BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICANTS: OKLAHOMA ENERGY PRODUCERS ALLIANCE, KEENER OIL & GAS COMPANY, COLUMBUS OIL COMPANY, BROWN & BORELLI, INC., CIMARRON PRODUCTION CO, INC., CANTRELL INVESTMENTS, LLC, POSTWOOD ENERGY, LLC, GLM ENERGY, INC., TOKLAN OIL & GAS CORPORATION, GUEST PETROLEUM, INC., SINGER OIL COMPANY, AND RKR EXPLORATION, INC.	)	CAUSE CD NO.
RELIEF SOUGHT: DETERMINATION THAT THE WASTE OF OKLAHOMA CRUDE OIL IS OCCURRING, DETERMINATION THAT THERE IS NOT MARKET DEMAND AT A PRICE EQUIVALENT TO THE ACTUAL VALUE OF OKLAHOMA CRUDE OIL BEING TAKEN, AND BY ADJUSTING, MODIFYING, AMENDING, SETTING OR ESTABLISHING ALLOWABLES FOR PRODUCTION OF OKLAHOMA CRUDE OIL OR PROVIDING FOR THE PRORATIONING OF THE PRODUCTION OF OKLAHOMA CRUDE OIL, OR THE GRANTING OF SUCH OTHER RELIEF AS MAY BE APPROPRIATE AND NECESSARY FOR THE PREVENTION OF THE WASTE OF OKLAHOMA CRUDE OIL AND THE TAKING OF OKLAHOMA CRUDE OIL AT LESS THAN ITS ACTUAL VALUE	)	202000984

FILED
MAY 07 2020
COURT CLERK'S OFFICE - OKC
CORPORATION COMMISSION
OF OKLAHOMA

COMMENTS IMPACTING OKLAHOMA AND SOUTHWEST REGION OF THE UNITED STATES FILED IN

OIL AND GAS DOCKET NO. OG-20-00003167

MOTION ON VERIFIED COMPLAINT OF PIONEER NATURAL RESOURCES U.S.A., INC. AND PARSLEY ENERGY INC. REGARDING CONSERVATION AND PREVENTION OF WASTE OF CRUDE PETROLEUM AND NATURAL GAS IN THE STATE OF TEXAS	&	BEFORE THE RAILROAD COMMISSION OF TEXAS HEARINGS DIVISION

MOTION REQUESTING A
MARKET DEMAND HEARING
AND
MARKET DEMAND ORDER EFFECTIVE FOR MAY 2020 PRODUCTION

PART 1

Continental
RESOURCES

April 8, 2020

Chairman Wayne Christian
Commissioner Christi Craddick
Commissioner Ryan Sitton
Railroad Commission of Texas
1701 N Congress
Austin, TX 78701

SENT BY E-MAIL

Dear Commissioners:

At least through the remainder of the select demand period for oil, I believe it is necessary for the Texas Railroad Commission to institute prorationing to the limited market.

Sincerely,

Harold Hamm
Executive Chairman

April 8, 2020

VIA EMAIL: RRCconference@rrc.texas.gov

The Honorable Wayne Christian
The Honorable Christi Craddick
The Honorable Ryan Sitton
Railroad Commission of Texas
1701 North Congress Avenue
Austin, Texas 78701

Re: **DOCKET NO. OG-20-00003167**; IN RE: MOTION FOR COMMISSION CALLED HEARING ON THE VERIFIED COMPLAINT OF PIONEER NATURAL RESOURCES U.S.A. INC. AND PARSLEY ENERGY INC. TO DETERMINE REASONABLE MARKET DEMAND FOR OIL IN THE STATE OF TEXAS

Dear Chairman Christian and Commissioners Craddick and Sitton,

On behalf of Parsley Energy, Inc., I thank you for scheduling a Commission meeting to discuss the Motion Requesting a Market Demand Hearing and Market Demand Order Effective for May 2020 Production ("Motion"). To supplement the comments I provided to the Commission in the Motion and accompanying cover letter dated March 30, 2020, I enclose a presentation that further illuminates how the ongoing, historical oil-market collapse is affecting every corner of the oil and gas industry in the State of Texas and ask that it be included as part of the record in the referenced docket.

I also respectfully request the opportunity to testify before the Commission at the open meeting scheduled on April 14, 2020 in support of the Motion, at which time I intend to address the issues raised in the materials I have submitted and answer any questions the Commission may have. To that end, here is the information the Commission requested of those wishing to comment:

(1) Matt Gallagher, President and CEO of Parsley Energy, Inc.
(2) 303 Colorado Street, Suite 3000, Austin, Texas 78701
(3) (737) 704-2300
(4) I represent Parsley Energy, Inc. and myself.

Finally, I again urge the Commission to call a hearing on the Motion and issue a proration order that temporarily curtails statewide production of oil in line with its reasonable market demand. Doing so will not only correct, prevent, and lessen the ongoing waste of Texas oil but also will hasten the stability of the Texas oil and gas industry for the benefit of the thousands of employees, contractors, and service companies who have built Texas to become the preeminent oil-producing State in the country.

Sincerely,

Matt Gallagher
President and CEO, Parsley Energy, Inc.

Enclosure

Cc: Callie Farrar, Commission Secretary (Callie.Farrar@rrc.texas.gov)
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Alex Schoch (Alex.Schoch@rrc.texas.gov)
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Doug Dashiell (ddashiell@scottdoug.com)
Davin McGinnis (dmcginnis@scottdoug.com)

CERTIFICATE OF SERVICE

This will certify that a true and correct copy of the foregoing document has been served on the following this 8th day of April 2020.

Via E-Mail

Railroad Commission of Texas, RRCconference@rrc.texas.gov
Chairman Wayne Christian
Commissioner Ryan Sitton
Commissioner Christi Craddick
1701 North Congress Avenue
Austin, Texas 78711

Callie Farrar, Callie.Farrar@rrc.texas.gov
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/s/Joe T. Sanders II
Joe T. Sanders II

PIONEER
NATURAL RESOURCES

April 8, 2020

VIA EMAIL (RRCconference@rrc.texas.gov)
Chairman Wayne Christian
Commissioner Ryan Sitton
Commissioner Christi Craddick
Railroad Commission of Texas
1701 North Congress Avenue
Austin, Texas 78711

Re: **Oil & Gas Docket No. OG-20-00003167;** To Consider the Motion for Commission Called Hearing on the Verified Complaint of Pioneer Natural Resources USA, Inc. and Parsley Energy Inc. to Determine Reasonable Market Demand for Oil in the State of Texas

Dear Chairman Christian and Commissioners Sitton and Craddick:

Please see the attached documents consisting of Pioneer Natural Resources USA, Inc's ("Pioneer") comments for the April 14th meeting.

1. Comments from Mark Berg, Pioneer's Executive Vice President, Corporate Operations
2. Scott Sheffield's PowerPoint
3. Rystad Oil Market Update PowerPoint
4. Pioneer's and Parsley Energy Inc's Memorandum of Law
5. Legal Principals for Market Demand PowerPoint – to be presented by Brian Sullivan

Please let me know if you have any questions in this regard. Thank you for your assistance in this matter.

With respect,

Pioneer Natural Resources USA, Inc.

Mark Berg
Executive Vice President, Corporate Operations

CERTIFICATE OF SERVICE

I certify that on April 8, 2020, a true and correct copy of the forgoing has been sent to the following parties by email.

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By: _____
Mark Berg
Executive Vice President, Corporate Operations

PIONEER
NATURAL RESOURCES

April 8, 2020

VIA EMAIL (RRCconference@rrc.texas.gov)

Chairman Wayne Christian
Commissioner Ryan Sitton
Commissioner Christi Craddick
Railroad Commission of Texas
1701 North Congress Avenue
Austin, Texas 78711

Re: Oil & Gas Docket No. OG-20-00003167 - To Consider the Motion for Commission Called Hearing on the Verified Complaint of Pioneer Natural Resources USA, Inc. and Parsley Energy Inc. to Determine Reasonable Market Demand for Oil in the State of Texas

Dear Chairman Christian and Commissioners Sitton and Craddick:

On behalf of Pioneer Natural Resources USA, Inc., I wish to thank the Railroad Commission of Texas for noticing a meeting on April 14, 2020 to consider the motion filed by our company and Parsley Energy Inc. on March 31, 2020. Our motion asks the Commission to determine whether waste in oil production subject to the Commission's jurisdiction is occurring or imminently likely to occur, and – most importantly – to implement limited remedial actions that are rationally tailored to ease the impact of the global health and economic crisis that is now falling so heavily on Texas oil and gas producers.

In response to the Commission's request for comments, I enclose (1) a presentation outlining Pioneer's assessment of current market conditions and possible proration options; (2) a report from Rystad Energy, which includes its analysis of the impact of the COVID-19 pandemic on crude oil demand and observations on U.S. shale producers' sensitivity to low oil prices; and (3) a presentation and memorandum explaining the Commission's legal authority and responsibilities in this matter, together with an additional explanation of how prorationing might work. Pioneer would welcome the opportunity to participate live in the Commission's hearing. Pioneer's chief executive officer, Scott Sheffield, is available to speak, and Pioneer's chief financial officer, Rich Dealy, and I will also be available to answer the Commission's questions.

Permit me also to update some of the information provided in the letter dated March 31, 2020, submitted by the chief executive officers of Pioneer and Parsley Energy in support of the companies' motion. In the eight days since then, the volatile oil market facing Texas oil producers has only worsened. Hundreds of thousands of Texans have lost their jobs,[1] with even higher unemployment expected. Crude oil storage continues to fill and at current production

[1] https://www.dol.gov/ui/data.pdf

rates is projected to be at capacity in May.[2] And, just yesterday, the Department of Energy's Energy Information Administration forecast that the United States will return to being a net importer of crude oil because of U.S. crude oil production declines.[3]

The demand collapse resulting from the COVID-19 pandemic combined with sharply increased foreign oil production has delivered a staggering one-two punch to Texas oil producers. The causes and consequences of the resulting devastating impact on our industry are indisputable. The only real question for the Commission is whether it should exercise its authority, in a careful, limited manner, to help address the crisis and protect the interests of Texas.

This crisis, aggravated by government actions around the globe, calls for appropriate government measures to mitigate the economic consequences. We are grateful for President Trump's diplomatic efforts to urge OPEC++ countries, including Russia and Saudi Arabia, to cut production, and are hopeful that production cuts will be agreed to at the OPEC and G-20 meetings later this week. For leadership from the United States to be most effective, however, Texas – the world's fourth largest oil producer – must step forward as well.

Opponents of proration have expressed concern that Commission action would unjustifiably interfere with free market consequences for Texas producers and their existing marketing contracts; that the Commission is incapable of determining reasonable market demand either in the aggregate or for individual producers; that unilateral production limits in Texas without coordination with other states or foreign countries will only harm Texas producers without resolving global oversupply; and that once engaged in prorating production other producing nations will insist that Texas continue proration once COVID-19 is under control.

We believe in vigorous competition, but the current market bears no relationship to a "free" market. Even the Wall Street Journal editorial board – an ardent opponent of the action we seek – has acknowledged that—

> "Oil at $20 does not represent free-market supply-demand price discovery. It is the result of a once-a-century pandemic-caused demand shock and the Saudis picking the worst moment to flood the market for political reasons."[4]

As the March 31 letter from Messrs. Sheffield and Gallagher notes, Russia has joined the flood-the-market gambit explicitly to drive U.S. shale producers out of business. Such extraordinary circumstances demand extraordinary, limited, and temporary government intervention by the Commission. We believe these unprecedented circumstances surrounding COVID-19 justify a limited action by the Commission with a clear condition that intervention ends when the virus is under control, similar to other actions undertaken in the United States and around the world. We do not support ongoing intervention thereafter.

The changes in the industry since the Commission last administered a proration program are substantial. This fact calls for carefully tailored solutions, however, not inaction. As the

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[2] *See* attached Rystad Energy report.
[3] https://www.eia.gov/outlooks/steo/
[4] https://www.wsj.com/articles/trumps-oil-summit-11585870063

second largest producer in Texas, with a large base of export customers, Pioneer knows well the contractual complexities that characterize the contemporary oil business. This knowledge makes us confident that our fellow Texas producers will be able to execute a reasonable prorationing order without hobbling their operations.

A prorationing order by the Commission would not impose substantial new burdens on either buyers or sellers. Companies around the world already are adjusting their contractual obligations in a business-like manner to meet current conditions. Conversations between operators, leaseholders, purchasers, and pipelines are inevitable as production is curtailed, whether by RRC proration order or forced curtailment resulting from the inability to sell or store all of the current Texas production. A Commission prorationing order would enable producers to plan for orderly curtailment of production on an equitable basis, including by considering their contractual obligations in a manner that would avoid performance problems in advance.

It bears emphasis that the Commission possesses broad flexibility to determine the basis of market demand and how to construct a prorationing order to address waste. Nothing compels the Commission to engage in a producer-by-producer inquiry.

For these reasons, Pioneer joins many others in urging the Commission to take bold action, in cooperation with our federal government, to temporarily curtail oil production. To repeat: COVID-19 is a global pandemic impacting global markets. Other nations, including Canada, Brazil and Norway, appear poised to join the members of OPEC and Russia in sharing the burden of production cuts needed to stabilize the market. Global cooperation of all producing regions, including the United States and Texas, is required to allow the world to recover from this unprecedented pandemic. An orderly reduction in oil supply will protect the viability of many of our country's independent oil producers and service providers.

We are confident that regulatory agencies and producers in other important jurisdictions will take actions as well to curtail production: the lack of customers and storage for unwanted oil compel that result. Beyond protecting Texas's vital interests in its resources, appropriate Commission action will limit the damage to the Texas oil industry resulting from this crisis and ensure that the industry will recover more quickly to meet future demand once the crisis passes. We nonetheless agree that Texas should not be caught in self-imposed isolation and any proration order should take into account supply restraints implemented in other producing regions.

In sum, because current production in Texas clearly exceeds reasonable market demand and some curtailment in Texas must (and inevitably will) be part of a global reduction in oil supplies, we urge the Commission to order carefully tailored prorationing that is explicitly temporary in nature to address the crisis, and no longer.

With respect,

Pioneer Natural Resources USA, Inc.

Mark Berg
Executive Vice President, Corporate Operations

PIONEER
NATURAL RESOURCES

Proration Hearing

Texas Railroad Commission

April 8, 2020

Proration Summary

Proration Advocates

- Prevents waste
- Proration is part of a larger global solution to the COVID-19 demand destruction
- Provides pricing support to protect our industry – jobs and development infrastructure - from a major collapse
- Preserves Texas production gains, limiting steep declines and likelihood of a reversion to U.S. importing 60% of its oil
- Maintains diversity of operators in Texas' greatest asset, the Permian Basin
- Protects small and medium-sized producers from being treated unfairly due to market access

Proration Opposition

- Preserves the "free market"
  - *Response: There has not been a free market for decades; both demand and supply of the oil market are currently driven by government actions*
  - *Response: Unlikely that OPEC+ will restrain production if it perceives U.S. is not contributing*
- Favors survival-of-the-fittest
  - *Response: Bankruptcies and job losses will negatively impact the industry for decades*
  - *Response: Texas Independents account for ~90% of Texas production growth over the past five years; diversity supports growth*
- No government intervention
  - *Response: Government actions (OPEC+, Russia, Covid-19 pandemic response) all play a role in the current price*
  - *Response: Extraordinary conditions demand limited actions that are tailored to ease the impact of the current crisis*
- OPEC will expect future participation
  - *Response: COVID-19 pandemic is singular circumstance requiring unprecedented global action*
  - *Response: States always retain freedom of action*

Pioneer Proration Position

Pioneer Natural Resources

- Operating in Texas since 1962
- Second largest oil producer in Texas
- Over 2,300 Texas employees
- Investment grade credit
- Fully hedged for 2020
- Significant firm transport to Gulf Coast; exported ~95% of oil production in Q4 2019
- Major investor in ProPetro, largest pressure pumper in the Permian Basin

Scott Sheffield, CEO

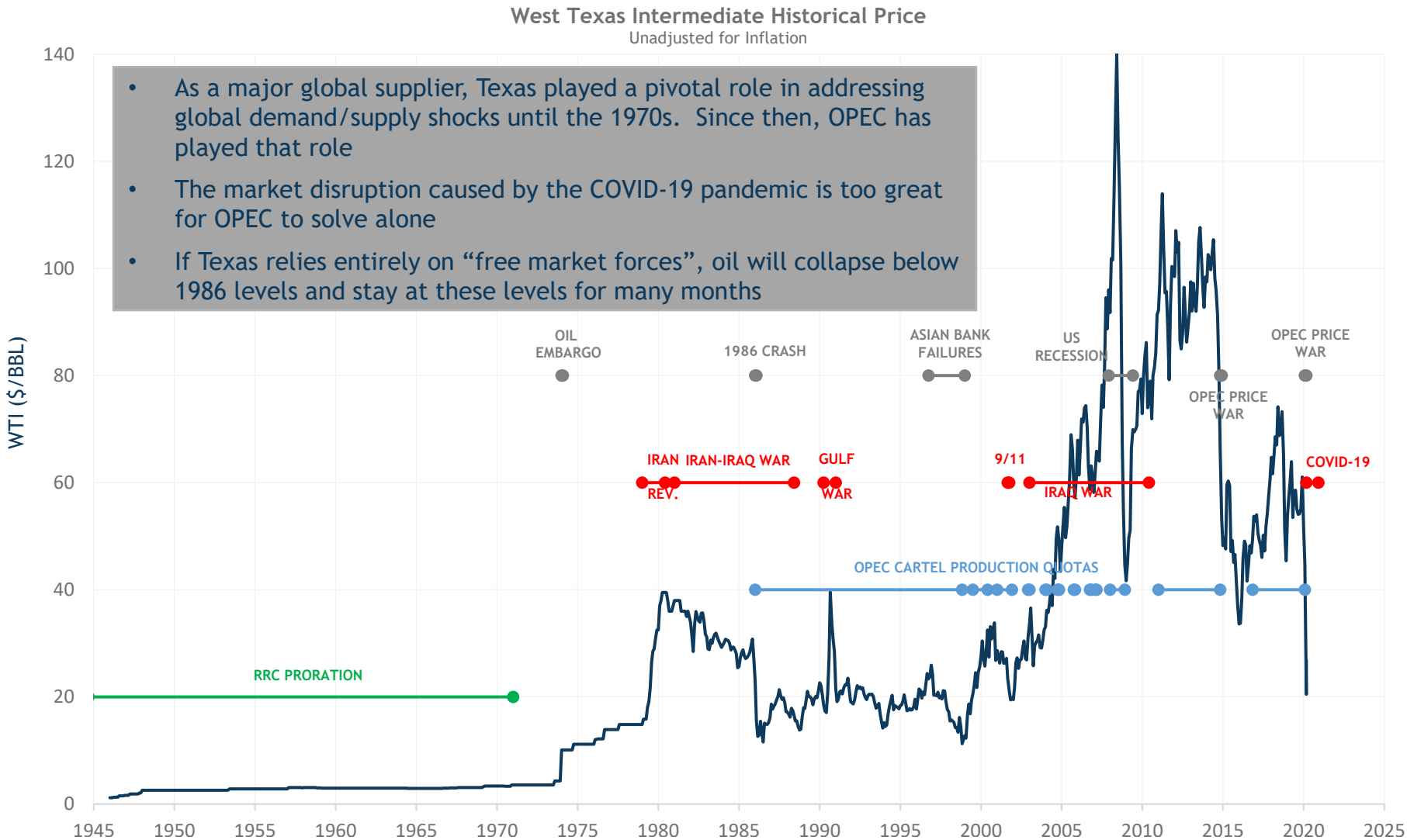
- Longest serving public company CEO having led Pioneer for over 35 years
- Navigated through five significant industry cycles
- Led industry group to eliminate oil export ban
- Leading efforts in Texas to reduce flaring
- Suddenness, severity and extent of demand collapse is similar to 1986

Texas RRC

- Responsible for ~40% of U.S. oil production
- Obligated to manage Texas resource to prevent waste
- Immediate action is necessary to preserve price stability, industry viability and U.S. energy independence
- Global stakes are high, failure to act is not an option
- RRC leadership is essential component of U.S. and global response

"The oil industry has never faced a collapse in demand of the magnitude inflicted by this disease, and is ill-equipped to cope. While production remains rampant, storage tanks could be filled within weeks, forcing a disorderly and damaging shutdown of production."
- Financial Times

OPEC Influence on Oil Market



- As a major global supplier, Texas played a pivotal role in addressing global demand/supply shocks until the 1970s. Since then, OPEC has played that role
- The market disruption caused by the COVID-19 pandemic is too great for OPEC to solve alone
- If Texas relies entirely on "free market forces", oil will collapse below 1986 levels and stay at these levels for many months

Energy Industry Update

Unprecedented Declines

- Global demand reduced 20% since this time last year
- World oil supply expected to exceed demand by 1.8 billion barrels in 1H 2020
- U.S. rig count has dropped 146 rigs in one month
- U.S. storage is expected to be full in May
- Midland cash spot sales lowest since 1998
- Upstream capital reductions for 2020 projected to be >50% of plan

Balance Sheet Impacts

- Investment grade (IG) borrowing costs have increased 700 basis points
- 6 MMBBLS/D in the U.S. comes from non-IG entities
- >40 public E&P bonds are trading less than 30% of par
- 2021 Net Debt-to-EBITDA for most public E&Ps at 4X – 6X
- ~400 bankruptcies and ~$175B of potential debt defaults if prices remain near $20 through 2021
- XOP and OSX indices down >65% YTD

