

COVID-19 REPORT 14TH EDITION

GLOBAL OUTBREAK OVERVIEW AND ITS IMPACT ON THE ENERGY SECTOR

3 JULY 2020

PUBLIC VERSION

MONTHLY REPORT

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Executive summary Covid-19 cases rise in the US as oil demand outlook grows increasingly uncertain

In the June edition of our Covid-19 report we expressed deep concern regarding the development of the virus in Latin America and South Asia. Since then, the virus has claimed 45,000 lives in Latin America and 11,000 lives in South Asia. In Brazil, Peru and Chile, daily fatality figures have flattened out, while in Mexico and Colombia daily fatalities continue to grow. In South Asia and Africa, fatalities seem to be plateauing. Thus, the worst case scenario, which foresaw continued exponential growth in these regions, does not seem to be coming to fruition.

In the US, states which began reopening at the end of May are now seeing a resurgence of the virus, particularly in Florida, California, Texas, Georgia and Ohio. New daily cases in these regions have doubled during June; there are currently more active cases in these regions than in the northeastern states which were initially hard hit by the virus. However, fatality figures are still surprisingly low compared to the number of reported cases. During the first wave of the virus we saw 1 fatality per 15 reported case in the US. We are now seeing 1 fatality per 60 reported cases in the states experiencing a resurgence. Why is this so? The explanation may be a combination of factors - primarily younger people are being infected, more cases being detected early, and treatment which is, in general, improving. The development of the virus over the next few weeks will shed more light on the potential drivers behind the decreasing fatality rate.

With a second wave of the virus seen in many US states, as well as across the Middle East, and the continued growth in Covid-19 cases in Latin America and South Asia, oil demand through 2020 is increasingly at risk. For July, however, we do observe a quicker return of gasoline demand than anticipated, except in those US Gulf Coast states that are experiencing a resurgence of the virus. In September, governments may be forced to reverse re-opening strategies if faced with a second Covid-19 wave, threatening global oil demand with another fall. As it stands now, the global oil markets have achieved a fragile "balance in the bottom" thanks to OPEC+ compliance. However, there is less potential for significant draws of inventory for the rest of the year, given the tenuous nature of the demand recovery. Nevertheless, our outlook for 2021 remains unchanged.

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Global overview The true cumulative number of people infected globally today is likely 130 million

Number of true and reported cases Estimated Cases (log scale), Current measures scenario* true cases 100,000,000 10,000,000 Infectious cases Reported cases 1,000,000 Aggregated Fatalities 100,000 10,000 **New Fatalities** 1,000 100 10

As of 30 June, 130 million people have likely been infected with Covid-19, according to our updated model based on reported fatalities.

There were 10.5 million reported cases as of 30 June, a number which our analysis suggests represents 8% of true cases. Reported cases are still growing at about 1.8% per day, despite a higher base of cases and lockdowns.

Registered fatalities globally were almost 515,000 as of 30 June. True fatalitities are probably higher, as the reporting of Covid-19 deaths in many places is insufficient outside of hospitals. The number of new fatalities per day has grown slightly again in the last three weeks from 4300 to 4800.

Many countries did loosen measures in May and early June, probably increasing the new growth in the number of cases and fatalities

Moreover, we see a record high figure of 9.5 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 limited evidence of slowing spread in Brazil, India and Bangladesh

Number of reported cases, key countries

Cases (log scale)



Just as in our report from June, we see limited evidence of a slow down in reported cases in Brazil, India and Bangladesh. Doubling time has been reduced slightly from 8-10 days to 12-30 days. India, Brazil and Russia have surpassed the largest European countries in terms of reported cases.

European and East Asian countries have all flattened out completely in reported cases, while the US is still growing.

The number of cases in Iran is still growing as well, and the country is currently experiencing a second wave.

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

> > RYSTAD ENERGY

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

Global overview Still many "new" countries growing fast, while lockdown measures are easened

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



While European countries, like Spain and Italy, are seeing growth in aggregated cases around 0.1% per day, the countries as shown here are still growing by about 3% or more per day.

