Oil & Gas in the Perfect Storm: Part 2 – Locking Both the World and Oil Down

April 2020

[Read our first "perfect storm" article to see how oil prices evolve going forward.](#)

A third of the world's population is today living in countries that have enforced moderate to severe lockdowns on virtually all human activity to mitigate the spread of COVID-19. In all, 27 countries have imposed lockdowns with nearly all of them opting for severe measures. Only three countries – Israel, Ireland, and the Czech Republic – have chosen to impose moderate lockdowns. In addition, there are a handful of countries where lockdowns have not been mandated but citizens in caution have voluntarily limited activity.

How much oil demand is impacted?

ADI estimates countries in lockdown consume two-thirds of global oil demand.

These lockdowns are collectively impacting oil demand in an unprecedented fashion. ADI estimates that the 27 countries under moderate to severe lockdown consume ~61 million barrels of oil daily. Including other countries such as Brazil where gangs are enforcing lockdowns, almost two-thirds of global oil demand – ~66 million bpd – is under threat of significant destruction from COVID-19 (see Exhibit 1).

ADI has a new study about navigating oil & gas through this "perfect storm". [Learn more >>](#)

Exhibit 1. Global oil demand impacted by COVID-19, million bpd.

What can we learn from China's lockdown?

These lockdowns are uncharted waters. China's lockdowns cut ~55% of road transportation and ~33% of truck traffic in February 2020.

These lockdowns are uncharted waters with little guidance on the extent of oil demand destruction. China is the only example we have of a region that has gone through this crisis before. Transportation data released by the Chinese Ministry of Transport suggests that lockdowns cut ~55% of road transportation and ~33% of truck traffic in February 2020.

How much oil demand will coronavirus destroy?

Let us assume that these reductions in road and freight traffic hold across the ~30 countries with lockdowns. You can also believe that 60% of oil use in transportation is via gasoline, and the rest diesel and jet fuel. Given these assumptions, ADI estimates a collective loss in oil demand of ~23%, which when applied to the ~66 million bpd of demand in the locked down countries translates to ~15 million bpd of demand destruction in 2Q 2020.

ADI estimates a collective loss in oil demand of ~15 million in 2Q 2020.

Our estimates compare well with other estimates as shown in Exhibit 2. But there are significant uncertainties, e.g., will COVID-19 impact all countries the same way as it did in China? Assumptions around the share of fuels in oil demand may also vary. Finally, we don't address demand elasticity at depressed prices, potential for a quicker rebound or an extended lockdown, and impact of government stimuli.

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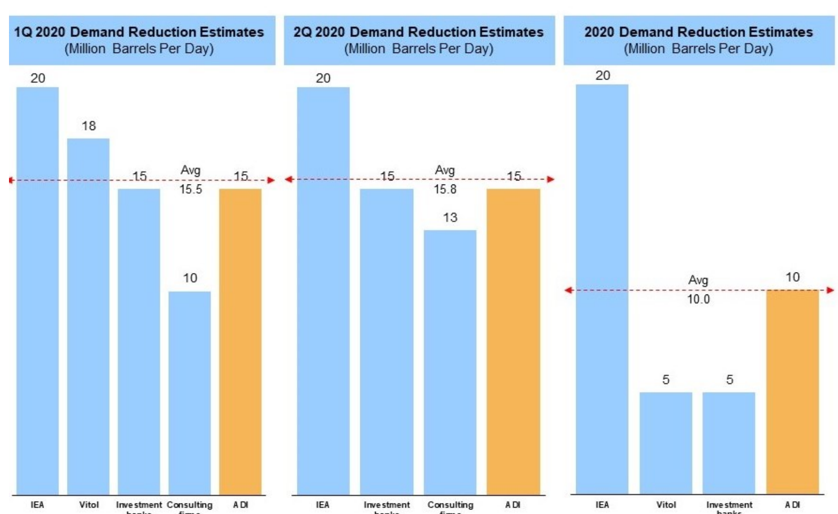
[Learn more >>]

Exhibit 2. Crude oil demand destruction estimates.



Capex cuts will intensify but marginal assets, e.g., stripper wells are shutting in.

The industry will be caught up in a stampede for storage.

Refiners will cut runs, try to shift yield to diesel, and trigger force majeures.

Operators will advance turnaround and other maintenance activities.

So what?

Demand destruction of this order is unprecedented and will trigger significant implications.

1. Oil and gas producers will intensify capital cuts to cut growth. Marginal assets such as stripper wells will be distressed, and, in fact, some have already started shutting in.

2. The industry will be caught up in a stampede for oil storage, which is underway with limited access to it especially for smaller producers.

3. Refiners will likely intensify cuts to crude runs and start ramping down utilization further as fuel demand evaporates.