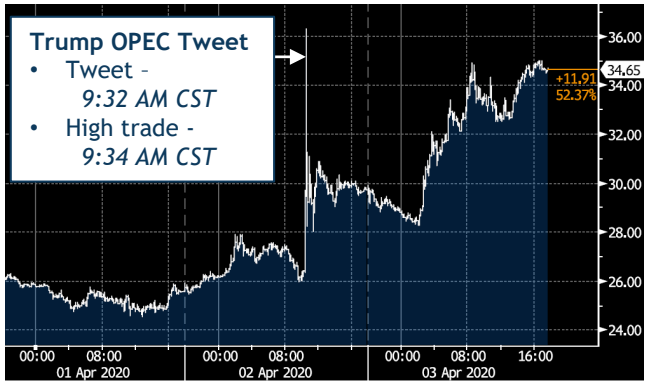
Industry and Texas Impacts

- U.S. E&P and Services industries annually pay $40+B to employees
- In 2019, industry employed 428,000 Texans (40% of total U.S.)
  - Industry employees earned double that of other private sector employees
  - Industry generated $14B in Texas tax revenue and $2B in state royalties in 2019
- Texas represents 5% of global oil market, could decline by nearly half by 2021 without higher prices

Extreme rebalancing of the market, will result in significant changes in country-specific production levels, permanently impacting U.S. energy security and Texas energy industry

Global Call for Supply Reduction

- Oil experienced the worst quarter ever with 66% price drop in Q1
- In the two days following President Trump's April 2 announcement of a possible 10 MMBBL/D joint cut by Saudi Arabia and Russia:
  - XOP
    - Increased 12%
  - Brent prices
    - Increased as much as 47% same day, closing up 21%
    - Additional 14% increase next day, closing at $34.11



- Since that time, Saudi Arabia and Russia have made it clear that other countries would need to share in the cut
  - Everyone has a part to play given the massive supply overhang
  - An OPEC cut of 30% is an "unlikely burden for OPEC to take on alone"
  - Texas has an opportunity to contribute, helping to ensure prices do not return to the levels seen prior to April 2nd

On April 6th, "U.S. crude futures fell more than 10% after a meeting between OPEC and its allies, initially scheduled for Monday, was delayed"

Call for Proration

- At current prices, Texas current production levels are causing waste
  - Producing in excess of reasonable demand (down 20% worldwide over several months)
  - Producing in excess of storage facility capacity (projected as of May)
- Legal precedent exists for proration to allocate production among producers on a reasonable basis to prevent waste
  - Ensures an orderly and equitable reduction in production
  - Supports higher price realizations instead of complete collapse
  - Limits layoffs, preserves balance sheets and supports critical oil service infrastructure while providing time for producers to adapt
  - Enables a quicker development response, supporting oil growth when prices recover
- Options for a temporary Proration Order
  - Target 1 MMBBL/D from Q4 2019 or Q1 2020 baseline
    - Fixed – Fixed percentage reduction for all operators (e.g. 20%)
    - Graduated – Progressive percentage reduction according to production levels
  - Temporary Proration Term: May 1st – September 30th
    - One-month extensions, if needed, thereafter

Supports global initiative to reduce supply during unprecedented demand loss

Support Documentation

Slide #2

1. 1. Utilizing Rystad Energy ShaleWellCube, Independents exclude ExxonMobil, Chevron, Shell, BP and Total

Slide #3

1. Parker and Parsley Petroleum and Mesa Petroleum (another Texas Independent) merged to form Pioneer Natural Resources in 1997; Parker and Parsley was formed in 1962
2. According to Texas RRC, gross production operated for full-year 2019
3. Pioneer maintains a Baa2 / BBB / BBB rating from Moody's, S&P and Fitch, respectively
4. Pioneer owns 16.6 MM of 100.6 MM shares outstanding in ProPetro (NYSE: PUMP)
5. U.S. produced 12.8 MMBBLS/D according to EIA in December 2019, Rystad estimates Texas production to be 5.4 MMBBLS/D in December 2019
6. States of Oklahoma, North Dakota, and New Mexico are discussing various measures including limiting new completions, mandatory curtailment and temporary production cuts without lease penalty
7. Quote taken from Financial Times, "Could the world really unite to boost the oil market?"

Slide #4

1. WTI Chart adapted from Investing.com, WTRG Economics and Beer with data from Bloomberg and St. Louis Fed

Slide #5

1. Global oil demand reduction projections per IHS "Light-speed oil surplus: Emergency conditions for the oil industry", March 20, 2020 and "Nowhere to go: 10 MMBb/D of oil production cuts coming". IHS anticipates 20 MMBBLS/D decline in demand in April 2020 relative to one-year ago when Q2 2019 demand averaged 100 MMBLS/D.
2. Rig counts per Enervus as of 4/03/20
3. Midland cash costs per Refinitiv and John Kemp "Oil market impact from coronavirus, lockdowns and volume war"
4. S&P Global Platts and Rystad (Rystad material filed with Commission) project production to be in excess of storage in May
5. Relative to 12/31/2019 and as of market close 04/01/2020, OSX had fallen 69% and XOP 67%
6. Per Morgan Stanley Investment Banking Group, Majors and Investment Grade Public Independents are responsible for ~5.4 MMBBLS/D of U.S. production, the remainder are considered non-Investment Grade
7. Investment Grade and bond par trading statistics are per Credit Suisse Investment Banking group via Credit Suisse Trading Desk, as of 4/03/20
8. Net Debt-to-EBITDA per Credit Suisse Equity Research utilizing strip prices
9. Bankruptcy statistics per Rystad Energy "U.S. upstream industry could see a jump in Chapter 11 cases already this year"
10. Total U.S. oil and gas industry employee earning by segment per Rystad Energy "Can U.S. Shale Survive, Challenges and Opportunities Ahead"
11. Oil and gas industry tax, royalty and jobs data per "Annual Energy & Economic Impact Report, 2019"
12. 41% annualized PDP decline based on forecasts by RSEG and Rystad

Slide #6

1. Brent intraday pricing chart from Bloomberg, Trump Tweets at 9:32 CST "Just spoke to my friend MBS (Crown Price) of Saudi Arabia, who spoke with President Putin of Russia, & I expect & hope that they will be cutting back approximately 10 Million Barrels, and maybe substantially more which, if it happens, will be GREAT for the oil & gas industry!.....Could be as high as 15 Million Barrels. Good (Great) news for everyone!
2. OPEC 30% cut quote from Rystad Energy – "Trump makes an oil market rally cry, will OPEC+ answer?"
3. OPEC futures quote from CNBC.com article "Oil prices turn lower despite hints Russia and Saudi Arabia are 'very close' to a deal"

Summary of Proration Options

Fixed Rate

Statewide Operator Stats			All Operators		Small Operator Exemption	
Production Brackets (MBOPD)	Active RRC Operators (#)	Average 4Q19 Production (MBOPD)	80% Flat Rate Proration - *All Operators*	Production with Proration (MBOPD)	80% Flat Rate Proration - *w/ Exemption*	Production with Proration (MBOPD)
0-1	3,400	200	80%	160	100%	200
1-10	144	506	80%	405	80%	405
10-25	39	573	80%	459	80%	459
25+	42	3,862	80%	3,089	80%	3,089
Total	**3,625**	**5,141**		**4,113**		**4,152**
PXD		306	80%	245	80%	245
PE + JAG		160	80%	128	80%	128
	Count of Active Operator Participation -->			*3,625*		*225*

Graduated Rate

Production Brackets (MBOPD)	Active RRC Operators (#)	Average 4Q19 Production (MBOPD)	Graduated Rate Proration - *All Operators*	Production with Proration (MBOPD)	Graduated Rate Proration - *w/ Exemption*	Production with Proration (MBOPD)
0-1	3,400	200	90%	180	100%	200
1-10	144	506	90%	456	90%	456
10-25	39	573	80%	498	80%	498
25+	42	3,862	75%	2,991	75%	2,991
Total	**3,625**	**5,141**		**4,124**		**4,143**
			Effective rate		*Effective rate*	
PXD		306	76%	232	76%	232
PE + JAG		160	76%	122	76%	122

Note: 246 operators with 0 BOPD of production during Q4 2019 are considered 'inactive' and excluded from 'active operator' counts

RYSTAD ENERGY

OIL MARKET UPDATE

2020: THE YEAR OF THE BAT

7 APRIL 2020

Agenda

- Demand: COVID-19 effects and scenario analysis
  - Products demand
  - Crude demand
- Supply-demand balances
  - Storage capacity and oil price/curve structure
- OPEC+ surge stopped in its wake?
- Market prices and price floors: Short-run marginal cost of supply and price sensitive supply at risk
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- Can US shale survive? US shale oil sensitivity to price
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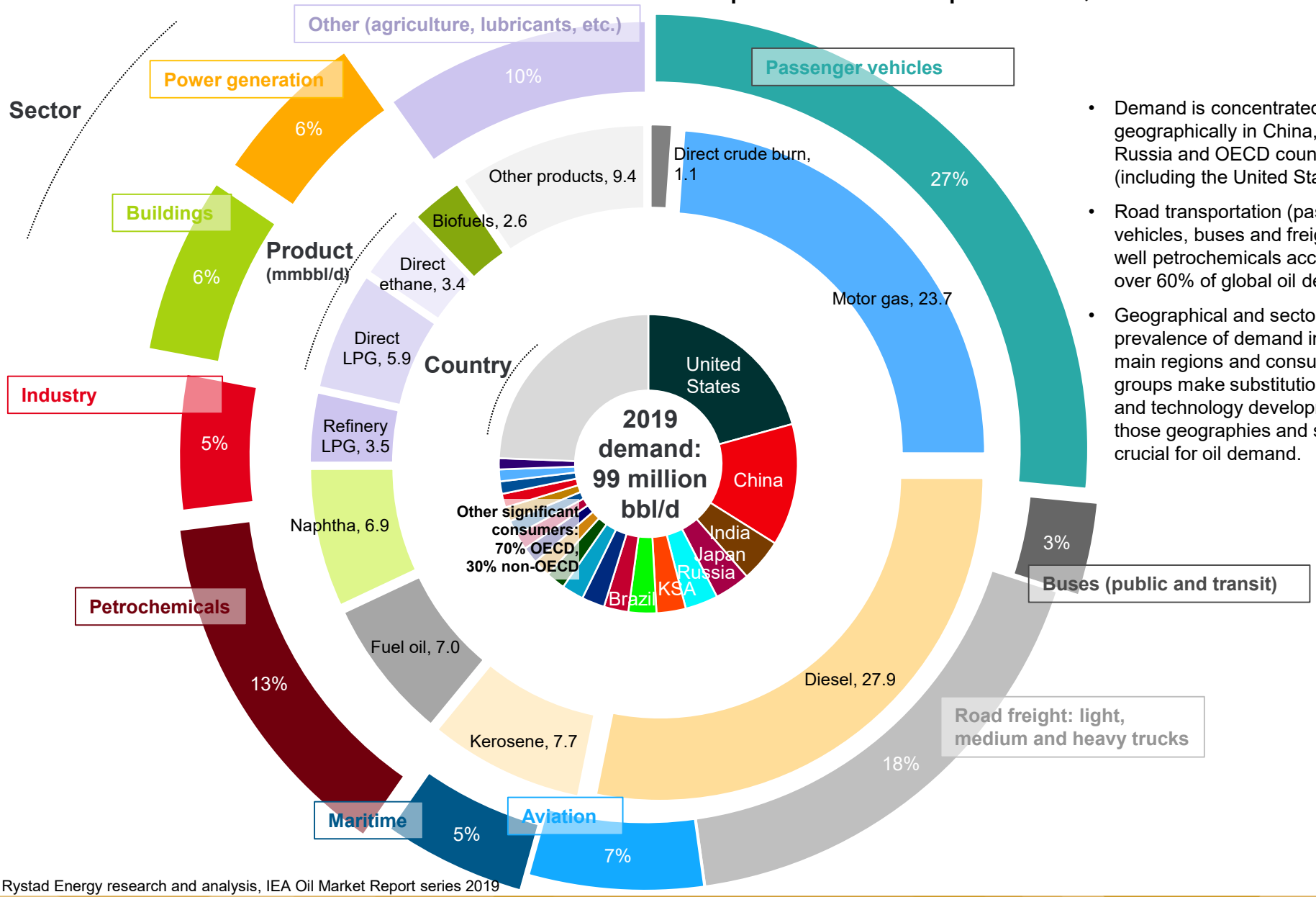
COVID-19 hits demand hard due to direct effect on personal transportation, aviation and freight



- Demand is concentrated geographically in China, India, Russia and OECD countries (including the United States).
- Road transportation (passenger vehicles, buses and freight) as well petrochemicals account for over 60% of global oil demand.
- Geographical and sectorial prevalence of demand in these main regions and consumption groups make substitution trends and technology developments in those geographies and sectors crucial for oil demand.

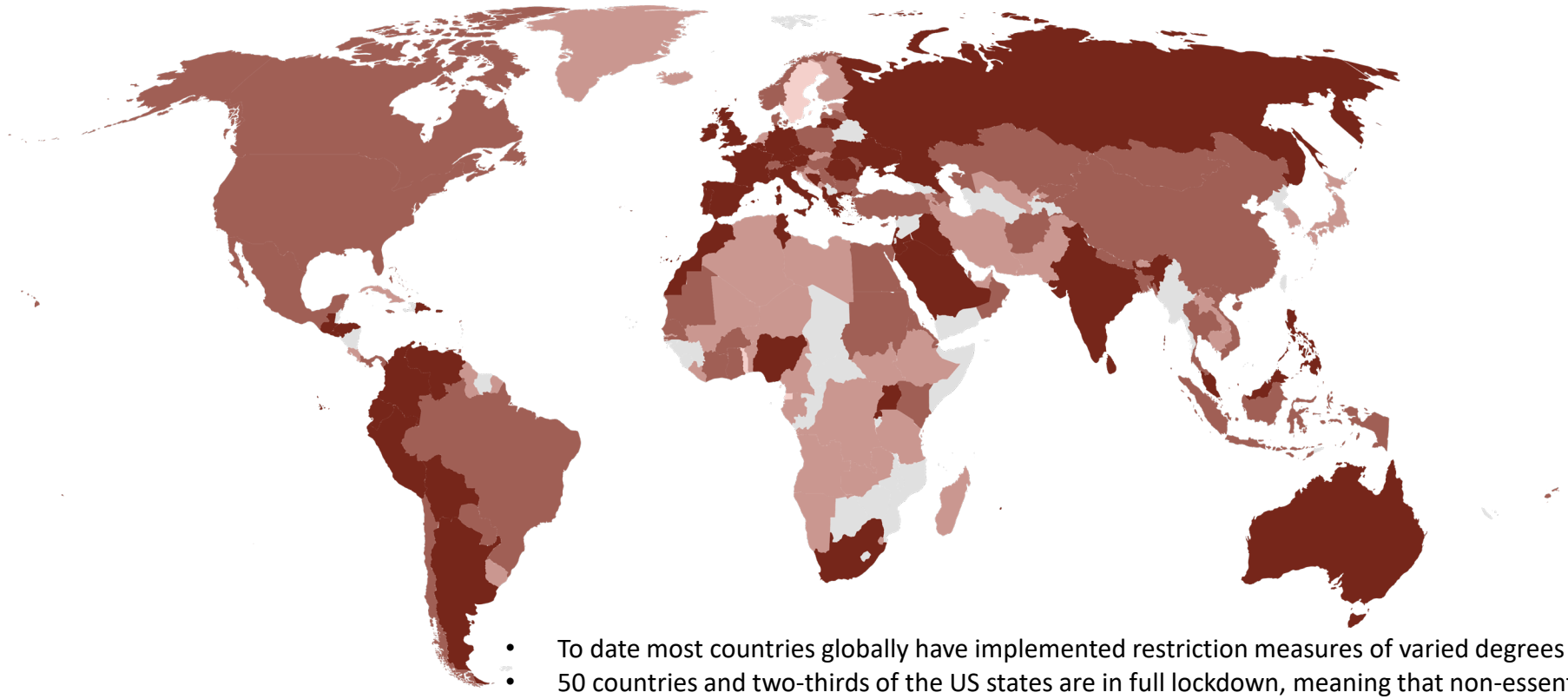
Source: Rystad Energy research and analysis, IEA Oil Market Report series 2019

Global quarantine measures currently implemented

Country level quarantine measured by severity as of 31 March 2020*

Stringency level of measure

Rules against mass gatherings	*Closure of schools*	*Closure of other businesses***	*Lockdown*

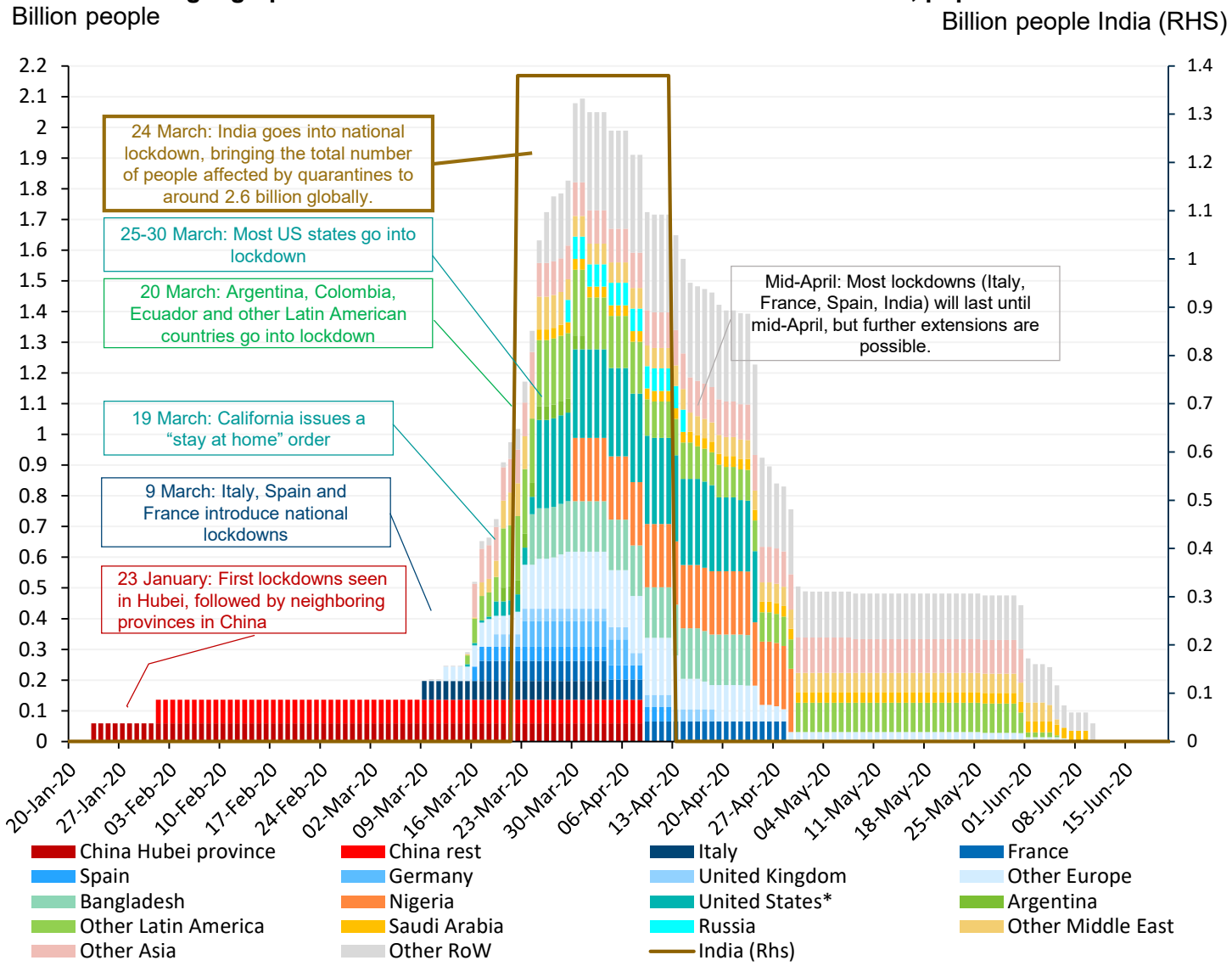


- To date most countries globally have implemented restriction measures of varied degrees of severity
- 50 countries and two-thirds of the US states are in full lockdown, meaning that non-essential business is closed, remote working is enforced, and only essential transportation is allowed

*The geographical extent of the preventive measures can vary within a country. For a small number of the countries, the measure is not yet imposed, but planned imposed in a short period of time
**Other businesses are businesses where it is hard to take measures to prevent the transmission of diseases, but they are not critical to the society. E.g. gyms, hairdressers, etc.
Source: Rystad Energy research and analysis

68 countries are currently in lockdowns with nearly 3.6 billion people affected

Countries and geographic entities that have introduced lockdown measures; population affected



Source: UN Population Prospects, Rystad Energy research and analysis

To date, 68 counties are in full lockdown as well nearly two thirds of US states. This means that all non-essential business is closed, remote working is enforced, and only essential transportation is allowed. We expect such lockdowns to have a significant impact on oil demand, especially on road fuels, as people stop commuting to work or using cars or public transport on the weekends.

In the US, major cities were the first to institute lockdowns, and we are now seeing sweeping state-mandated shelter-in-place orders for over 2/3 of US states.

On 24 March, India went into a three-week lockdown and a curfew regime was imposed, essentially prohibiting 1.3 billion people from venturing out of their homes. The government has indicated that these measures will last until mid-April, but extensions will almost certainly occur. Italy, the European epicenter, is still miles away from having the pandemic under control despite being the first European country to enact strict nationwide lockdowns.

