

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

Multi-Client Study Prospectus

April 2020

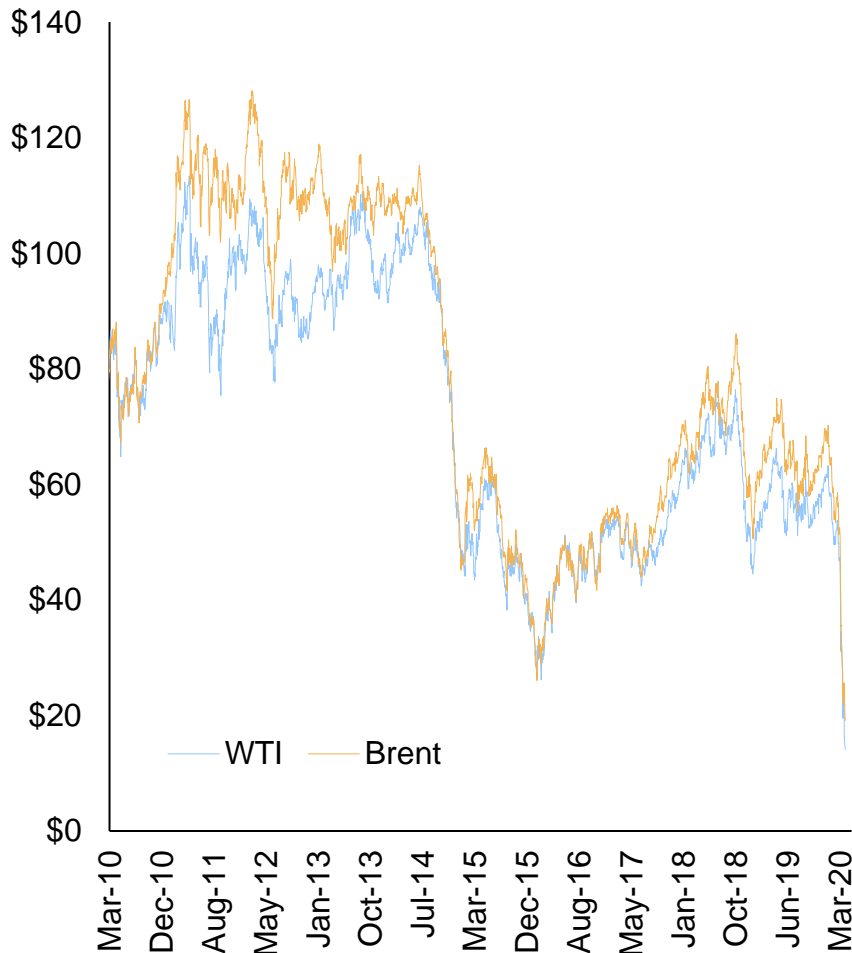


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Oil and gas after the price crash is in uncharted waters and the entire industry is grappling with several key questions

