Third Joint IEA-IEF-OPEC Technical Meeting on Interactions between Physical and Financial Energy Markets

OPEC Secretariat

28 March 2019

Background

The Joint IEA-IEF-OPEC Technical Workshops/Meetings on the "Interactions between Physical and Financial Energy Markets" were first established at the 12th IEF Meeting in 2010 as an outcome of the Cancun Ministerial Declaration to bring together market experts and participants to address timely topics and exchange views on the interactions between physical and financial energy markets.

The first Technical Meeting was held in Vienna in 2015, with a subsequent Meeting held in 2017. Additionally, six joint technical meetings were held at the OPEC Secretariat in Vienna, Austria, in 2010, 2011, 2013, 2014, 2016 and 2018.

The **Third Joint IEA-IEF-OPEC Technical Meeting on the Interactions between Physical and Financial Energy Markets** was **co-chaired** by OPEC Secretary General, HE Mr. Mohammad Sanusi Barkindo, together with HE Dr. Sun Xiansheng, Secretary General of the IEF, and Mr. Neil Atkinson, Head of the Oil Industry and Markets Division at the IEA.

The event built upon the insights gained in the previous Technical Meetings and Workshops on the Interactions between Physical and Financial Energy Markets. Discussions were structured to foster an open and interactive dialogue among participants, including oil companies, trading houses, bankers and analysts, in order to provide a diversity of views on the evolving interactions between financial and physical energy markets. To this end, the meeting was held under **Chatham House Rule**.

In his welcoming remarks, **HE Barkindo** said: "The three organizations represented here today are prime examples of the powerful benefits that the strengthening consumer-producer dialogue continue to bring to the global energy markets." The Secretary General also noted that the dynamics and functioning of the oil market continue to evolve on a daily basis, with the increased financialization of the oil market exposing the physical oil market to increased levels of speculative activity and volatility.

Addressing participants, the Secretary General noted that dialogue and cooperation among industry stakeholders is rising to unprecedented levels, as most clearly displayed by the landmark Declaration of Cooperation which has been in place since the beginning of 2017. He added that "This spirit of openness and the sharing of perspectives and knowledge has been a major supporting factor to the market stability we have witnessed of late."

HE Dr. Xiansheng stressed the important role the joint IEA-IEF-OPEC events play in enriching the dialogue between consumers and producers, having just successfully concluded the Ninth IEA-IEF-OPEC Symposium on Energy Outlooks, alongside two meetings in partnership with the European Union and the King Abdullah Petroleum Studies and Research Centre (KAPSARC) this February in Riyadh.

He further observed that the dialogue on the Interactions between Physical and Financial Energy Markets, was launched after a period of increased oil market volatility, at the 12th IEF Ministerial Meeting in Cancun on 2010. He also said that "Just as comparing outlooks has become easier over successive meetings and dialogue is now better informed and more collegial, so too are physical and financial energy market dynamics better understood thanks to the meetings we held over the years."

Mr. Atkinson of the IEA noted that " …[the IEA] is in regular dialogue with our member governments, non-member governments, energy companies, banks, trading companies, and other interested parties to exchange views on a wide range of topics; not least in trying to understand how the enormous weight of investor money is influencing the market and, of course, keeping up with the growing importance of machine learning, algorithmic trading, and many other developments."

The complete opening remarks of HE Barkindo, HE Dr. Xiansheng and Mr. Atkinson can be found in the annex.

Summary of discussions

As per the agenda, the content of the meeting was structured in **three main topics**:

- Interaction of financial markets and oil prices
- Developments in crude oil futures exchanges - Emergence of new crude oil benchmarks and their impact on regional markets
- Climate-related financial disclosures - Impact on global investment in the oil industry

1. First session: Review of Interaction of financial markets and oil prices.

The session began with an **introduction** of the recent developments in oil price movements along with a snapshot of the high volatility seen at the end of the 2018, particularly for oil prices and equities. It was noted that the volatility at the front end of the curve was extremely high at that time.

The **first presentation** in this session gave an overview of the various drivers affecting oil market volatility, such as changing market circumstances, uncertainty, exuberance, fear and poor and incomplete data. It was highlighted that poor information, especially with regard to data on demand from China adds significant uncertainty for decision makers. With regard to the difference in the volatility behaviour of physical and future prices, it was stressed that spot prices help to anchor forward markets. This view was supported by less volatility observed in Dated Brent than in the futures. The impact of the OPEC and Non-OPEC Declaration of Cooperation was described as effective in helping the oil market to recover, however, this has also exacerbated the shortage in the supply of heavier and sour crudes. Finally, crude differentials to Dated Brent are expected to widen as a result of the upcoming IMO 2020, though this impact is expected to fade over time.