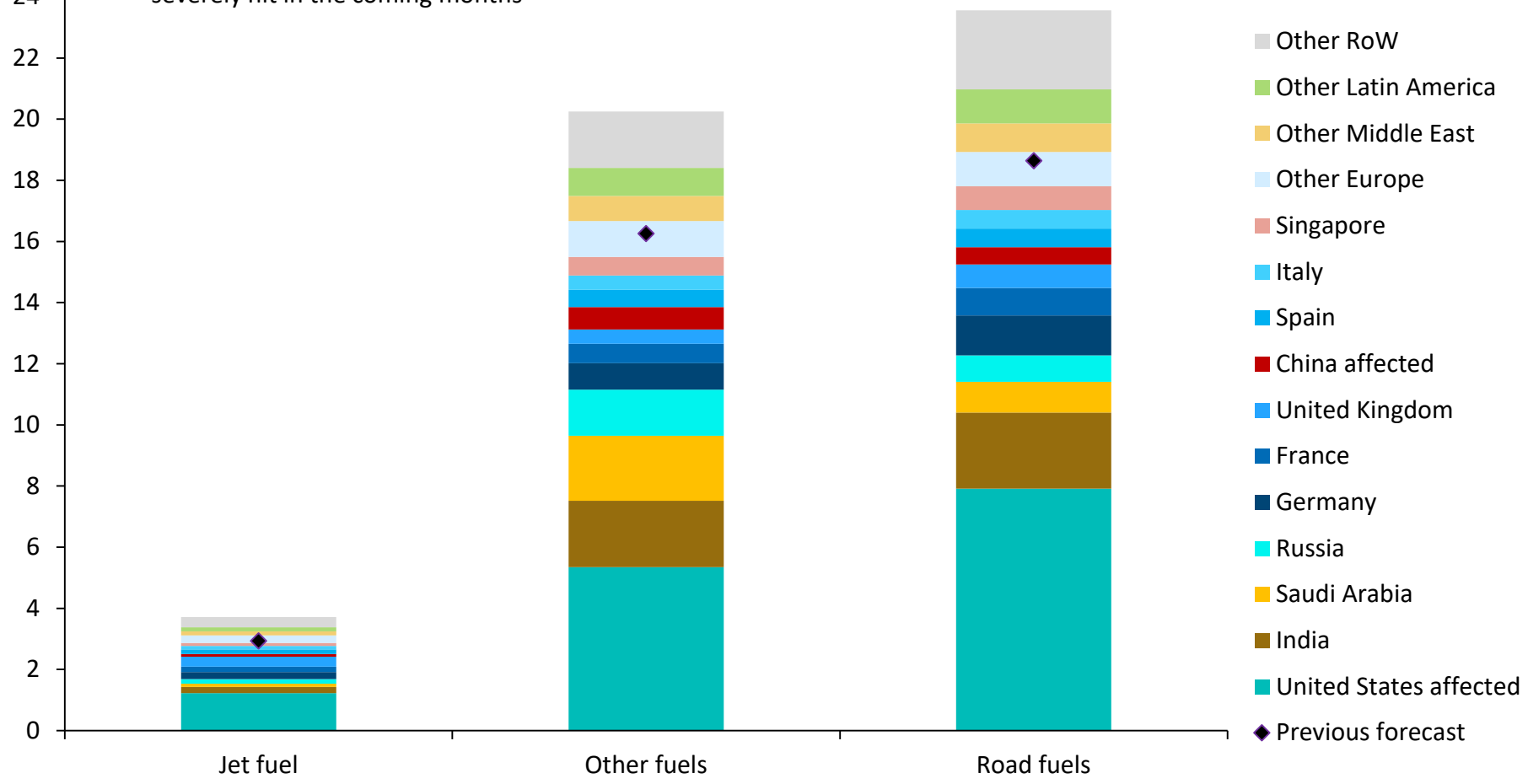
We also saw Nigeria and Uganda going on a lockdown on the 30th March signifying COVID-19 arrival to Africa

More country lockdowns and now 47 million bpd or half of global oil demand at various degrees of risk

Oil products demand directly affected by lockdowns by geography and oil product

Million bpd

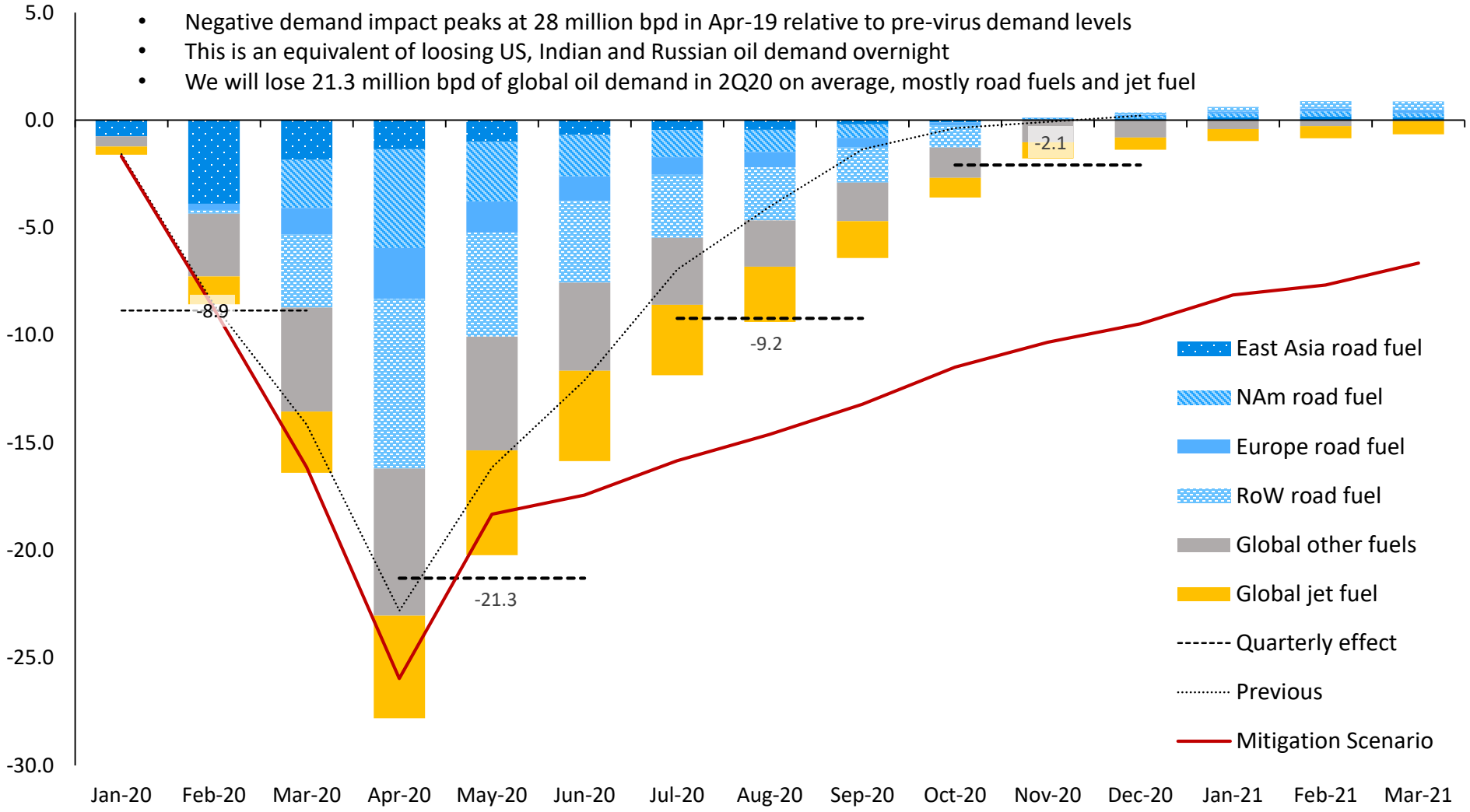
- The amount of oil products consumed in countries with total lockdown policies makes up 47 million bpd
- Not all of the 47 million bpd will disappear for the entire year, but we expect consumption of these volumes to be severely hit in the coming months



Source: Rystad Energy research and analysis

Coronavirus to slash over 21% of oil demand in 2Q-20, causing a shock not yet seen

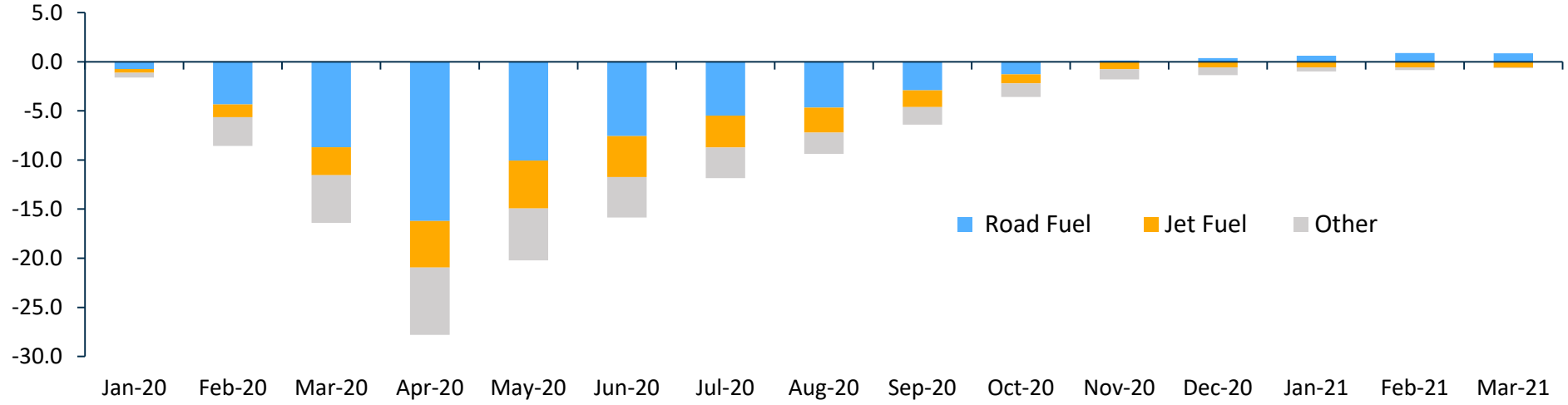
Coronavirus impact on global oil products' demand in 2020 by key region and oil product relative to pre-virus levels
Million bpd



Source: Rystad Energy research and analysis

While jet fuel is hit most in percentage terms, road fuels impact is largest in absolute terms

Coronavirus impact on global oil products' demand by oil product relative to pre-virus levels
Million bpd



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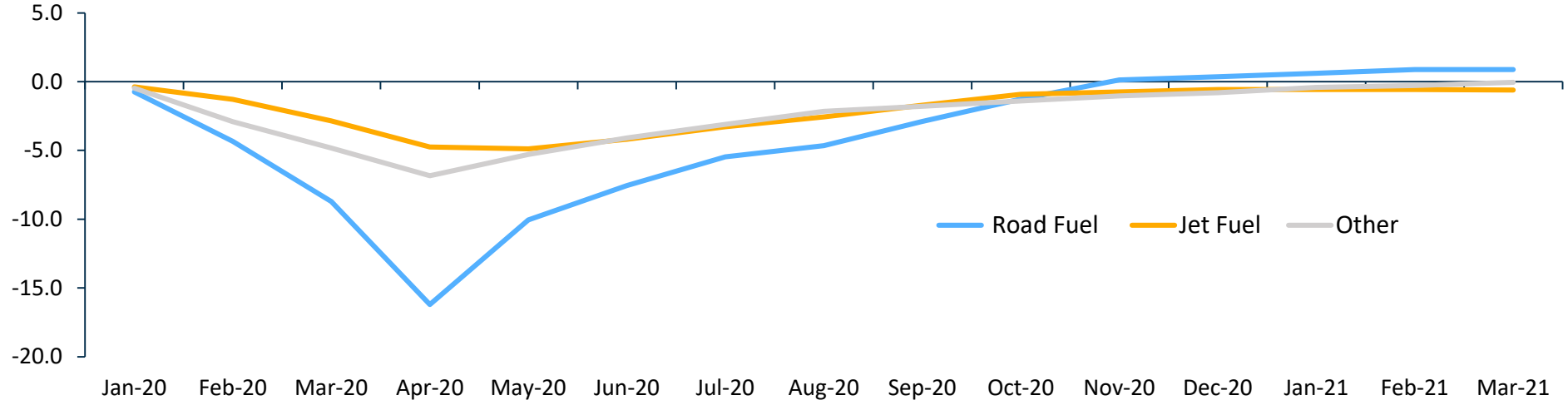
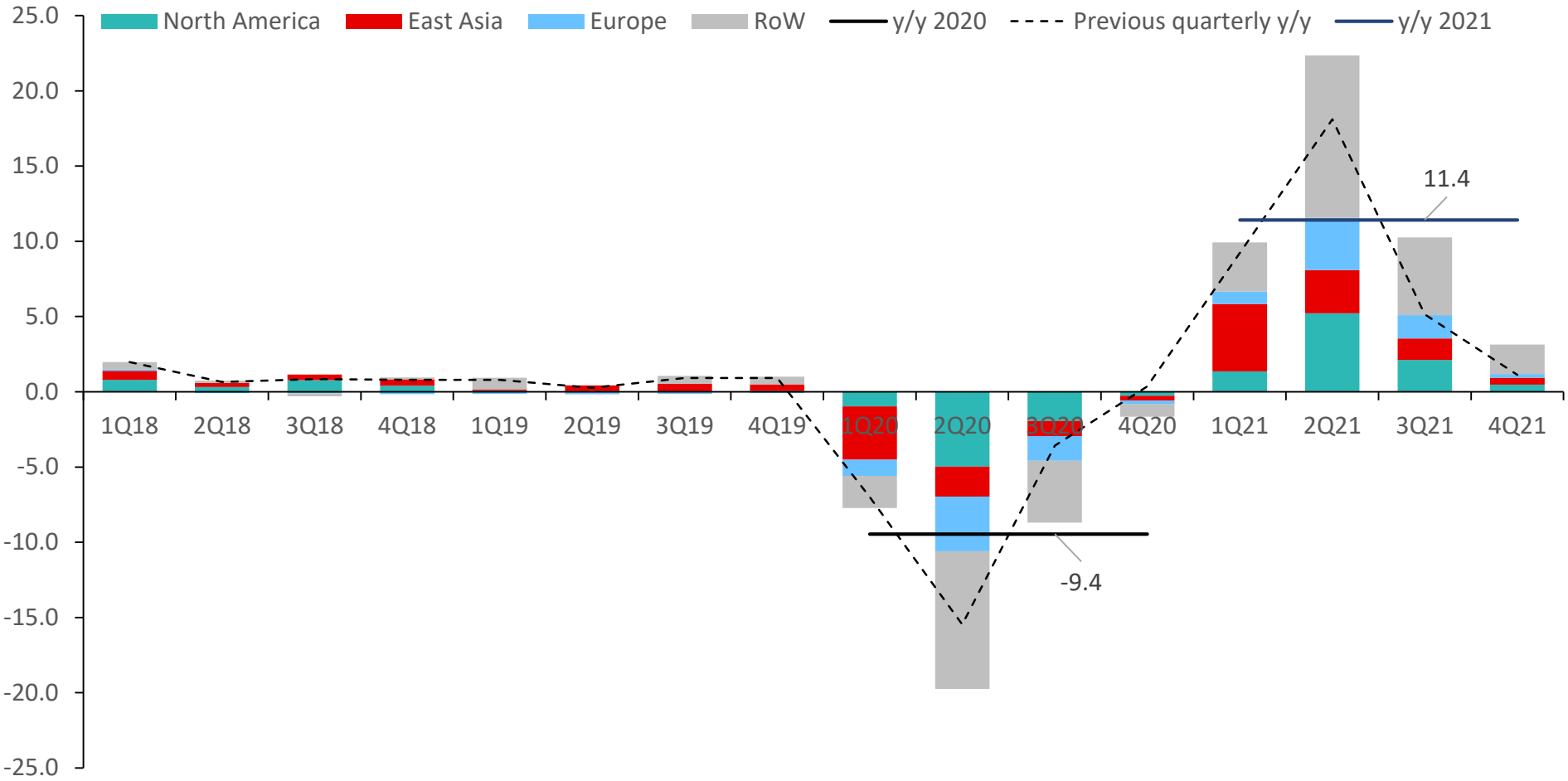


Source: Rystad Energy research and analysis

Oil demand can drop by over 9 million bpd in 2020 y/y – the largest drop on record

Global monthly oil demand growth y/y in 2017-2020 by key region
Million bpd

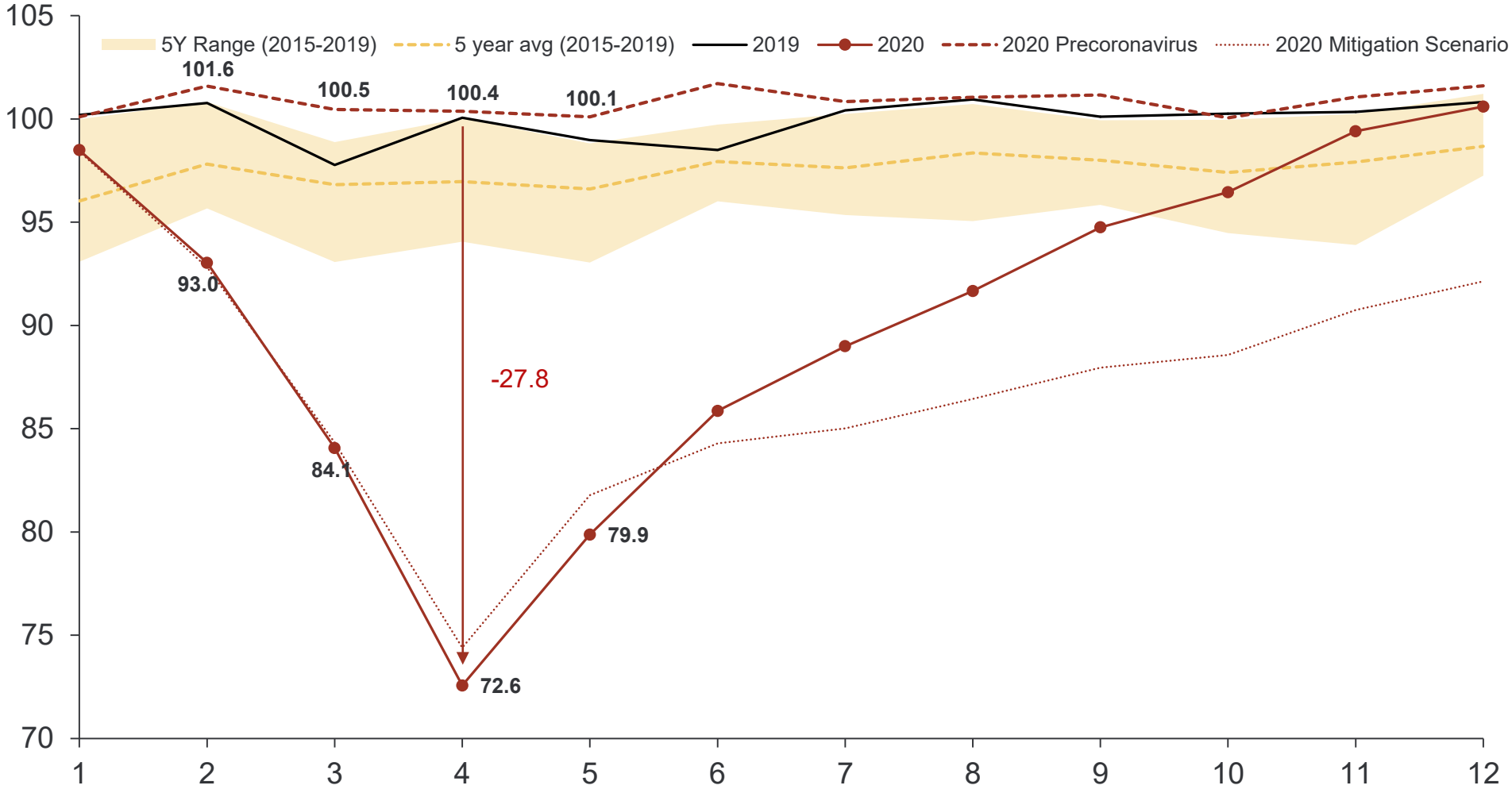


Source: Rystad Energy research and analysis

COVID-19 sends oil demand into free-fall, removing ~28 million bpd of oil demand in Apr-20

Global monthly oil products demand and coronavirus impact

Million bpd

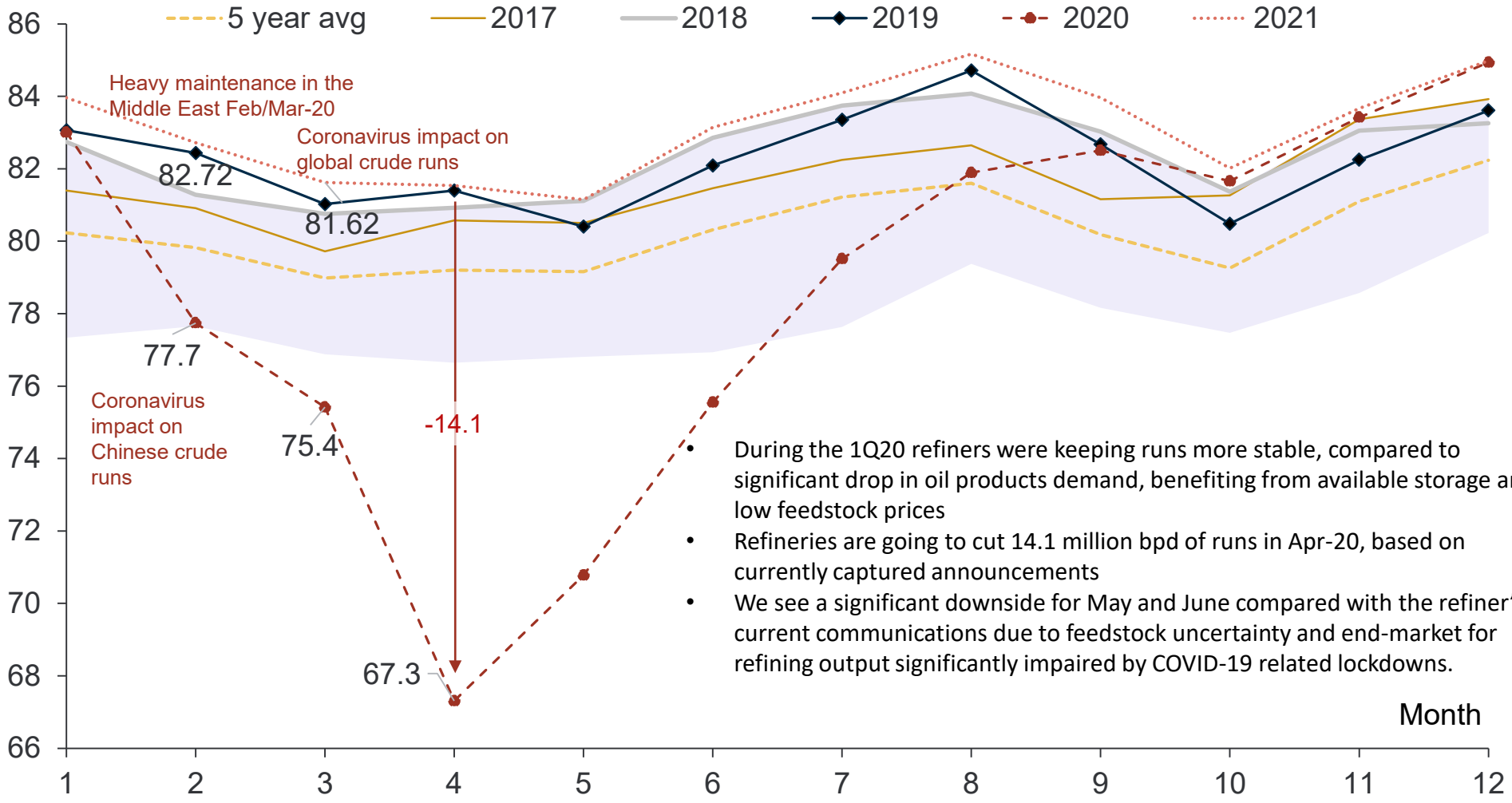


Source: Rystad Energy research and analysis

COVID-19 sends crude demand in a free-fall, with runs dropping 14 million bpd y/y in Apr-20

Global refinery throughput

Million bpd



- During the 1Q20 refiners were keeping runs more stable, compared to significant drop in oil products demand, benefiting from available storage and low feedstock prices
- Refineries are going to cut 14.1 million bpd of runs in Apr-20, based on currently captured announcements
- We see a significant downside for May and June compared with the refiner's current communications due to feedstock uncertainty and end-market for refining output significantly impaired by COVID-19 related lockdowns.

