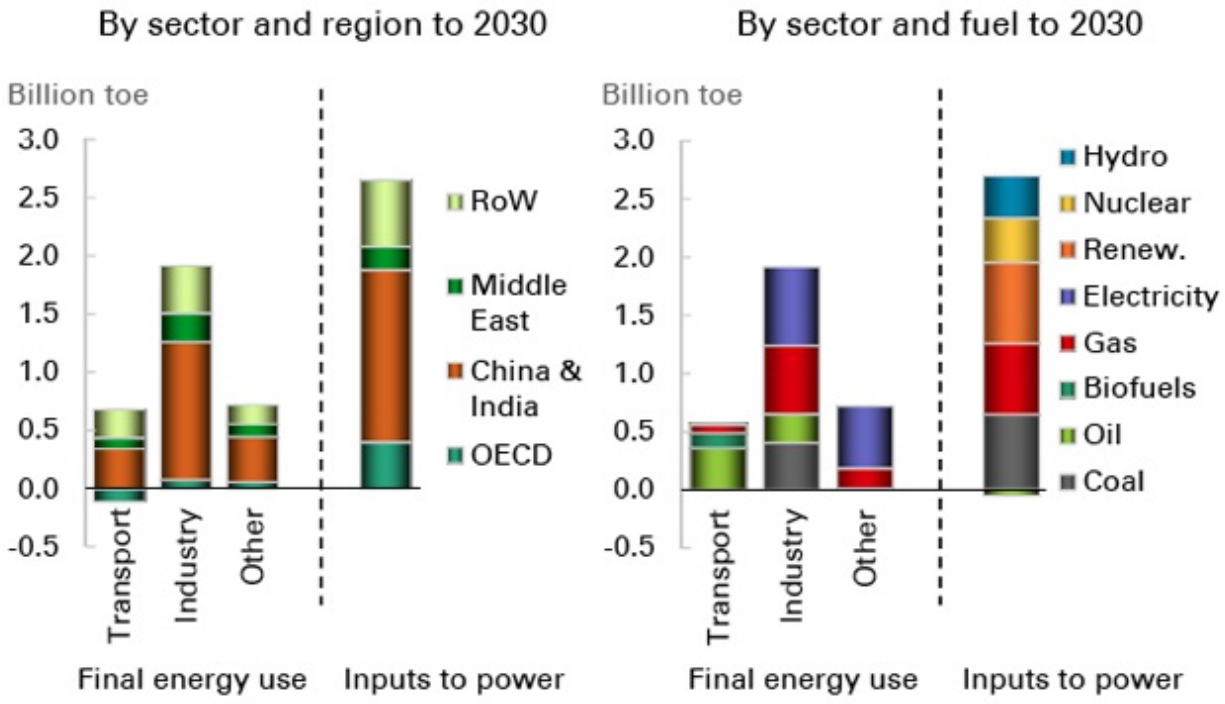
There are many unintended consequences as fuel supplies become more scarce and expensive. (With a h/t to Rune Likvern), I see that those Greeks who are being starved of affordable fuel are starting to chop trees down for warmth and income. This sort of desperation has devastated the countryside all over Albania, Africa, and Asia, and it is extremely difficult to stop the practice from spreading or to recover from it. The world expects that fuel must be available at an affordable price, and one of the ongoing questions is whether it will continue to be.

In that regard, BP has just released its Annual Energy Outlook 2030, examining how the world energy supply, and mix, will change in the years up to 2030. The booklet is an update from the study released last year, and reviewed at the time. This year the introductory speech by Bob Dudley focused on energy demand in China and India, Middle East exports, and transport fuel demand. BP sees overall energy demand growing some 40% over the next two decades, with virtually all growth coming from the developing countries. More than half will come from China and India alone. And of that energy, they anticipate that the supply will break out as follows:



