

Interview Fatih Birol

‘We have few reasons to be hopeful’

No energy expert is as much in the news as Fatih Birol, chief economist of the International Energy Agency (IEA) and director of the IEA’s flagship publication, the World Energy Outlook. In recent years, the Turkish-born Birol, who in the past worked in the secretariat of IEA-adversary OPEC, has issued increasingly pessimistic messages. The most recent WEO, published in November, was the most sombre to date. Its major messages are that not only is the energy market tighter than ever, we also seem to be inexorably headed towards climate disaster.

| *By Alex Forbes*

What are the key messages in this year's edition of the World Energy Outlook?

There are some worrying messages - first of all that the world is on an increasingly unsustainable energy path, in terms of oil security and in terms of climate change. Another is that China and India are transforming our energy system by their sheer size. We see their weight more and more every day in oil markets, in carbon dioxide (CO₂) emissions, and in energy investments. Thirdly, we are going through difficult times in the oil markets; if no significant additional efforts are made by consuming countries to slow down demand and/or by producing countries to increase capacity, we may see difficulties in coming years. Finally, if current CO₂ emission trends continue, we will end up with up to a 6°C increase in the global temperature (*above pre-industrial levels, ed.*) - a result that we don't want to see.

You have described some of the numbers that have emerged from your data-gathering efforts this year as "stunning". What has changed over the past year that causes you to use such a description?

The main reason is that China and India have a pace of economic growth which, it seems, will not slow down for years to come. This growth is mainly fuelled by oil, which has implications for global oil markets, and by coal, which has implications for CO₂ emissions. In this WEO, we didn't just look at China and India but at their implications for oil markets and the global energy system. The effects may be difficult to absorb so we need to look - all of us together - at the global issues and try to solve them in a global manner.

You've raised two key themes: energy security and climate change. Starting with energy security, you've said that an oil crunch could happen sometime between now and 2015. How likely is that?

That depends on the behaviour of the two major actors. If the consuming nations immediately and in a bold manner put new policies in place to slow down oil demand growth, this would make it unlikely. If the producing countries step up their investment plans, this too would make a supply crunch unlikely. We have this potential to change our supply-crunch trajectory but whether or not these actions will be taken is a key issue. We all have to wait and see; in fact, we have to push consuming and producing nations to take those steps.

What's your personal view of how likely an oil crunch is? Stepping aside from the scenarios and the analysis, what's your hunch?

I believe that if those policies are not put in place we should consider the probability of a supply crunch - with the consequence of upward escalation of prices.

You've talked about the role of producing countries in averting an oil crunch by increasing production capacity. What is the scale of the investment challenge?

The amount of money needed is not huge - about \$5,400 billion on oil production investment over the next 25 years. But there are two difficulties. The first is that some of the major

producing countries do not have access to capital. Iran is a major oil and gas producer but its political situation may not allow it to access external capital. The second is there are other countries, such as some Gulf countries, which, while they have domestic capital, may not have the political will to invest as much as is required in a timely manner. So the question here is whether these countries will put together the political will and the money to increase production.

Turning to the implications for climate change, it all looks very worrying, doesn't it?

Yes.

The most optimistic case in this year's WEO is what you call the "450 ppm stabilisation case", a notional pathway of energy use consistent with an increase in temperature to a maximum of 2.4 - the smallest increase in any of the IPCC scenarios and a level seen by some as an acceptable maximum. However, given that we seem to be going backwards, compared with previous WEOs, in terms of the reference [business-as-usual] scenario, the chances of achieving the "450 ppm" case appear to be tiny, don't they?

When we look at the three major challenges involved in realising this "450 ppm" case - namely technological breakthrough, huge investments, and, more importantly, global

'With climate change, we come to an irreversible trend'

political will - I do not think we have major reasons to be very hopeful, at this juncture. There is a potential there, but...

This isn't the first time the IEA has called for urgent action to tackle global warming. What will it take to convince policy-makers to implement the kind of policies that you're recommending?

What we are saying this year is that if policy-makers don't do anything over the next ten years we are approaching an irreversible trend.

There's an important difference in nature between energy security and climate change. In energy security, if everybody wanted, we could easily get producers to produce more and demand could be slowed down. We could find a solution to the energy security issue because we have enough oil and gas. However, when it comes to climate change, once we reach a certain concentration level we come to an irreversible trend. Therefore what we are saying to policy-makers is: 'Please take this seriously.'

