

Researched by Industrial Info Resources (Sugar Land, Texas)--IIR's weekly Global Refining Report gives you the latest inside intelligence on outages, derates, shutdowns, closures, delays and more.

.. & now there is an interactive, dynamic <u>Global Refining Capacity Dashboard</u> available to further power your refinery capacity research ..

and IIR has recently formalized an Alliance with Refinery Calc who will play an integral role in producing <u>IIR's North America Refinery MarketIntel Platform</u> -- the first of its kind in the industry here in July but IIR plans to focus on the APAC Region for crude slates, crude runs, product yields, margins, utilization, etc. in August.

-- just ask iirteam@iirenergy.com about a trial..

Tomorrow's news today...

Market Commentary:

Divisions. Thanks to IIR Refinery Research we can clearly see below in this report -- and now brought to life in the newly released IIR Dashboard -- that Asia & Europe Refining is mostly healthy by referencing the IIR Refinery Index (Operating %)



Where-as in the Americas it is not

Global Refinery Index Table as of - July 10, 2020

World Reg	cap off	non-COVID-19 related cap off	Available Capacity	COVID-19 Related Cut Rate (%)	non-COVID-19 Related Cut Rate (%)	Operating capacity (%)
Africa	445,000	627,720	2,013,480	1796	24%	76%
Asia	1,998,160	2,406,000	40,720,454	596	696	93%
Europe	942,535	1,306,829	18,910,129	496	6%	89%
Middle America	230,340	13,600	232,100	48%	396	49%
North America	4,886,030	1,161,500	15,455,650	23%	5%	72%
Oceania	140,000	135,000	344,750	23%	22%	56%
South America	937,315	723,675	3,515,460	18%	14%	68%
Grand Total	9,579,380	6,374,324	81,192,023	10%	7%	85%

• granted US is healthier than Canada which is healthier by far than Mexico

• and that there are countries in South America healthier than others



And it is not healthier in the Americas because of the continued COVID outbreaks which are affecting reopenings. As, <u>reported by OilPrice</u> the IEA (..notes..) that the recent rise in COVID-19 cases and the reinstating of partial lockdowns in some countries continue to weigh with uncertainty on the world's global oil demand in 2020.

This year, the world is expected to consume an average of 92.1 million bpd of oil, compared to the typical demand of 100 million bpd, the <u>IEA said in its Monthly Oil Market report</u>. (Note: This 7.9 mmbd is more optimistic than last month's 8.1 mmbd forecasted drop.)

Therefore, divisions appear to now exist in the world. How will the Americas recover from these recent COVID outbreaks & what will it mean for their economies? And what will it mean in the global theater as Asia & Europe appear to have recovered and are moving forward?

Within this Global Refining Report, IIR hopes to shed some light on what is transpiring from a Refinery Operations perspective as the Global Refining Index (working with ADUs) illustrates what is happening to crude operationally available capacity and how refineries are de-rating and operating

overall in these times. The Global Refinery Maps depict the COVID-19 Impact as well as the non-COVID-19 outages. Also, you will find both a Capacity Offline table to quickly display weekly what the available operating capacity by region is, not to mention Area Charts, which visualize COVID-19 Impact and non-COVID-19 capacity offline in Asia, Europe and North America.

Petroleum Refining Highlights

<u>July 10, 2020</u> WRB has restarted its 42,000 b/d CCU1 at reduced rates at its 355,000 b/d Wood River refinery located in Roxana, Illinois. Previously the CCU1 unit was expected to restart April 1,2020 after its planned maintenance but shut down of the unit was extended due to COVID-19.

<u>July 10, 2020</u> IIR has confirmed that **Phillips 66** has rescheduled a Planned Maintenance Turnaround of the 140,000 bbl/d CDU (CTU1) Unit at its 245,000 b/d **Humber Refinery, United Kingdom**. The Maintenance is now expected to take place in May 2021. Phillips 66 continues with a partial shutdown of the 65,000 b/d FCCU, 32,000 b/d Delayed Coker, 30,000 b/d Reformer and further secondary units for mandatory safety inspections and the units are expected to be back online tentatively end of July, 2020.

<u>July 10, 2020</u> IIR has confirmed that **Turkish Petroleum Refineries Corporation** has rescheduled a planned maintenance turnaround at its 226,300 b/d **Izmir refinery, Turkey**. The turnaround of the 22,640 b/d CCR unit, 9,000 b/d Isomerization and 15,000 b/d Diesel/Kerosene Hydroprocessing (9900) units was scheduled to kick off in October 2020, but has been rescheduled to kick off in October 2021.