4. Lack of fuel demand will trigger force majeures by oil refiners. Some refiners are invoking force majeures on crude oil purchase contracts for April.

5. Significant changes in the product mix should be expected as refiners will try to shift yield toward diesel where demand destruction is expected to be lower than that for gasoline.

6. As operators start cutting runs and utilization rates, they are likely to advance turnaround and other maintenance activities although this will vary based on asset type, location, and historical maintenance patterns.

7. Petrochemical producers will start evaluating their feedstock mix as refined product prices decline dramatically impacting relative competitiveness of naphtha and ethane for producing olefins.

Oil & Gas in the Perfect Storm: Navigating COVID-19 and the Price Crash

Multi-Client Study Prospectus

April 2020

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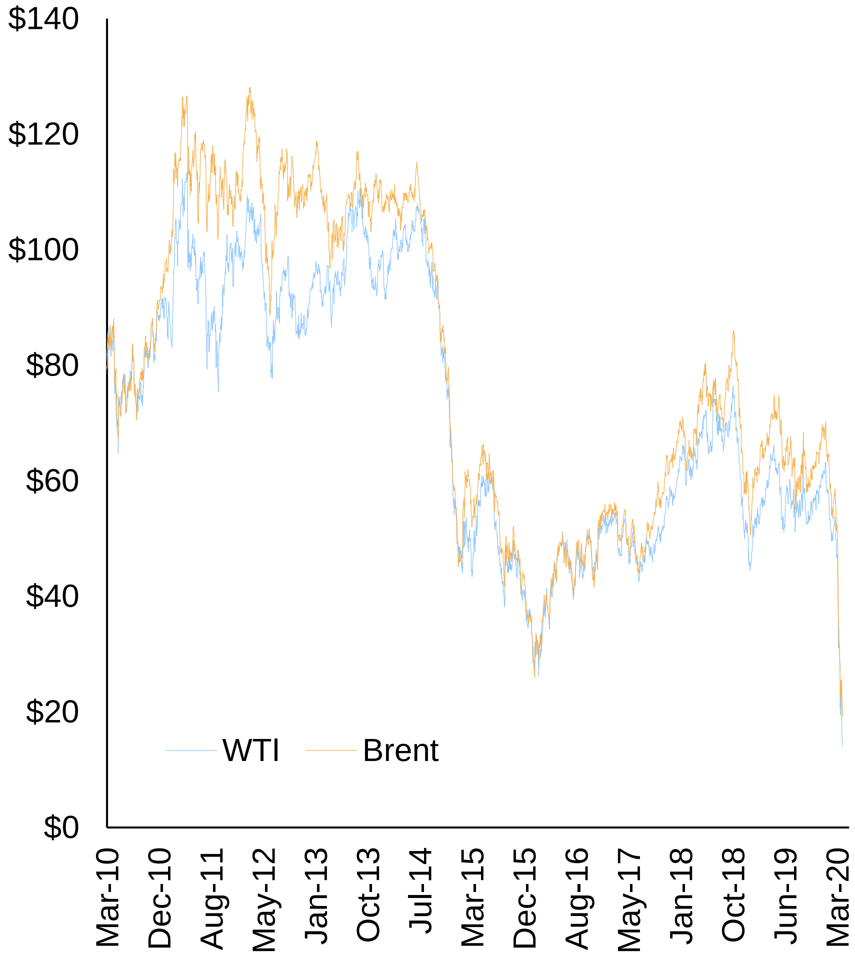
Oil and gas after the price crash is in uncharted waters and the entire industry is grappling with several key questions