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

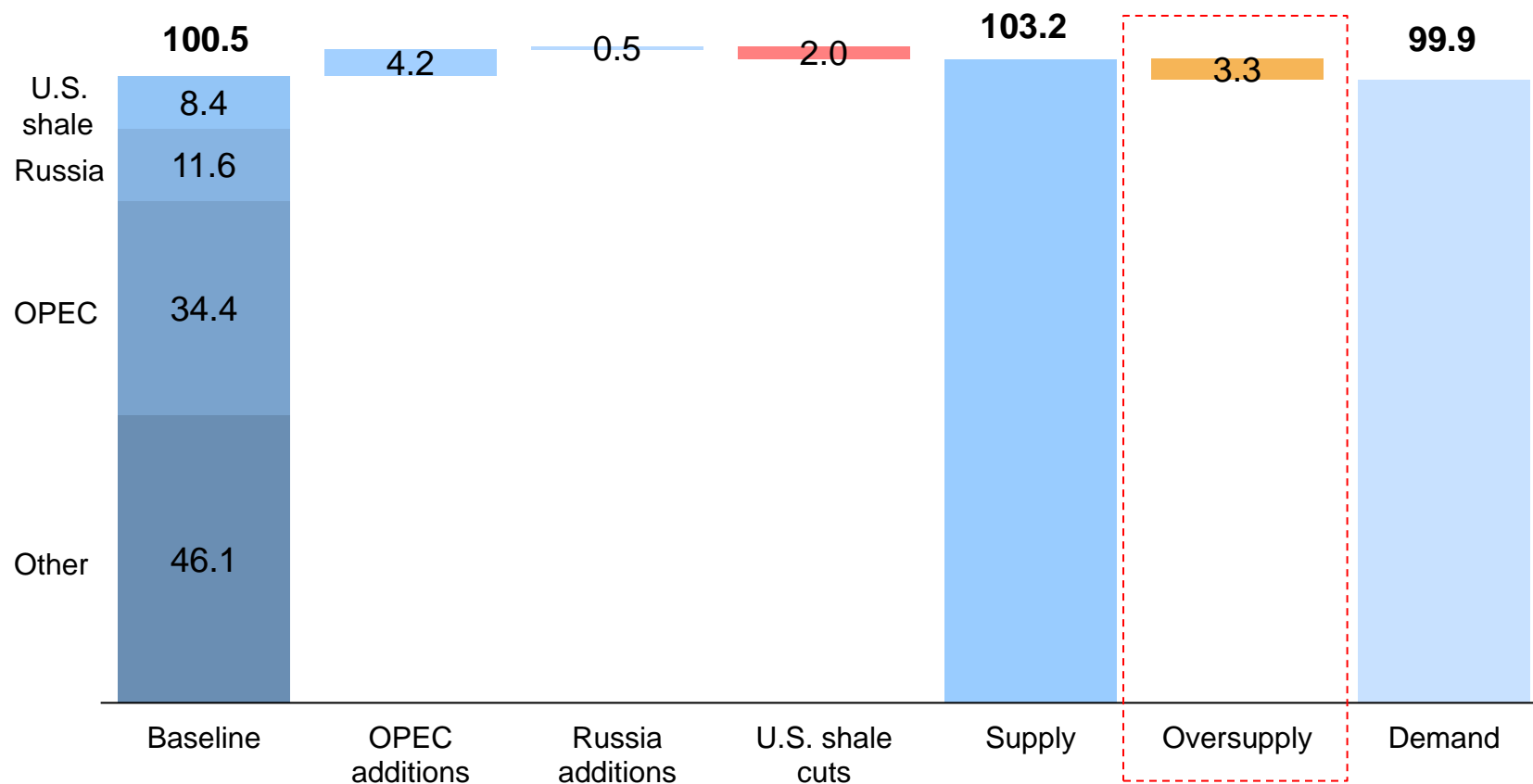


Key Questions

- 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?

