# COMPARATIVE ANALYSIS OF MONTHLY REPORTS ON THE OIL MARKET

## 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).

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

1. **Note by the Secretary General**

2. **Key Points**
   - 2.1 Demand
   - 2.2 Supply
   - 2.3 Stocks
   - 2.4 Snapshot (mb/d)

3. **Global Analysis**
   - 3.1 Demand Data
   - 3.2 Supply Data
   - 3.3 Stock Data
   - 3.3.1. Global Stock Analysis
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.

- Features 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 oil market balances are as follows:

**Iran Sanctions**
- The eight countries granted import exemptions by the US after Iranian sanctions went into effect will have until May 2, 2019 to cease purchases of Iranian crude.

**Unrest in Key Producer States**
- Protracted unrest in Venezuela, renewed conflict in Libya, and illegitimate third-party breaches in Nigeria risk increasing energy market volatility in a tightening oil market.

**Strait of Hormuz**
- Iran has warned that it can shut the Strait of Hormuz if the country’s oil shipments are blocked by US sanctions and hostility increases. The Strait of Hormuz handles roughly 30 percent of global seaborne crude trade and is one of the world’s most strategically important sea lanes for oil market stability.

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 OPEC and IEA world demand growth remains steady from last month with minor downward revisions. OPEC growth decreases by 30 kb/d for overall growth of 1.21 mb/d. OPEC world demand growth has steadily declined since May 2018. IEA growth projections remain steady at 1.39 mb/d, with a slight increase of 10 kb/d. The difference in growth between both organizations is 180 kb/d. The IEA and OPEC estimates for absolute world demand in 2019 are 100.60 mb/d and 99.91 mb/d, respectively.

- OPEC Non-OECD growth remains unchanged for the third consecutive month and remains at 1.00 mb/d. The IEA’s demand growth forecast for 2019 in Non-OECD countries increases by 80 kb/d to reach 1.12 mb/d. Conversely, OECD growth decreases by 60 kb/d to 0.27 mb/d. OPEC OECD growth decreases by 30 kb/d for total growth of 0.21 mb/d. The IEA and OPEC now differ in their 2019 assessments on OECD and Non-OECD demand growth by 60 kb/d and 120 kb/d, respectively.

2.2 SUPPLY

- The IEA and OPEC continue to differ on Non-OPEC supply growth. The IEA’s April 2019 assessment for Non-OPEC growth is down by 10 kb/d for a total growth of 1.75 mb/d. OPEC’s growth assessment moves down to 2.18 mb/d, a decrease by 60 kb/d from last month. In absolute values, OPEC and the IEA estimate non-OPEC supply growth at 64.54 mb/d and 64.45 mb/d respectively for 2019. OPEC OECD supply sees its highest growth in 2019 at 1.76 mb/d, reporting an increase of 50 mb/d from last month. The IEA growth estimate rises to 1.38 mb/d, an increase of 40 mb/d.

- OPEC reports its largest decrease in Non-OECD supply growth in April. OPEC revised its assessment down by 110 kb/d to reach total growth of 0.38 mb/d. The IEA revised its growth down by 50 kb/d for 2019 from last month to reach total supply growth of 0.27 mb/d. The difference between the IEA and OPEC Non-OECD supply growth is 110 kb/d.

2.3 STOCKS

- The IEA and OPEC continue to report strong alignment on stock figures that have returned above five-year averages. The IEA reports OECD stock levels at 2871 mb, which is close to OPEC’s assessment of 2863 mb for OECD stock that is 16 mb and 7.5 mb above the five-year average, respectively. The divergence between OPEC and the IEA stands at 8 mb for April. Total US crude inventories (excluding SPR) in December amount to about 461 mb according to the US Energy Information Administration (EIA). The EIA reports U.S. crude oil inventories are about 2 percent below the five-year average for this time of year. OPEC reports US stock below the five-year average by about 3.5 mb.
2.4 SNAPSHOT (mb/d)