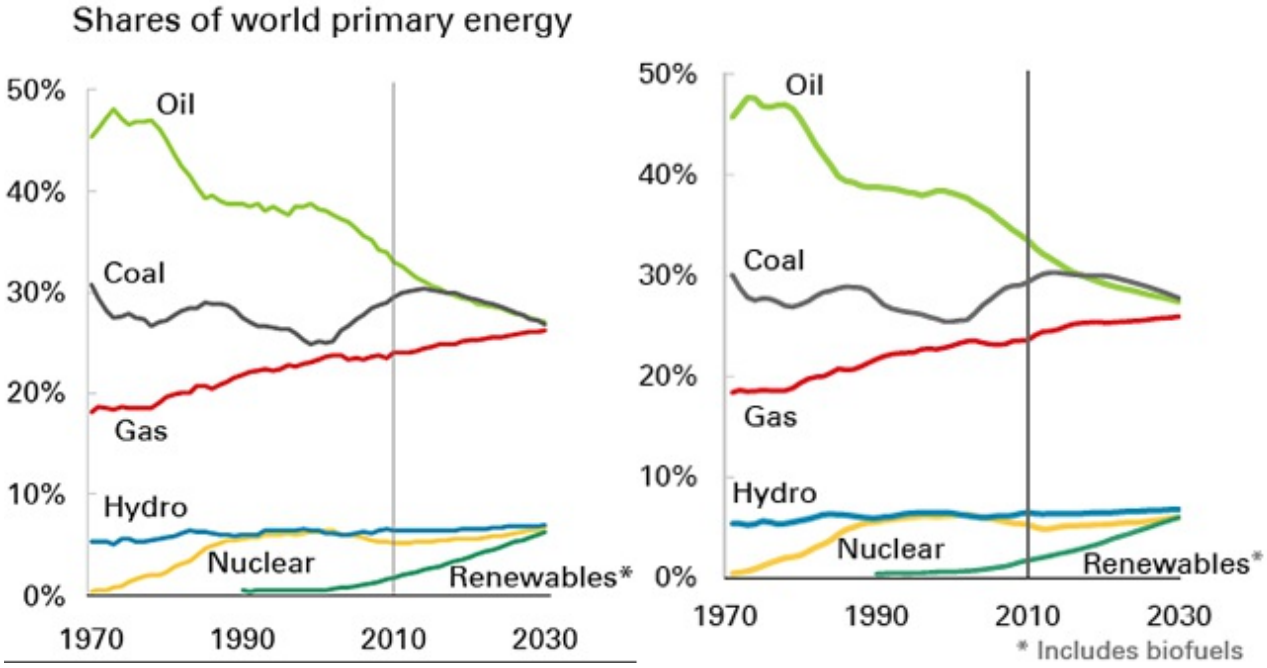
Energy Supply Source Contributions (BP Energy Outlook 2030)

Demand will grow across virtually all sections, apart from that of transportation in the OECD, which is expected to fall over the next two decades.



Demand changes in the next two decades (BP Energy Outlook 2030)

Oil will still be the basic source for transportation fuel, and though growth in demand is anticipated to be only 1% a year that turns into another 16 million barrels a day by 2030. One has to be careful therefore in assessing the contributions of the different sources of fuel, as percentages, since, while these may be falling relative to the whole, the actual volumes that are being consumed may still be rising.



Expected changes in the relative sources of energy supply prediction from last year (left) to this (right)through 2030 (BP Energy Outlook 2030)

On a minor note, the role of coalsurpasses that of oil some 20-years from now, while last year, the two were about equivalent. Even though BP expects that by 2020, coal's share of the global

