The Changing Global Energy Map Affects Demand and Investment

Speech delivered at ONS 2014

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Good morning Excellencies, ladies and gentlemen,

It is a great pleasure to join you here again for the ONS Summit Meeting and to open this session on **energy demand and security of supply**.

As I reflected on this topic and the audience, it occurred to me that a somewhat unexpected interest unites us. And that is *certainty*. For those of you on the producer side, certainty that energy demand will continue to grow and that your investments will bring reasonable – or even high – returns. And for those who tend to be more on the consumer side, certainty that demand will be met so that security of supply is ensured.

But one thing we all know is that in the energy sector, what is certain today may change by tomorrow.

And in recent years, we have seen considerable changes to the global energy map, many driven by rapid but shifting growth in energy demand and supply. And such changes bring both opportunity and new challenges, including meeting that demand reliably, affordably and sustainably.

This means that co-operation between industry and policy makers will be extremely important in the coming decades. And you are the right audience for this message.

This morning I would like to discuss demand and supply trends, focusing on fossil fuels, and their implications, especially in terms of investment.

I will start by looking at trends in the **gas market**.

In June, we released our *Medium-Term Natural Gas Market Report* which revealed a number of interesting developments.
On the demand side, we saw no “dash to gas” in 2013. On the contrary, growth rates slowed to only 1.2%, making it the fuel with the lowest demand growth.

While the easing of demand in the mature OECD countries was the continuation of a trend, the slowdown in non-OECD growth was often involuntary, caused by insufficient supplies that forced countries to curb consumption. The road back to much higher consumption is subject to both the timely development of domestic production for all non-OECD regions, and to being in a position to get access to imported gas, from an infrastructure, contract or price point of view.

Once those problems are resolved in much of the world, overall global demand growth should pick up again. Led by China, where domestic demand is expected to nearly double to top 300 bcm, that means an average annual increase through 2019 of 2.2%.

On the supply side, two OECD regions – Americas and Asia Oceania – will account for around 40% of additional gas volumes, with the Middle East contributing 19%.

China’s domestic supply is set to increase by around 65% in the next five years, but that won’t be enough: imports, both piped and as LNG, will meet about half of China’s demand growth. Already, the majority of globally traded LNG flows to China, Japan and non-OECD Asia. Prices are high – though have subsided a bit recently – and that has driven major expansion of export capacity in producer countries. The standout here is Australia, which is looking to export the majority of its new output.

The United States and Canada are major producers, too, but they also have high domestic demand. While these two countries are looking to export, it will be 2015 before the first gas leaves the United States. Many export facilities are in various states of development and awaiting approvals, with one in Oregon receiving federal approval last month. But it will be some time before we see just how much North American gas makes it to the international market.

This brings me to Europe, where North American LNG has been talked up by some as a panacea for the region’s supply concerns. But, as I’m sure many of you in this room already know, a few tens of bcm of LNG will not make much difference, given that OECD-Europe production continues to fall by similar quantities.

A broader range of measures are needed in Europe to ensure gas supplies long term, especially in light of recent conflict between Russia and Ukraine. While internal infrastructure is improving and the single market is on track, continued strong gas demand in Asia and competition for LNG mean that new volumes will be hard to come by in the case of supply disruption.
Europe should facilitate domestic production to offset declining European output, and it should have a strategic engagement with producers. Of course this should be seen as a complementary measure rather than substitution of efforts to improve energy efficiency and maintain a diversification of the primary energy mix.

Now I will turn to oil, drawing on our Medium-Term Oil Market Report, which also came out in June.

Let me start with the supply side, where we have seen instability in some key producer countries lately, especially Iraq and Libya. There has been little market reaction thus far primarily because disruptions have been minimal or offset. However, the IEA continues to watch developments very closely.

That said, the big supply story has been the unprecedented production growth in recent years in North America, driven by the United States which is now the world’s number one aggregate producer of oil liquids. The country is already a significant exporter of refined products, and the first condensate exports were recently approved to go to Asia. Further exports remain a hotly debated topic in the United States.