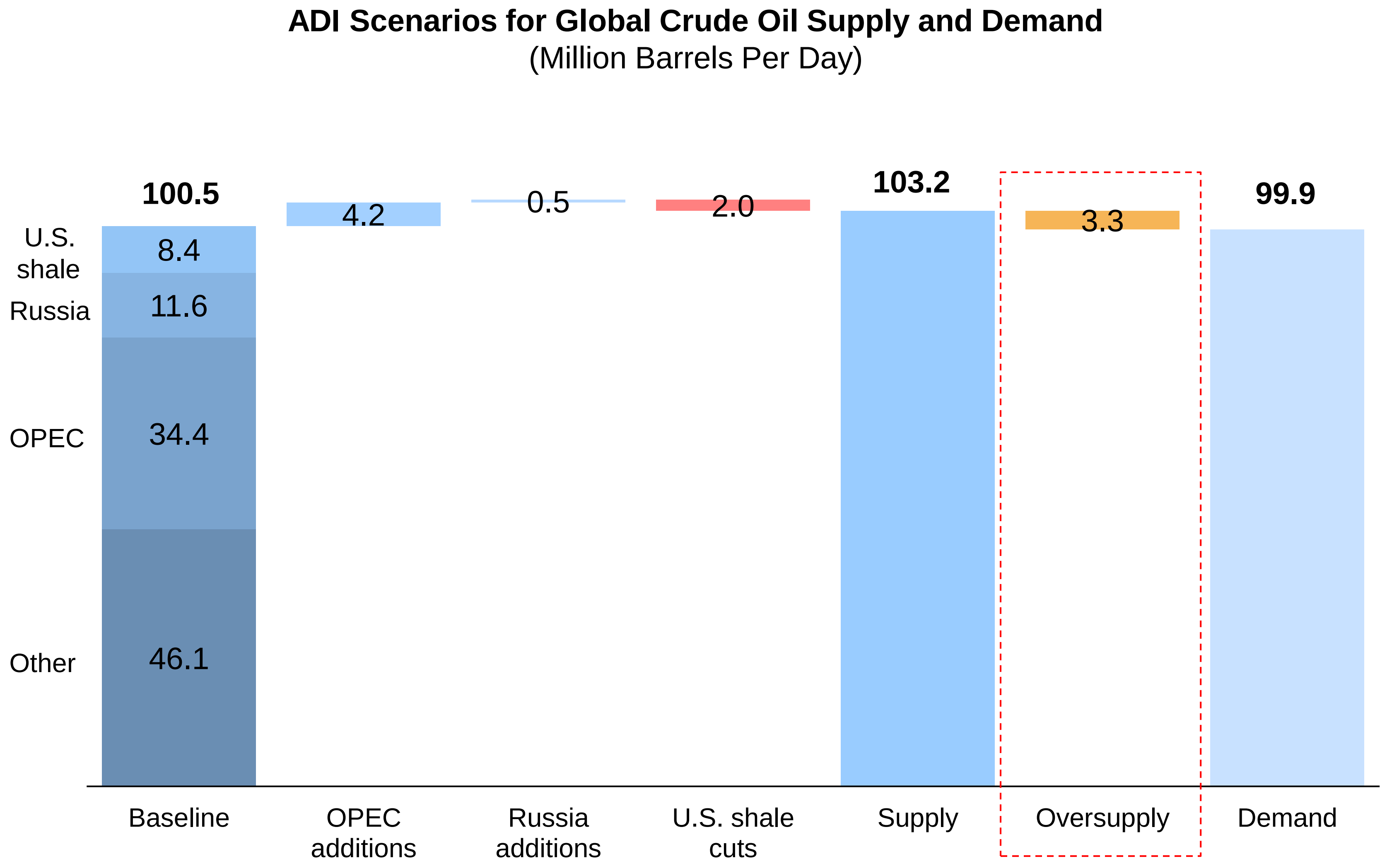
Crude Oil Prices
(U.S. Dollar Per Barrel)



