

**Written testimony
Hearing of the U.S. Senate Energy and Natural Resources Committee**

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Chairman Murkowski, Ranking Member Cantwell, and distinguished Members of the Committee, thank you for the opportunity to appear before you today to present the International Energy Agency's view on factors affecting global oil prices.

Let me start by conveying his best regards from Dr. Fatih Birol, the IEA Executive Director, to members of the Committee. He regrets not being able to appear at this session due to other long-standing engagements, and he asked me to convey his best wishes to you all.

A brief overview of the IEA's role in global oil market

The strong relationship between the United States and the International Energy Agency goes back to the founding of the IEA in 1974. For more than 40 years the United States has played an absolutely critical leadership role in the IEA. One important symbol of this is by providing distinguished officials to hold the role of Deputy Executive Director. Over the years, support for the Agency's work has come from the White House, the Department of State and the Department of Energy, as well as from this Committee and other parts of Congress. Outside of government, the Agency has good relations with many US research institutes, think tanks and companies.

I know that you, Madam Chair, and many of your colleagues know what the IEA does, but I also appreciate that not everyone here will be fully familiar with our role.

The IEA was founded by the United States and 15 other countries in the wake of the 1973/1974 oil crisis to promote energy security, cooperation and stable markets. Since then the Agency's role has expanded alongside developments in global energy systems and we have become the world's leading policy advisor across the entire energy mix. However, analysis of oil markets and the oil security system, in the form of our emergency oil reserve requirement, continues to be the core mandate for the Agency. Each month, the IEA publishes its closely-watched *Oil Market Report*, and once a year it publishes a five-year outlook. The Agency is at the centre of oil market analysis.

Recently, working with its member governments, the IEA has adopted a modernization strategy. This has three pillars: opening the IEA's doors to emerging economies; broadening our energy security mandate; and in addition to our pole position on fossil fuels, also becoming the global hub for clean energy transitions.

And now I turn to the matter at hand.

The Oil Market Situation

The theme of today's hearing is the global oil market and prices. As nearly always seems to be the case, there is considerable turbulence in the market, partly due to geopolitical factors, and forecasting is very challenging. To give you our analysis of today's market, we take as our starting point the fact that global crude oil prices are today typically 55% higher than a year ago. This reflects two main developments in the oil market.

First, global oil demand has been growing steadily. In 2017, it was 1.5 mb/d higher than the year before and we expect that the increase will remain steady both this year and in 2019 at 1.4 mb/d. Later this year, global oil demand is expected to reach the symbolic 100 mb/d level. An important factor underpinning this is that the world economy will continue to grow steadily: our current assumption is that global GDP will grow by 3.8% in 2018 and 3.9% in 2019. Incidentally, in today's oil market, China and India are hugely important as engines of growth and together they contribute about 50% of the increase in global demand.

Second, oil supply has been restrained. The reason for this dates back to oil prices falling below \$30/bbl early in 2016. This was very uncomfortable for oil producers, including, of course, here in the United States. To place a floor under prices and to achieve an increase, OPEC producers and some leading non-OPEC producers committed themselves, under the terms of what is known as the Vienna Agreement, to reduce production by 1.8 mb/d. In fact, earlier this year, according to IEA data, production had fallen by 2.5 mb/d. This over-performance was partly due to the collapse of production in Venezuela and the gradual decline in Mexico, as well as to lower than expected production in Angola and Iraq. More recently, the impact of the Vienna Agreement has been amplified by the return of strife in Libya, and shortfalls in Canada, Brazil, the North Sea and Kazakhstan.

Rising demand and production restraint have worked together to drive down the very high level of global oil stocks: commercial oil stocks held in OECD countries declined from more than 3 billion barrels in January 2017 to 2.8 billion barrels in May 2018, and they have been below the five-year average since March.