Many question how long the upward swing in US light tight oil production can last, but new unconventional oil supply may come from other regions sooner than previously anticipated. Canada, Russia and Argentina are leading the pack. And Chile this month signed an agreement to begin exploring its potential.

On the demand side, the world’s appetite for oil will continue to increase, topping 99 million barrels per day in 2019, driven by fast-growing markets outside of the OECD.

Here, too, demand growth is led by China, but also by other non-OECD countries in Asia. We expect to see Asian imports surge by 16% to 22 million barrels per day by 2020, with the region then accounting for around 65% of the international crude market.

So, like with gas, we see oil demand and supply undergoing major shifts in the medium term.

But that is just the start of changes to energy demand and security. Because we at the IEA see two very big challenges.

First, that growth in energy demand from emerging economies is making up for OECD countries, where demand is actually falling. Why? Some factors are sustained high prices and concerns about security of supply. But those are hardly new.
No, the big changes are part of a phenomenon occurring as demand transforms towards the second half of this decade. Fuel-switching from oil, tightening environmental regulations and efficiency gains are all working to undermine the demand impact of economic and population growth, slowing demand growth.

This is most pronounced in OECD countries now, but it is an increasingly global phenomenon.

Thus, while peak oil demand outside of the OECD may be years away, we could see a peak in the rate of global growth of oil demand within the next five years.

Then there is the elephant in the room: long term, oil and gas production may have to taper off regardless of demand. That’s because we need a sustainable as well as secure energy policy.

The IEA flagship publication *World Energy Outlook* makes clear that no more than one-third of proven reserves of fossil fuels can be consumed in the current manner before 2050 if the world is to limit average global temperature increase to no more than 2 degrees.

But a solution the *WEO* offers is something Norway has taken a significant lead in: carbon capture and storage. IEA scenarios to limit climate change all call for significant investment in, and implementation of, CCS. As long as fossil fuels and carbon-intensive industries play dominant roles in our economies, there simply is no credible long-term climate-friendly scenario without CCS.

With the Sleipner, Snøhvit and Mongstad projects, Norway has been showing world-class leadership in CCS for more than 15 years.

But the IEA does not see CCS as just a way to limit global warming. CCS can also be a way to more effectively develop fossil fuel reserves. Later this year, we will publish an in-depth look at how carbon capture can be part of enhanced oil recovery, or EOR: this win-win process uses the captured CO$_2$ to squeeze out more oil or gas from deposits. I can’t reveal much more now, but watch this space, because we will show how EOR can become a cost-effective way to limit climate change while providing more supply of the fossil fuels that the IEA sees as a significant part of the energy mix for decades to come.

Besides addressing the potential of EOR, the report will detail the investment necessary to develop it. But EOR is just a part of the significant investment needed overall for the oil and gas industry to keep providing the energy security the whole world relies on.
Our World Energy Investment Outlook – an already-released special chapter of our World Energy Outlook coming in November – estimates that upstream oil and gas spending must increase by a quarter to more than USD 850 billion per year in 2035.

What is particularly striking is that the bulk of that increase is to replace depletion of existing fields, where output will decline by more than half in the next two decades. Indeed, depletion is accelerating in almost every producing region. If this investment, does not take place, supply will shrink and we will no longer be able to meet existing demand, never mind demand growth.

So without CCS we cannot use more than one-third of the proven reserves in the world without endangering the climate, and thus large elements of our economies, including many of our energy operations. And without adequate upstream investment, potentially including EOR, we have no security of supply.

To encourage investment in both spheres, governments must play an important role. For supply growth, I cannot overemphasise the importance of governments’ ensuring a stable, consistent policy framework for energy investment. And governments can ease the first steps in developing the CCS required to use that supply sustainably, especially by supporting pilot and demonstration projects.

Earlier this morning, I noted that many of us would like more certainty. But one certainty we do not want is the grim future if we do invest in these two prerequisites for a secure and sustainable energy future.

In closing, ONS has gathered us here to give us the opportunity to identify sources of uncertainty and find solutions. I’ve listed the challenges the IEA sees. Now let me start the discussion by asking, From your point of view, what are the top priorities vis-à-vis a secure and sustainable energy future?

Thank you.