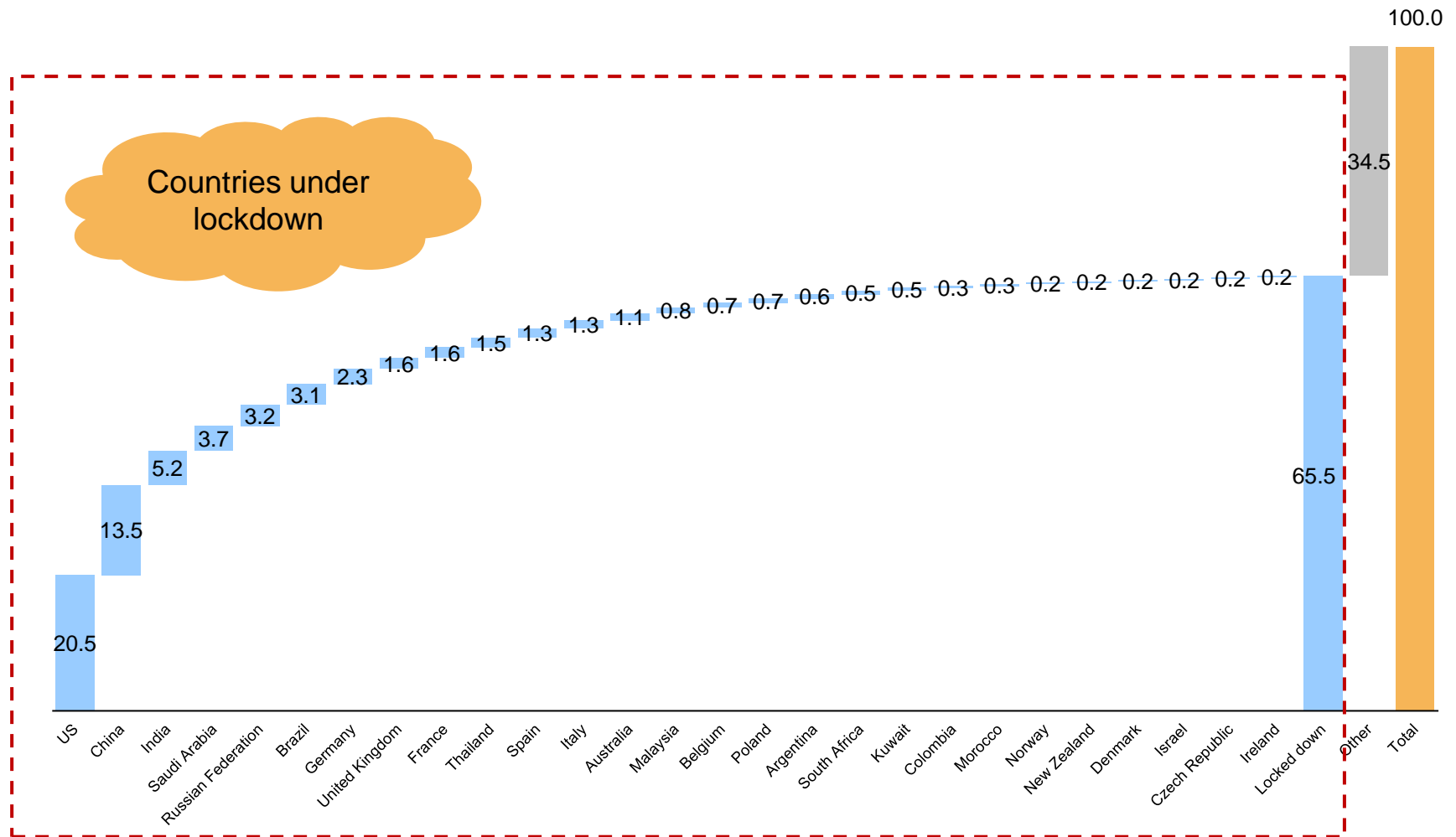
At the same time, ADI anticipates the oil and gas market oversupplied with the extent varying in multiple scenarios

ADI Scenarios for Global Crude Oil Supply and Demand
(Million Barrels Per Day)

