

# COVID-19 REPORT 13<sup>TH</sup> EDITION

GLOBAL OUTBREAK OVERVIEW AND ITS IMPACT ON THE ENERGY SECTOR

11 JUNE 2020

**PUBLIC VERSION** 

**MONTHLY REPORT** 

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# Executive summary

Outbreak status and outlook

Impact on oil demand

Impact on the oil and gas industry



## Executive Summary Worrying development in Latin America and South Asia

In the last two weeks since publishing the previous Covid-19 report, the pandemic has developed with disturbing ferocity in Latin America, South Asia, and Southern Africa. Daily fatalities in these regions have doubled over the last two weeks. And frighteningly, while Europe and North America went into complete lockdown after seeing similar developments, Latin America and South Asia are loosening measures rather than tightening them. This means that the growth of the pandemic is likely to accelerate further. This new wave could be far more deadly than the European and North American wave seen in March and April, as the populations in these regions are larger and lockdown measures have been less efficient.

If further measures are not implemented to control the virus, the aggregated number of infected cases will double every 12 days in Southern Africa, every 14 days in Central America, every 18 days in South America, and every 29 days in South Asia. This means that 50% of the population will have contracted the virus by the end of July in Central and South America and Southern Africa, and by early December in South Asia. If this rather alarming scenario comes to fruition, herd immunity will actually be achieved in these regions. However, it will come at a high price as the need for intensive care will far exceed available capacity.

If governments are able to control the pandemic in these regions we will likely see a deeper initial impact on these economies, as businesses will be locked down. In East Asia, Europe and North America however, we expect national economies to grow again and road fuel demand to return to 97% of previous level by august. With the recent extension of OPEC cuts, the oil market is likely to be in balance by the end of June.







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## Global overview The true cumulative number of people infected globally today is likely 103 million

#### Number of true and reported cases



As of 9 June, 103 million people have likely been infected with Covid-19, according to our updated model based on reported fatalities.

There were 7.2 million reported cases as of 11 May, a number which our analysis suggests represents 7% of true cases. Reported cases are still growing at about 2% per day, despite a higher base.

Registered fatalities globally were almost 410,000 as of 9 June. True fatalitities are probably higher, as the reporting of Covid-19 deaths in many places is insufficient outside of hospitals.

Many countries did loosen measures in May, and as a result we are seeing a new growth in the number of new fatalities.

Moreover, we see a record high figure of 9 million people currently in the most infectiouse stage (day 3 to 8 after onset).



\*Assumes current measures remain in place during forecasting interval Source: Rystad Energy Covid-19 research and analysis; Worldometer

## Global overview Still no sign of slowing spread in Brazil, India and Bangladesh

Number of reported cases, key countries

Cases (log scale)



Just as in our report from 13 May four weeks ago – we see no signs of a slow down in reported cases in Brazil, Russia, India and Bangladesh. Doubling time has been reduced slightly from 8-10 days to 12-30 days. Still the virus is not under control. These countries have surpassed the largest European countries in term of reported cases.

European and East Asian countries have all flattened out completely in reported cases, while the US is still growing, albeit at a slower pace slower than before

Iran is still growing, and is currently experiencing a second wave.

For further details please see our Covid-19 dashboard at rystadenergy.com.

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Source: Rystad Energy Covid-19 research and analysis; Worldometer

## Global overview Several "new" countries are seeing fast growth in new cases, despite lockdown measures

Number of reported cases, emerging high growth countries Cases (log scale)



Seven African countries currently see fast growth of new cases, with a doubling time of 8 days or less for most countries. These are Malawi, South Sudan, Mauritania, Central African Rep, Mozambique, Ethiopia and South Africa.

Similarly, seven Central and South American countries are also seeing quick growth in reported cases. Mexico and Chile already have more than 120,000 reported cases, a figure that is likely to double in ten days.

Nepal is also seeing growth in reported cases, doubling at a rate that is quicker than every eight days.