Another message, especially for countries like those in Europe, is that we need their leadership - and this leadership should be able to take China and India on board.

Even if Europe reaches its target of reducing CO₂ emissions by 20% by 2020, in a global sense the emissions reduction numbers wouldn't mean much compared with what will come

from China and India. But Europe can set a good example - it can inspire others.

So a major role for the policy-makers, especially the ones in Europe, is that, in addition to putting their own house in order, they should assume a leadership role to get China and India on board.

One of the most worrying messages that comes out of the latest WEO is the much larger role that you see for coal. Why is the role of coal now so prominent?

There are two reasons for that. One is that the bulk of the growth in global energy demand is coming from China and India and their economies are based on coal. They have huge resources of coal, the cheapest energy source for producing electricity.

In the OECD countries, such as the United States, higher gas prices are playing a role in coal demand growth. When people build a power plant they look at the economics. In the absence of any climate-change-related penalty on carbon, coal seems to be a logical choice for many companies, because of today's high gas prices.

There's a lot of emphasis in the WEO on the role of technology - in many different forms, for example nuclear, and in particular carbon capture and sequestration (CCS). Now, with nuclear we have a proven technology and the key barriers seem to be a political one and perhaps an economic one, although that could be changed by carbon pricing. However, in the case of CCS, are we not looking at a technology that seems to be years away from viability?

That is the reason why we have not put CCS in our alternative scenario. There are many barriers in the way of CCS becoming a viable option, such as its economics. Without putting a value on carbon, it is impossible for CCS to be competitive. Another is that there are some technological problems with CCS. And a

than those of, say, the US or Europe?

It would be wrong to say that the climate change issue is one of the major preoccupations of the Chinese people and the Chinese government. It is more the local pollution that is important to them.

Therefore, it is only through two dimensions that they are increasingly interested in climate change issues. One is that China is becoming a major player in the international scene - and an emerging player like China should also have some international and global responsibilities. Part of those responsibilities is to address climate change. The second is that China itself is going to be affected by climate change. One of the major issues in China, not only in energy but also in agriculture and other fields, is the availability of water, which may be affected by the temperature increase of climate change. So these are two aspects that can have an impact on Chinese policy-making. But, having said that, it would be wrong to consider climate change to be on the top of the agenda in China, unlike in many European countries.

What about the role of natural gas in China and India? Given that natural gas emits much less CO₂ per unit of electricity generated than coal, ought there to be a major role for gas?

Natural gas use in these two countries is going to increase. But the problem is that gas is used mainly for power generation and for the time being the natural choice for the Chinese and the Indians for new power plants will be coal firing.

When we talk about China, in fact there are two different Chinas: the coastal region, and the inland areas. The increasing energy demand in the coastal region is going to be met mainly by coal coming from inland, but because of the increasing transport costs of bringing coal long distances from inland to the coastal region, gas may have a competitive advantage. Therefore we expect gas to increase its share, with more and more gas-fired power plants being built, especially in the coastal region. But, still, gas will not be a game-breaker in China. Coal will remain the backbone of the electricity system.

We're looking now at oil going through the \$100/barrel barrier and there is widespread concern about the availability of oil - for example, the "peak oil" debate. How concerned is the IEA about the availability of oil and gas reserves?

What we would like to see is more transparency in the markets, in terms of what reserves each company owns and what reserves are left. We do not see the geological availability of oil and gas reserves as the main problem. The problem is the concentration of reserves, especially for oil and gas, in a small number of countries, where decisions to increase supply are not only made in terms of market forces but where other factors play a role.

What is important today is not geological availability but whether or not the oil and gas under the earth will come to the markets. ■

'Climate change is not at the top of the agenda in China'

third is that there are regulatory problems. This is why, if there are no major unexpected breakthroughs, we do not believe CCS will be a part of the solution in the next 25 years.

However, nuclear power is a proven technology, as you said, and we have only two problems there: public acceptance and in developing countries, sometimes, funding the capital cost.

Coming back to India and China, and their role in the energy future of the planet. The Chinese are very concerned about pollution in their cities - mainly SO_x, NO_x and particulates, which mostly come from coal combustion and from old and poorly maintained vehicles. But how much of a priority for China is climate change, given that the population is still on average very poor and that their per-capita CO₂ emissions are much lower