<table>
<thead>
<tr>
<th>Demand</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>World</th>
<th>Growth</th>
<th>Δ m/m</th>
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<tr>
<td>IEA</td>
<td>48.00</td>
<td>0.27</td>
<td>-0.06</td>
<td>52.60</td>
<td>1.12</td>
<td>0.08</td>
<td>100.60</td>
<td>1.39</td>
<td>0.02</td>
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<tr>
<td>OPEC</td>
<td>48.02</td>
<td>0.21</td>
<td>-0.05</td>
<td>51.19</td>
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<td>0.00</td>
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<td>Difference</td>
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<td>0.03</td>
<td>0.71</td>
<td>0.12</td>
<td>0.08</td>
<td>0.69</td>
<td>0.18</td>
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<table>
<thead>
<tr>
<th>Supply</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>NOPEC</th>
<th>Growth</th>
<th>Δ m/m</th>
<th>OPEC</th>
<th>Growth</th>
<th>Δ m/m</th>
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<tr>
<td>IEA</td>
<td>28.05</td>
<td>1.38</td>
<td>0.04</td>
<td>31.36</td>
<td>0.27</td>
<td>-0.05</td>
<td>64.45</td>
<td>1.75</td>
<td>-0.01</td>
<td>30.13</td>
<td>-0.55</td>
<td>-0.31</td>
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<tr>
<td>OPEC</td>
<td>30.00</td>
<td>1.76</td>
<td>0.05</td>
<td>32.27</td>
<td>0.38</td>
<td>-0.11</td>
<td>64.54</td>
<td>2.18</td>
<td>-0.06</td>
<td>30.02</td>
<td>-0.53</td>
<td>-0.31</td>
</tr>
<tr>
<td>Difference</td>
<td>1.95</td>
<td>0.38</td>
<td>0.01</td>
<td>0.91</td>
<td>0.11</td>
<td>0.06</td>
<td>0.09</td>
<td>0.43</td>
<td>0.05</td>
<td>0.11</td>
<td>0.02</td>
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<table>
<thead>
<tr>
<th>Stocks (mb)</th>
<th>OECD</th>
<th>IEA to 5-Year Average</th>
<th>US</th>
<th>US to 5-Year Average</th>
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<tbody>
<tr>
<td>IEA</td>
<td>2871</td>
<td>16 mb above</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>OPEC</td>
<td>2863</td>
<td>7.5 mb above</td>
<td>3.5 mb below</td>
<td>3.5 mb below</td>
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<tr>
<td>EIA</td>
<td>461</td>
<td>-</td>
<td>2 percent below</td>
<td>2 percent below</td>
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</table>

Data obtained from IEA Oil Market Report, 11 April 2019; OPEC Monthly Oil Market Report, 10 April 2019 and Energy Information Administration, Weekly Petroleum Status Report, 24 April 2019

*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 growth in April is up slightly to 1.39 mb/d for an absolute demand of 100.60 mb/d in 2019. Demand growth for 2019 is driven by continuing growth in non-OECD Asia which reports growth at 0.85 mb/d.

OPEC’s global demand outlook is down marginally to 1.21 mb/d in 2019. Absolute demand is just under the 100 mb/d mark at 99.91 mb/d. OPEC-IEA divergence in overall world demand stands at 0.69 mb/d up from 0.64 mb/d last month.

OECD Demand

The IEA sees OECD oil demand growth at 0.27 mb/d, down slightly from last month’s figure of 0.33 mb/d, and the lowest so far this year. The IEA anticipates total OECD consumption for 2019 at 48.00 mb/d. OPEC growth projection for the OECD region decreases to 0.21 mb/d, also the lowest so far this year, with total OECD demand for 2019 at 48.02 mb/d. The divergence of OECD oil demand growth between the IEA and OPEC is now 0.02 mb/d.

