SUMMARY FINDINGS FROM A COMPARISON OF DATA AND FORECASTS ON THE OIL MARKET BY THE INTERNATIONAL ENERGY AGENCY (IEA) AND ORGANIZATION OF THE PETROLEUM EXPORTING COUNTRIES (OPEC).

FEATUREING A COMPARATIVE ANALYSIS OF OIL INVENTORY DATA REPORTED BY JODI, THE IEA, OPEC AND SECONDARY SOURCES IN COLLABORATION WITH THE RAPIDAN ENERGY GROUP.

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1. NOTE BY THE SECRETARY GENERAL

The IEF conducts a comprehensive comparative analysis of the short-, medium-, and long-term energy outlooks of the IEA and OPEC, to inform the IEA-IEF-OPEC Symposium on Energy Outlooks that the IEF hosts in Riyadh as part of the trilateral work programme on a yearly basis.

To inform IEF stakeholders on how perspectives on the oil market of both organisations evolve over time more regularly, this monthly summary provides:

- Key findings and a snapshot overview of data points gained from comparing basic historical data and short-term forecasts of the IEA Oil Market Report and the OPEC Monthly Oil Market Report.

- A comparative analysis of oil inventory data reported by JODI, the IEA, OPEC and secondary sources in collaboration with the Rapidan Energy Group.

Moreover, international developments this month that will have an impact on oil market balances are as follows:

**OPEC+ Meeting**

- The 6th OPEC+ Ministerial Meeting held on 2 July in Vienna, Austria extended the voluntary oil production adjustments by nine months until the end of March 2020.

**Geopolitical Instability**

- The seizing of oil tankers by the UK and Iran on 4 and 19 July have further heightened tensions in the Strait of Hormuz; the world’s most critical sea lane for oil shipments.

**US Sanctions**

- The U.S. enforced sanctions on a Chinese company for “a significant transaction for the purchase or acquisition of crude oil from Iran” on 22 July, blocking Iran’s oil exports.

I trust this month’s analysis helps to sharpen focus on evolving short-term market perspectives.

Dr Sun Xiansheng  
Secretary General  
International Energy Forum
2. KEY POINTS

2.1 DEMAND

- **Both the IEA and OPEC world demand growth remains steady for the month of July.** The IEA's and OPEC growth projections remained the same as last month with total growth at 1.18 mb/d and 1.14 mb/d, respectively. The difference in growth between both organizations is 40 kb/d. The IEA and OPEC estimates for absolute world demand in 2019 are 100.29 mb/d and 99.87 mb/d, respectively.

- **The IEA revises OECD demand growth upwards, while OPEC growth remains steady.** The IEA's estimate for OECD demand growth increases by 60 kb/d to 0.17 mb/d and OPEC’s estimate remains the same at 0.14 mb/d. The IEA's Non-OECD growth decreased by 60 kb/d for total growth of 1.01 mb/d while OPEC growth remains the same at 1.00 mb/d. The IEA and OPEC differ by 30 kb/d on OECD demand growth and by 10 kb/d on Non-OECD demand growth.

2.2 SUPPLY

- **The IEA and OPEC reach their closest alignment on Non-OPEC growth in 2019.** The IEA's July 2019 assessment for Non-OPEC growth is up by 120 kb/d for a total growth of 1.99 mb/d. OPEC’s growth assessment decreases by 90 kb/d for a revised projection of 2.05 mb/d. In absolute values, OPEC and the IEA estimate non-OPEC supply estimates at 64.43 mb/d and 64.85 mb/d respectively for 2019. OPEC reports OECD growth at 1.77 mb/d, an increase of 110 mb/d from last month. The IEA's OECD growth estimate rises to 1.65 mb/d, an increase of 120 mb/d.

- **OPEC Non-OECD supply growth posts it's largest decrease in 2019 to align with the IEA.** OPEC revised down its assessment by 190 kb/d to reach total growth of 0.25 mb/d to converge with the IEA's revised growth of 0.24 mb/d, up by 10 kb/d from last month. The difference between the IEA and OPEC Non-OECD supply growth estimates is now 10 kb/d.

