

The Oil Industry's Recovery Lacks One Important Ingredient



The growing global oil and gas glut, partly caused by the coronavirus global lockdown but also due to mismanagement of the US shale sector and the OPEC+ price war fall-out, is causing mayhem in all energy sectors.

Most of the media's attention goes to upstream oil and gas operators and financial institutions. As US shale companies drown in debt, bankruptcies are expected to pile up within the next months. US shale, offshore oil and gas operators and most non-OPEC producers are going to be struggling to keep some air in the balloon that was filled the last years.

In the next couple of months, due to OPEC++ production cuts and bankruptcies, a vast part of the overproduction will be removed, shrinking the glut to a much more acceptable level. Some analysts are even expecting growth before the end of 2020, based on misconceptions that oil prices could be even hovering around \$40 per barrel at that time. Optimism based on simple Excel equations or mathematics are most probably going to be proven wrong.

As long as the impact of the extended Covid-19 crisis on energy and on the global economy is not fully visible, and storage volumes are still building up, oil prices will probably stay low. At the same time, even if all goes back to a 'pre-corona normal', the normal will be different if nothing will have been learned from history.

A demand collapse such as we are witnessing at present has never been seen before. Demand destruction to the tune of 20-25 million bpd is a giant shock to the total energy system. Market watchers, however, are focusing too much on E&Ps. The current financial situation of most NOCs, IOCs and large independent producers is not yet dire, while smaller drillers are already on life-support. The industry will, in the end, find the right balance again as much production from smaller producers will be shut in or disappear for good.

The main objective for many producers is to be able to produce significant volumes at the end of the crisis. This is partly misunderstood in the media, as most operators are not the ones directly responsible for the production of hydrocarbons. The main players here are the oilfield services, the companies with the technical know-how and tools to produce a barrel of oil.

Premium: Oil Storage Nears Its Limit

Oilfield service companies offer technologies and equipment to oil and natural gas drillers and are crucial in the exploration and completion process, but are also responsible for the manufacturing and mending of equipment. Overall, the fate of all oil service firms is positively correlated to crude prices and also to the capital investment decisions of E&P operators.

The current correlation however is very negative, as low oil prices hit oilfield services exponentially harder. It's strange to see that non-oil and gas analysts are understanding

the threat better for other sectors, than oil and gas does. The threat to the survival and revamp of the automotive sector worldwide is not the cash-flow and debt levels of VW, Mercedes, Toyota or GM, but the survivability of the automotive part suppliers. Without automotive suppliers, no car or vehicle will leave the factory in Stuttgart or Detroit.

The situation is no different for the oil, gas and energy sector. Without oilfield services, production will stall and decline within months. The situation is dire for mainstream independent oilfield services companies, not only in US shale, where giants like Schlumberger, Halliburton or National Oilwell Varco are cutting their investments and workforce, but also in other non-OPEC and OPEC regions.

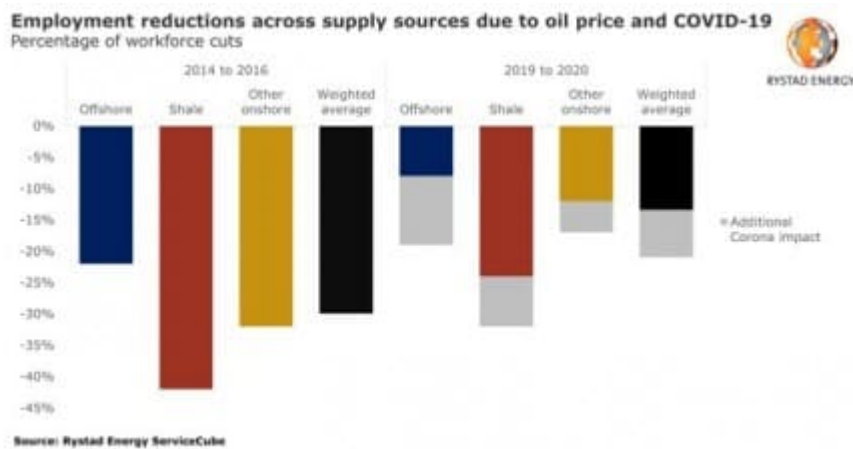
One Oil & Gas UK (OGUK) report already stated that the financial contagion triggered by historically low oil prices will threaten North Sea jobs, shrink its economic contribution and undermine energy security.