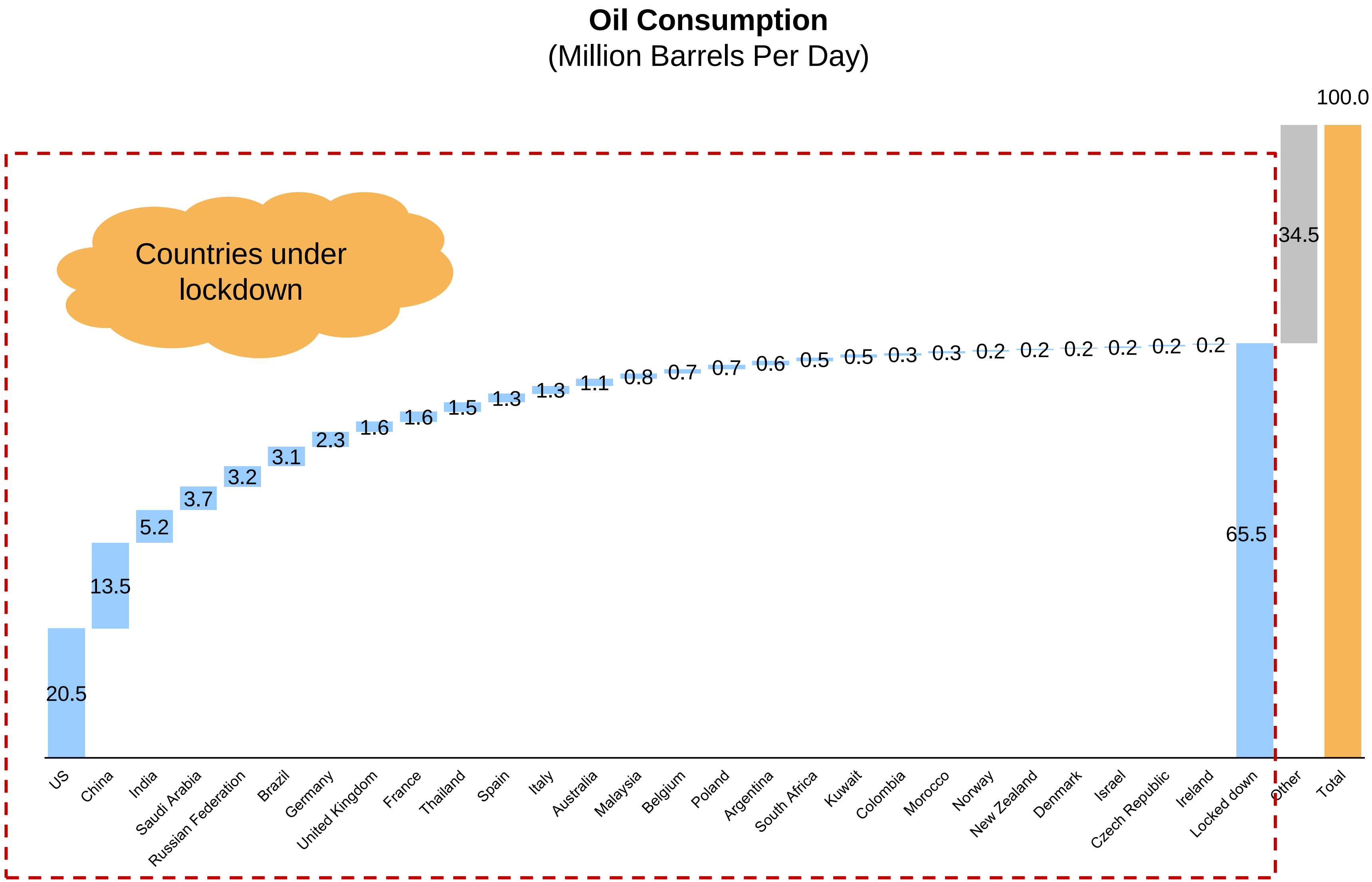
Key Questions

- What is the outlook for oil prices now?
- Will there be a resolution between Russia and Saudi Arabia? How will U.S. intervene?
- Which shale plays will be disrupted? Why?
- Is there a role for offshore in the near future?
- How will midstream and NGLs be impacted?
- What options do refiners have going forward?
- Where will LNG export projects make money?
- Which oilfield service, EPC, OEM, and suppliers survive in this environment?
- Which oil and gas operators are better positioned to survive and who will struggle?
- When will oil demand recover? How soon?
- What is CAPEX and OPEX forecast now?

At the same time, ADI anticipates the oil and gas market oversupplied with the extent varying in multiple scenarios

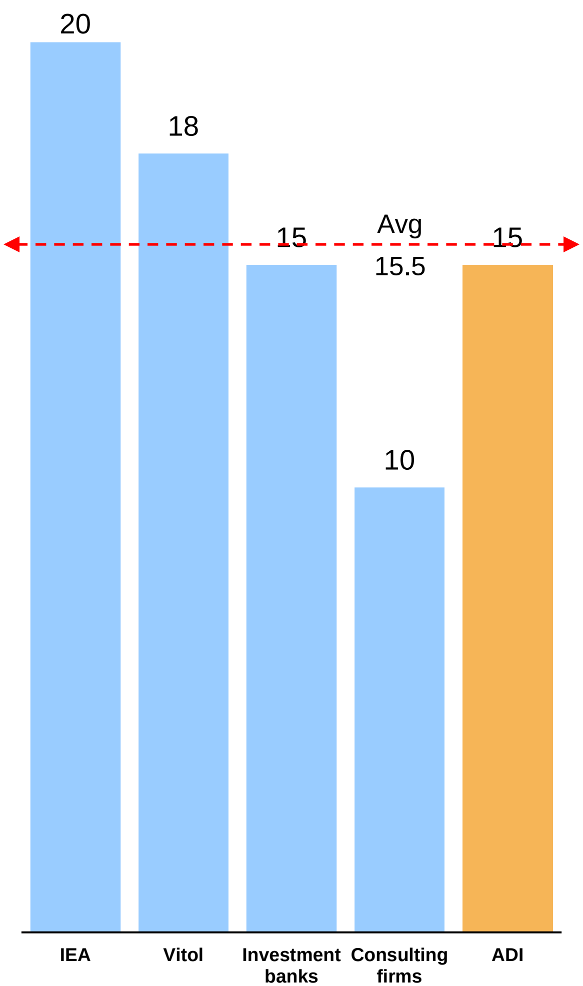


COVID-19 has led to lockdowns in nearly 30 countries collectively impacting two-thirds of oil consumption