2.3 STOCKS

- **The IEA and OPEC continue to report strong alignment on stock figures. Stocks are back above the five-year average.** The IEA reports OECD stock levels at 2906 mb, which is close to OPEC's assessment of 2925 mb for OECD stock that is 6.7 mb and 25 mb above the five-year average, respectively. The divergence between OPEC and the IEA stands at 19 mb for July. Total US crude inventories (excluding SPR) amount to about 445 mb according to the US Energy Information Administration (EIA). The EIA reports U.S. crude oil inventories are about 2 percent above the five-year average for this time of year. OPEC reports US stock above the five-year average by about 26 mb.
### 2.4 SNAPSHOT (mb/d)

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<thead>
<tr>
<th></th>
<th>IEA</th>
<th>OECD</th>
<th>Growth</th>
<th>Δ m/m</th>
<th>Non-OECD</th>
<th>Growth</th>
<th>Δ m/m</th>
<th>IEA to 5-Year Average</th>
<th>US to 5-Year Average</th>
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<th></th>
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<th>Δ m/m</th>
<th>Non-OECD</th>
<th>Growth</th>
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<tr>
<td>Difference</td>
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<td>0.01</td>
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*Totals in table may not exactly reflect content due to independent rounding.*
3. GLOBAL ANALYSIS

3.1 DEMAND DATA

Absolute Demand

The IEA’s estimate for global demand remains the same at 1.18 mb/d for an absolute demand of 100.29 mb/d in 2019. Demand growth for 2019 is driven by continuing growth in non-OECD Asia which the IEA reports at 0.75 mb/d.

OPEC’s global demand outlook also remains steady at 1.14 mb/d in 2019. Absolute demand is just under the 100 mb/d mark at 99.87 mb/d. OPEC-IEA divergence in overall world demand has converged further and now stands at 0.42 mb/d down from 0.47 mb/d last month.

OECD Demand

The IEA sees OECD oil demand growth at 0.17 mb/d, up from last month’s figure of 0.11 mb/d. The IEA anticipates total OECD consumption for 2019 at 47.90 mb/d. OPEC’s growth projection for the OECD region remains the same at 0.14 mb/d with total OECD demand for 2019 at 47.98 mb/d. Divergence in overall OECD oil demand growth between the IEA and OPEC for July is 0.03 mb/d.

Non-OECD Demand

Both the IEA and OPEC anticipate continued growth in non-OECD demand for this year at 1.01 mb/d and 1.00 mb/d respectively. Total non-OECD demand forecasts average 52.39 mb/d and 51.90 mb/d. The IEA’s and OPEC’s assessments for 2019 non-OECD demand growth and absolute demand now differ by a mere 0.01 mb/d and 0.49 mb/d, respectively.

According to the IEA, China’s demand growth in 2019 will increase by 0.37 mb/d but will decrease to 0.32 mb/d in 2020. However, Chinese demand is forecast to rise 510 kb/d y-o-y (year-over-year) in the second half of 2019 due to the commissioning of new propane dehydrogenation plants along with higher deliveries of other products. OPEC reports growth will fall to 0.35 mb/d in 2019 compared to 0.32 mb/d in 2020. While the expanding petrochemical sector, especially new propane dehydrogenation plants, and spending on infrastructure projects holds promise for further demand growth, a slower economy combined with government policies that encourage reductions in the use of transportation fuel remains a downside risk.

The IEA expects strong demand growth in India by 0.19 mb/d in 2019 and 0.23 mb/d in 2020. Overall demand in May is down 240 kb/d below expectations. Although the aviation sector experienced a slow-down, gasoline and gasoil/diesel demand was up despite the recent reduction in passenger vehicle and two-wheeler sales. In May, car sales fell by 26% y-o-y – the lowest level in 18 years. LPG/ethane consumption growth went to zero in May, the lowest annual growth recorded in several months. From OPEC’s perspective, LPG demand rose slightly compared to a high baseline comparison in 2018. Gasoline and diesel demand also grew despite a 20% y-o-y drop in car sales in May. Indian demand for 2019 remains steady at 0.19 mb/d compared to 0.17 mb/d in 2019.