All this points to a tightening market and the rise in prices the low point of \$27.88/bbl for Brent crude oil in January 2016 to the highest level seen so far in 2018 of \$79.80/bbl reflects this demand/supply reality. As we try to anticipate what will happen in the second half of 2018 and into 2019, we must consider the following factors, heavily weighted towards supply concerns:

Demand

On demand, although for the time being the IEA believes that global oil demand growth is relatively steady at 1.4 mb/d, there are signs of stress in some consumer markets as oil prices have increased. In many developing countries, when prices fell sharply in 2015 and 2016, they took the opportunity to reduce or eliminate extremely expensive subsidies for oil products. Now that prices are rising again, consumers are inevitably less protected and they are feeling the pain. When the strength of the US dollar is taken into account, we find that in local currency terms some countries have seen very sharp rises in the domestic cost of oil. Examples include: Argentina, where prices are up 124% versus a year ago, Brazil up 89%, Mexico up 78% and in Turkey prices are up by 104%. Here in the US, we see that national average domestic gasoline prices are about 25% higher than a year ago. In all countries, rich and poor alike, higher prices are unwelcome.

In addition to the interactions between oil demand and supply, we should also acknowledge that another important factor in determining oil demand growth are the current trade tensions between major nations and trading blocs. If they escalate, and global trade is reduced, this will adversely impact the global economy with a knock-on effect on oil demand. Incidentally, it might have a disruptive impact on oil trade: so far in 2018 the US exported more than 500 kb/d of crude oil and products to China.

So, demand growth could turn out lower than we currently expect, although the difference is unlikely to be very large. If this happens, it could be argued that it would take some of the heat out of oil prices. However, by far the most significant factors affecting the market are on the supply side, and this is the subject of the next section of my testimony.

Supply

There are several big supply uncertainties in front of us. Individually, they are important enough to present a serious challenge to security, but in 2018 we are faced with the possibility that these factors could impact the market simultaneously and present a challenge to global production capacity that has rarely been seen.

Iran

The first uncertainty we must consider is Iran. The policy of the United States is to reduce Iran's oil exports by the maximum possible volume. At this time, we cannot know how much Iranian oil will actually be removed from world markets, but recent indications point to the shortfall being significant. In May, Iran's oil exports were about 2.4 mb/d, but data for June show that purchases by European customers were about 50% lower than in May, down to 340 kb/d. The world's second and third biggest oil markets, China and India, respectively, each imported more than 650 kb/d of oil from Iran in June and sourcing alternative supplies on this scale, both in terms of volume but also crude quality, will be a major undertaking.

Venezuela

Whatever the eventual fall in Iran's exports, it will almost certainly be accompanied by the continuing collapse of oil production in Venezuela. Since the inauguration of President Chavez in 1999, production has slumped from 3.5 mb/d to only 1.3 mb/d and if the current rate of decline is maintained, and it is more likely than not, production could have fallen by a further 200-250 kb/d by the time Iranian sanctions formally take effect. This will have a big impact on global oil markets of course but it also raises supply issues for the United States, which, according to Energy Information Administration data, has imported 500 kb/d of oil from Venezuela in 2018 which is used in refineries especially configured for this typically heavy, sour crude. Incidentally, China and India, which are major customers of Iran, are also affected by the Venezuelan situation, with each importing about 300 kb/d of its crude oil.

Some analysts have predicted a complete collapse of the oil industry as chaos finally overwhelms Venezuela. Of course, we cannot know how much further the situation will deteriorate, but there is clearly a very serious risk factor affecting oil security.

Libya

The third major uncertainty is Libya. Until recently, at least in oil production terms, Libya was relatively stable with oil production broadly holding steady for about a year at 1 mb/d. The recent outbreak of

fighting and the attacks on oil infrastructure resulted production falling by about half. Today, we are unclear as to the pace of recovery towards normal production. The fresh outbreak of fighting has reminded us that Libya remains a major supply risk in global oil markets.

Other supply concerns

Iraq is another country with production problems. Due to the dispute between Baghdad and the Kurdistan Regional Government, about 250 kb/d of production is shut in. At the moment, we cannot know when supplies will resume.

Production problems are not limited to OPEC producers. Canadian oil supplies plunged sharply from mid-June as the 360 kb/d Syncrude upgrading facility was shut down. Heavy maintenance saw North Sea oil output plunge by 400 kb/d compared with a year ago. Growth in Brazil has been slower than expected so far this year although the start-up of another production unit should ease the situation in coming months.