Non-OECD Demand

Both, the IEA and OPEC anticipate continued growth in non-OECD demand for this year at 1.12 mb/d and 1.00 mb/d respectively. Total non-OECD demand forecasts average 52.60 mb/d and 51.89 mb/d. The IEA’s and OPEC’s assessment for 2019 non-OECD demand growth and absolute demand now differ by 0.12 mb/d and 0.71 mb/d, respectively.

According to the IEA, China’s demand in 2019 will slightly increase to 0.44 mb/d compared to last month’s figure of 0.42 mb/d due to the passing of recent monetary policies and stimulus measures in China. OPEC reports growth in 2019 will fall to 0.34 mb/d as compared to 0.39 mb/d in 2018. While the expanding petrochemical sector shows promise for demand, the reduction in the use of transportation fuel remains a downside risk.

The IEA expects strong demand growth in India by 0.24 mb/d in 2019 compared to 0.21 mb/d based
on revised 2018 data. Government policy encouraging the use of LPG’s has come at the expense of kerosene demand. However, India’s booming aviation sector is continuing to make up for that loss. From OPEC’s perspective, Indian demand for 2019 remains steady at 0.19 mb/d compared to 0.20 mb/d in 2018. A stable economic outlook due to government infrastructure projects coupled with LPG for domestic use and gasoline for transportation are seen as the anchors for growth.

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

### IEA Non-OECD demand growth sees slight increase
But IEA and OPEC show OECD demand slows

![Graph showing monthly revisions of annual estimates for oil demand growth 2018/17 and 2019/18 from April 2019](image)

*monthly estimates rounded to the nearest barrel.

### 3.2 SUPPLY DATA

#### Non-OPEC Supply

OPEC’s April assessment of total non-OPEC supply for 2019 stands at **64.54 mb/d**. Supply growth has been revised down by 60 kb/d to **2.18 mb/d** driven by expected growth in the US (1.87 mb/d), Brazil (0.31 mb/d) and Russia (0.19 mb/d). Growing output from these countries is offset by declining production from Mexico (-0.14 mb/d), Kazakhstan (-0.07 mb/d) and Norway (-0.06).

The IEA also forecasts 2019 non-OPEC supply at 64.45 mb/d with a lesser year-on-year growth of 1.75 mb/d mainly due to growth in the US and Brazil. The US comprises the bulk of this growth at 1.59 mb/d. Brazil’s production is expected to total 3.02 mb/d for 2019. Supply growth is 0.50 mb/d less than last month, but the startup of new projects will lead to a growth of 0.32 mb/d for 2019. Other increases are due to come from Russia and Kazakhstan with declines in Mexico, Norway and Canada.

#### OECD Supply

OPEC and the IEA both forecast OECD growth at 1.76 mb/d and 1.38 mb/d with total supply reaching
30.00 mb/d and 28.05 mb/d respectively in 2019. The IEA’s data shows OECD Americas liquids supply growth at 1.37 mb/d to reach 24.16 mb/d in total supply, while OPEC reports stronger growth at 1.70 mb/d with total liquids supply reaching 25.70 mb/d in 2019. Growth within the region is led by the US for which OPEC revised its liquid supply forecast up to 1.87 mb/d to reach 18.53 mb/d in total, while the IEA projects less US growth of 1.59 mb/d to amount to 17.08 mb/d in total. OPEC’s assessment for OECD Europe has increased from last month for a total production of 3.83 mb/d in 2019. The IEA’s assessment for OECD Europe supply decreases to 3.41 mb/d for a decrease in growth of 0.06 mb/d. For 2019, both the IEA and OPEC see the UK as the primary driver of OECD Europe supply growth, with figures of 0.04 mb/d and 0.06, respectively.