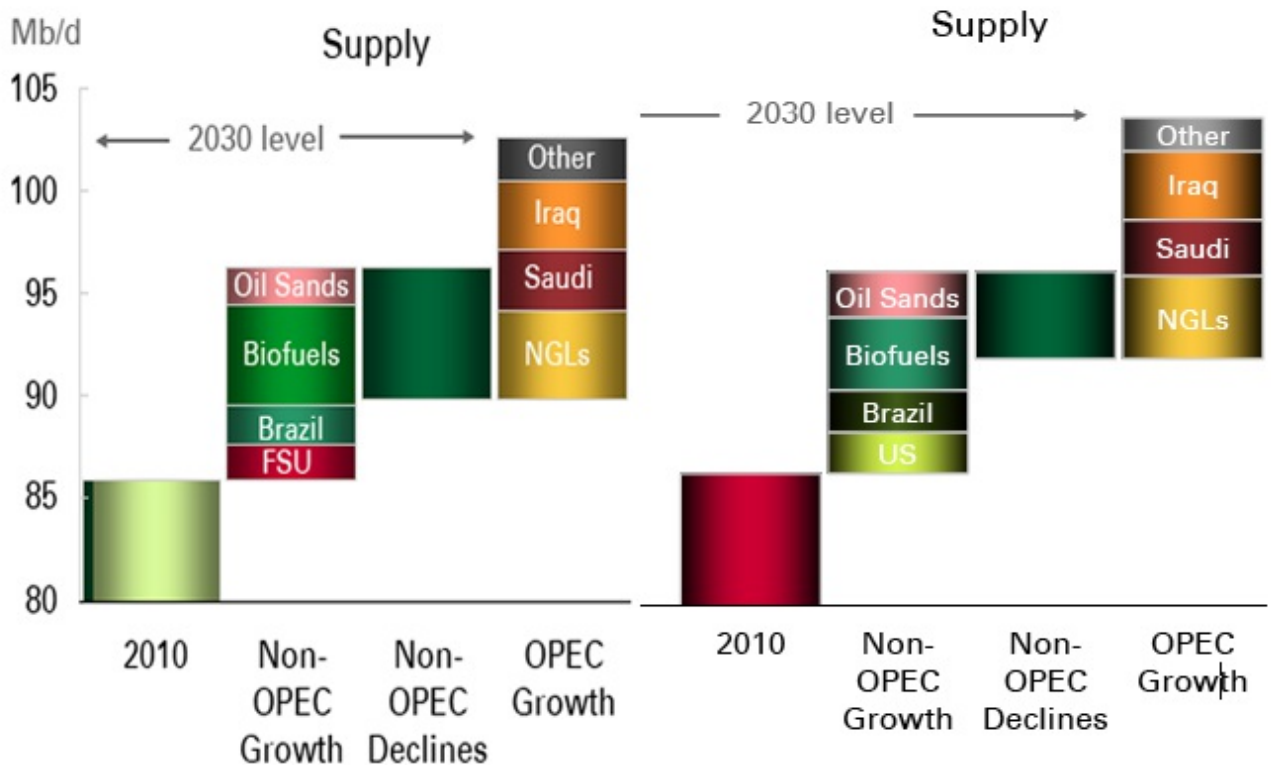
market will begin to fall, though less steeply now than they anticipated last year. And BP expects that some of the change in the mix will be brought about by technical change.

> Technology underlies many of the trends apparent in this report. For example, the supply of gas has been accelerated as a result of technologies that unlock shale gas and tight gas. In the transport sector, we believe the efficiency of the internal combustion engine is likely to double over the next 20 years. And that will save roughly a Saudi Arabia's worth of production. By 2030, we expect hybrids to account for most car sales and roughly 30% of all vehicles on the road.

The interesting question is, of course, where BP thinks that all the oil will come from. Last year, when they projected the same growth rate, the sources were expected to be Saudi Arabia and Iraq. This year, they project that more will come from Deep water, rising from the 9% of supply anticipated last year to 10% in the current review (currently it is at about 7%). But, more interesting, is that they see the roles of energy efficiency and technical exploitation of indigenous resources leading to a great change in the international fuel market:

> we foresee both the Americas and Eurasia - or Europe including Russia and the former Soviet Union - achieving self-sufficiency in energy, while the Middle East will generate surplus supply for Asia's surplus demand. In the US for example, oil imports have dropped by about one-third since peaking in 2005 and are likely to be half of today's level in 2030. The US now produces over 50% of the liquid fuel it uses – as opposed to importing the majority, as was the case a few years ago.

For the U.S. and European pictures to change as much as they anticipate, cellulosic ethanol still appears to be the flag pole on which they have hung their future, and in which they remain heavily invested. Yet when one looks at the make-up of the sources for fuels in 2030, as projected this year over that suggested last year, there has been a slight gain in overall volumes required.