Chile has grown by 3.3% per day in June and is finally seeing some flatting of the curve. Other South American countries are still growing around 4% per day (doubling time 18 days), including Colombia, Argentina, Bolivia, Honduras, Guatemala, French Guiana and Venezuela.

In the Middle East, Iraq has seen a second wave, like many other countries in the Middle East.

South Africa has had a steady growth of 5% per day in reported cases last month, while Ethiopia has recently reduced its growth rate significantly.

Clearly, the virus is not yet under control in any of these countries.





US focus States in the US have taken different approaches to reopening

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

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



States in the US have taken different approaches to implementing lockdown measures.

22 states loosened measures significantly at the end of May and have almost returned to normal activity in June.

13 states have maintained fairly strict lockdown measures. However, activity is still up from the -45% to -17% activity levels previously seen.

The remaining 15 states have chosen the middle path, significantly loosening in June, but not yet returning to normal.

In the following slides we will explore the consequences of these three different strategies, in terms of the number of infected people.





US focus States that have reopened now see a steep growth in the number of cases

Covid-19 cases per day for three groups of states

New reported Covid-19 cases per 100 000 population per day (14 days rolling average)



For states that have partly or fully reopened, cases are up from 6 to 13 per 100,000 people per day, over the last two weeks.

New York, New Jersey and 11 other primarily Atlantic states have maintained fairly strict lockdown measures. For these states, cases are down from 23 new to 5 per 100,000 people per day.

Could testing intensity explain these differences? See the next page.



US focus Testing intensity is not the reason for growth in cases

Covid-19 testing per day for three groups of states

New Covid-19 testing per 100 000 population per day (14 days rolling average)



For states that have partly or fully reopened (the "early reopeners"), testing is up from 140 to 160 per 100,000 people per day over the last two weeks, or about 15% up. Reported cases have more than doubled, implying that the share of tests that are positive has grown from about 5% to 9%. This is an indication that the underlying increase of cases is probably larger than what is visible as reported cases.

For other geographies, we see a reduced share of positive tests when testing is ramped up.

Thus, the increase in the number of cases is real, and growth is likely even larger than what is visible based on reported cases.



Source: Worldometer, Rystad Energy covid 19 model

US focus Fatalities no longer follow reported cases



The number of fatalities per day per 100,000 people peaked at 1.7 in mid April for 13 states primarily at the Atlantic coast.

The number of new deaths per new reported case per day was around 1:15* (7%).

This trend is completely broken over the last weeks for all the other states in US. Now it is around 1:60.

- Why?
- Milder virus
- Better treatment
- Younger people infected
- More intensive testing find 4x more cases

Next weeks fatality figures key to understand this

* Globally typically 5-10% of reported cases leads to fatalities. However, as proven in previous report, only about 5% - 15% of true cases are reported, thus, true Infection Fatality Rate (IFR) is around 0.7% in US, or 1:150 Source: Worldometer, Rystad Energy covid 19 model