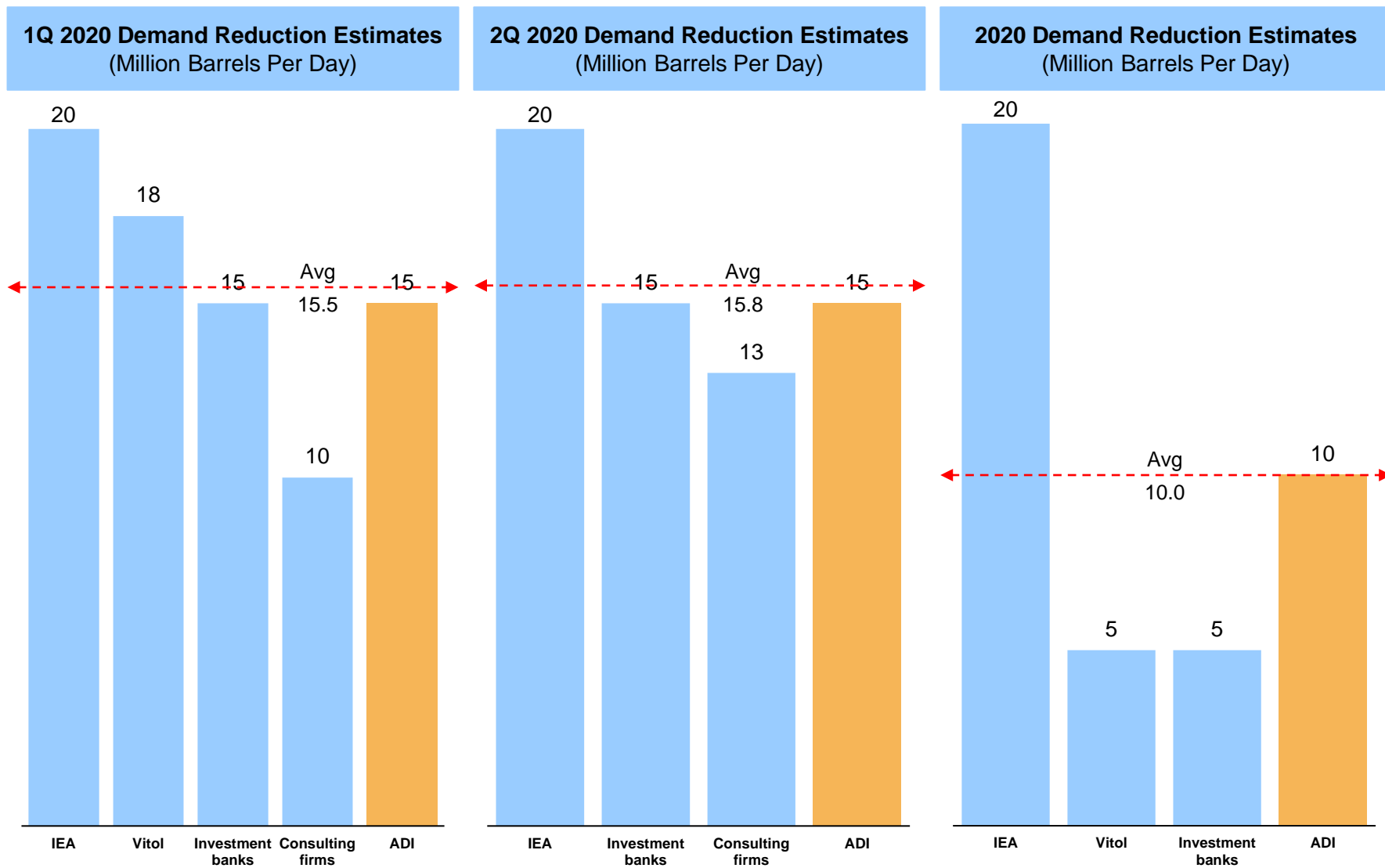


COVID-19 has led to lockdowns in nearly 30 countries collectively impacting two-thirds of oil consumption

Oil Consumption
(Million Barrels Per Day)



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



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

1

Conduct in-depth review of 2020 oil price crash and COVID-19 on oil & gas industry

2

Develop scenario planning-based forecasts for oil & gas industry through 2025

3

Build granular impact assessments for upstream, midstream, refining, and petchem segments and sub-segments

4

Synthesize strategic implications for oil & gas operators, suppliers, investors, and other stakeholders

Select Insights

- Crude oil supply / demand balances
 - Breakeven prices and marginal costs
 - Geopolitical drivers and developments
 - COVID-19 demand destruction impacts
-
- Three crude oil price scenarios with ...
 - ... Supply/demand balances for each
 - Signposts and milestones for scenarios
-
- Upstream (conventional, shale, offshore)
 - Midstream (gas proc, pipelines, NGL, LNG)
 - Refining
 - Petrochemicals
-
- 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 <i>Protracted oil demand slump as economy slips into a recession</i>	II	RECONCILIATION <i>Pain lasts thru 2Q 2020 driving Russia - OPEC reconciliation</i>	III	REBOUND <i>COVID-19 resolves quickly driving oil demand rebound</i>
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BRENT OIL PRICE, \$/B