The **second presentation** explored the causes that exacerbated the downward trend in the oil price seen in November and December 2018. It was suggested that financial flows into the futures market have become more volatile, while at the same time risk capital has become more scarce in the market, which has amplified price and volatility moves. This phenomenon converged with the necessity of institutions acting as swap dealers to hedge their exposure resulting from sovereign hedge programmes along with risk management activities of shale oil producers, thus accelerating the fall in prices. Other factors contributing to the sell-off seen during this time were the negative performance of other assets, and diminished liquidity around the year-end holidays in the US.

The **third presentation** focused on the new composition of actors in the futures market, which shows that "systematic" participants have outgrown fundamental traders. It was reasoned that the systematic oil market community can destabilize short-term oil prices. In the specific case of algorithmic traders, while they dominate exchange-traded volumes, they can turn quickly from being liquidity providers into liquidity consumers. They carry more, and normally smaller, transactions but the overall result is less market depth, which impacts the ability to sustain large market orders without large price impacts. As the influence of systematic participants tends to be concentrated in the short term, the potentially resulting greater short-term volatility discourages capital investment by raising the required rate of return. Finally, it was stressed that the concept of "price stability" needs to be consistently communicated, and that the shape of the forward curve ("the carry") is a powerful quantitative signal that can be managed through inventories.

The **fourth presentation** maintained that while fundamentals control price levels over medium to long-term time periods, however the speed at which algorithmic trading takes places reduces the time frame within which markets react to changing fundamentals, and thereby increases volatility. The volumes of WTI futures contracts have grown many times faster than the US physical crude oil market and there is a strong correlation between increases in trading volume and observed price volatility. In 4Q18, shorts were initially triggered by bearish counter-seasonal inventory builds. This was followed by the announcement of the US Administration for 8 sanction waivers. This then interacted with seasonal illiquidity, especially around the US Thanksgiving and also later at the year-end holidays, resulting in the increasing volatility observed.

The **final presentation** of this session highlighted that oil benchmarks have historically evolved driven by fundamentals and regulation. ICE Brent futures are linked to physical markets through the exchange of futures for physical and contract for differences instruments. ICE Brent and WTI have been evolving with underlying changes in the respective markets. Price benchmarks do the 'heavy lifting' for oil price discovery, enabling other grades to be traded in reference to the most liquid flat price instruments, providing security and liquidity to the whole market.

The **discussion** following this block of presentations included the potential impact of impending IMO regulation on price differentials. It was also mentioned that there could be some potential strengthening of sweet versus sour crudes and of heavier against light crudes, due to the supply adjustments as well as geopolitical restrictions. It was emphasized that the role of non-commercial actors continues to increase – however, these new actors have a risk-neutral view of the market and tend to trade in smaller volumes. This new automated group of investors have filled the vacuum left by discretionary funds which have stepped back from the market. It is worth noting that in general there was some degree of agreement that, in the medium-term, fundamentals drive market price actions. However, in the short term, prices could be increasingly volatile. This volatility also affected the investment decisions of shale producers, as was registered in 4Q18, at the time that annual budget decisions were made. Different views were also shared with regard to the impact of higher interest rates in the US, as some highly levered funds could be particularly sensitive to rising cost of capital. At the same time, while it was mentioned in three of the presentations that the majority of the open interest was increasingly found at the beginning of the forward curve, this could be related to both the increasing hedging necessity of shale producers which follow a short term cycle, and the fading presence of asset managers investing in the long end of the curve.

2. Second session: Developments in crude oil futures exchanges

The **first presentation addressed the recent developments in Asia with regard to creating a crude oil benchmark at the Shanghai International Exchange**. The presenter started by recalling the previous attempts to set a crude oil benchmark for the Asian and East Suez market, and explained why so many Asian crude oil contracts failed to emerge as benchmarks. He explained that the main reason for their failure was because most of them were only cash-settled, making them less attractive to oil companies who have, or require, physical exposure. The presenter highlighted the emergence of the Chinese INE contract as a new benchmark, arguing that it has seen a tremendously successful start. The contract's trading volumes are increasing quickly while it continues to enjoy strong official encouragement for Chinese firms to trade at the INE, and, at the same time, some of the teething problems were overcome. However, the presenter recognized that INE is still facing some headwinds, mainly due to a lack of sufficient physical exposure and hardly any trading taking place outside of the front month. Furthermore, settlement is not in line with other benchmarks, such as the DME or ICE.

The **discussion** was concentrated on the obstacles that could prevent INE from emerging as a new regional market, mainly due to its settlement in Renminbi instead of the US dollar like other benchmarks, making arbitrage difficult. In addition, the lack of international acceptance was discussed, because of the nature of the Chinese onshore market and its regulations.

