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Ministerial Session: Responding to the new challenges of the oil sector
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Mr Appert, fellow panelists, ladies and gentlemen, it is a great honor to be invited to participate in this important Summit and please be assured that during my tenure as Executive Director I intend to build on the IEA's long and productive history of collaboration with the IFP.

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With oil prices around \$110 a barrel, I feel obliged to start with a few comments on the oil price. Let me be clear, the IEA views current prices as too high for everybody, especially for developing countries and considering the other threats to global economic growth that exist at present. As you are no doubt aware, there has been much debate on whether the current price level can be explained by fundamentals, or is the result of financial activities. In response to this interest, in mid-March the IEA held an Experts' Roundtable on oil price formation.

Not surprisingly, a diverse range of opinions was voiced. For instance, large increases in money flows were noted yet the complexity of the relationships between market players and the distinct lack of data makes it difficult to draw firm conclusions on their impact.

The turmoil in the credit market may also be an issue. Credit is not a big issue for the super-majors, but it may be for the independent looking to fund exploration and production activity or marginal oil.

The short-term impact of dollar weakness was discussed. And yes, recently the rise in price is co-related to the weaker dollar - but this does not explain everything - oil prices are higher in all currencies.

The lack of data transparency was discussed and there was a strong view that the biggest problem is the lack of stock data. Individually countries may feel their data is sensitive - globally however a lack of transparency aggravates volatility.

Concerns were also expressed about rising costs of production. But, I don't think we saw a \$40 jump in marginal costs last year.

In short, our impression from the roundtable was that there is no single explanation for higher oil prices, and that the impact of the various drivers can ebb and flow over time. We do believe however, that many of the explanatory

variables really only find fertile ground in a fundamentally underinvested commodity.

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The IEA maintains that the run-up in prices has been due to a coming together of many different factors, the most important of which have been the low level of spare oil production capacity, insufficient inventory cover and a continuing mismatch in refining capacity.

During the past 5 years, spare capacity has fallen below the 3-4mb/d typical of the past decade. Unfortunately, the IEA's Medium-Term Oil Market Report shows that market tightness will actually increase from 2009 as capacity additions are unlikely to keep up with both the decline in output from existing fields and the projected increase in demand. This underscores the need for more investment, an issue I will come back to shortly.

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Now let's have a look at the demand picture over the longer-term. In our World Energy Outlook's Reference Scenario, oil demand reaches 116 mbd in 2030. China accounts for the biggest increase in demand and the transportation sector is the driving force in growth in all regions. As shown by this chart, we expect China will overtake the US as the largest car market by 2015.

The growing importance of Chinese demand in global oil markets, coupled with demand in other fast growing economies such as India and countries throughout the Middle East, is the main reason that we are yet to see any significant revisions in the outlook for global oil demand, despite the OECD economies showing clear signs of a looming economic slowdown. Another factor behind the lack of a demand response is that prices remain subsidized in some of the countries where demand is growing the fastest. In certain cases, this is creating an unsustainable economic burden.

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As I have outlined, the IEA clearly sees ongoing demand for oil for decades to come. We are also comfortable that the world's hydrocarbon reserves are adequate to meet this demand until at least 2030. However, like in any other industry, challenges exist in the oil sector. I would now like to touch on three of the most pressing.

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The first relates to **investment**. For decades the world has underinvested in upstream oil production capacity. In recent years, a sharp increase in costs of raw materials and labour has reduced the capacity additions which were expected even as spending has increased. There is really an urgent need to

strengthen the flow of capital. After all, the oil sector must attract \$5.4 trillion of investment in order to meet demand growth to 2030.

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The second challenge is proliferating above-ground risks. Although we have recently seen a surge in spending, supply growth could remain sluggish, both because of increasing costs and because of a proliferation of above-ground risks. We believe in the medium term these factors are more of a constraint on capacity growth than below-ground risks like depletion and decline rates. Ever-present geopolitical and weather-related risks to production are being compounded as investors confront more frequent access limitations and tighter fiscal and regulatory regimes.