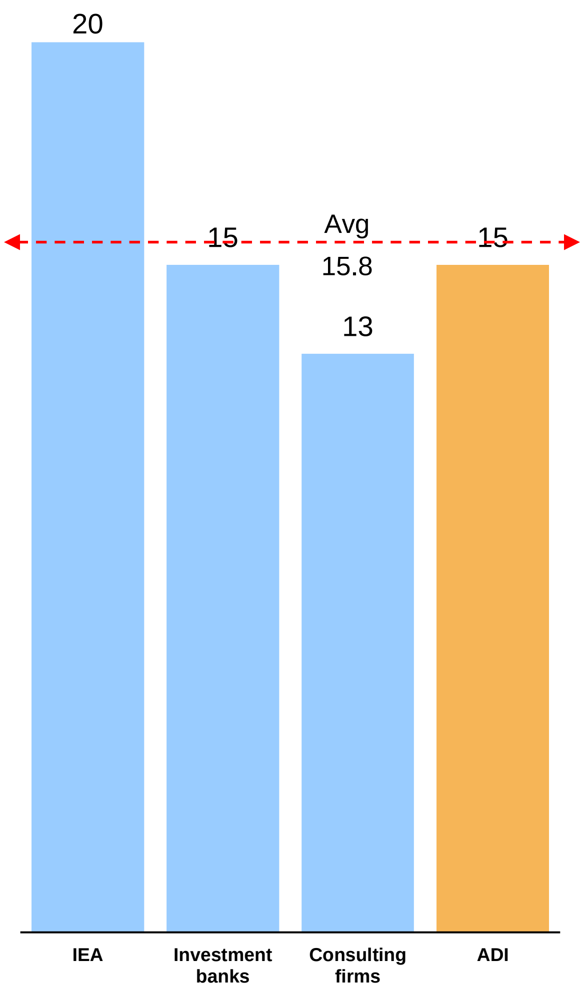


Collectively, ADI estimates COVID-19 leading to dramatic oil demand destruction in 1H 2020 and for the entire year as well

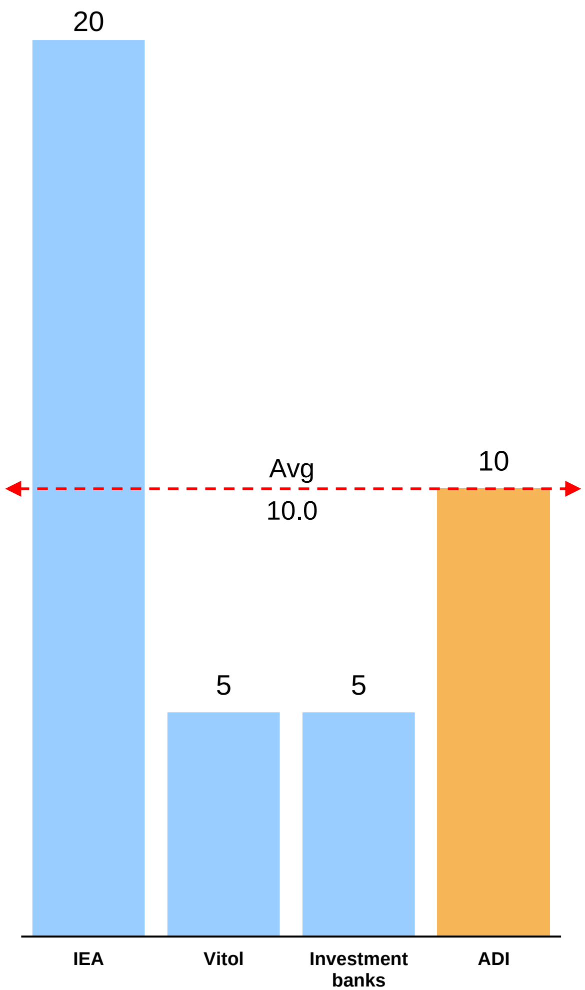
1Q 2020 Demand Reduction Estimates
(Million Barrels Per Day)



2Q 2020 Demand Reduction Estimates
(Million Barrels Per Day)