	RECESSION	RECONCILIATION	REBOUND
2020	\$10 - \$15	\$30 - \$35	\$35 - \$40
2021	\$15 - \$20	\$35 - \$40	\$40 - \$45
2022	\$20 - \$25	\$40 - \$45	\$45 - \$55

OIL DEMAND

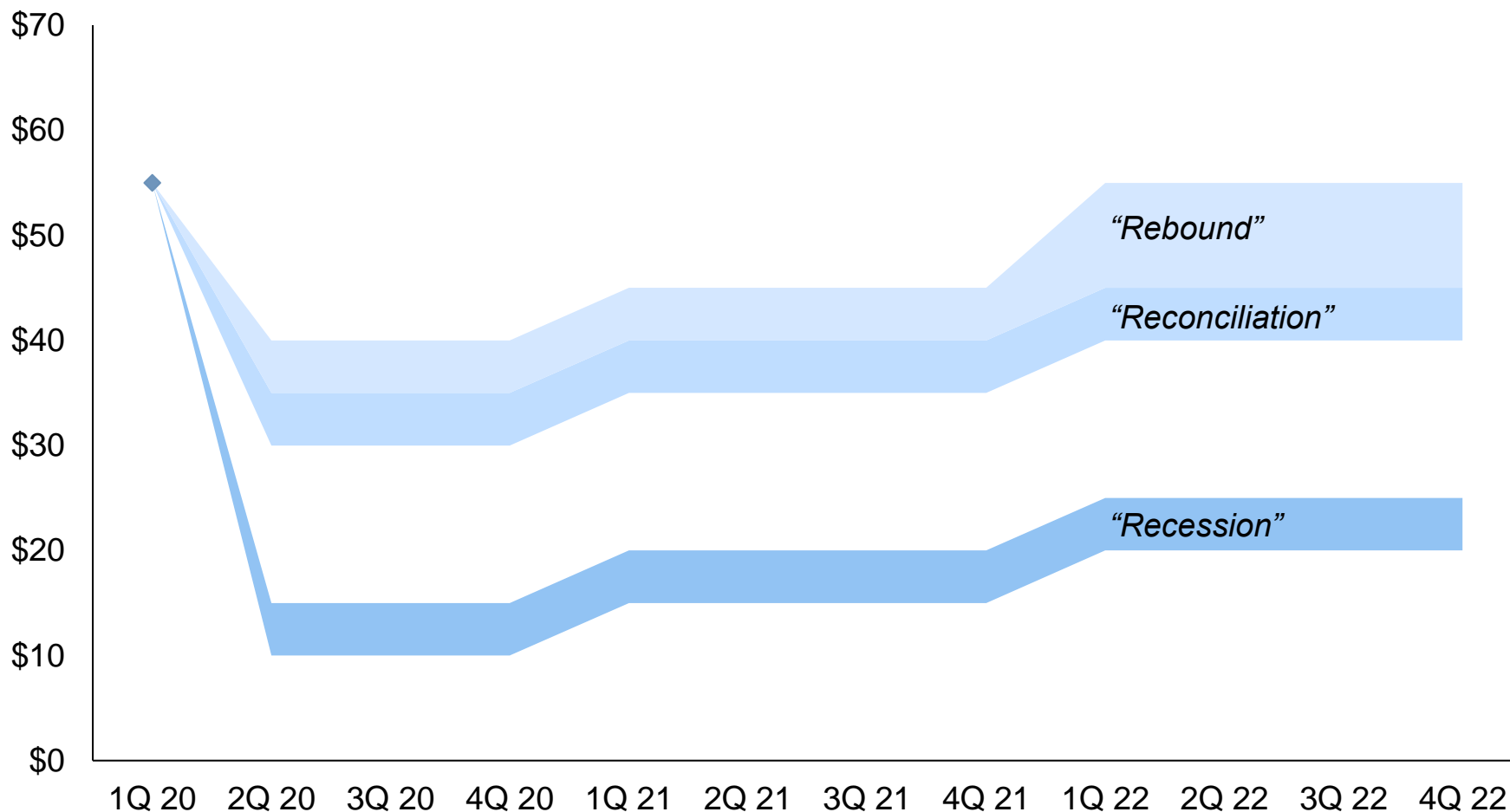
	RECESSION	RECONCILIATION	REBOUND
COVID-19	Expands to a global lockdown thru summer	Limited further precautions and travel with limited improvement	Limited regional lockdowns and virus blows over thru spring
Govt. stimuli	Fails to avoid a recession	Barely avoids a recession	Helps with economic rebound