See the graph below for the monthly revisions of IEA and OPEC annual estimates for 2018 and new estimates for 2019 demand.
3.2 SUPPLY DATA

Non-OPEC Supply

OPEC’s July assessment of total non-OPEC supply for 2019 stands at 64.43 mb/d. Supply growth is down by 0.09 mb/d for a revised forecast of 2.05 mb/d driven by the US (1.90 mb/d), Brazil (0.36 mb/d) and China (0.07 mb/d). Growing output from these countries is offset by declining production from Mexico (-0.15 mb/d), Norway (-0.09 mb/d) and Kazakhstan (-0.08).

The IEA forecasts 2019 non-OPEC supply at 64.85 mb/d with growth of 1.99 mb/d, 120 kb/d greater than last month, driven mainly by the US and Brazil. The US comprises the bulk of this growth at 1.77 mb/d with total production at 17.26 mb/d. Brazil’s production is expected to total 2.93 mb/d for 2019 with a growth of 0.23 mb/d. Other increases are due to come from Russia, China, Canada and the UK. For 2020, non-OPEC oil supply growth is reduced to 2.13 mb/d following the decision by OPEC+ countries to extend output cuts through 1Q20. The US, Brazil and Canada are forecasted to supply 80 percent of that growth.
OECD Supply

OPEC and the IEA forecast OECD growth at 1.77 mb/d and 1.65 mb/d with total supply reaching 30.00 mb/d and 28.48 mb/d respectively in 2019. The IEA's data shows OECD Americas liquids supply growth at 1.68 mb/d to reach 24.63 mb/d in total, while OPEC reports stronger growth at 1.76 mb/d with total liquids supply reaching 25.75 mb/d in 2019. Growth within the region is led by the US for which OPEC revised its liquid supply forecast up to 1.90 mb/d to reach 18.57 mb/d in total, while the IEA projects less US growth of 1.73 mb/d to amount to 17.26 mb/d in total. OPEC’s assessment for total OECD Europe production in 2019 is 3.78 mb/d with a decline in growth by 0.05 mb/d from last year. The IEA’s assessment for OECD Europe supply decreases to 3.37 mb/d; a decrease in growth of 0.10 mb/d.

OPEC Supply

OPEC reports that total OPEC-14 preliminary crude oil production averaged 29.83 mb/d in June according to secondary sources. This is a decrease of 68 kb/d over the previous month. Crude oil output decreased mostly in Iran, Angola and Libya while production increased in Saudi Arabia and Nigeria. The IEA reports a decrease in OPEC production by 90 kb/d in June, and more than 1.8 mb/d lower than a year ago reaching a total production of 29.91 mb/d. Lower production from Iran, Iraq and Angola led to the decrease in addition to the OPEC+ production adjustments.

See the graph below for the monthly revisions of IEA and OPEC annual estimates for 2018 and new estimates for 2019 supply.

IEA and OPEC world supply growth approaches convergence
OPEC aligns with IEA on Non-OECD growth

See the graph below for the monthly revisions of IEA and OPEC annual estimates for 2018 and new estimates for 2019 supply.

*monthly estimates rounded to the nearest barrel.
3.3 STOCK DATA

IEA data shows OECD commercial inventories rose by 22.8 mb month-on-month (m-o-m) in May to **2906 mb** and are 6.7 mb above the five-year average. According to OPEC, preliminary data for May showed that total OECD commercial oil stocks rose by 41.5 mb m-o-m to **2925 mb** and are now 25.0 mb above the latest five-year average. While both organisations report closely aligned data on OECD stocks due to a continuous and reliable data stream and data harmonization efforts, comprehensive data on stock developments for non-OECD countries is still work in progress.

See the graphs below for monthly estimates of OECD total commercial oil stocks and the monthly comparison versus the five-year average.