US focus Overview of US states and lockdown status

State	Total population 2020	Reopening status	US region	State	Total population 2020	Reopening status	US region
Ohio	11 689	Early reopener	Midwest	California	39 512	Middle Way	West Coast
Georgia	10 617	Early reopener	Lower Atlantic	Texas	28 996	Middle Way	Gulf Coast
North Carolina	10 488	Early reopener	Lower Atlantic	Florida	21 478	Middle Way	Lower Atlantic
Tennessee	6 829	Early reopener	Midwest	Michigan	9 987	Middle Way	Midwest
Indiana	6 732	Early reopener	Midwest	Arizona	7 279	Middle Way	West Coast
Missouri	6 137	Early reopener	Midwest	Minnesota	5 640	Middle Way	Midwest
Wisconsin	5 822	Early reopener	Midwest	Louisiana	4 649	Middle Way	Gulf Coast
South Carolina	5 149	Early reopener	Lower Atlantic	lowa	3 155	Middle Way	Midwest
Alabama	4 903	Early reopener	Gulf Coast	Nevada	3 080	Middle Way	West Coast
Kentucky	4 468	Early reopener	Midwest	Nebraska	1 934	Middle Way	Midwest
Oregon	4 218	Early reopener	West Coast	New Hampshire	1 360	Middle Way	New England
Oklahoma	3 957	Early reopener	Midwest	Maine	1 344	Middle Way	New England
Utah	3 206	Early reopener	Rocky Mountain	Rhode Island	1 059	Middle Way	New England
Arkansas	3 018	Early reopener	Gulf Coast	Delaware	974	Middle Way	Central Atlantic
Mississippi	2 976	Early reopener	Gulf Coast	New York	19 454	Slow reopening	Central Atlantic
Kansas	2 913	Early reopener	Midwest	Pennsylvania	12 802	Slow reopening	Central Atlantic
West Virginia	1 792	Early reopener	Lower Atlantic	Illinois	12 672	Slow reopening	Midwest
Idaho	1 787	Early reopener	Rocky Mountain	New Jersey	8 882	Slow reopening	Central Atlantic
Montana	1 069	Early reopener	Rocky Mountain	Virginia	8 536	Slow reopening	Lower Atlantic
South Dakota	885	Early reopener	Midwest	Washington	7 615	Slow reopening	West Coast
North Dakota	762	Early reopener	Midwest	Massachusetts	6 893	Slow reopening	New England
Alaska	732	Early reopener	West Coast	Maryland	6 046	Slow reopening	Central Atlantic
Wyoming	579	Early reopener	Rocky Mountain	Colorado	5 759	Slow reopening	Rocky Mountain
				Connecticut	3 565	Slow reopening	New England
				New Mexico	2 097	Slow reopening	Gulf Coast
				Hawaii	1 416	Slow reopening	West Coast
				District Of Columbia	706	Slow reopening	Central Atlantic
				Vermont	624	Slow reopening	New England



Key insights Uncertain development ahead





Review of key insights Conclusion: Returning to our nine key insights

As of 25 May	As of 3 July
1. Herd immunity will not be achieved	Remains valid
2. The realistic strategy moving forward will be to "wait for a vaccine", which will likely take 8 to 24 months.	Remains valid
3. East Asia, Europe and North America have now successfully suppressed the spread of the virus. The epicenter has gone from north to the <i>south</i> , i.e. South America, South Asia and South Africa.	Partly valid, new US growth in selected states
4. Inadequate governmental responses have led to and will lead to unnecessary deaths.	Remains valid
5. New outbreaks are likely, but emerging technologies and adapted behavior will suppress them.	Remains largely valid, but time will tell if this is true in the US.
6. Domestic activity will soon return to 90% of pre-pandemic levels, but crowds must be avoided.	Remains valid
7. International travel will not fully normalize until a vaccination is deployed.	Remains valid
8. The global economy is down 6% versus the pre-pandemic growth trend.	Global economy is now likely down 8%
9. New technologies. and adapted behavior will have a structural impact on energy consumption	Remains valid



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Global overview

Two main recovery profiles: effective retainment and mitigation scenario



Jet fuel demand levels 2020-2021

V-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:

- Prolonged recovery due to the downside risk of a second wave in 2H20.
- Follows the previous year's trend for 2021 with slow recovery.

Key assumptions:

- Easing of lockdowns increases the risk of a second wave in 2H20; The majority of borders remain closed through 4Q20.
- Consumer confidence remains low, with domestic and leisure travel slowly recovering.
- International flights recover at a much slower pace.

Source: Rystad 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.

Second wave with L-shaped recovery:

- Demand hits bottom in April 2020, with a weaker recovery period where road fuel remains below 2019 levels through 2022.
- Second wave hits regions in period August-October 2020, but lockdown reactions are less strict than April reactions.

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





Global overview In July, global oil demand to recover by more than 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 89 million bpd for 2020 and 96-97 million bpd for 2021.
- Demand destruction is seen at 11-12 million bpd in 2020, and 5-6 million bpd in 2021, 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 2.5 million bpd for 2021.