Source: Rystad Energy research and analysis, JODI, Bloomberg

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Oil market balances are officially broken as G-20 leaders gather to discuss how to fix them

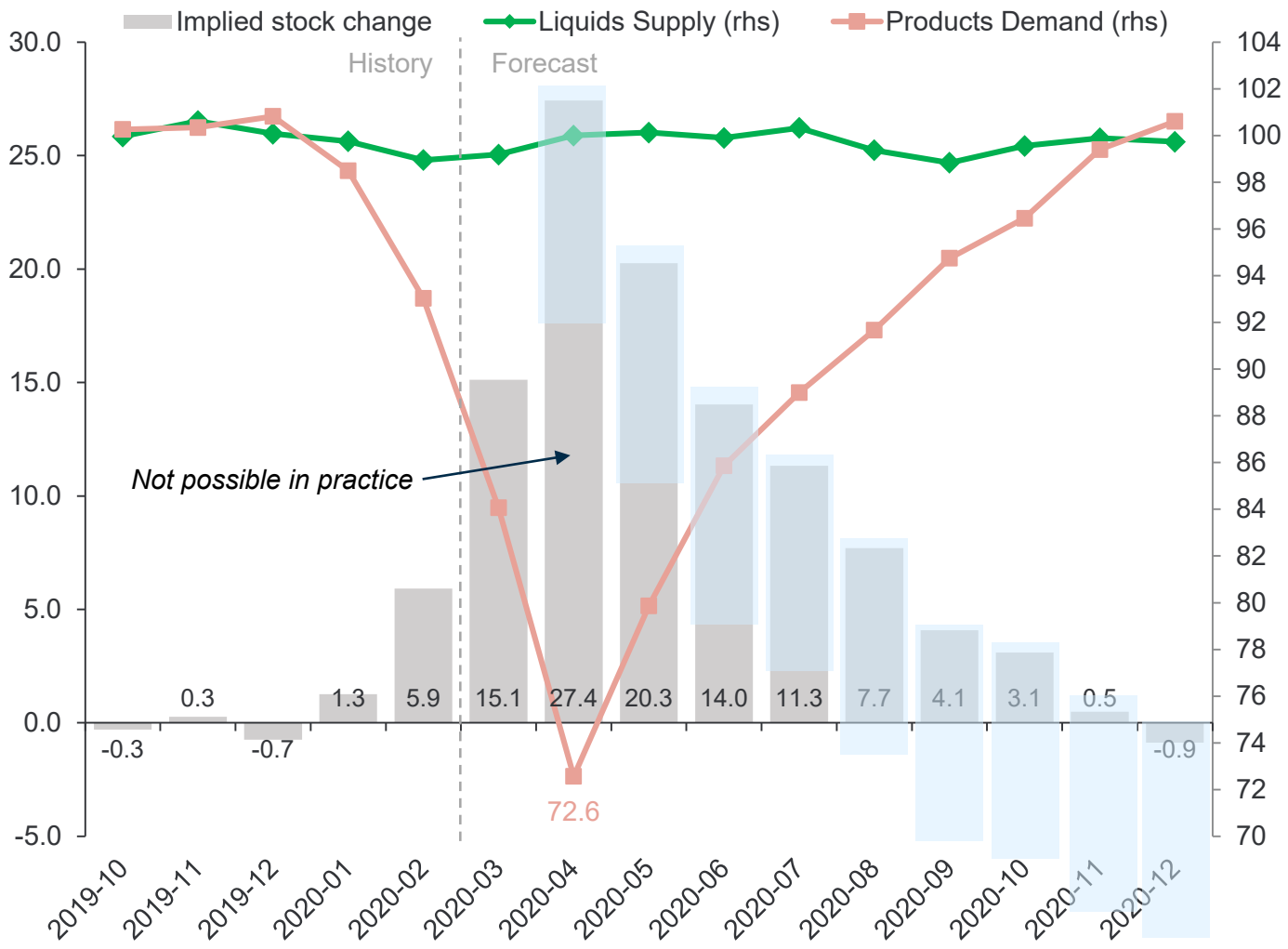
Traditional supply-demand balances analysis in the current market simply break down due to the unbelievably deep losses to current products demand. However, when just stacking liquids supply-demand against each other, we get the chart on the right, suggesting a theoretical oversupply in the overall oil market of 27 million bpd for April, 20 million bpd for May and 14 million bpd for June. Of course such magnitude of implied stock builds are not possible in practice, and market forces will work to correct the huge imbalance very quickly, as is shown on the next slides.

In our latest demand update from our COVID-19 report, global demand losses peak in Apr-20 at a 28 million bpd impact, then improves to 20 million bpd in May and 16 million bpd in June. In our supply numbers we only include the latest announced upstream shut-ins observed and no additional voluntary global production cut nor additional «forced shut-ins» due to full storage chains or low oil prices.

Clearly, the market cannot absorb a 20 million bpd liquids market surplus during 2Q 2020. Something has got to give in; price, and then supply. This is the daunting market backdrop as global oil producing countries gather on Thu 9 April followed by a G-20 meeting scheduled for Fri 10 April to discuss how to help the oil market avoid an uncontrolled supply collapse.

In the next two slides we show possible scenarios for how long the oil market is able to absorb excess supply of a magnitude never before seen in the history of the market. Clearly, a 10 million bpd immediate global coordinated supply cuts is not enough to save the market entirely, but the alternative scenario is much worse.

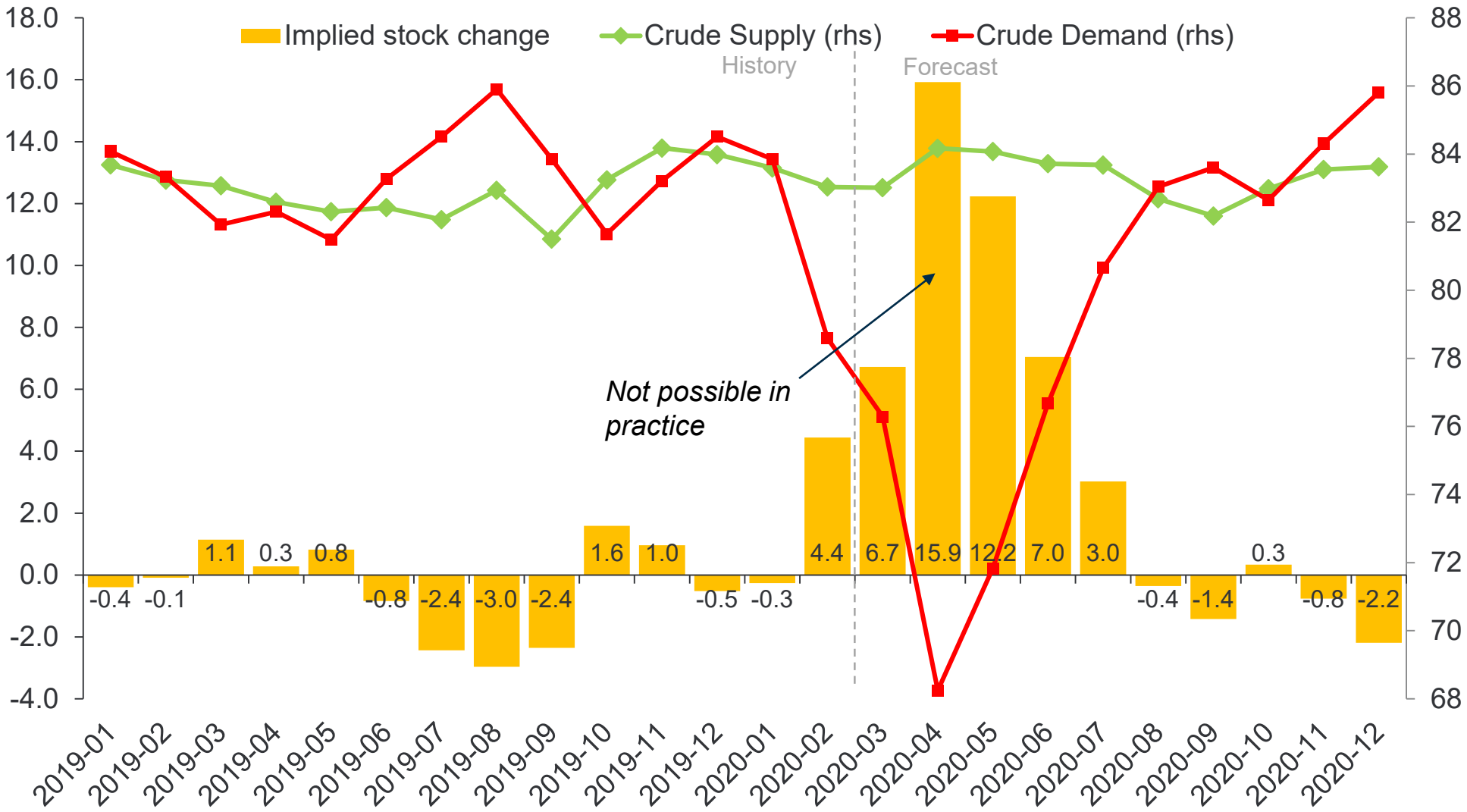
Global liquids supply and demand balances, monthly
Million barrels per day



Source: Rystad Energy research and analysis, OilMarketCube

Unprecedented supply glut for crude in 2Q 2020 prompts question of storage capacity

Global Crude and condensate balances, quarterly
Million barrels per day



Source: Rystad Energy research and analysis, OilMarketCube

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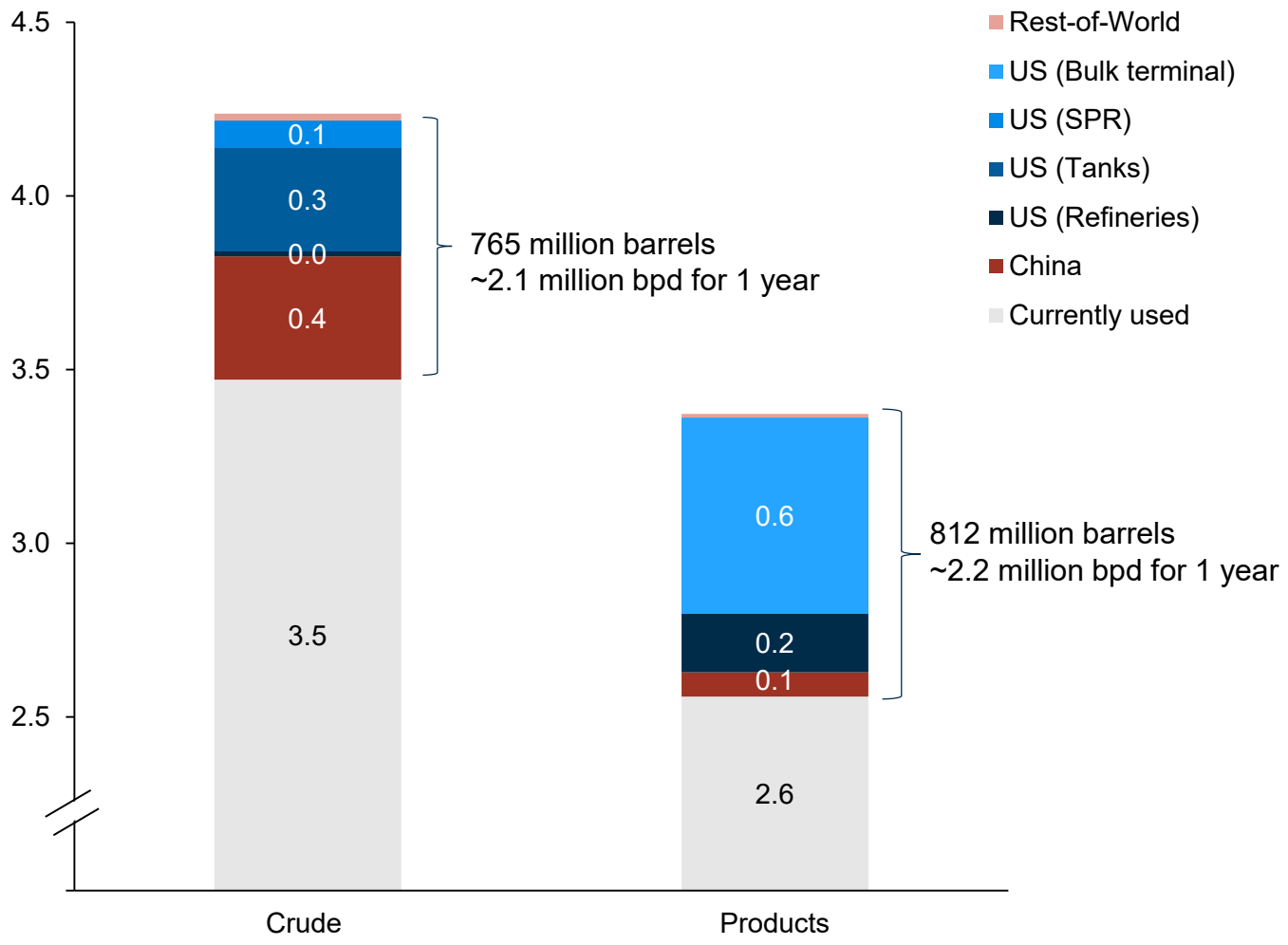
Available global storage capacity is not large enough absorb the current rate of stock build

Based on rigorous analysis, we find that the world has currently in storage around 7.4 billion barrels crude and products onshore, including 1.3 billion currently onboard oil tankers at sea. We estimate that on average 79% of the world's oil storage capacity is already full. Therefore, we believe that the theoretical available storage capacity is currently limited to 1.5 billion barrels onshore for crude and products combined. The operational storage capacity is actually lower as tanks cannot be filled up to 100% capacity.

Using our estimate of an average of over 20.0 million bpd of implied "theoretical" oil stock builds for 2Q20, we find that it would take less than three months to fill all onshore tanks. However, in practice, we will hit the ceiling as soon as mid-May due to several operational constraints, including that not all storage is available to all market participants. Storage capacity is not geographically distributed but rather concentrated in the US and China. Also, a percentage of the storage infrastructure is locked into long-term lease agreements or contracted for the exclusive use of a particular operator/refiner. In addition, there is not a one-size-fits-all solution when it comes to storage tanks, they are designed for one specific product or crude blend.

Producers cannot scape production shut-ins/cuts in the following months. Although refinery runs are holding up for the moment, with an oil demand drop of nearly 30.0 million bpd in April, the currently available 800 million barrels of product storage will fill very fast. This will soon, rather than later, force refineries to significantly cut runs to balance the product market. Once refinery throughput follows the demand shock, producers will have not option but reduce supply as the 765 million barrels of estimated available crude storage won't be enough to withstand the crude oversupply.

Global available storage capacity, by region by type
Billion barrels



Source: Rystad Energy research and analysis, IEA, EIA, SCIG. US storage capacity excludes pipelines.

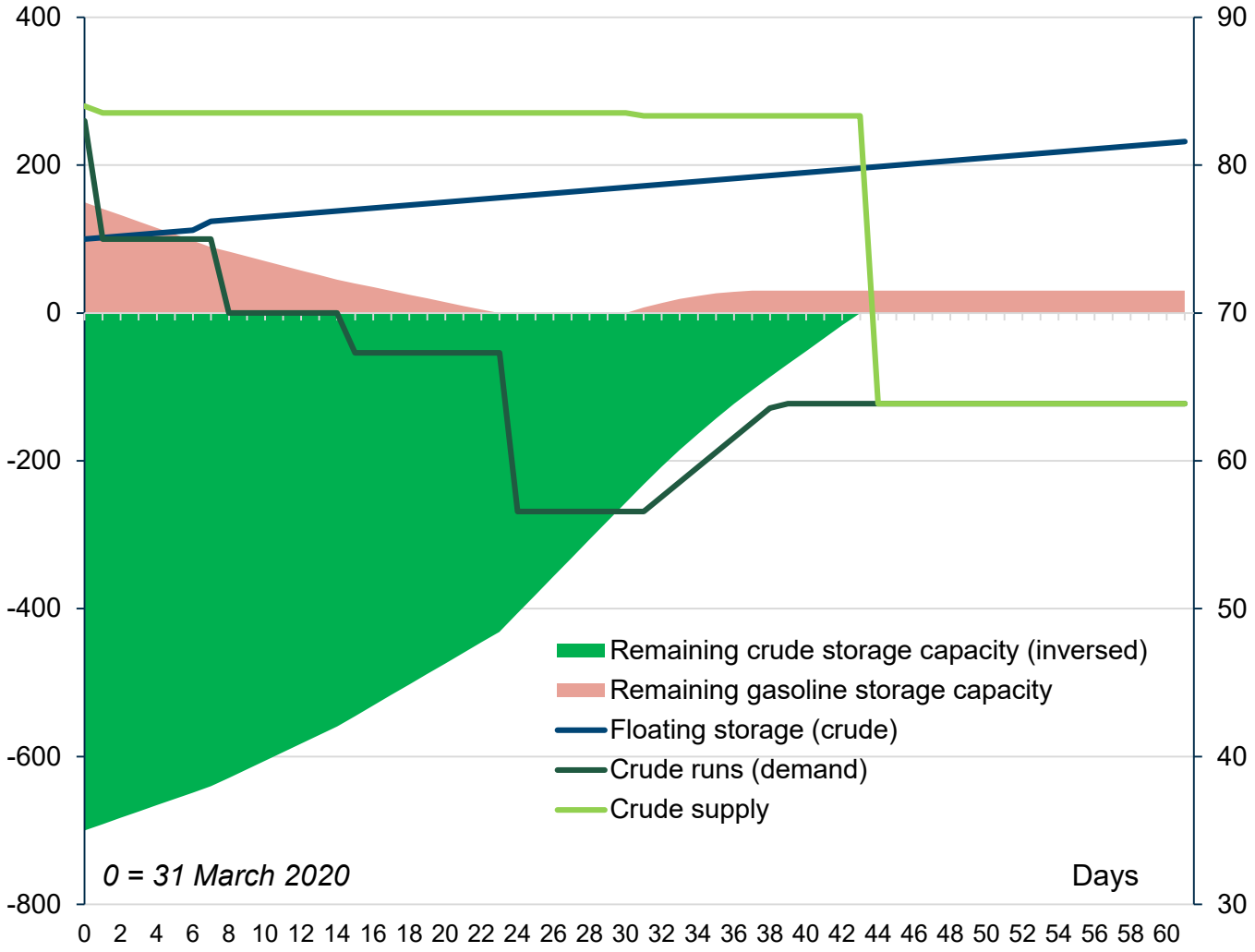
Mind the abyss – we «hit the wall» of crude storage capacity by mid-May or even sooner

Time is running out for the oil market. If there are no large voluntary production cuts immediately in April, we could see large additional refinery run cuts in 2-3 weeks from now and the world could run out of crude onshore storage by mid-May, even when accounting for builds in floating storage, forcing upstream production shut-ins around the world as supply needs to align with demand. Spot crude prices would collapse, companies could go under and we could create permanent damage to supply capacity when demand inevitably recovers again.

We believe a likely sequence of rebabancing could be: Refinery run cuts have occurred into April, but not enought so the market will still build product and crude storage. Then, motor gasoline storage capacity is exhausted (assumed the bottleneck) causing waves of refinery run cuts which again accelerates the crude stock build. Lastly, crude oil storage runs out, forcing large upstream production shut-ins and the forced rebalancing between supply and demand for crude.

In this theoretical scenario, without large voluntary crude supply cuts, we can run out of gasoline storage capacity around the third week of April (in the next 14 days). Refinery runs would then need to be reduced further, accelerating the crude stock builds. Despite floating crude storage builds of 2 million bpd (equivalent to one VLCC per day), we would run out of the remaining onshore crude storage capacity by the second week of May, causing massive shut-ins in upstream crude supply.