The **second presentation focused on the growing importance of WTI at Houston,** highlighting the growing interest in pricing WTI crude oil referenced to Houston and the Permian, rather than the traditional hub at Cushing. This move is intended to meet market needs and reflect the new US trade flows amid booming US crude oil production and exports, and additional oil pipeline and loading port capacities, which are transforming the US Gulf Coast to become an important delivery point for oil produced in Permian Basin. The presenter recalled the persistent disconnection of WTI Cushing from Brent, which has led to a broader look at US crude pricing. The two most important exchanges, CME and ICE, have been increasingly competing for the US Gulf Coast light sweet crude contract, which presents a more relevant WTI crude benchmark to value US crude oil exports. The potential impact of increasing US crude oil exports to Northwest Europe with regard to the assessment of dated Brent was also addressed. Platts had confirmed that with effect from 1 October, 2019, competitive offers for BFOET crude oil cargoes on a CIF Rotterdam basis would be reflected in its Dated Brent crude oil benchmark. Nonetheless, Platts does not have any immediate plans to bring further grades into its Dated Brent crude oil basket. The presentation also explored Platts' assessment methodology for WTI and other US grades in several locations in the US.

Discussions focused on the potential impact of the new assessment of Dated Brent on the price structure, and how producers and traders should adjust their crude differentials and official selling prices to reflect the changes in the new benchmark.

The **third presentation highlighted the newly announced changes to the assessment of the North Sea Dated contract**. Beginning with a brief assessment of the current and future North Sea crude oil production level and available crude for trading, the presentation highlighted the dramatic decline in just this production and dwindling trade volumes in the North Sea benchmark assessment process, despite ongoing adding of other grades to the benchmark. This has created high volatility in the physical prices compared to the Brent futures contracts. Furthermore, increasing US crude oil exports to Northwest Europe has led to US crude becoming a significant component of the crude pool in Europe, which should be taken into account. A new price assessment of North Sea Dated has just recently been launched by Argus, based on CIF cargoes for not only BFOET grades, but also including other foreign crudes delivered into Northwest Europe.

3. Third session: Climate-related financial disclosures.

The session opened with the moderator giving an **overview** of the unprecedented political frameworks that have been ratified by a large international community and emphasized the scale of the challenge for energy demand that lies ahead. According to the moderator, global carbon emissions need to be reduced by roughly 50% over the next 20 years in order to meet the goal of reducing global warming. Pursuant to the Paris Agreement, Article 2(c) reads that global financial flows should be made consistent with a pathway towards low greenhouse gas emissions and climate-resilient development. Furthermore, there is a need to understand what is required to make such a commitment happen, such as: what are the physical risks from climate change, what are some of the unintended consequences of climate change. So while there is a drive to divest away from fossil fuels, yet one must also consider the large number of new energy users "coming online" over the next years.

The **first speaker** in this session mentioned that the current drive for climate-related action was not so much a policy issue, but rather a grass-roots movement prompted by environmental concerns which has been taken up by several highly influential leaders and organizations. Several investment funds as well as organizations such as the World Bank are increasingly committed to not investing in fossil fuels, and while the impact so far has been very moderate, this could change soon. The speaker also explained that the Financial Stability Board (FSB)[1], had created a Task Force on Climate-related Financial Disclosures, which published a report in June 2017[2]. So, while environmental, social and governance (ESG) criteria are gaining traction, further supported by shareholder activism, this could, in turn become a challenge for energy security. (*discussion followed at the end of the presentations*)

The **second presentation** in this session covered the issue of climate risk and capital requirements to address these. The key issue identified to

[1] http://www.fsb.org/2017/06/task-force-publishes-recommendations-on-climate-related-financial-disclosures/
[2] https://www.fsb-tcfd.org/publications/final-recommendations-report/

alleviate climate change is the pursuit of a reduction of carbon emissions. It was suggested that oil companies could contribute to this by sharing and employing their extensive knowledge and expertise on carbon capture technologies. In addition, the oil industry could review its E&P processes to identify means and methods of reducing carbon emissions, also in terms of flaring. Taking a look at the capital need to finance climate change solutions, it was found that the current investment in clean energy (around $3.3 bn/year in 2017) would need to be tripled in order to be able to finance the required measures, with the largest burden placed on Developing Countries (DCs). While the OECD and BRIC countries would only need to double current efforts to reach the required investment levels, DCs would need to raise their current expenditure levels by a factor of 19. On the other hand, it was said that the funding of the energy transition will not come from the public, but from the private sector, with banks possibly playing an important leading role in channelling funds. ESG investment in the US is rapidly growing with an increasing awareness of fiduciary duty for long-term investments. Green bonds have been issued, totalling $167bn globally in 2018. These bonds represent a revolutionary change in bond markets as they issued by the industry – not governments - and their success will also depend on a wide-spread acceptance of a common definition of standards rather than strict national government regulation which could deter investment on a broader scale. (*discussion followed at the end of the presentations*)