OIL SUPPLY

	RECESSION	RECONCILIATION	REBOUND
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

ADI Scenarios for Brent Crude Oil Price
(USD Per Barrel)



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

1	Executive Summary <i>Key conclusions, findings, and strategic implications with a review workshop and underlying data in spreadsheet format</i>	8	Oil & Gas Capital Spend (CAPEX) Forecast <i>Review capex cuts, project cuts/delays, and revised capex forecast to 2025 for upstream, midstream, refining, and LNG</i>
2	Oil Price Crash Background <i>Geopolitical drivers, OPEC and Russia's motivations and fiscal resilience to low oil prices, U.S. interventions, deal scenarios, and critical timelines to watch</i>	9	Oil & Gas Operating Spend (OPEX) Forecast <i>Review impact on opex spending with new opex forecast to 2025 for upstream, midstream, refining, and LNG</i>
3	COVID-19 and Oil Demand Destruction <i>State of COVID-19 and evolution scenarios, countries under lockdown, oil and fuel (gasoline, diesel, and jet fuel) demand destruction through 1Q and 2Q and all of 2020</i>	10	Deep Dive into Midstream and NGLs Outlook <i>Impact assessment on midstream including project cuts / delays by shale play, revenue stability / outlook, cost and margin analysis, and key strategic implications for the sector</i>
4	Deep Dive into Upstream and Supply Outlook <i>Global supply cost curve, breakeven prices and supply risk by region and asset incl. U.S. shale, offshore, deepwater, oil sands, conventional, stripper wells, and NGLs</i>	11	Deep Dive into Refining Outlook <i>Impact assessment on refining including cuts to refinery runs, fuel demand, crack spread stability / outlook, refinery sales, and key strategic implications for the sector</i>
5	Oil Supply-Demand Balance and Inventories <i>Quarterly forecasts for supply-demand balances and inventories through 2023 in three likely oil price scenarios with strategic supply cuts and demand reduction implications</i>	12	Deep Dive into Natural Gas and LNG Markets <i>Impact assessment on dry and associated gas production, pricing, demand, and outlook; LNG markets, demand, pricing, and export projects; and strategic implications for the sector</i>
6	Oil Price Forecasts, Scenarios, and Outlook <i>Oil price history and forecast scenarios, marginal cost of oil supply, regional oil pricing, discounts, trade flows, light-heavy and other crude differentials, and global price dynamics</i>	13	Deep Dive into Petrochemical Markets <i>Impact assessment on petrochemical and polymer markets; feedstock competitiveness; demand assessment and outlook; and strategic implications for the sector</i>
7	Investor Implications and Opportunities <i>Summarize investor implications for institutional and private equity investors and opportunities including potential best performers and opportunities in each sector</i>	14	Strategic Implications and risk / opportunity analysis <i>Findings and conclusions, strategic implications by segment, risks and mitigation strategies, and opportunity analyses</i>

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



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 hypothecate 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?

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.

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

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



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 are being cautious and have voluntarily imposed limits on their activities.

How much oil demand is impacted?

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).

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

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



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Riches to Rags: Downstream O&G in Perfect Storm

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



April 2020

Read our first "perfect storm" article to see how oil prices evolve going forward.

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.

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

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 ~6.2 million bpd averaged over 2019.

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

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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