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 92-93 million bpd for 2021.
- Demand impact vs. pre-virus estimates is seen at around 13-14 million bpd for 2020, and 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 9% for 2020, jet fuel down 44% and other fuels down 7% 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 89 million bpd for 2020 and 96-97 million bpd for 2021.
- The majority of demand destruction comes from road fuels, which bottomed out in early April at 16 million bpd lower than our pre-virus projection.
- We expect a slower recovery for the aviation sector with a destruction in jet fuel demand of 1.9 million bpd for 2021 versus pre-virus projections.



5,000 -5,000 -10,000 -15,000 -15,000 -20,000 -25,000 -25,000 -25,000 -25,000 -25,000 -25,000 -25,000 -25,000 -25,000 -25,000 -25,000 -25,000 -25,000 -25,000 -25,000 -25,000 -20,00

Demand impact vs. pre-virus estimates

Oil demand impact by fuel 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 92-93 million bpd for 2021.
- A slower recovery results in expected demand destruction from road fuels to be down 6.5 million bpd for 2020 and down 3.4 million bpd for 2021.
- The risk of a second wave and extended lockdowns will slow the recovery of jet fuel demand further to 3.5 million bpd in 2021.



Demand impact vs. pre-virus estimates



Source: Rystad Energy research and analysis

-30.000

Aviation and jet fuels Number of flights is set to recover as 1H20 ends with 8% recovery compared to last month

The number of daily flights under the effective retainment scenario is estimated to be 52,200 for 2020, slightly up from 45,700 in our June report.

The latest analysis of real-time data suggests slightly quicker recovery than anticipated, as more countries allow for domestic travel. The number of flights is down 45% y/y for 1H20 and down 67% relative to previous projections, as of 20 June.

As we enter peak season for air travel, Rystad Energy expects recovery will continue through the rest of 3Q20 as governments ease cross-border travel restrictions. We forecast a negative 54% y/y impact under the effective retainment scenario for 2H20.

Due to the downside risk of a second wave, the mitigation scenario has an extended bottom which averages at -67% y/y impact for 2H20.

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



Aviation and jet fuels Domestic flights are recovering, international flights still down more than 80% y/y globally

Year-on-year impact of domestic and international flights, 3 May to 22 June 2020

7-day moving average; Solid line is domestic flights; Dashed line is international flights



Sources: Flightradar24; OAG; Company reporting; ICF; IATA; ICAO; Rystad Energy research and analysis



Aviation and jet fuels Road traffic activity in June following positive trend from May

Rystad Energy Global City Traffic Database covers road traffic in 1,800+ cities and 150+ countries

Road traffic reduction* versus normal levels, 7 March to 28 June

7-day moving average, percent difference versus mean of traffic during same weekday in same month for 2019



*Population-weighted within each region and based on an hour-by-hour road traffic database with more than 1800 cities spread across 150+ countries. Source: TomTom Traffic Index; Google Maps; Baidu; Korea Expressway Corporation; Rystad Energy Global City Traffic Database



Aviation and jet fuels Growth in activity for US road traffic flattening towards the end of June

Road traffic reduction* versus normal levels for top 15 gasoline consuming states in the US, 18 March to 28 June

7-day moving average, percent difference versus mean of traffic during same weekday in same month for 2019



Source: TomTom Traffic Index; Google Maps; State-by-state Department of Transportation; MS2; Rystad Energy Global City Traffic Database



Regional focus Oil demand in the US still trending positively, but less so than at the start of June





Resilient road and flight traffic amid unrest and a surge in active cases provides hope for strong oil demand in the months ahead.

- 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 12% from 2019 levels, with large state-wise differences observed. June saw the strong positive trend from May continue, but growth has been weaker towards the end of June amid an increase in active cases.
- Despite the large impact on jet fuel demand, the US is still one of the largest consumers of jet fuel at 615,000 bpd in 2Q 2020 and 830,000 bpd in 3Q of 2020, mostly due to the resilient domestic market.
- For 2021, we expect a gradual recovery with year-on-year growth of 8-9%.











Regional focus Chinese oil demand moving in the right direction despite virus fears



Virus fears have sparked a small speedbump for Chinese oil demand recovery, but June activity will still be similar to 2019 activity.

