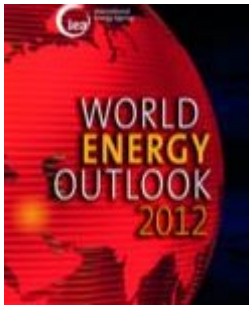
WORLD ENERGY OUTLOOK 2012: THE DIFFERENCE BETWEEN SCENARIO AND FORECAST



The IEA ***World Energy Outlook 2012****, recently released in London and presented by Fatih Birol at an OMV event in Vienna last Wednesday, is a kind of shock for many environmentalists. The rise of non-conventional oil and gas, especially the radical shift in the US energy landscape is massively affecting future energy scenarios. The reaction in media has been intense; a key message is very clear: a comeback of fossil energy. The US will become energy sufficient based on developments of non-conventional oil and gas, especially shale gas and tight oil.*

It is obvious that this message adresses the political playfield, too. Europe will have to react, playing a less important role in future. And of course the impact on climate politics is obvious. Fatih Birol, Chief Economist of IEA, emphazises the importance of energy efficiency and the focus on climate strategies, but it is clear that the market development goes in a opposite direction. The IEA says: *"Taking all new developments and policies into account, the world is still failing to put the global energy system onto a more sustainable path."* Some key points:

"Global energy demand increases by over one-third in the period to 2035. Energy-related CO2 emissions rise from an estimated 31.2 Gt in 2011 to 37.0 Gt in 2035, pointing to a long-term average temperature increase of 3.6 °C.
Demand for oil, gas and coal grows in absolute terms through 2035, but their combined share of the global energy mix falls from 81% to 75% during that period.
The United States, which currently imports around 20% of its total energy needs, becomes all but self-sufficient in net terms by 2035 thanks to rising production of oil, shale gas and bioenergy, and improved fuel efficiency in transport.
Falling US oil imports mean that North America becomes a net oil exporter by around 2030."
From a climate politics perspective one could say: "We've lost."