Anticipated sources of fuel in 2030 – last year's projection (left) and this year (right)

The interesting changes come in Non-OPEC growth, with the contribution from bio-fuels diminishing, growth in US production replacing that anticipated from the FSU (wonder where that went?) and a drop in the Non-OPEC declines. To answer my own question, I suspect that the growth in FSU supplies (which I am covering elsewhere) has been melded into the need to sustain production at current levels, and that may be a part of the reason for the drop in the Non-OPEC declines.

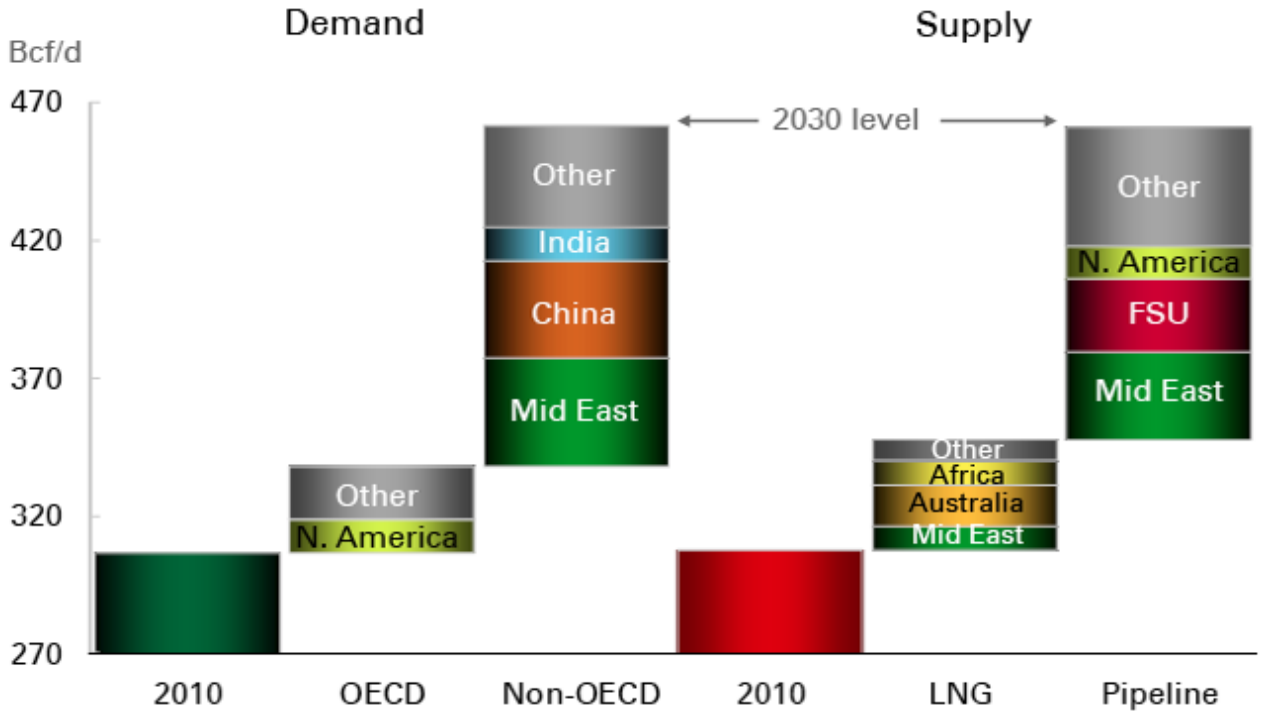
When one considers that BP are forecasting an increase in demand of 8 mbd from China, 3.5 mbd from India, and 4 mbd from the Middle East, with the non-OPEC decline being at 6 mbd, there is a total of 21.5 mbd of new production being forecast, over the next 20 years. And of this, 12 mbd will come from OPEC, namely Saudi Arabia and Iraq, but with a significant contribution - 4 mbd - from NGLs.