- After bottoming out in February/March, Chinese oil demand made a strong comeback in April/May. In 2020, we expect Chinese oil demand will be 8-9% lower than our pre-virus projections, with total demand at 14.1 million bpd for 2020.
- Following a series of new cases in Beijing, rush-hour road traffic activity levels across China rose above normal, while non-rush hour activity has been below 2019 levels for most of 2020.
- The recovery of jet fuel demand has been paused by rising virus fears, but the domestic Chinese market is looking strong. For 2020, Rystad Energy expects jet fuel demand destruction in China of around 300,000 bpd.

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











Regional focus Oil demand in India risks flattening out for longer with rising active cases



Road and flight traffic recovery put on pause following virus scare after reopening, with India facing uncertain months ahead.

- After an impressive recovery in May, Indian oil ٠ demand looks set to continue its positive trend from -44% relative to pre-virus projections in April to -24% down in May, but recent setbacks have challenged this view.
- Road traffic is currently down 20% from ٠ normal levels, with the traffic drop being larger in megacities, such as New Delhi, which is currently experiencing a 30-35% drop in traffic.
- A month ago, the number of flights in India ٠ looked set to follow this strong positive trajectory at the end of May, but the increase in domestic flights has flattened out in June.





May

Jun



Source: Rystad Energy research and analysis



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

	MMbbl/d											Change year-on-year									
					20	20		2	2020 Q1						20	20		2020 Q1			
	2019	2020	2021	1Q	2Q	3Q	4Q	April	Мау	June		2020	2021	1Q	2Q	3Q	4Q	April	Мау	June	
Global	99.5	<mark>89.0</mark>	96.3	93.5	79.9	90.1	92.5	73.7	79.6	<mark>86.5</mark>		-10.6%	8.2%	-5.8%	-18.9%	-10.0%	-7.6%	-25.2%	-19.4%	- <mark>12.0%</mark>	
Road	47.5	43.1	46.7	43.6	37.7	45.1	46.0	31.9	38.2	43.1		-9.3%	8.4%	-6.8%	-20.6%	-6.2%	-3.6%	-32.8%	-19.6%	-9.4%	
Aviation	7.2	4.1	5.6	6.4	2.5	3.4	3.9	2.7	2.3	2.6		-43.9%	38.2%	-8.5%	-64.8%	-54.9%	-45.3%	-61.9%	-67.5%	-65.2%	
Other	44.8	41.9	44.0	43.5	39.7	41.6	42.6	39.1	39.1	40.8		-6.5%	5.0%	-4.3%	-9.4%	-6.6%	-6.0%	-11.0%	-11.3%	-5.8%	
United States	20.5	18.1	19.6	19.3	15.5	18.4	19.0	13.9	15.3	17.2		-11.7%	8.6%	-4.7%	-23.8%	-11.0%	-7.5%	-30.8%	-24.5%	- <mark>16.4%</mark>	
Road	11.2	10.1	10.8	10.4	8.6	10.7	10.7	6.9	8.7	10.2		-9.9%	7.0%	-5.5%	-24.6%	-5.8%	-3.6%	-39.0%	-23.0%	-12.1%	
Aviation	1.7	1.0	1.4	1.6	0.6	0.8	1.0	0.7	0.6	0.6		-42.8%	39.5%	-5.1%	-65.3%	-53.5%	-44.3%	-62.5%	-69.0%	-64.5%	
Other	7.5	6.9	7.4	7.4	6.3	6.8	7.3	6.4	6.0	6.4		-7.2%	6.4%	-3.5%	-12.2%	-8.8%	-4.7%	-9.8%	-15.6%	-11.3%	
China*	15.1	14.1	15.5	12.8	14.5	14.6	14.4	13.9	14.5	15.1		-6.5%	10.0%	-14.9%	-2.0%	-3.5%	-5.6%	-3.8%	-6.5%	<mark>4.5%</mark>	
Road	6.1	5.8	6.6	4.6	6.0	6.3	6.4	5.4	6.1	6.5		-4.4%	12.8%	-24.9%	0.8%	1.5%	5.3%	-7.2%	-2.8%	12.8%	
Aviation	0.9	0.7	0.9	0.9	0.5	0.7	0.7	0.5	0.5	0.6		-23.7%	27.5%	-0.3%	-39.6%	-28.0%	-25.4%	-38.5%	-39.6%	-40.6%	
Other	8.1	7.6	8.0	7.4	8.0	7.6	7.3	8.1	7.9	8.1		-6.2%	6.3%	-8.8%	0.1%	-4.3%	-11.4%	2.5%	-5.7%	4.1%	
Europe	14.2	12.5	13.4	13.3	10.9	12.8	13.1	9.7	10.8	12.1		-11.9%	6.6%	-5.2%	-23.4%	-11.9%	-7.0%	-32.9%	-22.7%	<mark>-14.5%</mark>	
Road	7.0	6.5	6.7	6.6	5.5	6.8	6.9	4.5	5.5	6.6		-8.3%	4.5%	-3.2%	-21.5%	-5.6%	-3.0%	-37.3%	-20.0%	-6.9%	
Aviation	1.5	0.7	1.1	1.2	0.4	0.6	0.7	0.4	0.3	0.4		-50.1%	50.4%	-10.0%	-75.1%	-62.0%	-47.2%	-74.0%	-76.5%	-74.8%	
Other	5.7	5.4	5.5	5.5	5.0	5.4	5.5	4.8	4.9	5.2		-6.5%	3.2%	-6.5%	-12.0%	-5.5%	-2.0%	-17.0%	-11.8%	-6.9%	