**IEA and OPEC data shows convergence on OECD stock draws**

**Comprehensive non-OECD stock data remains missing**

**IEA and OPEC report closely aligned OECD stock balances**

**Stocks return above the five-year average**

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*monthly estimates rounded to the nearest barrel.*
3.3.1 GLOBAL STOCK ANALYSIS

JODI inventory data and IEA’s estimate of Chinese implied crude stock builds suggest crude and product inventories may have risen by a massive 93 mb in May.

- Latest OECD inventory data from IEA, OPEC, and JODI show a significant divergence in estimates of May stock builds. On the low end, IEA estimates OECD commercial stocks rose 22.8 mb in May to 2,906 mb to stand 6.7 mb above the latest five-year average. OPEC’s estimate is nearly double IEA’s and shows OECD stocks grew by 41.5 mb in May to 2,925 mb to stand 25 mb above the five-year average. Meanwhile, JODI OECD data indicate stock builds were nearly thrice IEA’s estimate at a massive 64.7 mb build in May. If IEA ultimately revises up its May OECD stock change to a figure near JODI’s estimate, it will be only the fourth time in over a decade that a monthly OECD build has exceeded 60 mb.

- JODI non-OECD* data for May imply crude stocks drew by a marginal 0.3 mb while product stocks grew by 6.9 mb. Crude stocks in Saudi Arabia drew for the 21st time in 24 months dropping by 5.8 mb in May which was partially offset by crude builds in Taiwan (2.2 mb) and Gabon (2.0 mb). The largest product builds occurred in Taiwan (1.2 mb), Hong Kong (1.1 mb), Brazil (0.9 mb), Iraq (0.9 mb), and Nigeria (0.6 mb).

- Together, IEA’s OECD commercial and SPR inventory data and JODI’s non-OECD* data imply global crude and product stocks rose by 24.1 mb in May. However, stock builds may have been as large as 93 mb if JODI’s OECD data and IEA’s estimate of implied Chinese crude builds prove accurate. IEA estimated Chinese crude stocks rose by 21.3 mb in May (China’s stock change has not been reported in JODI since late last year).

* Non-OECD data is the aggregate of country-level data through JODI. Not all non-OECD countries report inventory data and the countries in the aggregate may vary monthly depending on regularity of individual country reporting.

### Global Inventory Changes

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<tr>
<td><strong>Crude</strong></td>
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<td>OECD SPR (IEA)</td>
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<td><strong>Products</strong></td>
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<td><strong>Total</strong></td>
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<td><strong>-4.9</strong></td>
<td><strong>18.3</strong></td>
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<td>OECD SPR (IEA)</td>
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<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
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* Aggregate of all non-OECD data available through JODI. Not all non-OECD countries report inventory data and the countries in the aggregate may vary monthly depending on the regularity of individual country reporting.

Source: IEA, JODI, OPEC, Rapidan Energy Group
**Comparative Analysis of Monthly Reports on the Oil Market**

Riyadh, Saudi Arabia

July 2019

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**Monthly Change in OECD and Non-OECD* Crude + Product Inventories**

- Non-OECD* Products (JODI)
- OECD Products (IEA)
- OECD Crude (IEA)
- Net Non-OECD* (JODI) and OECD (IEA) Crude + Products

* Aggregate of all non-OECD data available through JODI. Not all non-OECD countries report inventory data and the countries in the aggregate may vary monthly depending on the regularity of individual country reporting.

Source: IEA, JODI, Rapidan Energy Group

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**Accumulative OECD and Non-OECD* Crude + Product Builds Since End-2014**

- Non-OECD* Products (JODI)
- OECD Products (IEA)
- OECD Crude (IEA)
- Net Non-OECD* (JODI) and OECD (IEA) Crude + Products

* Aggregate of all non-OECD data available through JODI. Not all non-OECD countries report inventory data and the countries in the aggregate may vary monthly depending on the regularity of individual country reporting.

Source: IEA, JODI, Rapidan Energy Group