2020 Demand Reduction Estimates
(Million Barrels Per Day)



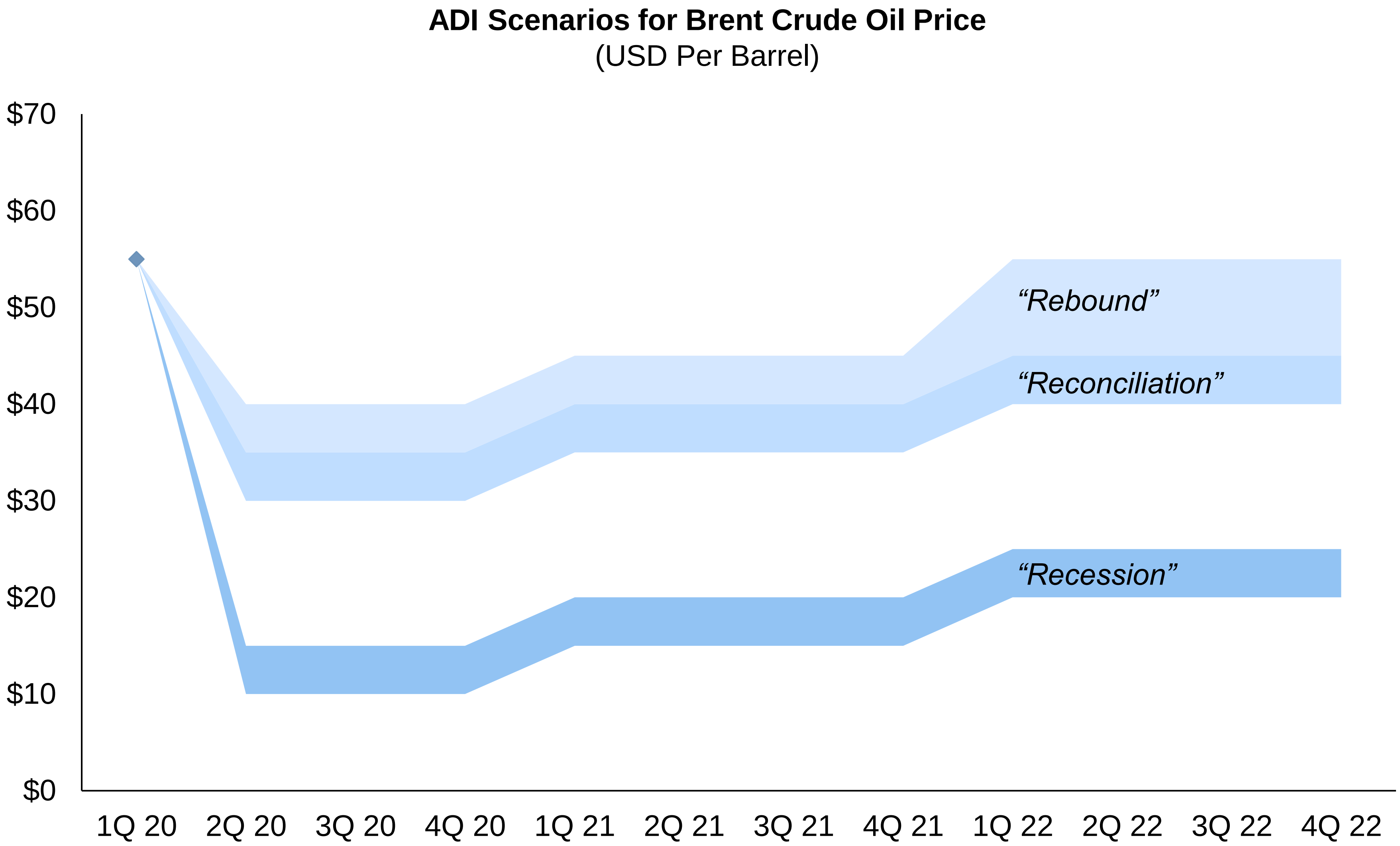
ADI research teams are working on a new study to assess impacts of oil price crash and COVID-19 on oil & gas industry

Research Goals	Select Insights
1. Conduct in-depth review of 2020 oil price crash and COVID-19 on oil & gas industry	▪ Crude oil supply / demand balances ▪ Breakeven prices and marginal costs ▪ Geopolitical drivers and developments ▪ COVID-19 demand destruction impacts
2. Develop scenario planning-based forecasts for oil & gas industry through 2025	▪ Three crude oil price scenarios with … ▪ … Supply/demand balances for each ▪ Signposts and milestones for scenarios
3. Build granular impact assessments for upstream, midstream, refining, and petchem segments and sub-segments	▪ Upstream (conventional, shale, offshore) ▪ Midstream (gas proc, pipelines, NGL, LNG) ▪ Refining ▪ Petrochemicals
4. Synthesize strategic implications for oil & gas operators, suppliers, investors, and other stakeholders	▪ Implications by segment for each scenario ▪ Capital and operating spend impacts ▪ Likely winners and losers ▪ Policy and other implications