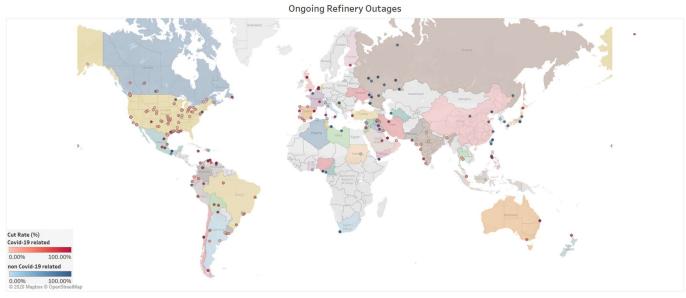
<u>July 10, 2020</u> **OQ**, on June 30, 2020, has restarted the 75,000 b/d RFCCU and 28,000 b/d LPG Merox 1 at its 198,000 b/d **Sohar Refinery, Oman** and operate at 20 percent and 30 percent derate respectively due to COVID-19 Pandemic. Previously, the units were under planned turnaround since May 28, 2020. Additionally, 116,000 b/d CDU 1 and 82,000 b/d CDU 2 are operating at 85 percent and 66,423 b/d HCU at 70 percent since July 1, 2020, while 26,500 b/d Gasoline HDS and 17,200 b/d DHDS are at 50 percent since June 29, 2020. Separately, 12,300 b/d Kero Merox 1 and 14,000 b/d Alkylation are operating at 70 percent and 90 percent since June 23, 2020 and July 1, 2020, respectively, while 40,000 b/d DCU is operating at 50 percent since May 28, 2020. Also, 13,030 b/d Isom was forced to shut on July 1, 2020. All units are expected to resume normal operations by July 30, 2020 (Previously reported July 6, 2020).

<u>July 10, 2020</u> IIR has confirmed that **Kuibyshev Refinery OJSC** has completed a planned plant wide maintenance turnaround of its 145,900 b/d **Kuibyshev Refinery, Russia**. The refinery has been shut down in Mid-April, 2020, and completion was on July 1, 2020. All units have been fully restarted apart from the 5,700 b/d Reformer LG-35/11-300 (Nr.2), which is expected to restart on July 31, 2020, and the 7,200 b/d Diesel Hydrotreater L-24-6/2 (First Stream), which is expected to restart on July 16, 2020.

<u>July 10, 2020</u> PetroChina Jinxi Petrochemical Company, on July 9, 2020, began an 80-day planned plant-wide turnaround at its 130,000 b/d Huludao Refinery, China. Major units including a 70,000 b/d Crude Unit 2, 20,000 b/d RFCCU 2, and 24,000 b/d Gasoline Hydrotreater are expected complete repairs and restart on September 6, 2020, while the 60,000 b/d Crude Unit 1, 36,000 b/d RFCCU 1, 30,000 b/d Delayed Coker, and 20,000 b/d Diesel Hydrocracking Unit are expected to become online upon completion of the Crude Unit 1 upgrading project on September 26, 2020.



Map of Global Refineries impacted by COVID-19/non-COVID -- OnGoing Offline Events



Global Refining Index

Industrial Info's Global Refining Index (GRI) illustrates how much Refinery Capacity is offline versus Normal Operating Capacity. Illustrating with an Operating % at a World Region - Market Region level how healthy Refineries are.. (see graphics below).