Crude and condensate balancing scenario in «no voluntary cut scenario» (Day 0 = 31 March 2020)



Source: Rystad Energy research and analysis, OilMarketCube

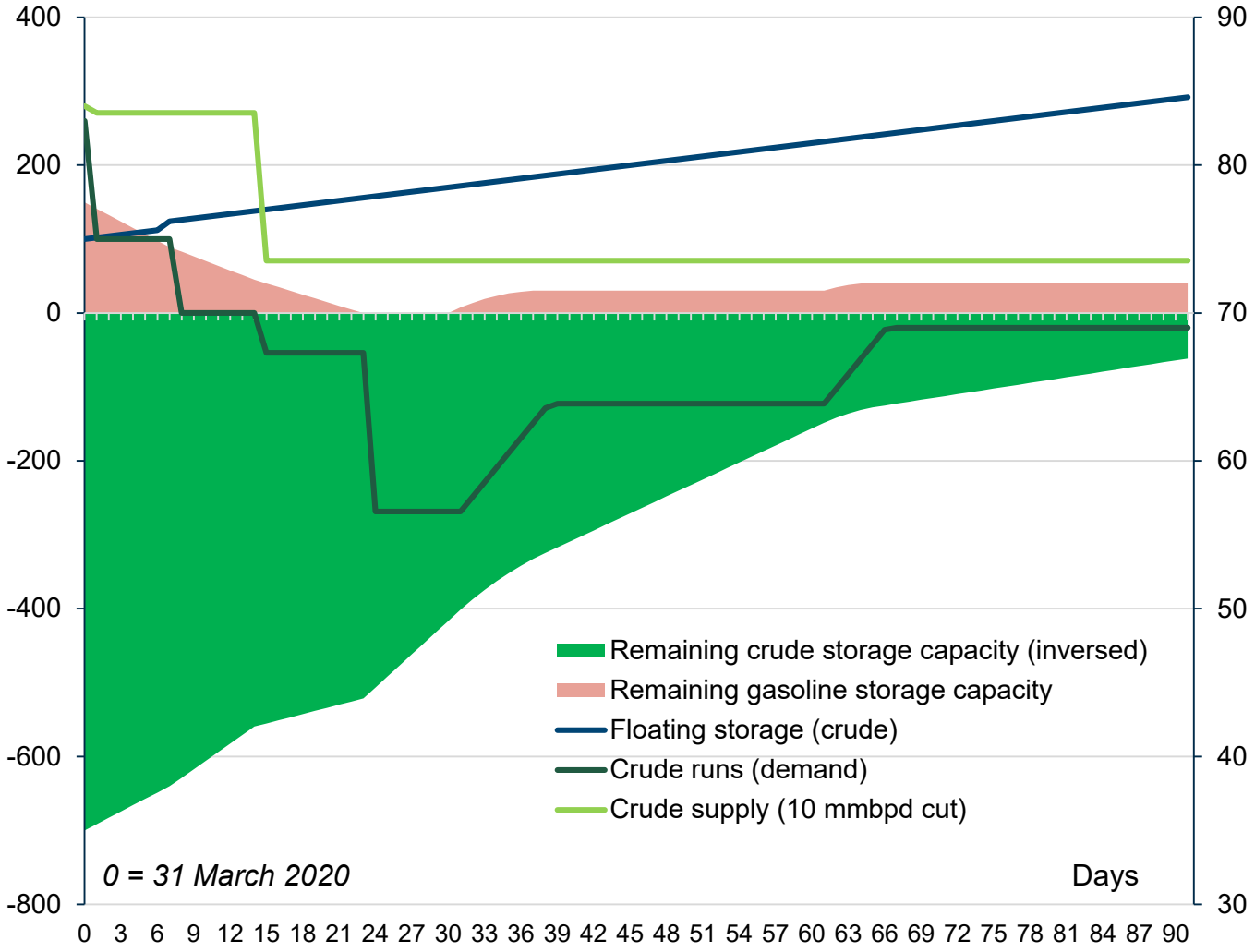
A 10 million bpd immediate supply cut not enough, but it delays the market abyss to July

What would a 10 million bpd cut do in order to bring the world's E&P companies and the physical oil market further away from the brink? In a 21 millon bpd oversupply for 2Q 20, 10 million bpd is not enough to avoid further downwards pressure in spot prices, but it would accomplish something important – give the market more time to prepare for a situation where oil storage capacity is getting depleted and large uncontrolled production shut-ins during May. In fact, it could in our model delay the reckoning to July, at a time when oil demand globally is expected to be much stronger if the world manages to get the COVID-19 spread under control.

If a global «OPEC++» cut of say 10 million bpd (or even higher) was implemented immediately (assumed from 15 April), it would still lead to large crude stock builds in April and May. Gasoline/product storage capacity would still run out during April and cause deep run cuts, but the market would be able to avoid reaching the «storage brink» in May, but instead into early July (see chart). This will help global E&Ps prepare better and keep spit oil prices more supported – although even in this scenario we believe crude prices would still come down from the current $33 Brent today.

We find that a double-digit immediate supply cut will delay the market «hitting a wall» with full storage by 2 months or more, and allow for more time for demand to improve, companies to prepare supply chains and activity plans, reduce costs and avoid an uncontrolled dismantling of parts of the industry, which will only come back to haunt the market with risk of price spikes 18-24 months down the line.

Crude and condensate balancing scenario in «10 mmbpd cut scenario» (Day 0 = 31 March 2020)



Source: Rystad Energy research and analysis, OilMarketCube

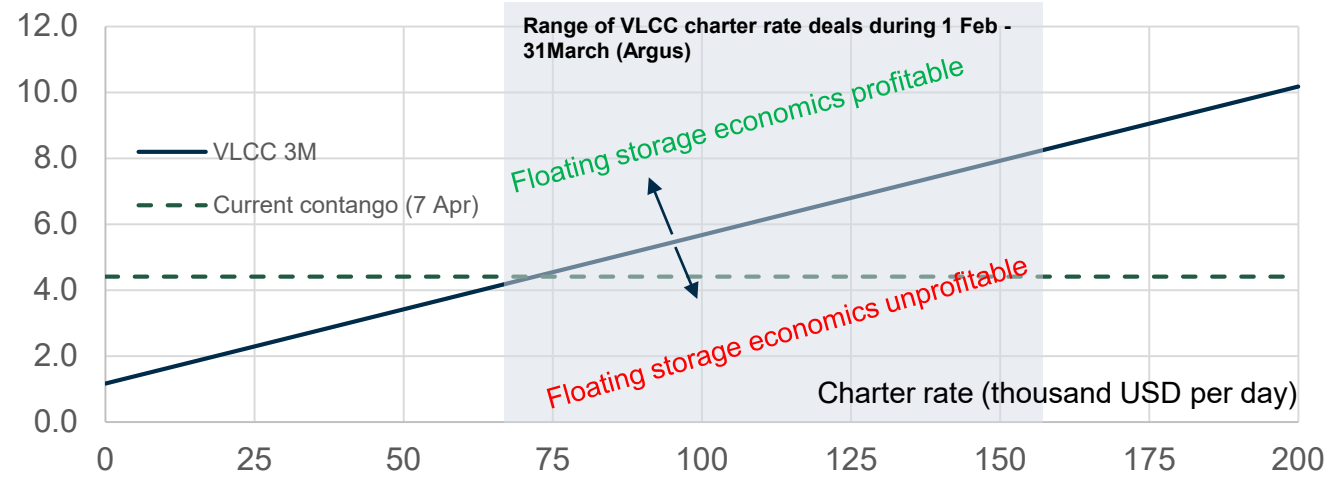
Floating storage will (need to) grow as onshore storage capacity gets more exhausted

The market occassionally uses parts of the 630 million dwt tanker vessel fleet as oil storage vehicles in times of large oversupply in the market. Going into Feb-20, only around 35 VLCCs were used for floating storage, mostly outside Asia and Iran. Since 1 Feb we have observed an increase in floating storage, but especially during the first week of April. Estimates for the exact amount of floating storage vary, but we have learnt that as much as 25 VLCCs (~50 million barrels) have been chartered between 1 Feb and 31 Mar 2020, and an additional ~16 million barrels of floating storage during the first week of April, likely as cuts in refinery runs globally accelerated. There has also been news about jet fuel floating storage deals, but volumes are limited.

Available vessels is not unlimited though. The total VLCC fleet, for example, is made up of around 800 active vessels with capacity of ~1.8 billion barrels, however most of these are in operation and not available to hire. The price for chartering VLCCs has also skyrocketed to as high as $250k/day in March after Saudi Arabia booked the remaining available vessels to conduct its April export spree. Spot rates have now eased back, but are still relatively high in the $120k range. Meanwhile, most floating storage trades are done when the crude term structure enables to lock-in a profit by hedging the crude price forward, from 3 to even 12 months forward. The contango in Brent at the end of March made floating storage economics attractive on a 3 month basis with the 3-month Brent contango near $10/bbl. Even the 12-month time spread moved into attractive territory of above $16/bbl briefly. However, since the news of a possible global production cut broke on 2 April, the «super-contango» has disappeared, making floating storage economics less attractive. However, we believe that floating storage economics will (need to) improve as the market's oversupply will reduce crude exports freeing up more vessels and also through a deeper contango in the Brent term structure, which would allow for floating storage to fill a part of the stock build as cheaper onshore storage capacity gets increasingly exhausted in 2Q20.

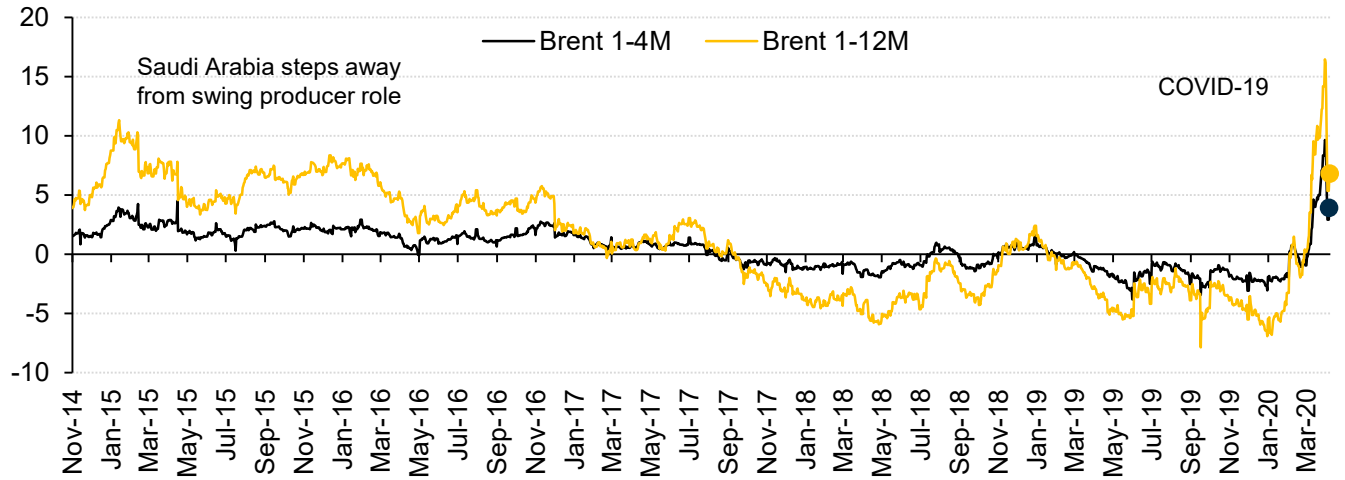
VLCC rates and floating storage economics vs Brent 3-month contango

USD per barrel



Brent term structure evolution

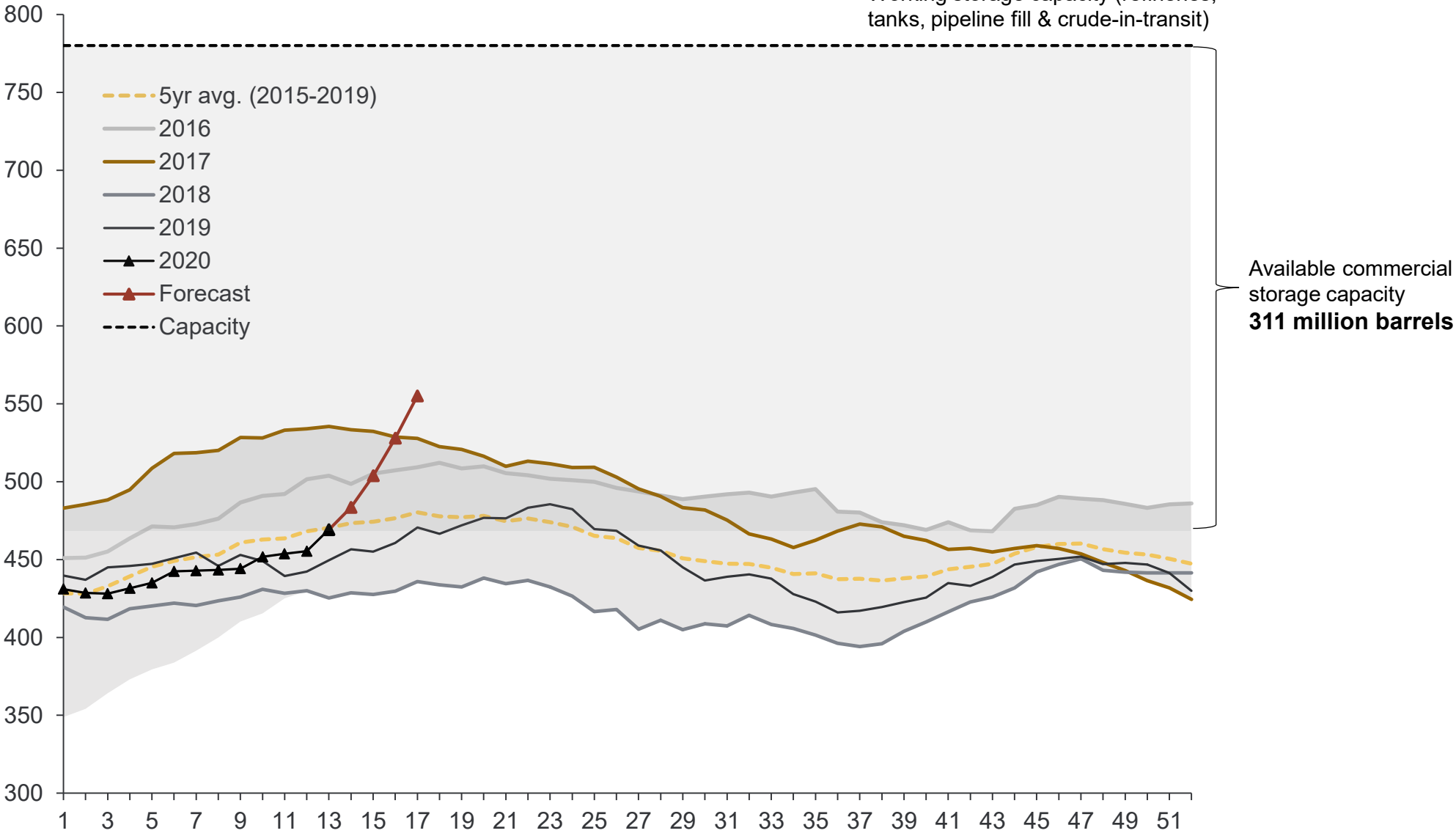
USD per barrel



Source: Rystad Energy research and analysis, Bloomberg

Figure 2: Total US commercial crude inventories

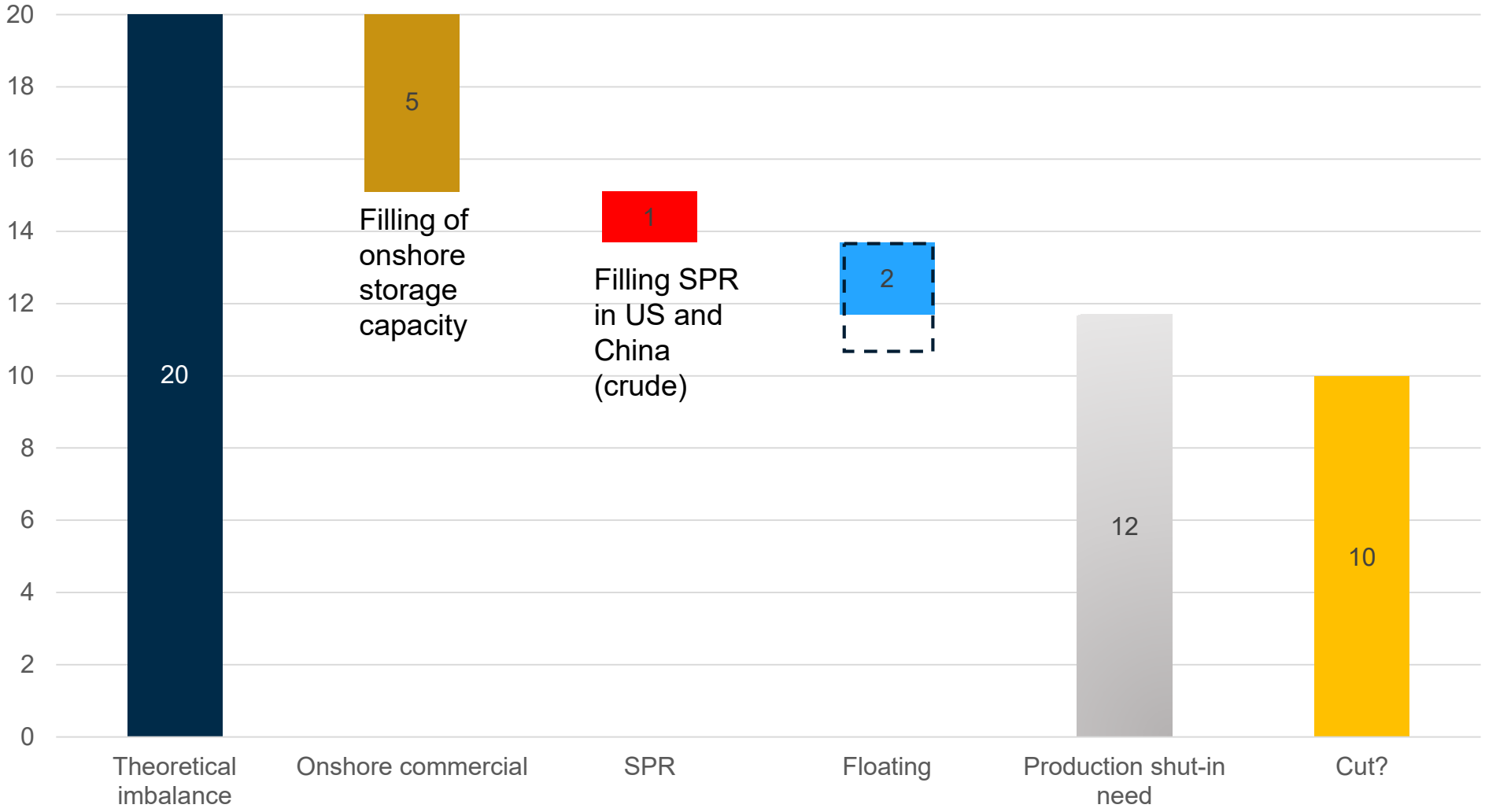
Million barrels



Source: Rystad Energy research and analysis, EIA

How to bridge the oversupply in 2Q – how much can we store and what “needs to happen”

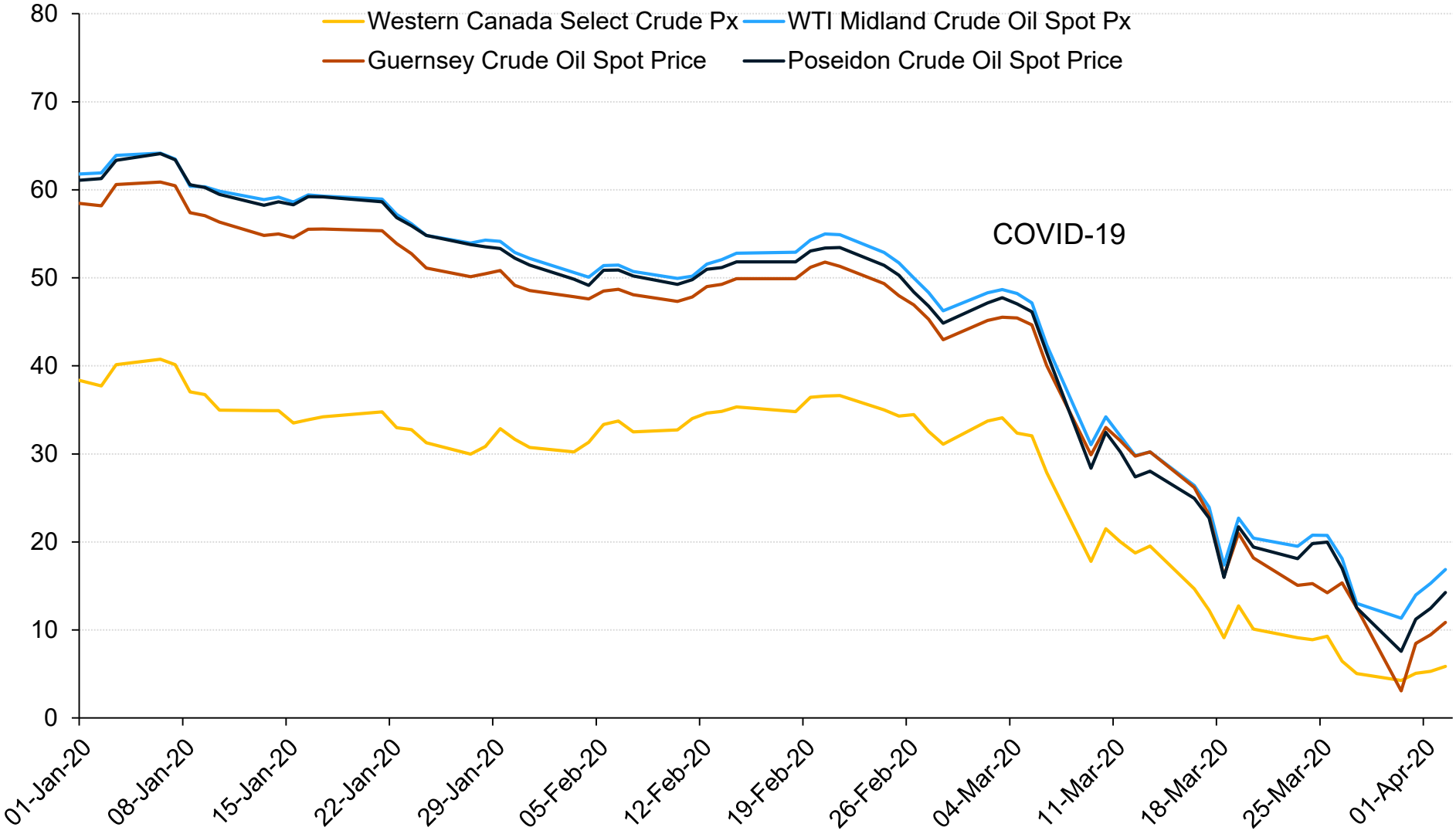
Global liquids supply and demand balances 2Q 20
Million barrels per day