All of these countries could reach 100,000 reported cases in early August if stricter measures are not implemented.

> For further details please see our Covid-19 dashboard at rystadenergy.com.





## Global overview The Covid-19 epicenter has now moved to Latin America and South Asia

#### Daily deaths per region, Effective retainment Scenario\*

Reported and estimated deaths (14 days rolling average)



\* Here we assume that announced lockdowns was actually efficient since late May, also for South and Central America, South Asia and South Africa Source: Rystad Energy Covid-19 model



## Global overview Latin America and South Asia could see greater impacts than those seen in North America

**Daily deaths per region, assuming** *current social distance measures are maintained for a period\** Reported and estimated deaths (14 days rolling average)



\* For Central America: until Mid-June, for South Africa until start of July, for South America until Mid July and for South Asia until mid August Source: Rystad Energy Covid-19 model



## Global overview Second wave possible in Europe and N.America, plus peak in Middle East and East Africa

#### Daily deaths per region, second wave scenario\*

Reported and estimated deaths (14 days rolling average)



\* Here we assume the last scenario plus a second outbreak in Southern Europe and North America plus Middle East as Central America and East Africa as South America with two months lag Source: Rystad Energy Covid-19 model



## Global overview Mobility data does not explain why cases have not stopped growing

Transit station activity (buses, trains, subway, etc)

Percent activity versus pre-corona levels (14 days rolling average)



Why are cases growing so rapidly in *the south,* while still lockdowns have been stricter than Europe and N.America?

No obviouse answer, but living conditions might play a role.

With loosened social distancing measures over the last weeks, we will likely see acceleration in the growth of the number of cases.



Source: Google mobility data

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# Impact on oil demand

- Global overview
- Key region focus
- Aviation and jet fuel
- Ground transportation and road fuels

# Impact on the oil and gas industry



## Global overview

# Two main recovery profiles: effective retainment and mitigation scenario



#### Jet fuel demand levels 2020-2021

#### **I**'-shaped recovery:

- Stabilizes at a new normal in 3Q20.
- Follows the previous year's trend for the rest of 2021 with moderate growth.

#### Key assumptions:

- Gradual opening of borders as government lockdowns loosen in 2Q20.
- · Business travel is expected to recover quicker
- Consumer confidence increases and short-haul and leisure travel begins to recover

#### **U**-shaped recovery:

- Stabilizes at a new normal in 2Q21.
- Follows the previous year's trend for the rest of 2021 with low growth.

#### Key assumptions:

- Slow opening of borders with risk of a second wave; Majority of borders closed through 3Q20.
- Consumer confidence remains low with short-haul and leisure travel slowly recovering.
- Business travel is still expected to recover at a faster pace than leisure travel.
   Irce: Rvstad Energy research and analysis



#### **Demand scenarios**



#### Road fuel demand levels 2020-2021

#### V-shaped recovery:

- Demand hits bottom in April 2020, followed by a strong rebound in June and July.
- Demand impact lasts into 2021, reaching 2019 levels towards the end of the year.

#### Key assumptions:

- Governments loosen measures and unemployment remains at manageable levels.
- People prefer personal vehicles over public transport, with 15% to 20% of the workforce in developed countries working from home.
- Heavy-duty vehicle traffic down 5-7% in 2020 and 2021.

#### L-shaped recovery:

• Demand hits bottom in April 2020, with a weaker recovery period where road fuel remains below 2019 levels through 2022.

#### Key assumptions:

- Work-from-home policies continuing into 2021.
- Unemployment rates cause reduced commuter demand and less
  personal vehicle use.
- Heavy-duty vehicle traffic heavily affected by demand shock, with reductions of 8-12% versus pre-virus estimates in 2020-2022.