Going forward, ADI sees three likely scenarios for oil & gas …

	I **RECESSION** *Protracted oil demand slump as economy slips into a recession*	II **RECONCILIATION** *Pain lasts thru 2Q 2020 driving Russia - OPEC reconciliation*	III **REBOUND** *COVID-19 resolves quickly driving oil demand rebound*
BRENT OIL PRICE, $/B			
2020	$10 - $15	$30 - $35	$35 - $40
2021	$15 - $20	$35 - $40	$40 - $45
2022	$20 - $25	$40 - $45	$45 - $55
OIL DEMAND			
COVID-19	Expands to a global lockdown thru summer	Limited further precautions and travel with limited improvement	Limited regional lockdowns and virus blows over thru spring
Govt. stimuli	Fails to avoid a recession	Barely avoids a recession	Helps with economic rebound
OIL SUPPLY			
Balance	Oversupply of 4+ mm bpd with inventory >500 mm bbl	Oversupply of 1–2 mm bpd with inventory of 500 mm bbl	Oversupply of <1 mm bpd with inventory of <300 mm bbl
Russia-OPEC deal	Irrelevant	Occurs in the summer	Occurs in early 2Q 2020
Shale supply	Drops 2.5+ mm bpd	Drops 1 mm bpd	Drops <0.5 mm bpd

… Each offering a distinct set of oil price implications



The new ADI report's Table of Contents shows the in-depth coverage of issues as oil & gas navigates this "perfect storm"

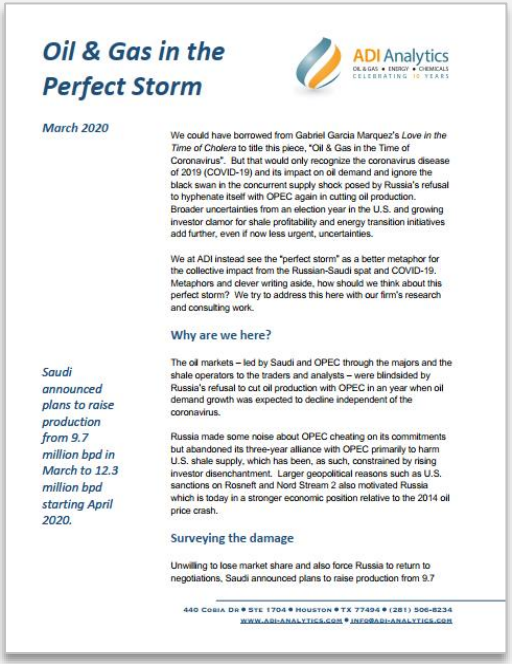
The study -- available early April 2020 -- includes a report, underlying data, and a review call with client teams

	Deliverable	Format
1	Executive summary	Slide deck
2	Final report	Slide deck
3	Market data and analytics	Spreadsheet
4	Report review workshop	Interactive conference call

Call Uday Turaga +1 (832) 768-8806 or
e-mail info@adi-analytics.com to subscribe.

Meanwhile, please download articles based on research for this study from the ADI team

Oil & Gas in the Perfect Storm



Oil & Gas in the Perfect Storm

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CELEBRATING 10 YEARS

March 2020

We could have borrowed from Gabriel Garcia Marquez's *Love in the Time of Cholera* to title this piece, "Oil & Gas in the Time of Coronavirus". But that would only recognize the coronavirus disease of 2019 (COVID-19) and its impact on oil demand and ignore the black swan in the concurrent supply shock posed by Russia's refusal to hyphenate itself with OPEC again in cutting oil production. Broader uncertainties from an election year in the U.S. and growing investor clamor for shale profitability and energy transition initiatives add further, even if now less urgent, uncertainties.

We at ADI instead see the "perfect storm" as a better metaphor for the collective impact from the Russian-Saudi spat and COVID-19. Metaphors and clever writing aside, how should we think about this perfect storm? We try to address this here with our firm's research and consulting work.

Why are we here?

Saudi announced plans to raise production from 9.7 million bpd in March to 12.3 million bpd starting April 2020.

The oil markets – led by Saudi and OPEC through the majors and the shale operators to the traders and analysts – were blindsided by Russia's refusal to cut oil production with OPEC in an year when oil demand growth was expected to decline independent of the coronavirus.

Russia made some noise about OPEC cheating on its commitments but abandoned its three-year alliance with OPEC primarily to harm U.S. shale supply, which has been, as such, constrained by rising investor disenchantment. Larger geopolitical reasons such as U.S. sanctions on Rosneft and Nord Stream 2 also motivated Russia which is today in a stronger economic position relative to the 2014 oil price crash.