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



Summary data table for total liquids demand after Covid-19 "mitigation" case

	MMbbl/d											Change year-on-year									
					20	2020		2	2020 Q1						20	20			2020 Q1		
	2019	2020	2021	1Q	2Q	3Q	4Q	April	Мау	June		2020	2021	1Q	2Q	3Q	4Q	April	Мау	June	
Global	99.5	<mark>86.5</mark>	<mark>92.3</mark>	93.5	80.2	85.3	87.0	73.4	79.8	87.5		-13.1%	6.7%	-5.8%	-18.6%	-14.8%	-13.1%	-25.5%	-19.2%	-11.0%	
Road	47.5	41.6	45.1	43.6	38.4	41.8	42.7	31.9	38.8	44.4		-12.4%	8.3%	-6.8%	-19.3%	-13.1%	-10.5%	-32.8%	-18.4%	-6.6%	
Aviation	7.2	3.5	4.0	6.4	2.5	2.7	2.6	2.7	2.3	2.6		-51.1%	14.5%	-8.5%	-65.1%	-64.9%	-63.7%	-62.2%	-68.1%	-65.1%	
Other	44.8	41.4	43.2	43.5	39.3	40.9	41.7	38.8	38.7	40.5		-7.6%	4.4%	-4.3%	-10.1%	-8.2%	-8.0%	-11.5%	-12.1%	-6.5%	
United States	20.5	17.6	18.7	19.3	15.7	17.6	17.8	13.9	15.3	17.8		-13.9%	5.9%	-4.7%	-22.8%	-14.9%	-13.2%	-30.8%	-24.5%	-13.4%	
Road	11.2	9.8	10.4	10.4	8.8	10.1	10.0	6.9	8.7	10.7		-12.7%	6.1%	-5.5%	-23.2%	-11.3%	-10.4%	-39.0%	-23.0%	-8.1%	
Aviation	1.7	0.8	0.9	1.6	0.6	0.6	0.6	0.7	0.6	0.6		-51.6%	10.1%	-5.1%	-65.3%	-68.3%	-64.3%	-62.5%	-69.0%	-64.5%	
Other	7.5	7.0	7.3	7.4	6.3	6.9	7.2	6.4	6.0	6.5		-7.0%	5.1%	-3.5%	-11.5%	-7.6%	-5.8%	-9.8%	-15.6%	-9.2%	
China*	15.1	13.5	14.8	12.8	14.3	13.5	13.4	13.7	14.4	14.9		-10.3%	9.5%	-14.9%	-3.3%	-10.7%	-12.3%	-5.5%	-7.2%	3.0%	
Road	6.1	5.5	6.2	4.6	6.1	5.7	5.8	5.4	6.3	6.5		-8.9%	12.1%	-24.9%	2.2%	-8.3%	-4.2%	-7.2%	-0.1%	14.0%	
Aviation	0.9	0.6	0.6	0.9	0.5	0.4	0.4	0.5	0.5	0.6		-38.8%	14.6%	-0.3%	-39.6%	-55.7%	-56.2%	-40.4%	-39.6%	-38.8%	
Other	8.1	7.4	7.9	7.4	7.7	7.4	7.2	7.8	7.6	7.8		-8.2%	7.2%	-8.8%	-3.3%	-6.9%	-13.4%	-0.6%	-9.0%	0.0%	
Europe	14.2	12.2	12.7	13.3	10.9	12.2	12.2	9.7	10.8	12.3		-14.5%	4.2%	-5.2%	-23.1%	-16.2%	-13.4%	-32.9%	-22.8%	-13.4%	
Road	7.0	6.2	6.5	6.6	5.6	6.4	6.4	4.5	5.6	6.7		-11.3%	3.7%	-3.2%	-20.5%	-11.6%	-9.9%	-37.3%	-19.3%	-4.6%	
Aviation	1.5	0.6	0.8	1.2	0.4	0.5	0.4	0.4	0.3	0.4		-56.4%	25.1%	-10.0%	-75.5%	-66.7%	-67.9%	-74.1%	-77.2%	-75.2%	
Other	5.7	5.3	5.4	5.5	5.0	5.3	5.4	4.8	4.9	5.2		-7.7%	2.2%	-6.5%	-12.3%	-7.6%	-4.4%	-17.0%	-12.7%	-7.0%	