Mitigation

Effective retainment

## Global overview Global oil demand unlikely to return to 2019 demand level until 2022-2023

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Global oil demand impact analysis, changes vs pre-virus estimates Thousand barrels per day



Source: Rystad Energy research and analysis



## Global overview By July, global oil demand may recover by close to 15 million bpd since the bottom in April

#### Oil demand impact by region in the effective retainment scenario

Thousand barrels per day

- Rystad Energy's effective retainment scenario includes an absolute oil demand of 87-88 million bpd for 2020 and 97 million bpd for 2021.
- Demand destruction is seen at 12-13 million bpd in 2020, and 5 million bpd in 2021 when compared to our pre-virus projection.
- The quickest recovery is seen in East Asia while the slowest recovery is expected from the Rest of world where we see an impact of 2.7 million bpd for 2020.





#### Oil demand impact by region in the mitigation scenario

Thousand barrels per day

- In our mitigation scenario, we expect total oil demand will be at 86-87 million bpd in 2020 and 93 million bpd for 2021.
- Demand impact vs. pre-virus estimates is seen at around 14 million bpd for 2020, and 8-9 million bpd for 2021.
- Total demand is expected to stay well below 2019-level out until 2022-2023.



#### Demand impact vs. pre-virus estimates



Source: Rystad Energy research and analysis

# Global overview Road fuels down 10% for 2020, jet fuel down 41% and other fuels down 9% vs. 2019

#### Oil demand impact by fuel in the effective retainment scenario

Thousand barrels per day

- Rystad Energy's effective retainment scenario includes an absolute oil demand of 87-88 million bpd for 2020 and 97 million bpd for 2021.
- The majority of demand destruction comes from road fuels, which bottomed out in early April at -17 million bpd compared to our pre-virus projection.
- We expect a slower recovery for the aviation sector with a destruction in jet fuel demand of 1.4 million bpd for 2021 versus pre-virus projections.





#### Oil demand impact by fuel in the mitigation scenario

Thousand barrels per day

- In our mitigation scenario, we expect total oil demand of 86-87 million bpd in 2020 and 93 million bpd for 2021.
- A slower recovery results in expected demand destruction from road fuels to be down 5.7 million bpd for 2020 and down 3.2 million bpd for 2021.
- The risk of a second wave and extended lockdowns will slows the recovery of jet fuel demand further to 3.3 million bpd in 2021.



Demand impact vs. pre-virus estimates



Source: Rystad Energy research and analysis

## Key region focus US oil demand recovers in May by 1.9 million bpd vs April

-6,000

-7,000

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#### Strong recovery in May paves the way for further activity increase during the summer, but uncertainty looms.

- US oil demand is at 18 million bpd in 2020, down 12% from 2019 levels with road fuels down 10%.
- Road traffic in the US is currently down around 20% from 2019 levels, with large state-wise differences observed. May saw large increases in activity at the start of the month, but growth flattened out more towards the end of the month.
- Despite the large impact on jet fuel demand in 2Q20, the US is still one of the largest consumers of jet fuel at 970,000 bpd due to the resilient domestic market.
- For 2021, we expect a gradual recovery with year-on-year growth approaching 7% to 8%.

Source: Rystad Energy research and analysis





Dec 20

Jan 21

00, 20 No<sub>4</sub> 20 Feb27 Mar27 Jun 21

Aor 27 May 27 14037

Sep 21

Jul 27



Other fuels

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Dec 21

## Key region focus Indian oil demand to reach 2019 consumption levels in early 2021



After strong growth signs from aviation and road traffic in May, India enters June by removing additional measures

- Indian oil demand fell around 45% in April relative to our pre-virus projections, but has been making a strong comeback in May after lockdowns were eased.
- After lockdowns were introduced at the end of March, road traffic in Indian cities plummeted, staying at around 60% below normal levels for over a month. In the past few weeks, activity has recovered, with levels now standing at 30-35% from 2019 traffic levels.
- Recent data shows a rapid increase in the number of domestic flights and we expect a doubling of jet fuel demand in June 2020 compared to May 2020.

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## Aviation and jet fuels Bottom of aviation drop is behind us as new monthly numbers suggest slight recovery

Daily flights for the effective retainment scenario are estimated to be 50,600 for 2020, slightly up from 49,100 in the 28 May report.