Source: Rystad Energy research and analysis

Race to the bottom - single digit oil prices already incentivizing shut in production

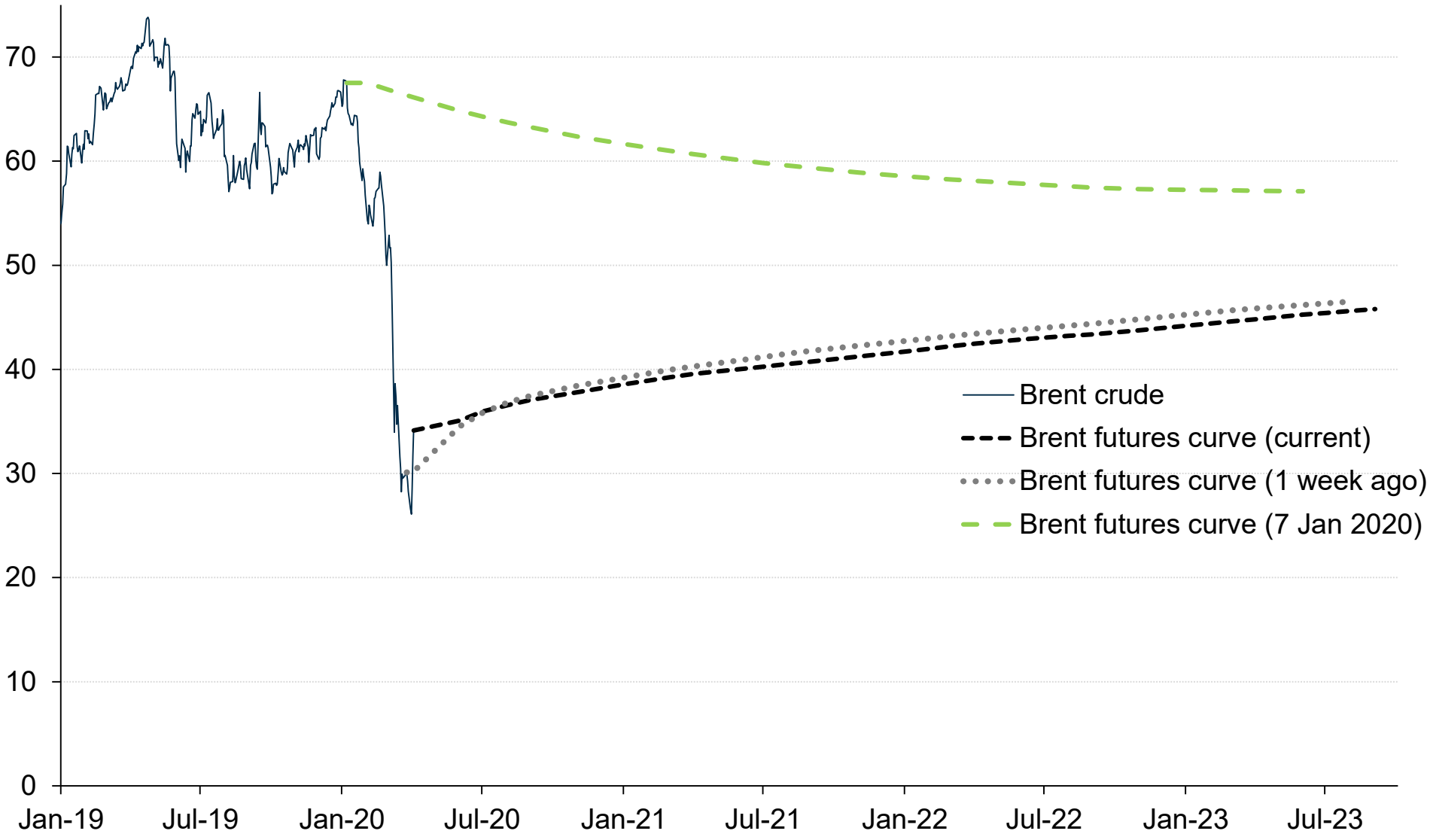
USD per barrel



Source: Rystad Energy research and analysis, Bloomberg

Brent front month and latest futures curves

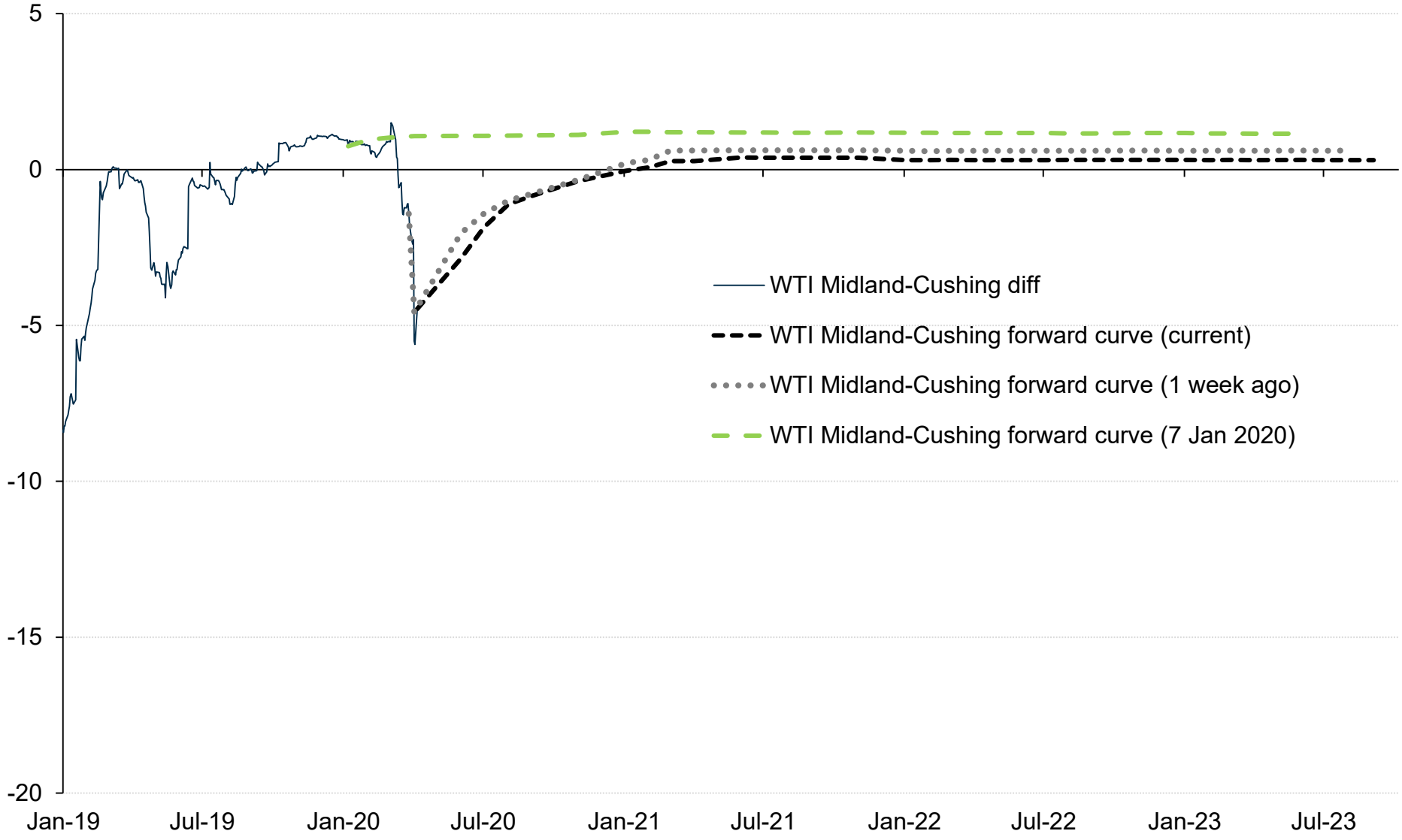
USD per barrel



Source: Rystad Energy research and analysis, Bloomberg

WTI Midland-Cushing differential front month and latest forward curves

USD per barrel



Source: Rystad Energy research and analysis, Bloomberg

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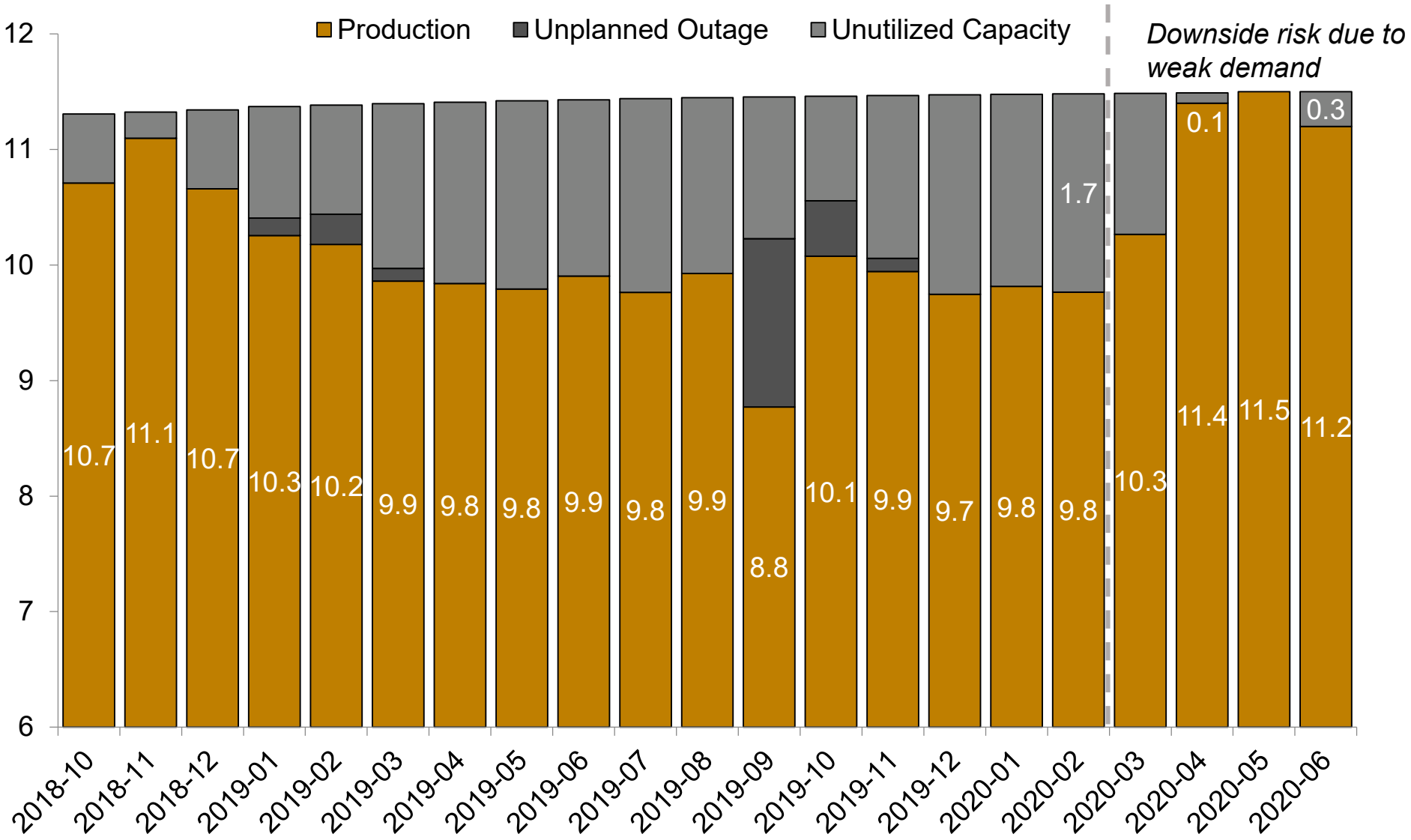
Figure 3: Saudi Arabia crude production and capacity estimates, monthly

Million barrels per day



Source: Rystad Energy research and analysis, OilMarketCube

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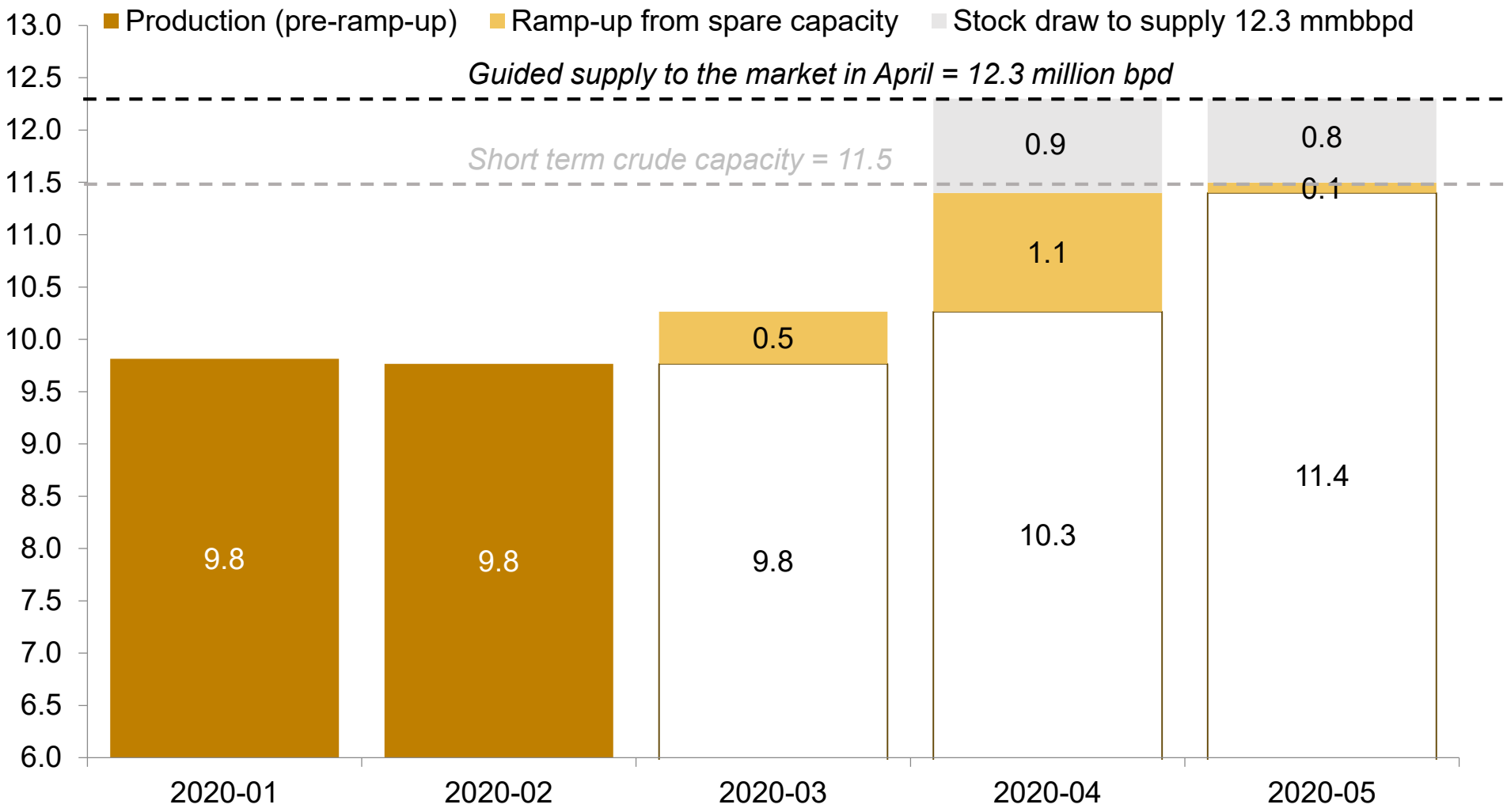
Figure 4: Saudi Arabia "supply to the market" and upstream production in ramp-up