Governments and industry need to do all they can to increase the output response from new investment. This means tackling the multitude of factors that hinder capacity additions along the entire value chain. Likewise, there is a clear need to improve access to reserves and to enhance cooperation between National Oil Companies (NOCs) and International Oil Companies (IOCs).

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The final challenge I would like to mention is the impact that the global response to climate change will have on the oil sector. Spiraling growth in

carbon dioxide emissions, not to mention current high prices, are stimulating action to curb energy usage. Such action is essential. After all, without new policies, emissions could jump by 56% between now and 2030, putting us on track for an eventual increase in global temperature of up to 6°C.

Of course, action to combat climate change will have an impact on oil demand. And, naturally, this raises concerns amongst producers who are dependent on oil revenues for the livelihood of their economies. But our analysis has some encouraging news for them. Even in our Alternative Scenario, demand for OPEC oil will increase, as will OPEC's market share. In fact, within the timeframe of the investment cycle, there is relatively little doubt over the amount of oil that will be needed. If I were a low cost producer, I would feel comfortable knowing that investment in new supplies will pay off over the longer-term horizon, even if the most ambitious efficiency policies currently on the table are put into place.

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We are all aware that there are negotiations underway, through the UNFCCC, MEM and G8, which could lead to commitments to cut emissions well beyond that projected in our Alternative Policy Scenario. As an input to these processes, the IEA has recently completed a new report entitled Energy Technology Perspectives which we will present to the G8 Summit in Hokkaido, and we are

also preparing analysis of possible post-Kyoto mechanisms for inclusion in the World Energy Outlook 2008.

Our analysis has outlined the action needed to meet the IPCC's most ambitious scenario of cutting emissions by 50% by 2050. It shows that the first step is to improve energy efficiency. We would then need a virtual decarbonisation of the power sector. The final, and most difficult step, would be to make an eightfold reduction in the carbon intensity of transport.

Of course, all of this will entail a huge amount of investment. Let me give you the example of carbon capture and storage. We would need to build at least 20 CCS demonstration plants over the course of the next twelve years, at a cost of US\$1.5 billion per plant. Such a construction program should be seen as one 'litmus test' for the seriousness of countries willingness to combat global warming. In this respect, I feel that making CCS eligible to receive revenues generated by the clean development mechanism could serve as a trigger for the deployment of this critical new technology.

But, even in this extremely ambitious scenario, demand for oil in 2050 would still be at around 73% of current levels. I would imagine, given that OPEC countries possess the world's largest and least-cost reserves, they may actually be called upon to produce more oil in 2050 than today. However, in order to gauge the level of supply that is possible in such a timeframe, there is a need to improve

the reliability of oil reserves data. Both producers and consumers should view the current uncertainty that surrounds oil reserves data as any area for immediate action. After all, the future availability and affordability of hydrocarbons affect crucial decisions that governments need to take to ensure their future energy and economic needs are met. The IEA's upcoming World Energy Outlook 2008 will start shedding some light on this issue by detailed field-by-field analysis of the prospects at hundreds of the world's largest fields.

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Let me close by emphasizing that the world's energy economy is on a pathway that is not sustainable. In the short-to-medium term, there is an urgent need for investment to restore an adequate cushion between oil supply and demand, both in the up and downstream.

In the longer-term, the energy economy is not sustainable from an environmental perspective. Fixing this problem will require an energy revolution that completely transforms the way we produce and use energy. However, as I explained to the Environment Ministers gathered in Bali last November, the energy sector should not be viewed as the cause of the climate problem, but as part of the solution. After all, it readily lends itself to providing the type of transferable skills required to prosper in a low carbon economy.

Continuing dialogue between producers and consumers is an essential step in this process. It is important that it continues to focus on issues where real progress is needed, and where mutually beneficial outcomes are possible. For example, the IEA and OPEC are co-operating on carbon capture and storage, as this could reduce carbon dioxide emissions into the atmosphere while enhancing oil recovery. In this respect, I would like to recognize the valuable contribution being made by OPEC Middle East Countries who have now committed USD 750 million for funding R&D in cleaner fossil fuels, including CCS. Through initiatives like this, and through working together, we can identify and embark upon a sustainable path.

Thank you.