The latest analysis of real-time data suggest a revision of less than 1, and is therefore not shown in the chart.

Actuals for May show a -60% y/y growth in air traffic, which is a slight recovery of 2% compared to April.

Rystad Energy expects the recovery will continue through rest of 2020 as governments are easing travel restrictions. We forecast -53% y/y impact for the effective retainment scenario.

Due to the downside risk of a second wave, the mitigation scenario exhibits an extended bottom which averages a -56% y/y impact on the number of flights for 2020. Daily number of commercial passenger flights (passenger and cargo), monthly average Number of flights



\*Forecast is based on previous years growth patterns. Effective retainment and mitigation scenarios are based on different quarantine regimes for regions, airline communication and airport flight schedules. Sources: Flightradar24; OAG; Company reporting; ICF; IATA; ICAO; Rystad Energy research and analysis

## Ground transportation and road fuels Global road traffic poised to recover from the bottom in April

Rystad Energy Global City Traffic Database covers road traffic in 1,500+ cities and 150+ countries

#### Road traffic reduction\* versus normal levels, 7 March to 7 Jun

7-day moving average, percent difference versus mean of traffic during same weekday in same month for 2010



\*Population-weighted within each region and based on an hour-by-hour road traffic database with more than 150 countries. Source: TomTom Traffic Index; Google Maps; Baidu; Korea Expressway Corporation; Rystad Energy Global City Traffic Database



## Impact on oil demand: Global overview

# Summary data table for total liquids demand after Covid-19 "effective retainment" case

|               |      |      |      |      | MM   | obl/d |      |       |       |      |
|---------------|------|------|------|------|------|-------|------|-------|-------|------|
|               |      |      |      |      | 20   | 20    |      | 2     | 020 Q | 1    |
|               | 2019 | 2020 | 2021 | 1Q   | 2Q   | 3Q    | 4Q   | April | May   | June |
| Global        | 99.5 | 87.8 | 96.5 | 92.1 | 78.5 | 88.5  | 92.2 | 72.0  | 79.2  | 84.3 |
| Road          | 47.4 | 42.6 | 46.4 | 43.9 | 36.8 | 44.2  | 45.6 | 31.0  | 38.0  | 41.6 |
| Aviation      | 7.2  | 4.2  | 6.1  | 6.5  | 2.9  | 3.5   | 4.1  | 2.9   | 2.8   | 3.0  |
| Other         | 44.9 | 41.0 | 44.1 | 41.8 | 38.8 | 40.9  | 42.5 | 38.2  | 38.4  | 39.7 |
| United States | 20.5 | 18.1 | 19.6 | 19.7 | 15.6 | 18.1  | 18.9 | 13.9  | 15.8  | 17.0 |
| Road          | 11.2 | 10.1 | 10.7 | 10.7 | 8.6  | 10.6  | 10.7 | 6.9   | 9.0   | 9.9  |
| Aviation      | 1.7  | 1.0  | 1.4  | 1.6  | 0.7  | 0.7   | 0.9  | 0.7   | 0.7   | 0.7  |
| Other         | 7.5  | 7.0  | 7.4  | 7.4  | 6.3  | 6.8   | 7.3  | 6.4   | 6.1   | 6.4  |
| China*        | 15.1 | 14.1 | 15.5 | 13.0 | 14.5 | 14.5  | 14.4 | 13.9  | 14.5  | 15.0 |
| Road          | 6.1  | 5.8  | 6.6  | 4.8  | 5.9  | 6.3   | 6.4  | 5.3   | 6.1   | 6.3  |
| Aviation      | 0.9  | 0.7  | 0.9  | 0.9  | 0.5  | 0.7   | 0.7  | 0.5   | 0.5   | 0.6  |
| Other         | 8.1  | 7.6  | 8.1  | 7.3  | 8.0  | 7.6   | 7.3  | 8.1   | 7.9   | 8.1  |
| Europe        | 14.2 | 12.0 | 13.3 | 12.5 | 10.3 | 12.4  | 12.9 | 9.2   | 10.3  | 11.5 |
| Road          | 7.0  | 6.2  | 6.7  | 6.5  | 5.1  | 6.5   | 6.7  | 4.1   | 5.2   | 6.0  |
| Aviation      | 1.5  | 0.8  | 1.2  | 1.2  | 0.5  | 0.7   | 0.7  | 0.4   | 0.4   | 0.5  |
| Other         | 5.7  | 5.0  | 5.5  | 4.8  | 4.8  | 5.2   | 5.4  | 4.7   | 4.7   | 4.9  |