Vorld Reg	Market Reg	U Capacity (bbl/d)	Covid Related cap off (bbl/d)	non-COVID-19 related cap off (bbl/d)	Available capacity (bbl/d)	COVID-19 Related Cut Rate (%)	non-COVID-19 Related Cut Rate (%)	Operating capacity (%)
frica	Total	2,641,200	0	627,720	2,013,480	0%	24%	76%
sia	Central Asia	2,676,500	125,000	60,000	2,491,500	5%	2%	93%
	East Asia	23,033,700	150,000	1,216,000	21,667,700	196	5%	94%
	South Asia	5,549,900	454,140	14,400	5,081,360	8%	0%	92%
	Southeast Asia	4,860,300	128,000	224,000	4,508,300	3%	5%	93%
	Western Asia	7,497,214	287,020	238,600	6,971,594	4%	3%	93%
	Total	43,617,614	1,144,160	1,753,000	40,720,454	3%	4%	93%
urope	Eastern Europe	2,248,249	0	160,000	2,088,249	0%	7%	93%
	Northern Europe	2,767,400	200,000	0	2,567,400	796	096	93%
	Russia	6,247,486	0	667,949	5,579,537	0%	11%	89%
	Southern Europe	4,295,858	384,535	53,280	3,858,043	9%	196	90%
	Western Europe	5,580,500	358,000	405,600	4,816,900	6%	796	86%
	Total	21,139,493	942,535	1,286,829	18,910,129	4%	6%	89%
liddle	Caribbean	457,040	230,340	13,600	213,100	50%	3%	47%
America	Central America	19,000	0	0	19,000	0%	0%	100%
	Total	476,040	230,340	13,600	232,100	48%	3%	49%
lorth	Atlantic Canada	430,000	190,000	0	240,000	44%	0%	56%
merica	Great Lakes	2,374,000	624,600	45,000	1,704,400	26%	2%	72%
	Mexico	1,615,000	340,400	576,000	698,600	21%	36%	43%
	Mid Atlantic	23,000	6,900	0	16,100	30%	0%	70%
	Midwest	928,000	177,000	0	751,000	19%	0%	81%
	Northeast	883.500	185.000	230.000	468,500	21%	26%	53%
	Ontario	392,000	53,350	130,500	208,150	14%	33%	53%
	Quebec	395,000	79,000	0	316,000	20%	0%	80%
	Rocky Mountains	811,900	167,080	0	644,820	21%	0%	79%
	Southeast	700,100	188,850	0	511,250	27%	0%	73%
	Southwest	9,192,300	1,865,135	80,000	7,247,165	20%	196	79%
	West Coast	2,898,300	874,300	0	2,024,000	30%	0%	70%
	Western Canada	848,080	122,415	100,000	625,665	14%	12%	74%
	Total	21,491,180	4,874,030	1,161,500	15,455,650	23%	5%	72%
Oceania	Oceania	619,750	140,000	135,000	344,750	23%	22%	56%
	Total	619,750	140,000	135,000	344,750	23%	22%	56%
outh	South America	5,176,450	937,315	723,675	3,515,460	18%	14%	68%
merica	Total	5,176,450	937,315	723,675	3,515,460	18%	14%	68%







Refining Available Capacity

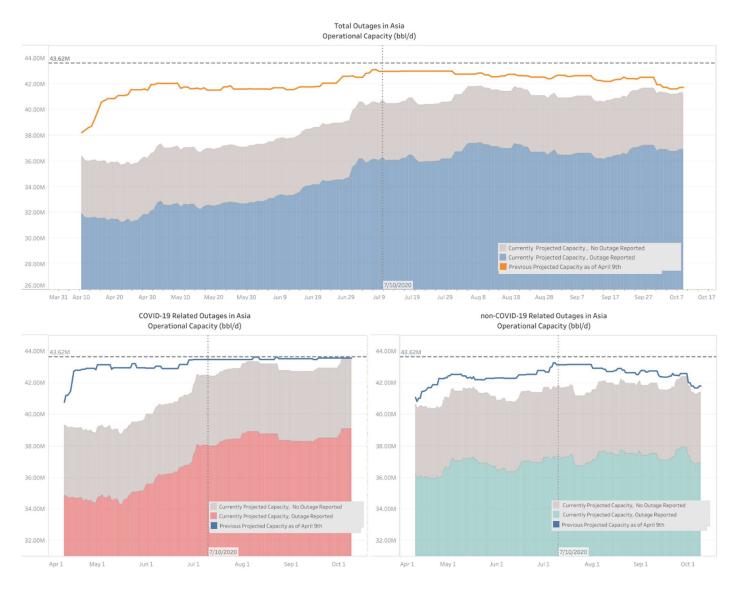
Operational Capacity (BBL/d) Currently vs. Previously Projected Capacity