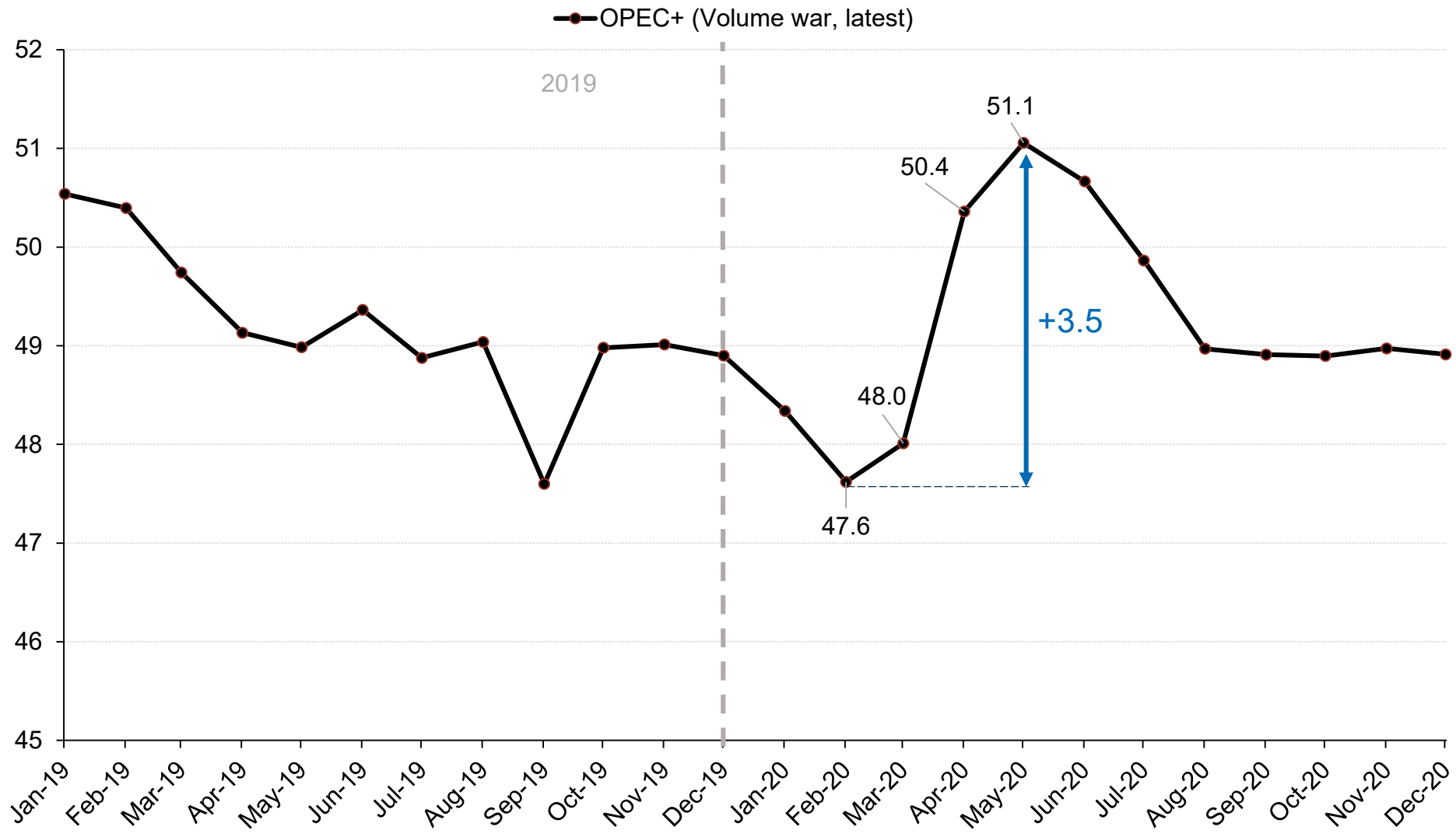
Million barrels per day



Source: Rystad Energy research and analysis, OilMarketCube

“OPEC+” oil* production ramp-up potential forecast before shut-ins/cuts, monthly

Million barrels per day



*OPEC+ oil here includes OPEC-13 and non-OPEC-10 crude and lease condensate

Source: Rystad Energy research and analysis, OilMarketCube

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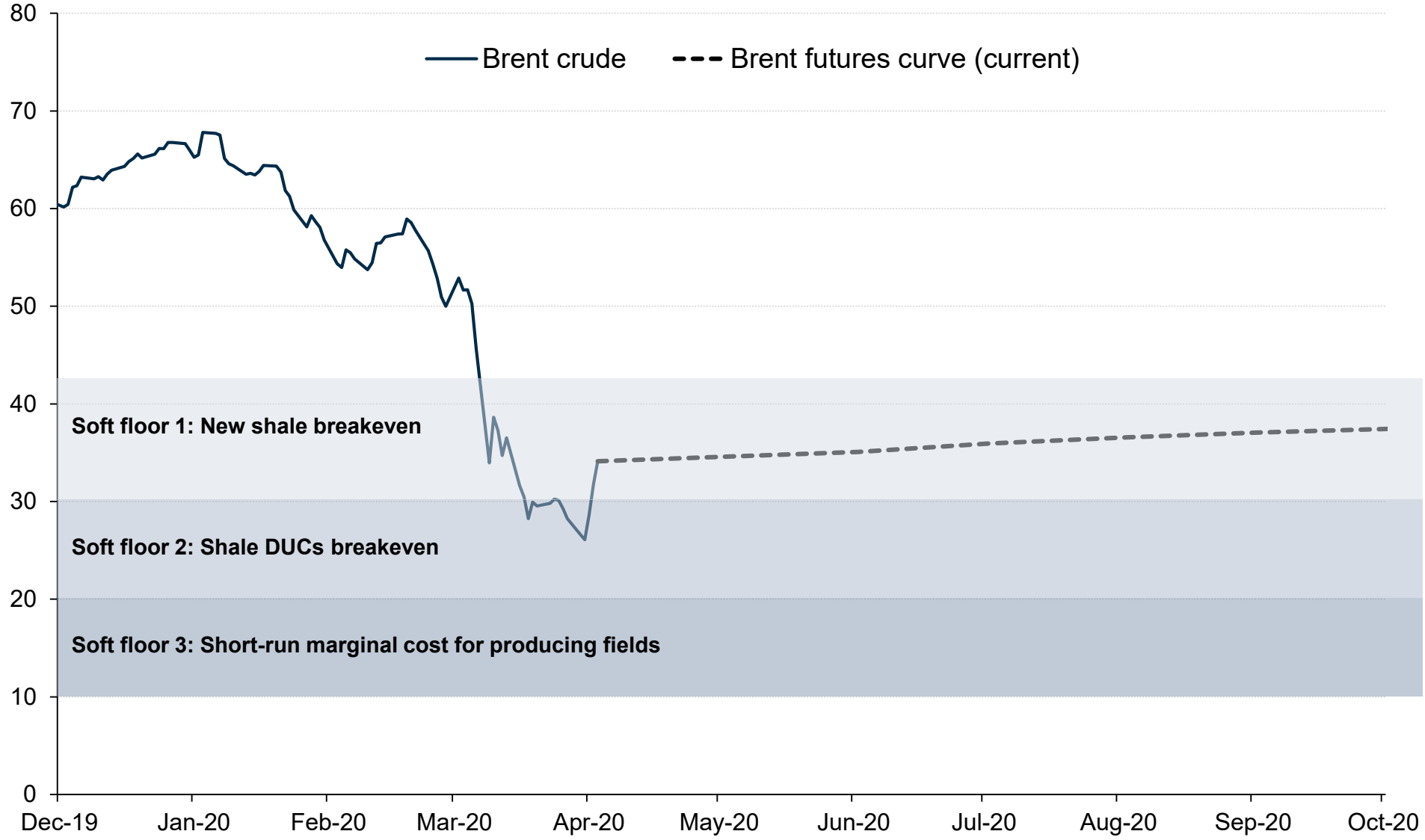
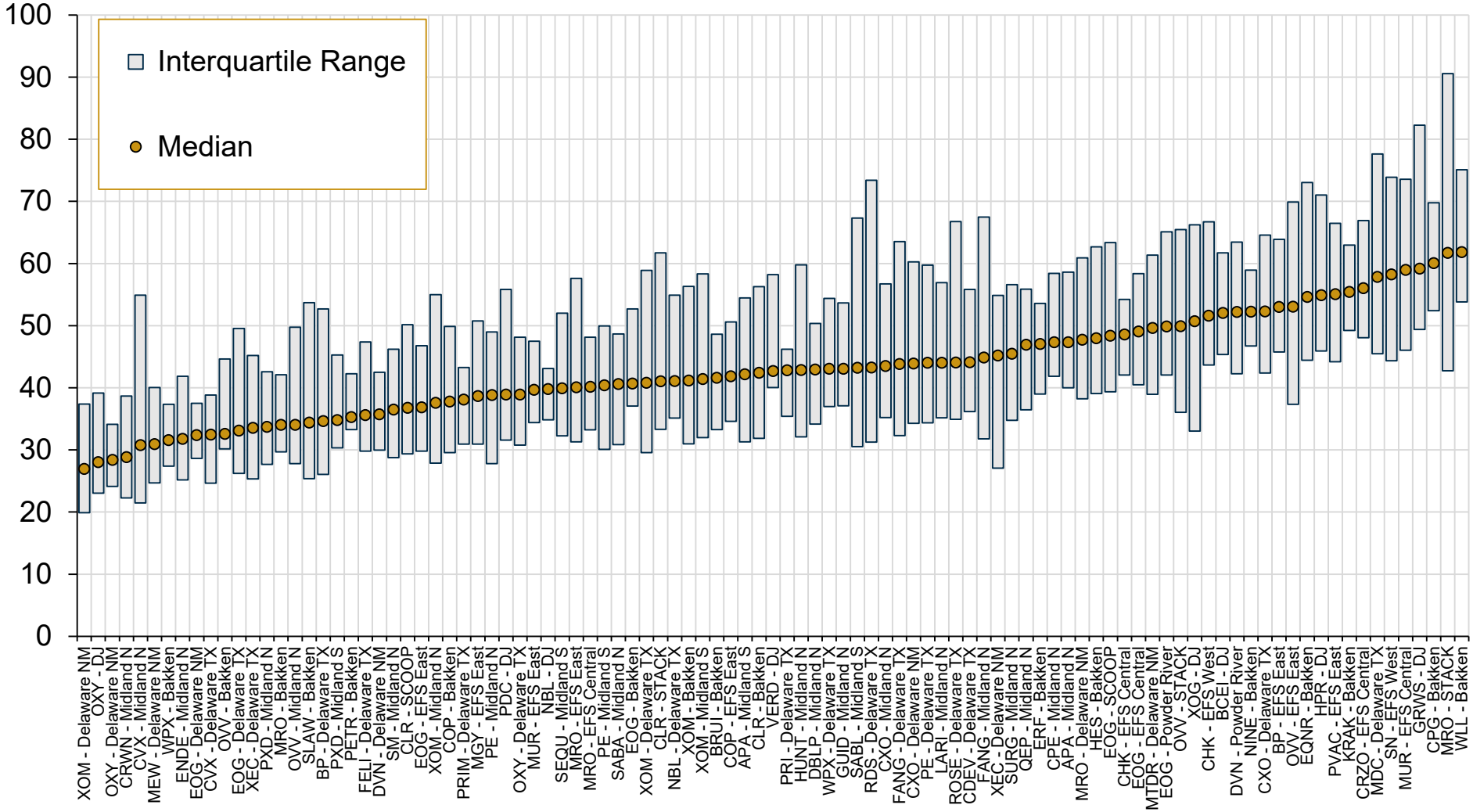
Brent may need to test all the three soft "floors" in the coming month or two in the worst case
USD per barrel



Source: Rystad Energy research and analysis, Bloomberg

Soft floor 1: We are already deep into this one
WTI breakeven oil prices* in 2018-2019 for the 100 most commercial acreages

Dollars per barrel

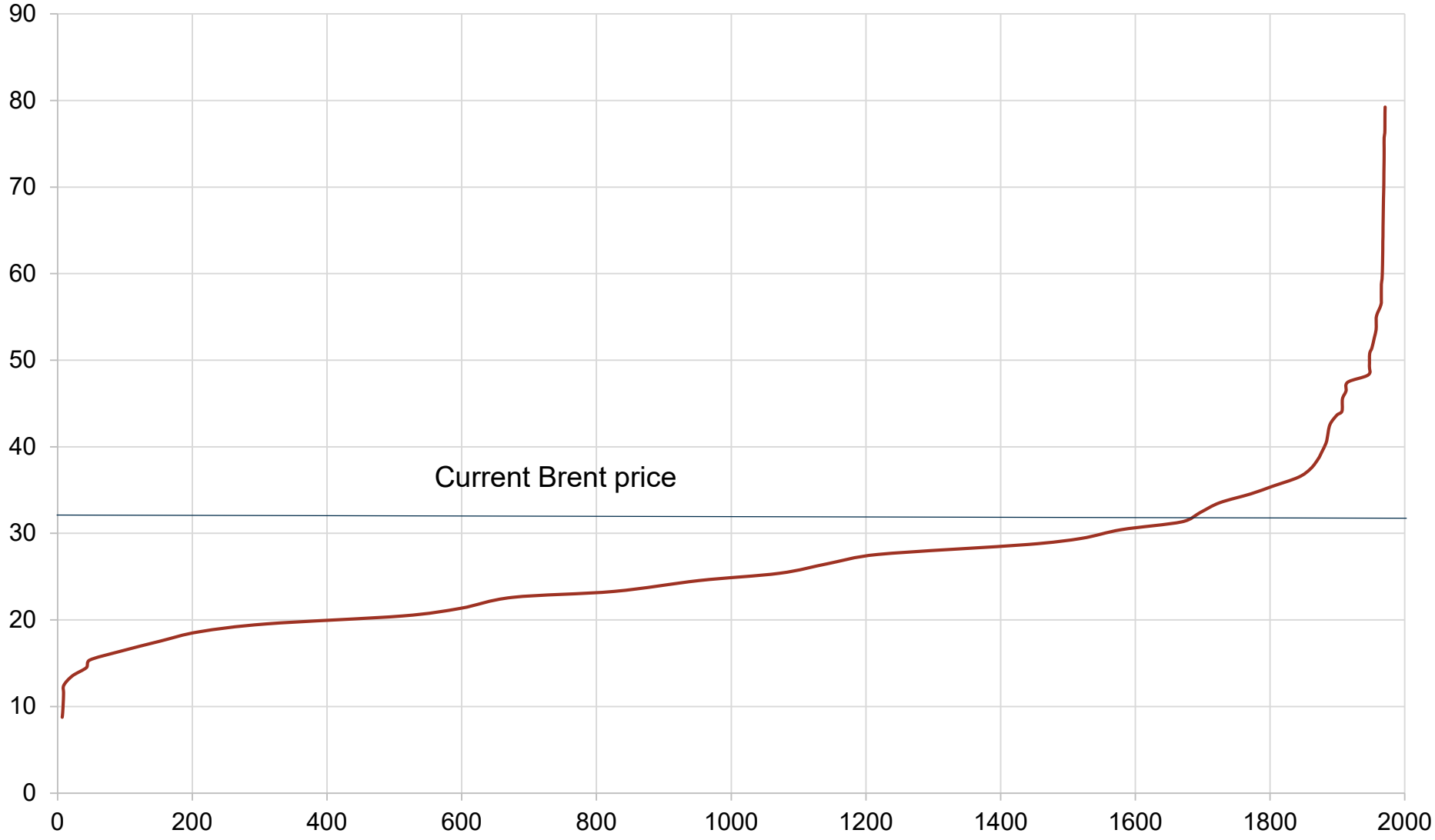


*Includes all horizontal oil wells with at least four months of reported production
**Only acreage positions with more than 30 wells in Permian, Eagle Ford, Bakken, DJ, Powder River, SCOOP & STACK are included
***Gas and NGL prices are assumed at $2 per MMBtu and $15 per barrel, respectively
Source: Rystad Energy ShaleWellCube, February 2020

RYSTAD ENERGY

Soft floor 2: US shale cost of supply curve for DUCs

X-axis: Cumulative oil production in 2021 (thousand bpd); Y-axis: Brent-equivalent breakeven oil price



*Oil price required to yield an NPV of zero using 10% nominal discount rate for cash flows
Source: Rystad Energy research and analysis, UCube

Agenda

- Demand: COVID-19 effects and scenario analysis
  - Products demand
  - Crude demand
- Supply-demand balances
  - Storage capacity and oil price/curve structure
- OPEC+ surge stopped in its wake?
- Market prices and price floors: Short-run marginal cost of supply and price sensitive supply at risk
- Observations on supply responses to low oil prices:
  - Upstream shut-ins and COVID-19 effects
- Can US shale survive? US shale oil sensitivity to price
- Oil price scenarios - could we be setting the stage for a bullish 2021?

Production shut-ins due to COVID-19/ low oil prices/ storage issues

As of 7 April 2020, Thousand barrels per day

Country	Project	Operator	Supply Segment	API Group	Sulphur Group	Estimated Operating cost for 2020 ($/bbl)	Reason	Mar-20	Apr-20	May-20	Jun-20
Brazil	Not reported	Petrobras	Offshore	-	-	-	Low oil prices	-	200	200	200
Iraq	Halfayah	PetroChina	Other Onshore	20-23	Sour	3	Storage constraints	95	193	193	193
Canada	Fort Hills	Suncor Energy	Oil Sands	Bitumen	Sour	21	Low oil prices	30	126	106	90
Iraq	Garraf	Petronas	Other Onshore	Medium	Sour	4	COVID-19 related shut-in	67	110	110	10
Canada	Syncrude Mildred Lake	Syncrude	Oil Sands	Bitumen	Sweet	27	COVID-19 related shut-in	112	91	87	-
Canada	Suncor Oil Sands Project	Suncor Energy	Oil Sands	Extra Heavy	Sweet	25	COVID-19 related shut-in	38	76	76	-
Venezuela	Petro Piar	PDVSA	Other Onshore	Bitumen	Sour	14	Storage constraints	34	44	55	63
Venezuela	Petro Monagas	PDVSA	Other Onshore	Bitumen	Sour	13	Storage constraints	32	40	48	52
Venezuela	MPE-3, VE	PetroChina	Other Onshore	Bitumen	Sour	14	Storage constraints	26	35	44	48
Venezuela	Dobokubi	PDVSA	Other Onshore	Extra Heavy	Sour	15	Storage constraints	24	30	37	40
Others	-	-	-	-	-	-	-	70	118	126	120
Grand Total								**528**	**1062**	**1082**	**816**

Source: Rystad Energy research and analysis, OilMarketCube

Agenda

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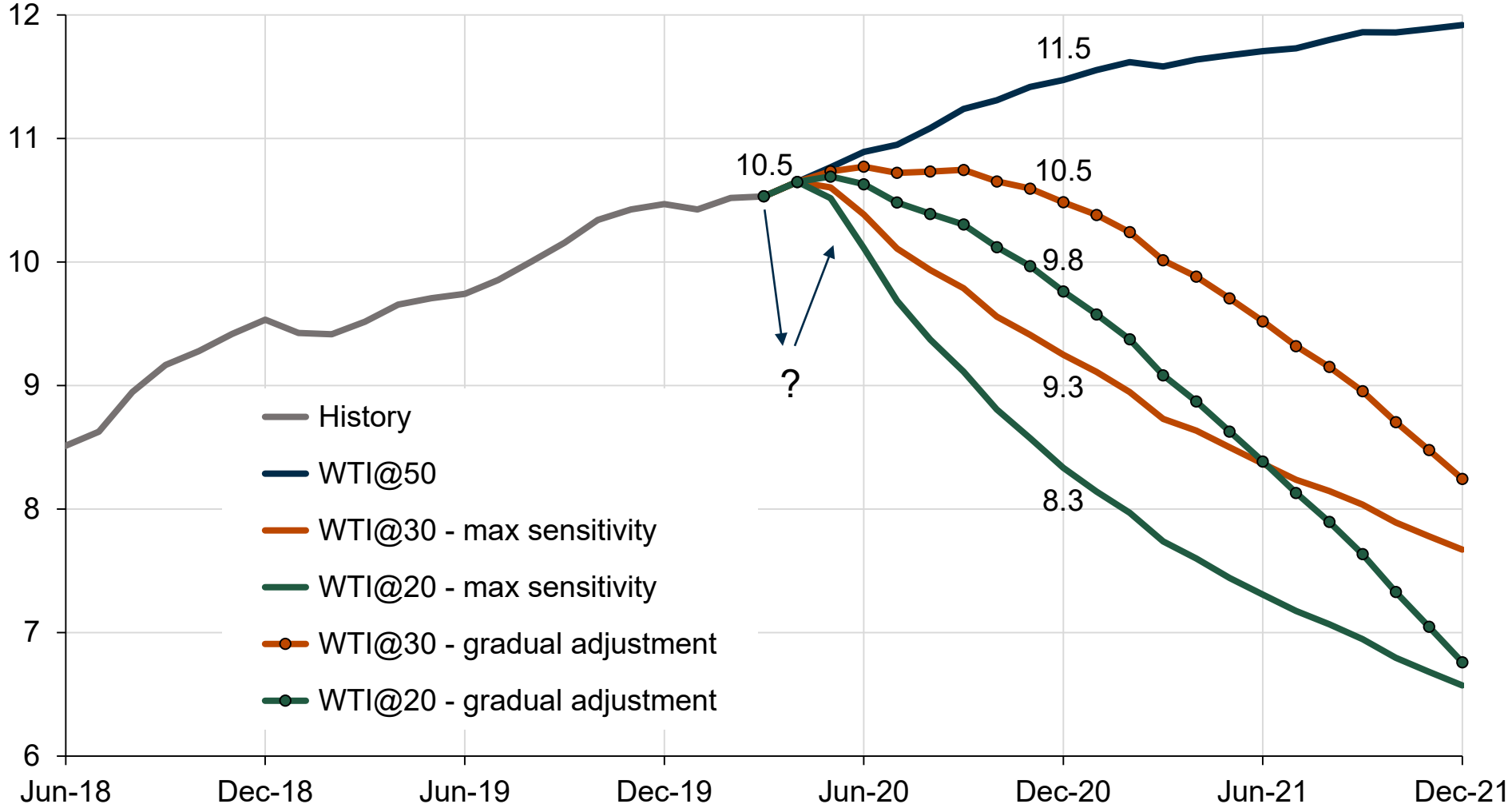
Most scenarios suggest that significant decline from 2H20 is inevitable

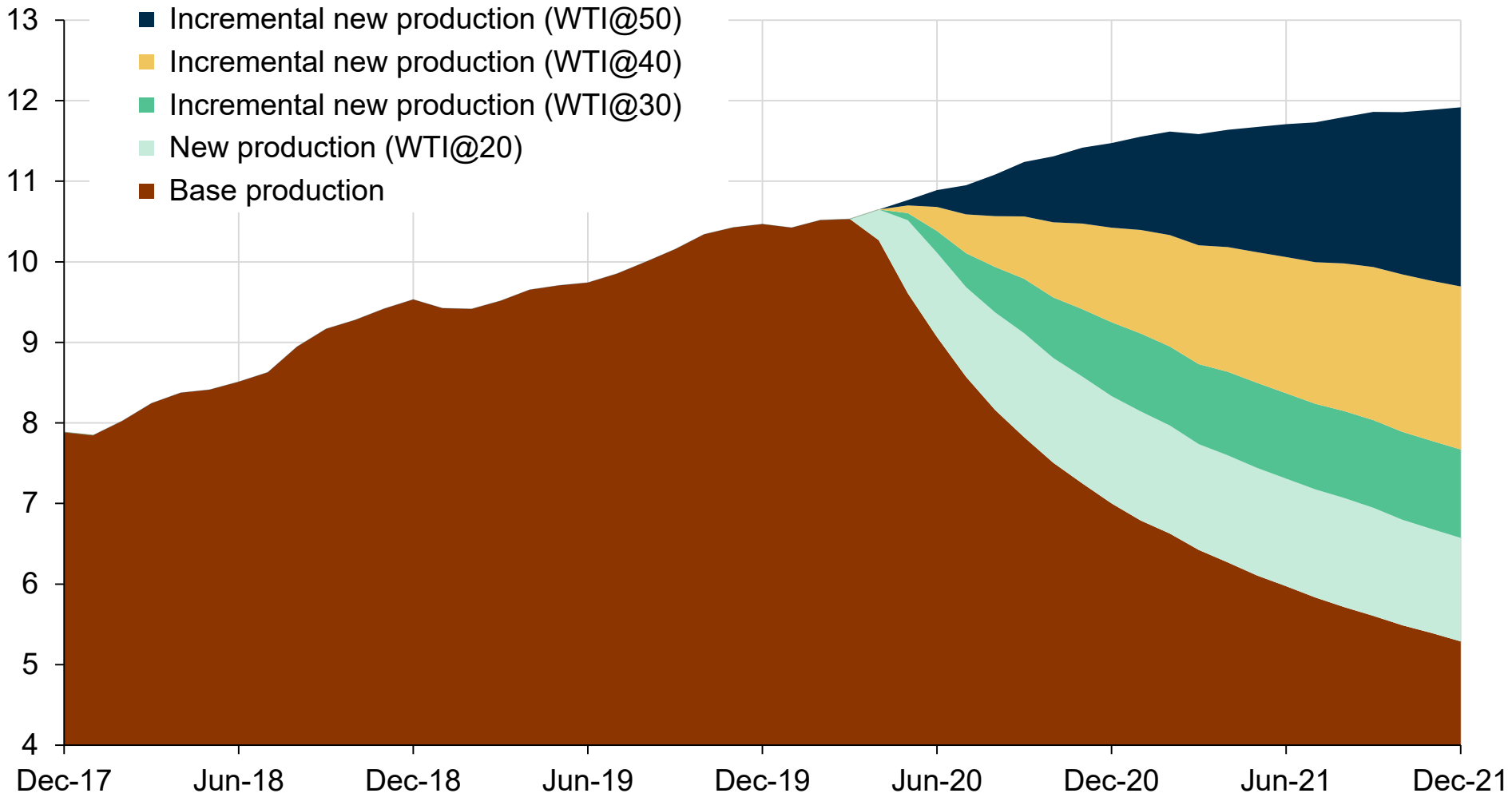
US L48 ex.GoM oil production scenarios
Million barrels per day



*All scenarios assume Henry Hub Gas and Mont Belvieu weighted average NGL prices of 1/20 and 0.35 of WTI oil price
Source: Rystad Energy research and analysis, Rystad Energy ShaleWellCube

In our maximum sensitivity scenarios, US oil production starts declining almost immediately

US L48 ex.GoM oil production outlook, maximum sensitivity scenario
Thousand barrels per day



*All scenarios assume Henry Hub Gas and Mont Belvieu weighted average NGL prices of 1/20 and 0.35 of WTI oil price
Source: Rystad Energy research and analysis, Rystad Energy ShaleWellCube

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The "mother of all surpluses" in 2Q20 causes price collapse but opportunities in the recoil

What in January seemed to be a small problem in a Chinese region has resulted in thousands of fatalities and has upended global markets, trade, travel and left the oil markets in disarray.

Oil is now at a 17-year low, with Brent futures trading at $23 per barrel and WTI wavering in the $20 range. What we see now is a complete breakdown in the oil market mechanism.