\*Includes Mainland China, Hong Kong and Taiwan Source: Rystad Energy research and analysis



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- Gas market deep dive



## Global market outlook Global E&P investments expect to fall around 30% this year

**Global Investments** 

**Billion USD** 



Source: Rystad Energy UCube

## Global market outlook E&P companies have already cut their 2020 guiding close to 30%

Global E&P capital investments revisions Billion USD





Source: Company reporting; Rystad Energy research and analysis

## Global market outlook Global FID activity to slip significantly

Total conventional greenfield investments sanctioned/ to be sanctioned Billion USD





## Global market outlook Low oil prices have reduced 2025 liquid supply by more than 6 million barrels per day

**Revisions in outlook for total liquids production for different supply segments** Million barrels per day



\*Non-core OPEC countries are defined as OPEC countries outside the Middle East Source: Rystad Energy UCube

## Global market outlook Lower oil price has lowered US oil production by almost 2.5 million bbl/d

US oil\* production outlook by forecast time stamp

Thousand barrels per day



\*Crude oil and lease condensate production Source: Rystad Energy ShaleWellCube, Rystad Energy OilMarketCube, Rystad Energy research and analysis



## US Shale deep dive

# Horizontal oil rig count, speed of decline in previous down cycles

Indexed to the value of 100 for the week when peak level of activity before the decline is reached



\*Oil – Permian, Bakken, Eagle Ford, DJ Basin, SCOOP & STACK, other horizontal drilling targeting oil Source: Baker Hughes, 29 May 2020; Rystad Energy research and analysis



## US Shale deep dive US Land, started frac operations by standard month\* Number of wells, based on satellite imagery



\*Actual number of started frac operations divided by the number of days in each month and multiplied by 365.25 / 12 Source: Rystad Energy ShaleWellCube



## Oil market deep dive Tighter crude balances during June-August led by extended OPEC+ cuts





Source: Rystad Energy research and analysis, OilMarketCube

#### Oil market deep dive

Fresh OPEC+ cuts for July still mean 11.2 million bpd less global supply vs. Mar-20 Million barrels per day



\*Crude oil and lease condensate production Source: Rystad Energy research and analysis, OilMarketCube



## Service sector deep dive Offshore wind expenditure to surpass upstream oil and gas in Europe in 2022

Annual offshore oil & gas capex\* vs. offshore wind capex\*\*, Europe Billion USD



Offshore wind development in Europe is expected to flourish in the coming years as countries strive to reach their ambitious 2030-targets - and large investments will be required. Commissioning activity is expected to increase towards 2025, and projects expected to be operational in 2023-2025 are already driving up capital expenditures in 2020, and will continue to do so in the coming years. At the same time, the oil market collapse has delayed several offshore oil and gas developments in Europe, putting capital expenditures in the offshore upstream market on a continued downwards trajectory through 2022. In light of the postponement of multiple final investment decisions (FIDs) and lower investments in offshore oil and gas, coupled with the increasing activity in offshore wind, Rystad Energy expects that the two markets will reach parity as soon as next year. We anticipate capital expenditures (capex) for offshore wind will surpass upstream O&G capex in Europe in 2022.