		Currently vs. Previously Projected Capacity																										
		05-Apr-20	12-Apr-20	19-Apr-20	26-Apr-20	03-May-20	10-May-20	17-May-20	24-May-20	31-May-20	07-Jun-20	14-Jun-20	21-Jun-20	28-Jun-20	05-Jul-20	12-Jul-20	19-Jul-20	26-Jul-20	02-Aug-20	09-Aug-20	16-Aug-20	23-Aug-20	30-Aug-20	06-Sep-20	13-Sep-20	20-Sep-20	27-Sep-20	04-0ct-20
Africa	Daily Available Cap	1,778,170	1,612,936	1,602,873	1,504,301	1,504,301	1,649,730	1,883,730	1,978,730	1,984,087	1,984,980	1,978,409	2,013,480	2,013,480	2,013,480	2,022,289	2,096,471	2,113,671	2,138,100	2,138,100	2,138,100	2,138,100	2,145,243	2,100,200	1,925,629	1,915,771	1,943,629	1,952,
	Prev Available Daily Cap (As of April 9th)	1,858,395	1,928,037	2,053,000	2,175,857	2.153,000	2,255,857	2,318,714	2,353,000	2,344,257	2,342,800	2,342,800	2,342,800	2,348,629	2,353,000	2,399,571	2,362,200	2,347,914	2,262,200	2,262,200	2,262,200	2,262,200	2,269,343	2,252,200	2,252,200	2,252,200	2,273,629	2,282,3
	Capacity Delta	-80,225	-315,101	-450,127	-671,556	-648,699	-606,127	-434,984	-374,270	-360,170	-357,820	-364,391	-329,320	-335,149	-339,520	-337,283	-265,729	-234,243	-124,100	-124,100	-124,100	-124,100	-124,100	-152,000	-326,571	-336,429	-330,000	-330,0
	Operating Capacity (%)	67%	61%	61%	57%	57%	62%	71%	75%	75%	75%	75%	76%	76%	76%	77%	79%	80%	81%	81%	81%	81%	81%	80%	73%	73%	74%	7
Asia	Daily Available Cap	36,220,904	35,983,328	35,827,313	36,217,309	37,111,204	36,927,389	36,995,559	37,161,749	37,319,660	37,721,925	38,345,302	38,869,522	39,787,133	40,501,163	40,595,040	40,491,783	40,640,648	41,583,828	41,614,400	41,566,114	41,135,257	41,000,471	40,993,043	40,719,328	41,261,400	41,516,385	41,261.4
	Prev Available Daily Cap (As of April 9th)	38,305,539	39,819,425	41,110,264	41,670,907	42,049,157	41,675,728	41,587,443	41,667,443	41,609,928	41,641,928	41,765,357	42,066,071	42,572,928	42,981,785	42,993,957	43,005,614	42,971,614	42,779,757	42,656,614	42,690,043	42,533,185	42,598,043	42,611,043	42,263,900	42,436,828	42,247,671	41,676,
	Capacity Delta	-2,084,635	-3,836,096	-5,282,951	-5,453,598	-4,937,953	-4,748,339	-4,591,884	-4,505,694	-4,290,268	-3,920,004	-3,420,055	-3,196,549	-2,785,795	-2,480,623	-2,398,917	-2,513,831	-2,330,966	-1,195,929	-1,042,214	-1,123,929	-1,397,929	-1,597,571	-1,618,000	-1,544,571	-1,175,429	-731,286	-415,0
	Operating Capacity (%)	83%	82%	82%	03%	85%	85%	85%	85%	06%	06%	88%	89%	91%	93%	93%	93%	93%	95%	95%	95%	94%	94%	94%	93%	95%	95%	9
Europe	Daily Available Cap	17,609,927	17,499,641	17,183,058	17,144,173	16.861,192	16,595,954	16,701,423	17,223,733	17,418,248	17,542,512	17,779,750	18.042,685	18,260,300	18,770,872	19,082,823	19,651,557	19,666,125	20.194,622	20,215,714	20,045,741	19,938,712	19,665,536	19,375,116	19,507,590	19,473,693	19,506,279	19,220,3
	Prev Available Daily Cap (As of April 9th)	18,597,387	18,875,999	18,920,901	19,234,505	19,404,847	19,187,525	19,166,795	19,382,984	19,763,170	19,882,727	20,452,579	20,510.607	20,596,607	20,797,464	20,651,893	20.589,035	20,547,007	20,695,922	20,694,728	20,491,898	20,386,612	20.025.822	19,709,116	19,738,733	19,666,550	19,790,850	19,598,0
	Capacity Delta	-987,460	-1,376,357	-1,737,843	-2,090,331	-2,543,655	-2,591,571	-2,465,372	-2,159,251	-2,344,922	-2,340,215	-2,672,828	-2,467,921	-2,336,307	-2,026,593	-1,569,070	-937,479	-880,882	-501,300	-479,014	-446,157	-447,900	-360,286	-334,000	-231,143	-192,857	-284,571	-377,6
	Operating Capacity (%)	83%	83%	81%	81%	80%	79%	79%	81%	82%	83%	84%	85%	86%	89%	90%	93%	93%	96%	96%	95%	94%	93%	92%	92%	92%	92%	9
Middle	Daily Available Cap	205,600	204,100	184,614	181,700	181,700	181,700	181,700	181,700	184,700	181,700	172,129	182,529	197,100	227,100	232,100	232,100	234,043	245,700	245,700	245,700	245,700	232,129	251,037	371,759	364,384	400,371	453,0
	Prev Available Daily Cap (As of April 9th)	205,600	215,929	229,700	267,191	273,440	273,440	273,440	273,440	273,440	275,726	259,440	254,440	361,069	471,040	476,040	476,040	476,040	476,040	476,040	476,040	476,040	462,469	457,040	457,040	459,754	473,040	469,0
	Capacity Delta	0	-11,829	-45,085	-85,491	-91,740	-91,740	-91,740	-91,740	-88,740	-94,026	-87,311	-71,911	-163,969	-243,940	-243,940	-243,940	-241,997	-230,340	-230,340	-230,340	-230,340	-230,340	-205,003	-85,281	-95,370	-72,669	-16,0
	Operating Capacity (%)	43%	43%	39%	38%	38%	38%	38%	38%	39%	38%	36%	38%	41%	48%	49%	49%	49%	52%	52%	\$2%	52%	49%	53%	78%	77%	84%	9
North	Daily Available Cap	15,287,935	15,236,636	15,090,482	15,038,656	15,093,714	15,318,320	15,306,383	15,313,806	15,545,114	15,546,214	15,612,400	15,650,143	15,717,900	15,588,793	16,187,893	17,223,293	17,662,606	19,635,806	19,066,823	20,280,680	20,405,134	20,881,665	20,791,180	20,695,680	20,735,680	20,747,323	20,587,2
Hinghia	Prev Available Daily Cap (As of April 9th)	16.292.335	16,389,464	16,668,806	17,704,948	20,715,287	20,816,616	20,901,359	21,091,859	21,113,787	21,227,716	21,293,501	21,304,930	21,367,787	21,369,216	21,336,537	21,346,180	21,346,180	21,346,180	21,261,751	21,050,680	21.122,109	21,100,180	20,861,180	20,765,680	20,805,680	20,870,894	20,799.0
	Capacity Delta	-1,004,400	-1,152,827	-1,578,324	-2,666,292	-5,621,573	-5,498,296	-5,594,976	-5,778,053	-5,568,673	-5,681,501	-5,681,101	-5.654,787	-5,649,887	-5,780,423	-5,148,644	-4,122,887	-3,683,574	-1.710,374	-1.394,929	-770,000	-716,975	-218,515	-70,000	-70,000	-70,000	-123.571	-211,7
	Operating Capacity (%)	71%	71%	70%	70%	70%	71%	71%	71%	72%	72%	73%	73%	73%	73%	75%	80%	82%	91%	92%	94%	95%	97%	97%	96%	96%	97%	9
Oceania	Daily Available Cap	552,250	552,250	552,250	543,679	490,821	412,250	412,250	412.250	412,250	412,250	412,250	412,250	373,679	344,750	344,750	344,750	344,750	344,750	344,750	344,750	344,750	535,464	589,750	589,750	\$89,750	589.750	589,7
	Prev Available Daily Cap (As of April 9th)	552,250	552,250	555,107	572,250	540,821	462,250	462,250	442,250	442,250	442,250	442,250	461,536	509,750	509,750	509,750	509,750	509,750	509,750	509,750	509,750	509,750	604,036	619,750	619,750	619,750	619,750	619,7
	Capacity Delta	0	0	-2,857	-28,571	-50,000	-50,000	-50,000	-30,000	-30,000	-30,000	-30,000	-49,286	-136,071	-165,000	-165,000	-165,000	-165,000	-165,000	-165,000	-165.000	-165,000	-68,571	-30,000	-30,000	-30,000	-30,000	-30,0
	Operating Capacity (%)	89%	89%	89%	88%	79%	67%	67%	67%	67%	67%	67%	67%	60%	56%	56%	50%	56%	56%	56%	58%	56%	86%	95%	95%	95%	95%	9
South	Daily Available Cap	2,435,083	2,646,229	2,609,465	2,515,169	2,547,205	2,552,179	2,565,561	2,679,059	2,699,964	2,905,841	2,939,291	2,964,135	3,190,006	3,465,789	3,688,347	3,844,367	4,000,239	4,592,807	4,618,235	4,587,950	4,587,950	4,448,521	4,373,950	4,419,379	4,426,950	4,433,807	4,579,6
AnneriCă	Prev Available Daily Cap (As of April 9th)	3,197,588	3,617,373	3,942,896	4,172,257	4,517,657	4,473,307	4,730,450	4,730,450	4,833,479	4,889,221	4,910.650	4,910,650	5,022,079	5,110,621	5,111,450	5,111,450	5,111,450	5,111,450	5,068,736	5,058,450	5,058,450	4,912,021	4,853,450	4,898,879	4,906,450	4,906,450	5,043.
	Capacity Delta	-762,505	-971,144	-1,333,430	-1,657,088	-1,970,452	-1,921,129	-2,164,889	-2,051,391	-2,133,515	-1,983,381	-1,971,359	-1,946,515	-1,832,072	-1,644,833	-1,423,103	-1,267,083	-1,111,211	-518,643	-470,500	-470,500	-470,500	-463,500	-479,500	-479,500	-479,500	-472,643	-463,9
	Operating Capacity (%)	47%	51%	50%	49%	49%	49%	50%	52%	52%	56%	57%	57%	62%	67%	71%	74%	77%	89%	89%	89%	89%	86%	84%	85%	86%	86%	