The point to make here is that in a 100 mb/d oil market, the global oil supply system is under strain. The very small number of producers that can increase production to make up for shortfalls elsewhere face a big challenge to help ensure stability of supply.

Spare capacity

You will recall that earlier I said that signatories to the Vienna Agreement had over-achieved their target of cutting oil production by 1.8 mb/d. In recognition of this, at their recent meetings signatories to the Agreement committed to *increasing* their oil production so that it would meet their objective, rather than exceed it. According to numbers cited by leading OPEC ministers, this implies a production increase of 1 mb/d. Subsequently, Middle East Gulf OPEC producers have said that they will increase production in the coming months, and they already show signs of having started to do so. Russia is following suit.

While the decision by signatories to the Vienna Agreement to increase production is welcome in terms of helping to ensure stability of supply to oil markets, it comes at the expense of the global spare capacity cushion that could fall to low levels not seen since 2008. You will recall that in that year oil prices soared to record highs at more than \$140/bbl. In the July edition of the IEA's *Oil Market Report*, we showed that there is just over 3 mb/d of spare production capacity held by OPEC countries, with nearly all of it in Saudi Arabia, the UAE, and Kuwait. The number is not certain however, due to lack of transparency in these countries and because the spare capacity has not actually been used for many years. Elsewhere, amongst the non-OPEC countries that signed the Vienna Agreement, only Russia can increase production significantly by the end of 2018 and the 300 kb/d of production that it cut would be a first instalment of higher production.

Elsewhere, the only realistic source of significantly higher oil production is the United States, which is the most important source of growth in the non-OPEC world. The resurgence of the US industry following the fall in output from mid-2015 onwards has been truly impressive. In terms of total liquids the US is now the world's biggest producer and the IEA forecasts that production will grow by 1.7 mb/d in 2018 to reach 14.9 mb/d, with a further 1.2 mb/d due next year. This is a long-standing outlook: the IEA sees little scope to revise it upwards even though prices have increased to three and a half year highs.

The reason is that the impressive growth in production is running up against constraints in takeaway capacity. IEA research published in our five-year outlook *Oil 2018 – Analysis and forecasts to 2023* revealed

an impressive number of pipeline, storage, and export capacity projects in progress in the US, but they will have little impact on the market until well into 2019. This crimps growth potential at a time when the market will be able to absorb any oil that can be produced.

The tight supply situation is not helped by the recent low level of investment in the upstream oil and gas industry. The major exception is, of course, the United States, but in most of the rest of the world the picture was discouraging: in both 2015 and 2016 global investment fell by 25%, and in our recent publication "*World Energy Investment 2018*" we point out that in 2017 it grew by only 2%. This has major implications for the growth of production in the coming years as new investments are not only needed to meet growth in oil demand of more than 1 mb/d per year, but also to offset declines from oil fields currently producing. Recent analysis by the IEA shows that production from oil fields that have already peaked declines by more than 3 mb/d each year. This means that each year the industry must replace the equivalent of production from the North Sea just to stand still.

Conclusions

Although there has been remarkable progress in renewable deployments and other low carbon technologies, oil continues to be the dominant fuel in transportation. A good example is found here in the United States, where more than 90% of transport needs are met by oil. Globally, despite talk of peak oil demand, the requirement for liquid fuels will continue to grow for many years to come. This means that supply must grow. As our discussion of production capacity and consequences of by low investment show, this is no small challenge.

Today, looking at the short term situation, we see a very volatile and challenging period. Geopolitical factors even more than pure fundamentals are important in determining oil price movements. For its part, the IEA is engaged in a close dialogue with major oil producers and consumers, both inside and outside the IEA Family, and we are monitoring market developments in order to be prepared to advise on any support that might be needed to ensure market stability. This is why the IEA was founded in 1974 and this role is as important today as it was then.

On behalf of everyone at the IEA, I wish to once again thank you for inviting me before your Committee. I am happy to answer any questions.