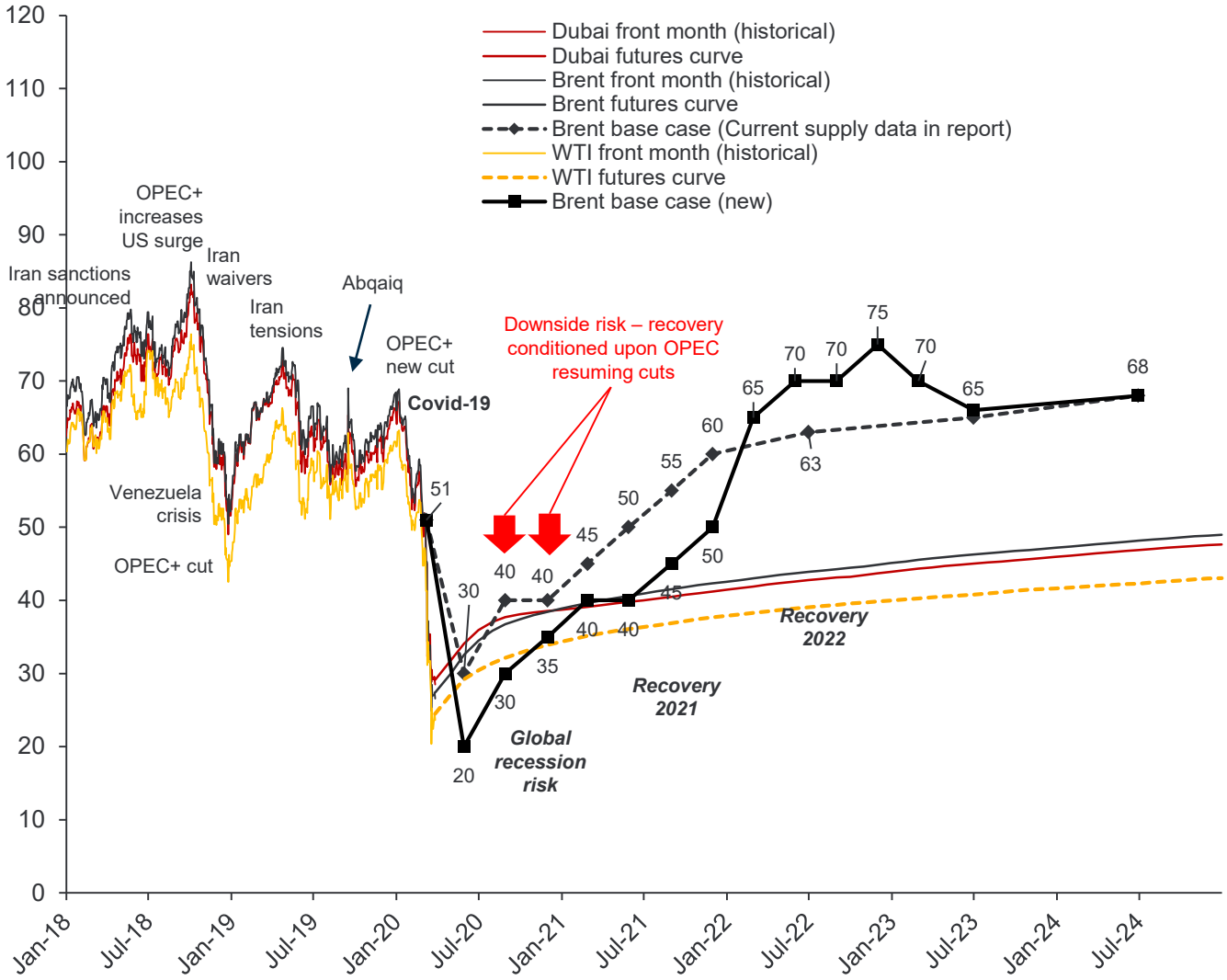
Spurring the demand destruction and record low commodity prices are country-level attempts to stop the spread of the virus through drastic quarantine measures, modeled in our Effective Prevention scenario in our Covid-19 reports. These measures erase around 23 million bpd of global demand in April and more than 17 million bpd in 2Q20, by far the biggest demand shock to ever occur. On top of this unprecedented demand collapse, Saudi Arabia has instigated a price volume war which will add ~3 million bpd of OPEC+ supply as countries ramp up spare capacity, contributing to oil prices tumbling to levels not seen since the late 1990s.

The impact of the coronavirus is growing by the day, and a global recession seems almost guaranteed in 2020. The question is how much time it will take to return to a state of normal. In our base case scenario (Effective Prevention), effective quarantines can result in a quick bounce back in economic activity.

Prices may get a boost if OPEC+ comes to a new supply agreement in Jun-20, though given the unmaterial effect it will have on prices, this assumption carries great downside risk.

Due to the severity of the building oversupply situation, we now see that Brent may average $20 in 2Q20 with slower recovery in the short term, but a stronger price recoil come 2022. Storage capacity will be tested and filled quickly, resulting in necessary production shut-ins upstream as markets resolve the "mother of all surpluses."

ICE Brent, WTI and Dubai historical monthly prices, latest futures curves and Rystad base case estimates
USD per barrel



Source: Rystad Energy research and analysis, Bloomberg

Rystad Energy Oil Market Research Team

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Thank you for your attention

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Consulting: Leading advisor on strategy, markets and business development within the energy space globally.

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RYSTAD ENERGY

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OIL AND GAS DOCKET NO. OG-20-00003167

IN RE: MOTION FOR COMMISSION CALLED HEARING ON THE VERIFIED COMPLAINT OF PIONEER NATURAL RESOURCES U.S.A. INC. AND PARSLEY ENERGY INC. TO DETERMINE REASONABLE MARKET DEMAND IN THE STATE OF TEXAS	§ § § § § § §	**BEFORE THE** **RAILROAD COMMISSION** **OF TEXAS**

PIONEER NATURAL RESOURCES USA, INC.'S AND PARSLEY ENERGY INC.'S

MEMORANDUM OF LAW

Pioneer Natural Resources USA, Inc. and Parsley Energy Inc. (together, the "Parties") file this Memorandum of Law to provide the Railroad Commission of Texas ("Commission") with the relevant legal authority bearing on the Parties' Motion Requesting Market Demand Hearing and Market Demand Order Effective for May 2020 Production ("Motion").

I. Introduction

As the Parties articulate in their Motion, the one-two punch of the COVID-19 pandemic and the market-share war between Russia and Saudi Arabia has dealt a critical blow to the demand for Texas oil. Consequently, the current levels of production in the State of Texas exceed the reasonable demand for the State's oil. Pursuant to Texas law, that constitutes waste. Waste is illegal, and when the Commission finds that waste either is occurring or is imminent, it must act to correct, prevent, or lessen the waste. To do so, the Texas Legislature has empowered the Commission to limit and prorate oil production as a means to prevent waste, and the U.S. Supreme Court has upheld the constitutionality of such action.

II. Statutory Framework

"The preservation and conservation of all such natural resources of the State are each and all hereby declared public rights and duties; and the Legislature shall pass all such laws as may be appropriate thereto." Texas Constitution Article XVI Sec. 59(a).

The Legislature enacted what is now Chapter 85 of the Texas Natural Resources Code ("TNRC 85") to discharge its constitutional duty to preserve and conserve the State's wealth of oil and gas resources. In doing so, it entrusted the Commission to administer and enforce the legal framework of TNRC 85.

A. TNRC 85 forbids waste.

The bedrock principle of the Legislature's mandate to preserve and conserve oil is codified in TNRC 85 as an express prohibition against waste: "The production, storage, or transportation of oil or gas in a manner, in an amount, or under conditions that constitute waste is unlawful and prohibited."[1]

B. What constitutes "waste?"

Waste is statutorily defined as activities that pose threats to our State's oil resources, including both physical and economic waste.[2] Among those activities constituting waste is the "production of oil **in excess of transportation or market facilities or reasonable market demand**, and the commission may determine when excess production exists or is imminent and ascertain the reasonable market demand."[3] Though the statute does not define "reasonable market demand," Texas courts have established that reasonable market demand in the oil industry "means

[1] TEX. NAT. RES. CODE §85.045.
[2] TEX. NAT. RES. CODE §85.046. The statute also separately defines and prohibits physical waste. It is important to recognize that these two concepts frequently go hand in hand. In instances where economic waste is occurring, courts recognize that physical waste will occur due to evaporation of oil stored on the surface without available transport or market or due to the premature abandonment of wells. *Railroad Commission v. Continental Oil Co.,* 157 S.W.2d 695, 700 (Tex. App.—Beaumont, writ ref'd w.o.m.).
[3] TEX. NAT. RES. CODE §85.046(10) (emphasis added).

the amount of oil reasonably needed for current consumption, together with a reasonable amount of oil for storage and working stocks."[4] Hence, when the amount of Texas oil production exceeds the levels of current consumption, storage availability, and transport capacity, unlawful waste is occurring.

TNRC also defines waste to include the "underground waste or loss" of oil, which often results from the premature abandonment of low-volume-producing wells in times of low demand and price. [5] This form of waste is no doubt occurring or imminent, given the chasm that currently exists between the supply of and demand for Texas oil.

C. <u>What if the Commission finds that waste is occurring or is imminent?</u>

If waste is occurring or is imminent, the Commission is compelled to act. Section §85.051 expressly states: "If the Commission finds at a hearing that waste is taking place or is reasonably imminent, it **shall** adopt a rule or order in the manner provided by law as it considers reasonably required to prevent, correct, or lessen the waste."[6]

Under Texas law, the use of the word "shall" imposes a duty unless the context in which the word appears "necessarily requires a different construction or unless a different construction is expressly provided by statute."[7] TNRC 85 provides no different construction for the word "shall," and the plain language of Section §85.051 does not necessarily require a different construction of that word. Indeed, discretionary language used elsewhere in TNRC 85 demonstrates that the legislature purposely intended to place a duty upon the Commission to act if waste exists or will occur imminently. For example, Section §85.060 states, "[t]he commission ***may*** require a person who produces, stores, transports, refines, reclaims, treats, markets, or

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[4] *Continental Oil Co.,* 157 S.W.2d at 699 (emphasis added).
[5] TEX. NAT. RES. CODE §85.046(3).
[6] TEX. NAT. RES. CODE §85.051 (emphasis added).
[7] TEX. GOV'T. CODE §311.016.

processes oil … to make and file with the commission sworn statements or reports as to facts within his knowledge or possession pertaining to the reasonable market demand for oil ….”[8]

So, the Commission possesses the discretion to compel reports from those in the oil and gas industry to help it determine the reasonable market demand, but, upon a determination that production exceeds that reasonable market demand or a determination that waste is otherwise occurring or reasonably imminent, the Commission must follow this determination with a rule or order to prevent waste and fulfill its duties under TNRC 85.

III. The Commission is Expressly Authorized to Limit and Prorate Production

Section §85.051 compels the Commission to issue an order or rule upon a determination that waste is occurring or imminent, and the Commission possesses broad discretion to craft the order it determines best in order to limit or prevent waste.

Texas issued its first statewide proration order in 1930 to limit oil production based on a determination that production exceeded reasonable market demand.[9] The Commission continued to evaluate the reasonable market demand and issue proration orders accordingly through the early 1970s.[10]

The current version of TNRC 85 still expressly contemplates the Commission entering orders prorating oil production, establishing allowables, and allocating production.[11] For example, Section §85.054 expressly states that the Commission “may allocate or apportion the allowable production of oil on a fair and reasonable basis among the various pools in the state.”[12]

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[8] TEX. NAT. RES. CODE §85.060.
[9] https://www.rrc.state.tx.us/about-us/history/history-1866-1939/
[10] *See generally,* https://www.rrc.state.tx.us/about-us/history.
[11] *See* TEX. NAT. RES. CODE §§ 85.042, 85.049, 85.051 and 85.053, 85.054.
[12] TEX. NAT. RES. CODE §85.054.

Under Texas law, "the subject of administration is so vast, complex, and complicated that its administrative agency cannot be placed in an absolute strait jacket."[13] This principle extends to oil proration. The Commission "is an administrative body having broad powers and discretion in connection with the subjects or conservation of crude petroleum oil and natural gas as well as with production nominations and allowables in connection therewith."[14]

The Supreme Court of Texas in *W.L. Pickens v. Railroad Commission of Texas,* provided a list of different proration orders based on factors Texas courts had determined represented an appropriate use of Commission authority.[15] The Supreme Court of Texas then stated:

> We fully appreciate the thorny problem that the Commission has in this matter of proration among the hundreds of fields under their supervision with different characteristics and the diverse conflicting interests, views and opinions, but we are confident that with the trained personnel at their disposal a much nearer approximation can be made, giving to all parties an opportunity to produce a fair share of the minerals underlying the field with ratable allowables…[16]

The statutory grant to the Commission to form a proration order is broad and Texas courts recognize the Commission's extensive authority under Texas law to craft a proration order as it determines best to lessen or prevent waste.

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[13] *Gulf Land Co. v. Atlantic Refining Co.,* 131 S.W.2d 73 (Tex. 1939).
[14] *Woods Exploration & Producing Company, Inc. v. Aluminum Company of America,* 382 S.W.2d 343, 346 (Tex. App.—Corpus Christi 1964, writ ref'd n.r.e.).
[15] 387 S.W.2d 35, 43-44 (Tex. 1965).
[16] *Id.* at 44.

IV. Proration is Appropriate to Prevent Economic Waste

Proration orders based on economic waste have a long history in the United States. In *Champlin Refining Co. v. Corporation Commission of State of Oklahoma, et al.,* the U.S. Supreme Court held that a statute, and the proration orders issued pursuant to that statute, which permitted the regulatory agency to prorate oil production in line with reasonable market demand did not violate the federal constitution.[17]

Further, in *Railroad Commission of Texas v. Rowan & Nichols Oil Co.,* the U.S. Supreme Court recognized the importance the Commission should place on impacts to the Texas economy when determining the structure and extent of a proration order.[18] In *Rowan,* the Commission issued a proration order that promoted small operators, given their importance to the Texas economy. Rather than a step beyond its authority, economic considerations are squarely within the Commission's purview and an important factor for the Commission to evaluate.

In addition, the statutory definition of "waste" expressly contemplates that it includes economic waste. For example, the definition includes "surface or subsurface waste of hydrocarbons, including the physical or ***economic waste*** or loss of hydrocarbons in the creation, operation, maintenance, or abandonment of an underground hydrocarbon storage facility."[19] Thus, under TNRC 85, the Commission must act to guard against both physical and economic waste.

V. Conclusion

The law is clear. Production of oil in excess of reasonable market demand or available transportation and storage facilities is waste and therefore unlawful. If waste is occurring or is reasonably imminent, TNRC 85 requires the Commission to act to correct, prevent, or lessen such

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[17] 286 U.S. 210 (1932).
[18] 310 U.S. 573 (1940).
[19] TEX. NAT. RES. CODE §85.046(11) (emphasis added; *see also* TEX. NAT. RES. CODE §85.046(10).

waste, and the federal constitution recognizes a proration order as an appropriate and legal method to do so.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that on April 8, 2020, a true and correct copy of the forgoing has been sent to the following parties by email.

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Legal Principles for Market Demand

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Legal Principles for Market Demand

- A very brief history
- 1920s – the Commission begins prorating production.
- 1937 – December 31, 1962
  - Commission used the "Shut-Down Day" system to prorate production.
  - Each well was allowed to produce its allowable for a set number of days each month

Legal Principles for Market Demand

- A very brief history, slide 2
- January 1, 1963 – 1973
  - Commission uses a "Market Demand Factor" system to prorate production.
  - Allowable x Days in the Month x Market Demand Factor = a well's production limit.
  - Since April 1972, the Market Demand Factor has been set at 100%.

Legal Principles for Market Demand

If the Commission finds that "waste" is occurring, the Commission has no discretion, it must act.

Sec. 85.051. ADOPTION OF RULE OR ORDER. ***If the commission finds*** at the hearing ***that waste is taking place or is reasonably imminent***, ***it shall adopt a rule or order*** in the manner provided by law as it considers reasonably required ***to correct, prevent, or lessen the waste.***

Legal Principle for Market Demand

- **"Shall"**

  - Under Texas law, **<u>the use of the word "shall" imposes a duty</u>** unless the context in which the word appears "necessarily requires a different construction or unless a different construction is expressly provided by statute." TEX. GOV'T. CODE § 311.016.

  - No context or express language requires a different meaning.

Legal Principles for Market Demand

- What is "**waste**"?
- **Sec. 85.046. WASTE.** (a) The term "waste," among other things, specifically includes:
- (a)(10) ***production of oil in excess of transportation or market facilities or reasonable market demand***, and the commission may determine when excess production exists or is imminent and ascertain the reasonable market demand.

Legal Principles for Market Demand

- **Waste** includes both physical and economic waste, economic waste is the drilling of unnecessary wells and the production in excess of reasonable market demand.

- *Browning Oil Company, Inc. v. Luecke*, 38 S.W.3d 625,633 (Tex. App. – Austin 2000, pet. Denied)

Legal Principles for Market Demand

- What is "***reasonable market demand***"?
- "…***reasonable market demand***' as used in the oil industry, ***means the amount of oil reasonably needed for current consumption***, together with a reasonable amount of oil for storage and working stocks."
- *RRC v. Continental Oil Co.*, 157 S.W.2d 695, 699 (Tex. App-Beaumont 1941, writ refused)

Legal Principles for Market Demand

- In considering how to structure a proration order, the Commission may consider the economic impacts on the State of Texas.
- Commission has broad discretion as to proration methodology and implementation
- *Railroad Commission of Texas* v. *Rowan & Nichols Co.*, 310 U.S. 573, 582 (1940).

Legal Principles for Market Demand

- **Conclusion**
- If the production of oil exceeds the current consumption (reasonable market demand), then waste is occurring by definition.
- The Statutes require the Commission to issue an order ***to correct, prevent, or lessen the waste.***

Summary of Proration Options

Fixed Rate

Statewide Operator Stats			All Operators		Small Operator Exemption	
Production Brackets (MBOPD)	Active RRC Operators (#)	Average 4Q19 Production (MBOPD)	80% Flat Rate Proration - *All Operators*	Production with Proration (MBOPD)	80% Flat Rate Proration - *w/ Exemption*	Production with Proration (MBOPD)
0-1	3,400	200	80%	160	100%	200
1-10	144	506	80%	405	80%	405
10-25	39	573	80%	459	80%	459
25+	42	3,862	80%	3,089	80%	3,089
Total	**3,625**	**5,141**		**4,113**		**4,152**
PXD		306	80%	245	80%	245
PE + JAG		160	80%	128	80%	128
Count of Active Operator Participation -->				*3,625*		*225*

Graduated Rate

Production Brackets (MBOPD)	Active RRC Operators (#)	Average 4Q19 Production (MBOPD)	Graduated Rate Proration - *All Operators*	Production with Proration (MBOPD)	Graduated Rate Proration - *w/ Exemption*	Production with Proration (MBOPD)
0-1	3,400	200	90%	180	100%	200
1-10	144	506	90%	456	90%	456
10-25	39	573	80%	498	80%	498
25+	42	3,862	75%	2,991	75%	2,991
Total	**3,625**	**5,141**		**4,124**		**4,143**
			Effective rate		*Effective rate*	
PXD		306	76%	232	76%	232
PE + JAG		160	76%	122	76%	122

Note: 246 operators with 0 BOPD of production during Q4 2019 are considered 'inactive' and excluded from 'active operator' counts

QUANTUM ENERGY PARTNERS

April 8, 2020

Via Email
Docket Services
Hearings Division
Railroad Commission of Texas
1701 North Congress Avenue
Austin, Texas 78711
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Re: **Oil & Gas Docket No. OG-20-00003167;** To Consider the Motion for Commission Called Hearing on the Verified Complaint of Pioneer Natural Resources U.S.A. Inc. (665748) and Parsley Energy Inc. (642652) to Determine Reasonable Market Demand for Oil in the State of Texas

Dear Chairman Christian, Commissioner Craddick, and Commissioner Sitton:

I write this letter to respectfully urge the Railroad Commission of Texas to exercise its authority to temporarily prorate oil production to meet reasonable market demand.

You are all keenly aware of the one-two punch that Texas oil and gas producers have received from demand destruction associated with the COVID-19 pandemic and the supply surge instigated by Saudi Arabia and Russia to harm the U.S. shale industry. As a result, WTI prices have dropped into the low-to-mid $20's, which means that most producers are receiving anywhere from about $8/bbl to $20/bbl at the wellhead after basis differentials and transportation costs are applied. There is not one producer in Texas that can make money at those levels.

Quantum has five private upstream companies, two private mineral and royalty companies and two private service companies operating in the Permian Basin. Over the past several years our companies have averaged between 10 and 12 rigs running at any given time on our operated assets and about 35 to 40 rigs running at any given time on our mineral and royalty assets, making us one of the largest players in the Permian. And that is before considering that we built the largest private midstream company in the Permian, which we sold in 2019. Additionally, we are one of the largest gas drillers and producers in the state, owning two large companies in the Haynesville Shale play in East Texas. Across the energy business in the state of Texas, we employ more than 1,500 people directly and indirectly. Needless to say, we have

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our finger on the heartbeat of the oil and gas business in our state, and I can unequivocally tell you that the vast majority of oil and gas producers are teetering on insolvency, and many of them will be filing for bankruptcy if these conditions persist for long.

Fortunately, you can do something to change these conditions. By temporarily prorationing oil production in Texas, and using your leadership to coordinate with other states to enact similar prorationing targets, you can lead the U.S. in doing its part to reduce global supply to levels that provide a more sustainable oil price so that we don't bankrupt the oil and gas industry. Otherwise, Texas will soon be reliving the devastation that occurred to our great state in the 1980's.

The Railroad Commission has been entrusted by the people of Texas to conserve the state's natural resources through the prevention of waste. The Texas Natural Resources Code specifically includes production above reasonable market demand as waste and instructs the Railroad Commission to issue an order or rule to eliminate this waste. It is clear that with the global surge in production and the collapse in demand, production now exceeds reasonable market demand. It is precisely at this time of global crisis that the Railroad Commission must take leadership to show its commitment to the prevention of waste and to fulfill its duties to the people of Texas.

I respectfully urge the Railroad Commission to issue a temporary proration order reducing production throughout Texas by up to 20%. I believe this limited action will provide the regulatory response that Texas oil producers need now. A temporary proration order from the Railroad Commission is a necessary step to combat current global conditions, which do not reflect a rational, free market. In order to protect the economic strength and security of Texas and the United States, the Railroad Commission must utilize its statutory authority to provide needed stability to the oil industry, related industries, and their employees.

Thank you for your leadership in our industry and in our great State of Texas.

Respectfully yours,

S. Wil VanLoh Jr.

S. Wil VanLoh, Jr.
Founder & CEO