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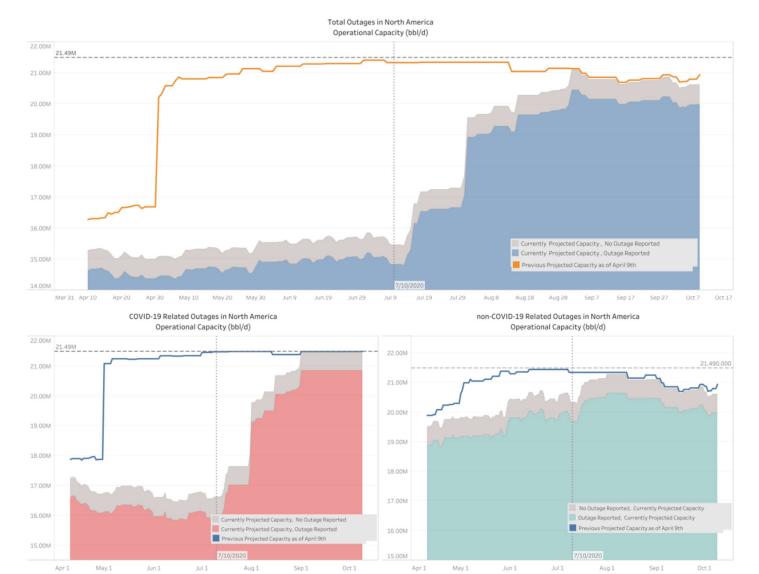