OPEC Supply

OPEC reports that total OPEC-14 preliminary crude oil production averaged 30.02 mb/d in March according to secondary sources. This is a decrease of 0.53 mb/d over the previous month. Crude oil output decreased mostly in Saudi Arabia, Venezuela, Iraq, and Iran while production increased in Libya, Congo, and Nigeria. The IEA reports a decrease in OPEC production by 0.24 mb/d in March for total production of 30.13 mb/d. Losses from Venezuela and lower production from Saudi Arabia has production hovering at a four-year low.

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 disagree on OECD and Non-OPEC supply growth
But IEA and OPEC see convergence on Non-OECD growth

3.3 STOCK DATA

IEA data shows OECD commercial inventories fell by 21.7 month-on-month (m-o-m) in February to 2871 mb and are 16 mb above the five-year average. According to OPEC, preliminary data for February showed that total OECD commercial oil stocks fell by 18.3 mb m-o-m to 2863 mb and are now 7.5 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
Surplus stocks rise above the five-year average

*monthly estimates rounded to the nearest barrel.
### 3.3.1 Global Stock Analysis

OECD and JODI non-OECD crude and product inventory data show a net 21.6 mb draw in February

- IEA data shows OECD commercial inventories fell by 21.7 mb m/m in February to 2,871 mb – their highest level since November 2017. OPEC estimates total OECD commercial stocks fell by 18.3 mb in February to 2,863 mb. IEA and OPEC now estimate OECD inventories exceed the five-year average by 16 mb and 7.5 mb, respectively.

- JODI non-OECD* data for February imply crude stocks drew by 3.8 mb, while product stocks built by 1.9 mb. Saudi Arabia’s first recorded crude build (3.7 mb) in nine months was more than offset by draws in Brazil (-4.9 mb), Taiwan (-2.8 mb), and Nigeria (-1.5 mb). On the product side, the largest build occurred in Taiwan (1.2 mb).

- Together, IEA’s OECD commercial and SPR inventory data and JODI’s non-OECD* data imply global crude and product stocks drew by 21.6 mb in February, partially offsetting January’s 44.7 mb crude and product build. Following upward revisions to December 2018 JODI non-OECD product inventories, the data now implies total inventories grew by 44.6 mb during 2018 (vs. 14.4 mb estimated in last month’s report).

- IEA and OPEC’s 2018 balances continue to imply much larger global inventory builds (333.2 mb and 186.2 mb, respectively) compared to JODI non-OECD and IEA OECD inventory data. Data transparency efforts have progressed in recent years; however, some key data remain opaque and unreliable, including Chinese stock data. IEA’s Oil Market Report noted this month that Chinese custom data, as well as estimates for crude production and refinery throughput, imply Chinese crude stocks continued to build by ~1 mb/d in 1Q19 (down slightly from 1.3 mb/d in 4Q18). However, statistics from China Oil, Gas and Petrochemicals have not been published since May and JODI Chinese stock data has not been published since August.

* 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

<table>
<thead>
<tr>
<th></th>
<th>February 2019</th>
<th>January 2019</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Crude</td>
<td>Products</td>
<td>Total</td>
</tr>
<tr>
<td>OECD Commercial (IEA)</td>
<td>10.4</td>
<td>-32.1</td>
<td>-21.7</td>
</tr>
<tr>
<td>OECD SPR (IEA)</td>
<td>1.2</td>
<td>0.8</td>
<td>2.0</td>
</tr>
<tr>
<td>Available JODI Non-OECD Data*</td>
<td>-3.8</td>
<td>1.9</td>
<td>-2.0</td>
</tr>
<tr>
<td>Total</td>
<td>7.8</td>
<td>-29.5</td>
<td>-21.6</td>
</tr>
<tr>
<td>IEA’s Implied Global Supply Surplus</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>OPEC’s Implied Global Supply Surplus</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* 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 regularity of individual country reporting.

Source: IEA, JODI, OPEC, Platts, Rapidan Energy Group
COMPARATIVE ANALYSIS OF MONTHLY REPORTS ON THE OIL MARKET

RIYADH, SAUDI ARABIA
APRIL 2019

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

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

* 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