Source: Rystad Energy Offshore Wind Solutions, May 2020

## Gas market deep dive

## Asian prices have stabilized while the European market continues to reach new lows



- Asian spot prices have stabilized during the past few days as some new pockets of demand begin to emerge.
- Prices slightly rebounded to \$2.50 per MMBtu during the few last days, before falling back to \$1.92 per MMBtu this week.
- Chinese imports have rebounded in April after two months of lows. Imports in April were well above last year's level at 5.4 MT, pushing Japan out of the top position as the largest LNG importer on a monthly basis.
- While some pockets of demand have been emerging, the global LNG trade is expected to be lower in May as this is normally the period when demand drops in the northern hemisphere, the result of warmer weather.
- TTF prices are trading below Henry Hub, meaning that exporters of US LNG cargoes are not even covering the cost of gas when selling in the European market.



Source: Rystad Energy research and analysis, AIS data, Refinitv, Bloomberg

## Gas market deep dive US LNG exports down 2 Bcfd from peak in January to the latest data point in May

#### **US LNG feedgas**

Billion cubic feet per day, Billion cubic meters



Gas consumption for electricity generation Billion cubic feet per day



Source: Rystad Energy research and analysis, AIS data, Refinitv, EIA

Gas consumption for residential/commercial use Billion cubic feet per day



- Natural gas flows into US liquefaction plants have been on a declining trend since March. Flows in May have averaged 6.5 billion cubic feet per day (Bcfd) which would be equivalent to 5.7 Bcm of monthly production, down 21% from March.
- Sabine Pass has adjusted LNG production the most our of all plants, with feedgas dropping from 3.4 Bcfd in March to 2.6 Bcfd in May (-23%).
- Between 20 and 30 US LNG cargoes for June loading have been cancelled, which could be driving the lower flows into the plants.
- Demand from the power sector, on the other hand, remains strong despite the continued reduction of economic activity.
- Gas consumption for electricity generation has averaged around 25 Bcfd (708 mcm/d), which is line with the 2019 level.
- Gas consumption from the residential and commercial sector was strong at the start of May due to low temperatures.



## Gas market deep dive Henry Hub prices forecasted to remain below \$3 per MMBtu

#### US underground storage levels

#### Billion cubic feet



#### **US unconventional gas cost curve 2020** USD per MMBtu, Million cubic feet per day



- The latest EIA data shows injections into underground storage have continued at a strong rate in May, with stock levels reaching 2,500 Bcf.
- Our new production outlook suggests that injections will slow down substantially after July and that stock levels will be closer to 3,600 Bcf by the end of October (-400 Bcf).
- The new forecast also shows a faster decline in stock levels during 4Q20, as production continues to decline and demand increases due to normal seasonality.
- Assuming that production from conventional and tight oil plays will be driven by liquids totaling close to 31 Bcfd, an additional 52 Bcfd is required from unconventional gas plays.
- As shown in the cost curve, these volumes can be produced at a level of around \$3 per MMBtu.
  However, unconventional gas production can increase to 53
  Bcfd, having only a marginal effect on the cost of supply, which would increase to \$3.16 per MMBtu.



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# RYSTAD ENERGY PRODUCT RELEASE



OIL MARKET WEEKLY – Demand report, a weekly report with:

- An overview of global oil demand
- Oil demand impact in two COVID-19 mitigation scenarios
- Impact of oil demand in aviation, ground transportation and road fuels



## **OIL MARKET WEEKLY – Balances report:**

- A weekly **Commentary** with the latest oil market observations
- A weekly **Executive Summary** on the oil market balances, oil supply and demand, and the overall oil market view



# **OIL MARKET DASHBOARDS and Excel data on:**

- Oil demand analysis dashboard: split by country, transport type, aviation
- <u>COVID-19 dashboard</u>: oil demand impacting two COVID-19 mitigation scenarios





Rystad Energy is an independent energy consulting services and business intelligence data firm offering global databases, strategy advisory and research products for energy companies and suppliers, investors, investment banks, organizations, and governments. Rystad Energy's headquarters are located in Oslo, Norway.

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