At which point I cough gently and draw your attention to recent remarks (h/t Stuart Staniford) of the Saudi Oil Minister, who suggested that they have flexibility up to a full production of 12.5 mbd, with a little time; but, on the other hand, they will drop production to keep the price over $100 a barrel. And so there is a suspicion that as Libyan oil production returns to normal, Saudi production may fall in balance. The upper limit on Saudi production had earlier been set at 12 mbd, but both these figures are now coming under increasing question, particularly since Aramco has had problems in finding a market for their heavier crudes, which make up almost all of the surplus over current production. (And the Saudi refineries to treat them are still a couple of years away). Yet, if the refineries to treat those oils do come on line, and that increases Saudi capability by 1 mbd of marketable product from Manifa, it will still only bring them up to about 11 mbd. It may be that they will raise production that much, to offset increasing domestic use, and maintain the volume of exports that they need to sustain their economy. But how long they can do that, relying on their ageing major reservoirs remains, of course, the other big question. BP anticipates that they will increase production by 3 mbd over current levels, and still have a cushion of a million or so barrels a day.

And as for Iraq, the country exported 2.14 mbd in December having risen 275 kbd or 14.4% over the year. Whether that can be sustained in the face of continued troubles is not clear. The Al-Ahdab field has come on stream and is ahead of schedule, at 120 kbd, though it may well be that all that oil ends up in China. BP, however, are assuming that Iraq can double production, to 6 mbd, by 2030.

Growth in production in the Americas is anticipated to come from the oil sands (up 2.2 mbd); the Brazilian deep waters (another 2 mbd) and U.S. shale oil (at 2.2 mbd). Total biofuels growth of 3.5 mbd balances out the anticipated supply and demand at just under 105 mbd.

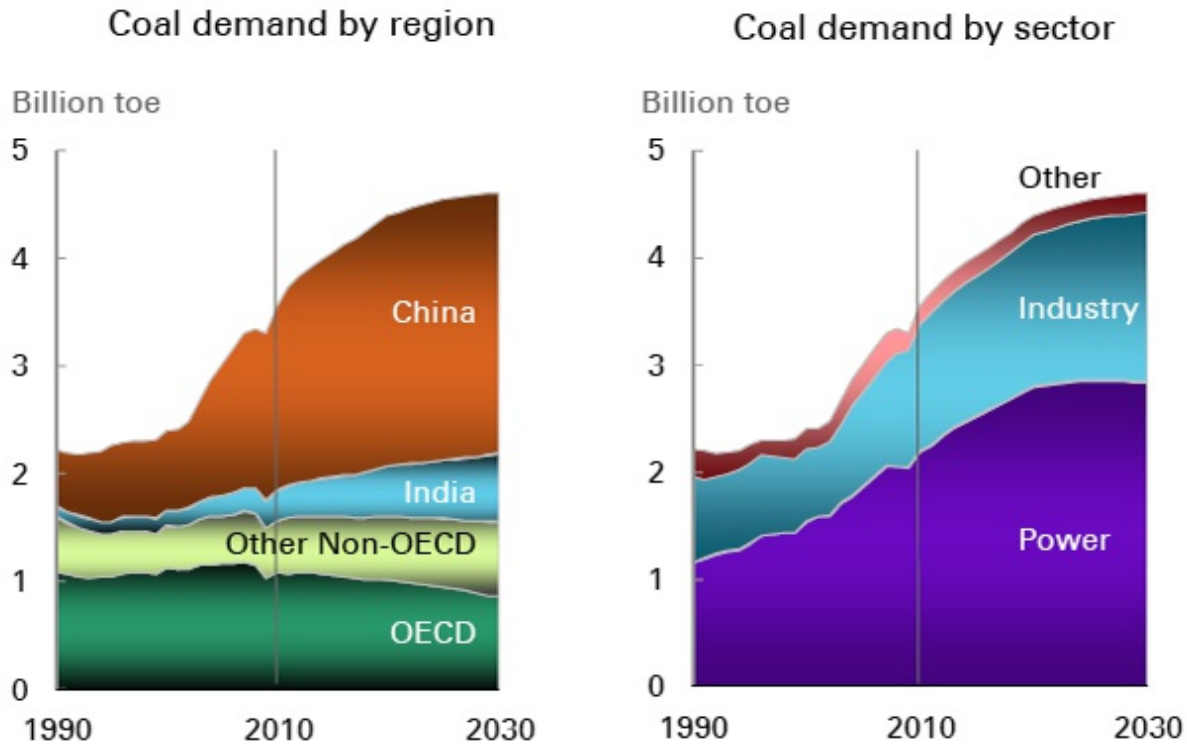
The continued growth in natural gas is divided into two parts, that which is shipped through pipelines, and that sent as LNG in tankers. Total demand will rise about 50% with the Middle East, China and India providing most of the increase in demand, and with supply coming from a number of sources.