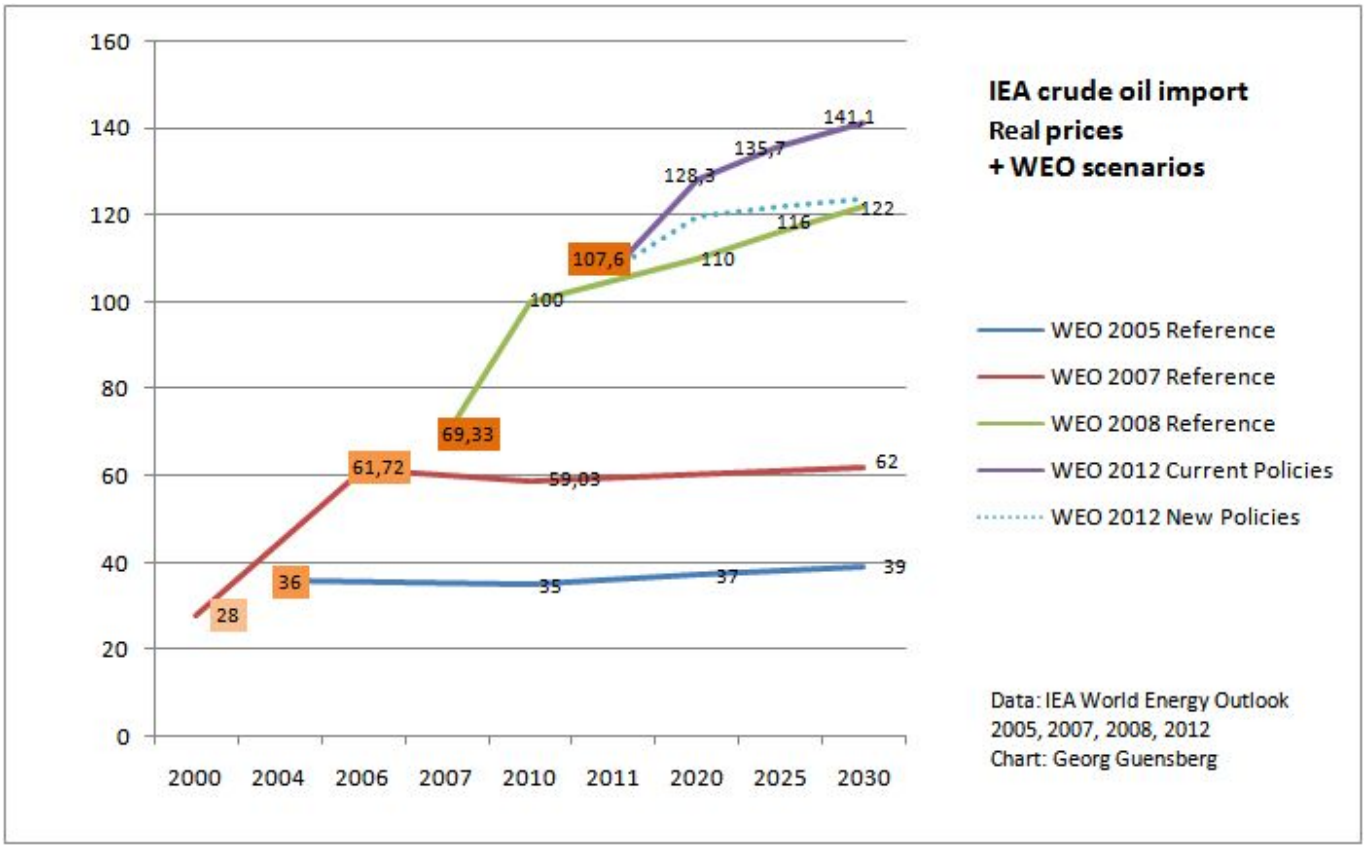
But wait…

The World Energy Outlook is really a great source of information providing excellent statistics and tons of scenarios. It´s one of the most important annual documents for international energy policy. But the great misunderstanding in media and politics is that the future projections are scenarios not forecasts. That´s why IEA offers different scenarios. The report clearly states that WEO 2012 projections "are subject to a wide range of uncertainties" (page 38) Especially the link between economic growth and

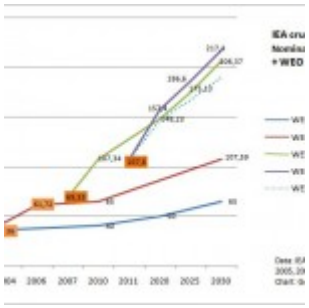
energy demand are the biggest source of uncertainity in the medium term.

So, the annual World Energy Outlook sometimes had to fail with its scenarios.

Example 1: One of the major shift in the last decade has been a dramatic change of the oil price which is 3 to 4 times higher than 10 years ago. It has not been foreseen by IEA. I collected the data of some old WOE reports just to show the difference:



Of course no one did foresee this price explosion a few years before, except some of the Peak Oilers who were critized for an “apocalyptic view”.



I did the same graph with nominal price projections that of course looks more extreme (see chart on the left). You can see that former price assumptions by the IEA World Energy Outlook were signficantly wrong for many years. It mostly projects the current price niveau with some increase but high stability. But the dramatic change which might be linked very much to Peak Conventional Oil has not been anticipated until it has been there (WEO 2008).

Another less dramatic example are the scenarios on wind energy:

WEO 2002 projected wind power to increase by 10% a year over the 30-year projection period, to reach 539 TWh in 2030.
WEO 2008 projected global wind power output is to increase from 130 TWh in

2006 to more than 660 TWh in 2015 (not that much difference to the WEO 2002 projection for 2030) and 1.490 TWh in 2030. Its share in total electricity generation has been asumed to rises from less than 1% in 2006 to 2.7% in 2015 and 4.5% in 2030.
WEO 2012 now is based on 342 TwH in 2010 and projects 2.680 TWh in 2035 pushing up its share in total electricity generation from 1,6 to 7,3%.
So within 10 years the World Energy Outlook scenarios changed the assumption for wind energy to a number 4-5 x higher.

But what will be the projection of the World Energy Outlook in 2015? Maybe it will again be significantly different due to technological developments, political priorities etc. There is no one to blame but it´s important to be aware of the change of scenarios.

There are a lot of uncertainties in future energy scenarios. E.g.

The history of tight oil and shale gas is very young and they are very much linked to each other (see the excellent analysis by Fiona Harvey in the Guardian points that out "Shale offers freedom and security – but it could be a trap") or Gail Tverber's analysis on shale future projections). The exploitation of non-conventional oil and gas is not cheap. It is based on the rise of energy prices and benefits from the current situation. Decline rates are not promising for industry and the trend that it will be fracked as hell in the US might create severe conflicts. So I am still sceptic on the development of non-conventionals although it is obvious that most of us have underestimated their potential. The ASPO2012 conference I have co-organized provided a lot of expertise on that very matter (especially Arthur Berman's video presentation).

Another example: The role of Irak providing enormous amounts of crude oil is highlighted in WEO 2012, too. A good example how important the geopolitical perspective is. But how will the geopolitical playfield change in future? Will China really grow the same way as projected? Revolutions, environmental and other catastrophes, conflicts never have been part of these projections. It´s the "above ground factors" that offer most of the uncertainties for a future prognosis.

Birol clearly stated in Vienna that the role of politics is crucial. The following numbers really show the current priorities:

In 2011, global subsidies for renewable energy reached $88 billion, an increase of 24% compared to 2010.

In 2011, global subsidies for fossil-fuel consumption totalled $523 billion, almost 30% higher than in 2010

(source International Energy Agency, World Energy Outlook 2012).

So, it´s about politics. The World Energy Outlook 2012 gives enough reason to be sceptic for the future. But it´s not hopeless. For a conclusion I just

want to quote WEO 2008:

“*But many of the key policy drivers (not to mention other, external factors) remain in doubt. It is within the power of all governments, of producing and consuming countries alike, acting alone or together, to steer the world towards a cleaner, cleverer and more competitive energy system. Time is running out and the time to act is now*.”