Global Regional Available Operational Capacity. COVID-19 Impact & non-COVID related outages

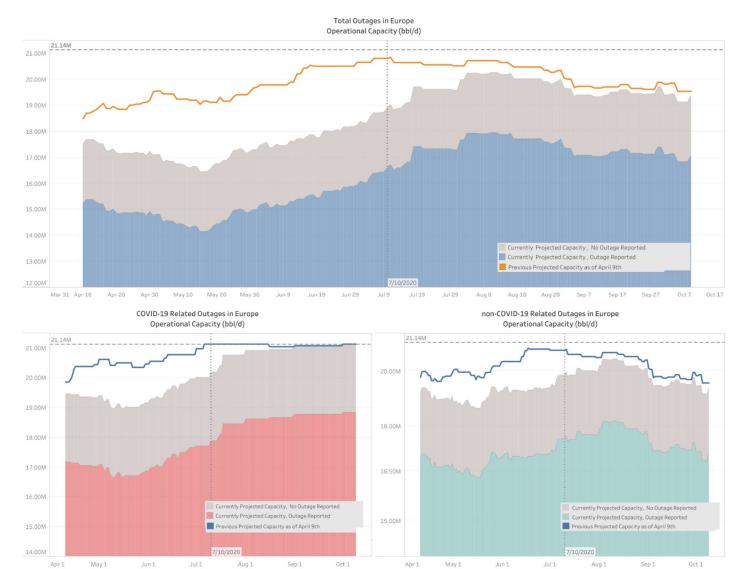


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Map of Global Refineries impacted by COVID-19/non-COVID - Future(Delayed) Offline Events