Changes in natural gas demand and supply over the next 20 years (BP Energy Outlook 2030)

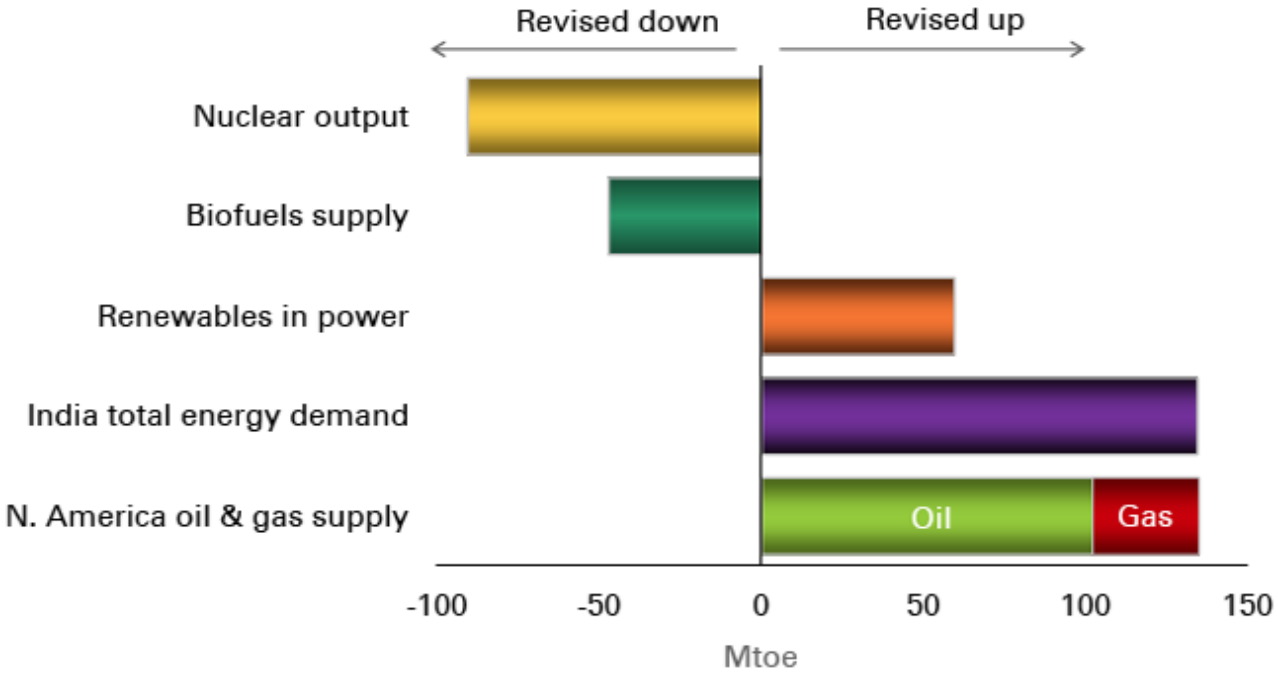
The growth in use will be across all sectors of the economy, but if I do an eyeball comparison it seems as though there is a significant drop in LNG increase over the numbers that BP were using last year. Back then they were seeing an increase of around 70 bcf/day over the interval; now, while they are projecting a growth of 4.5% p.a., the overall volume is somewhat less.

Coal demand will continue to rise, largely due to increased demand for power and industrial use in China and India, while western nations slowly ease away from the fuel.



Changes in coal use over the next 20 years. (BP Energy Outlook 2030)

BP summarizes the changes that they have made, relative to last year's forecast as:



Changes in BP forecasts from 2011 to 2012. (BP Energy Outlook 2030)

Overall, it looks to be a rather optimistic view of the future.