Surveying the damage

Unwilling to lose market share and also force Russia to return to negotiations, Saudi announced plans to raise production from 9.7

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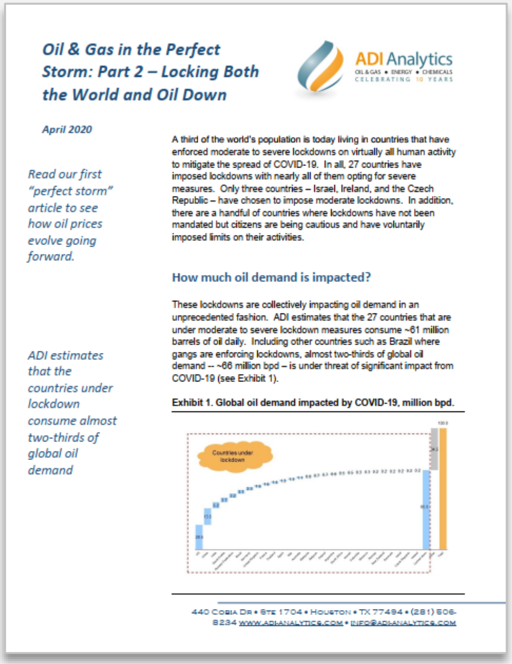
Locking Both the World and Oil Down



Oil & Gas in the Perfect Storm: Part 2 – Locking Both the World and Oil Down

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ADI estimates that the countries under lockdown consume almost two-thirds of global oil demand

These lockdowns are collectively impacting oil demand in an unprecedented fashion. ADI estimates that the 27 countries that are under moderate to severe lockdown measures consume ~61 million barrels of oil daily. Including other countries such as Brazil where gangs are enforcing lockdowns, almost two-thirds of global oil demand -- ~66 million bpd – is under threat of significant impact from COVID-19 (see Exhibit 1).

Exhibit 1. Global oil demand impacted by COVID-19, million bpd.

Countries under lockdown

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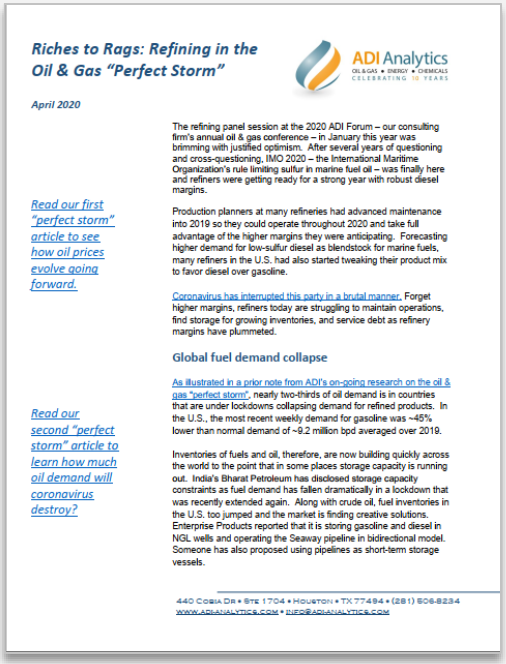
Riches to Rags: Downstream O&G in Perfect Storm



Riches to Rags: Refining in the Oil & Gas "Perfect Storm"

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April 2020

The refining panel session at the 2020 ADI Forum – our consulting firm's annual oil & gas conference – in January this year was brimming with justified optimism. After several years of questioning and cross-questioning, IMO 2020 – the International Maritime Organization's rule limiting sulfur in marine fuel oil – was finally here and refiners were getting ready for a strong year with robust diesel margins.

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Production planners at many refineries had advanced maintenance into 2019 so they could operate throughout 2020 and take full advantage of the higher margins they were anticipating. Forecasting higher demand for low-sulfur diesel as blendstock for marine fuels, many refiners in the U.S. had also started tweaking their product mix to favor diesel over gasoline.

Coronavirus has interrupted this party in a brutal manner. Forget higher margins, refiners today are struggling to maintain operations, find storage for growing inventories, and service debt as refinery margins have plummeted.

Global fuel demand collapse

Read our second "perfect storm" article to learn how much oil demand will coronavirus destroy?

As illustrated in a prior note from ADI's on-going research on the oil & gas "perfect storm", nearly two-thirds of oil demand is in countries that are under lockdowns collapsing demand for refined products. In the U.S., the most recent weekly demand for gasoline was ~45% lower than normal demand of ~9.2 million bpd averaged over 2019.

Inventories of fuels and oil, therefore, are now building quickly across the world to the point that in some places storage capacity is running out. India's Bharat Petroleum has disclosed storage capacity constraints as fuel demand has fallen dramatically in a lockdown that was recently extended again. Along with crude oil, fuel inventories in the U.S. too jumped and the market is finding creative solutions. Enterprise Products reported that it is storing gasoline and diesel in NGL wells and operating the Seaway pipeline in bidirectional model. Someone has also proposed using pipelines as short-term storage vessels.

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