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



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Global market outlook Impressive 88% compliance through July, but the 'cheaters' could compensate later

OPEC+ target cuts and forecast cut for May-July 2020 vs. reference production*



*Reference production is mostly set to October 2018 for most countries, with certain exceptions, such as for KSA, Russia and Nigeria. ** Saudi Arabia here includes the entire volumes of Abu Sa'fah shared 50/50 with Bahrain, hence KSA's target cuts are also adjusted for Bahrain's share of cut accounted for by Abu Sa'fah and are higher than Russia's cuts compared to the OPEC table. Source: Rystad Energy research and analysis, OilMarketCube, OPEC



Global market outlook Horizontal rig count by main hydrocarbon type* Number of rigs



*Oil – Permian, Bakken, Eagle Ford, DJ Basin, SCOOP & STACK, other horizontal drilling targeting oil Gas – Appalachia, Haynesville, other horizontal drilling targeting gas Source: Baker Hughes June 19, 2020; Rystad Energy research and analysis



Global market outlook Activity to return to 30% below 2019-levels in 2021 at ~\$40-45 WTI

US horizontal oil completion outlook by month Number of wells



Source: Rystad Energy ShaleWellCube

Global market outlook

US oil production down -820,000 bpd 2020 y/y, -400,000 bpd 2021 Thousand barrels per day



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



Global market outlook Supply-demand currently balancing in the bottom, no significant draws of inventory in sight

Rystad Energy's latest liquids supply and demand balance for all liquids (crude, condensate, NGLs, refinery gains, other liquids) show an ever-tightening oil market throughout 2020, with a possible perfect balance possible in Dec-20.

We believe that the worst liquids supplydemand balance in history peaked in April. Builds more than halved to 10.4 million bpd in May and will significantly lighten to 0.6 million bpd in June and 0.3 million bpd in July.

Come August, some of the more than 15 million bpd of crude and condensate supply that was removed from the market since Mar-20 will start to trickle back (both from the re-activation of US wells and OPEC+ deal laggards)

More action from OPEC+ means an equilibrium will be reached sooner; a second wave of Covid-19 could again cause great imbalance. In our base case scenario, we do not see 2019 demand levels (of about 100 million bpd of liquids) coming back until mid-2022. **Global liquids supply and demand balances, monthly** Million barrels per day







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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