The **third presentation** gave an overview of how climate issues are incorporated in the strategy of major energy company. This strategy focuses on seeking out oil projects with a low breakeven cost, expanding these along the value chain and developing and profitable and sizeable low carbon electricity business. Emissions that an energy company produces in its operations include flaring, emission of methane, energy use during production as well as electricity used in the process of distribution. At the same time, emissions are generated by the consumers' use of these energy products. It is the aim of the energy company to reduce the carbon intensity of the fuels provided, improve the efficiency of operations, promote sustainable biofuels and invest in carbon sink businesses.

The ensuing **discussion covering all the statements and presentations made in this session**, explored possible differences between the US and Europe in terms of the relationship between businesses and governance and the historical context of these. While some participants argued a profound demand destruction may lie ahead due to climate-related challenges, others were of the opinion that oil demand has seen steady growth of around 1-1.2 mb/d over the last 30 years and will continue along the same lines in future. On the other hand, should investment in oil supply fall short of the required levels – it was said that some $400-500 billion need to invested globally every year just to prevent a decline – this could lead to a shortage of supply in the years to come. Furthermore, it seems that while carbon capture may well have potential to help mitigate climate change, yet only few pilot projects so far are being undertaken. On green bonds, while there was some volatility seen from the investor side in recent months, yet the total amount of such bonds is forecast to reach around $1 trillion by 2025.

Conclusion

At the conclusion of the meeting, the three co-hosting organizations thanked the experts and analysts that had convened at the OPEC Secretariat in Vienna for their active participation to make this meeting "a huge success". Their valuable insights, expert evaluations and open discussions on the complex and evolving issues helped further a common understanding among participants. The organizations expressed their ongoing commitment to the dialogue process – and said they looked forward to convening the next Joint Workshop scheduled to take place in **March 2020**.

3rd Joint IEA-IEF-OPEC Technical Meeting
on the interactions between physical and financial energy markets

OPEC Secretariat
Helferstorferstrasse 17
Vienna, Austria

Agenda

<table>
<tr><th colspan="2">Wednesday, 27 March 2019</th></tr>
<tr><td colspan="2">Pre-Meeting Welcome Reception
Hotel de France, Schottenring 3, 1010 Vienna
18:00-20:00</td></tr>
<tr><th colspan="2">Thursday, 28 March 2019</th></tr>
<tr><td>08:30 to 09:00</td><td>Registration</td></tr>
<tr><td>09:00 - 09:20</td><td>Welcome and opening remarks
OPEC
IEF
IEA</td></tr>
<tr><td>09:20 - 11:00</td><td>Session I
Review of interaction of financial markets and oil prices

<u>Moderator</u>: Mr. Harry Tchilinguirian, BNP Paribas

<u>Presentations</u>:
Oil market volatility and the implementation of the Declaration of Cooperation – James Gooder, Argus
The Interaction Between Physical and Financial Energy Markets – Chaitanya Mehra, Echion Capital Management
Interactions of Financial Markets and Oil Prices – David Chang, Wellington Management
A Look at Late 2018 Crude Oil Futures Price Volatility - EU-Vienna approved – Jason Bloom, Invesco Capital
The Dynamics & Structure of Modern Crude Markets – Mike Davis, ICE Futures Europe
Followed by roundtable discussion</td></tr>
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11:00 - 12:50	**Session II** **Developments in crude oil futures exchanges** Emergence of new crude oil benchmarks and their impact on regional markets Moderator: Dr. Cornelia Meyer, MRL Corporation Presentations: • INE and the search for the third benchmark – Owain Johnson, CME Group • The Battle for a Gulf Crude Contract – Jonty Rushforth, Platts • The Evolution of North Sea Dated – Michael Carolan, Argus *Followed by roundtable discussion*
12:50 - 13:50	Lunch
13:50 - 15:50	**Session III** **Climate-related financial disclosures** Impact on global investment in the oil industry Moderator: Dr. Steven Knell, IHS Markit Presentations: • Climate-related financial disclosures: policy overview – Pedro Gomez Pensado, World Economic Forum • Investors' point of view – Michael Eckhart, Citigroup • Integrating climate into our strategy – Etienne Anglès d'Auriac, Total *Followed by roundtable discussion*
15:50 - 16:00	**Closing remarks** OPEC IEF IEA
	Note: The event is held under Chatham House Rule