According to Energy and Restructuring law firm Hayes and Boone's, last year already a grand total of 50 energy companies filed for bankruptcy, including 33 oil and gas producers, 15 oilfield services companies and two midstream companies. The law firm warns that as the crisis in 2020 continues, they fear that the axe could now fall on debt-ridden oilfield services companies. Just in North America, oilfield services companies debt is said to reach \$32 billion which is coming due between 2020 and 2024.

The poor financial state of the industry is well represented by the sector's favorite benchmark, the VanEck Vectors Oil Services ETF (NYSEARCA:OIH), which is down more than 70% YTD, considerably lower than the 30% plunge by the S&P 500. Rystad's report last month that 20 percent of global oilfield services workers could be laid off this year has been undervalued as a real threat for the future. The firing of 1 million or more experts, drillers, engineers and workers means

a possible productivity loss at the end of the year that will constrain a possible upsurge in demand and supply.

Premium: The Oil Sector That Will Suffer The Most



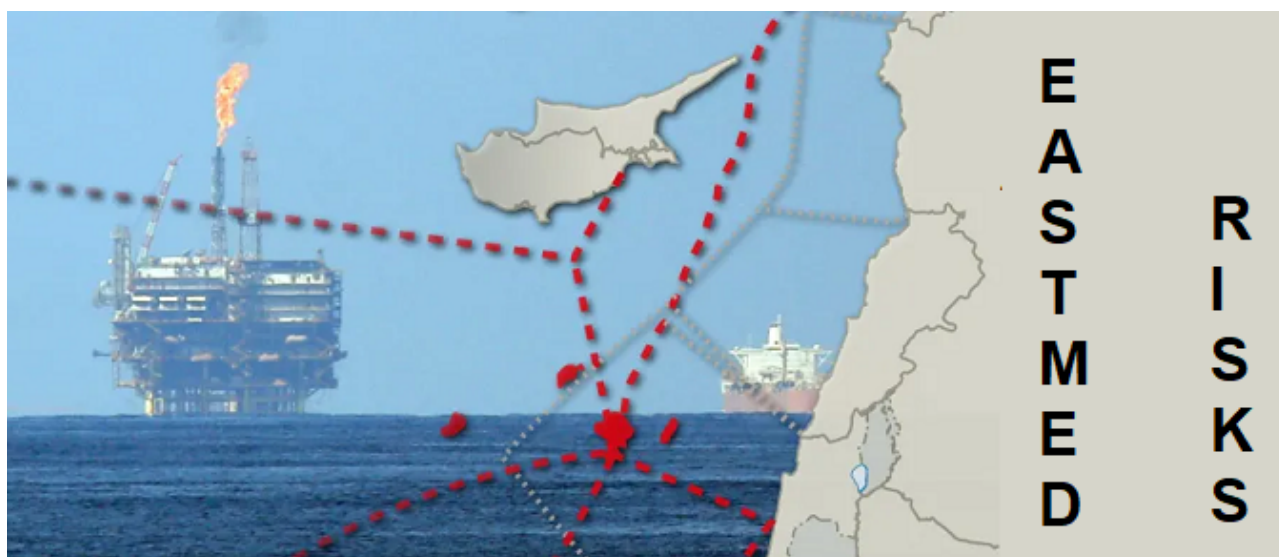
Former oil and gas crises in the 1980s or 2010s have shown that knowledge destruction because of layoffs can significantly slow down a recovery in the sector. Taking into account that the average oil and gas worker is above 45 years of age, a large part of those becoming unemployed will never come back again. Additionally, the possible bankruptcy of small specialized oilfield services also will destroy specific knowledge not easy to be regained if demand is growing again. Former oil price collapses have led to a strategy change at IOCs, removing part of their inside capabilities in engineering and operations, cutting costs meant handing over project implementation to independent oilfield services. IOCs and NOCs are now doing the same again, putting most of the current crisis fall-out on oilfield services companies that will have no other option than to cut their workforce. Oilfield servicing margins, even in good times, have been under pressure.

Oil & gas' future faces several threats and lack of human capital is a very underestimated one that threatens profitability of the sector going forward. Without human capital, which in most cases is being provided by oilfield services, less oil and gas will be able to be produced,

refined, stored or processed.

By Cyril Widdershoven for Oilprice.com

In Eastern Mediterranean, Resolving Maritime Boundary Disputes Becomes Key



The Eastern Mediterranean currently sits atop a veritable sea of potential. Energy discoveries in the past decade have transformed both economic and geopolitical perspectives of the region. With some experts making comparisons of the proven reserves ranging from the North Sea to Iraq, the region is widely regarded as a 'next big thing.' Large-scale projects and infrastructure agreements are already underway that will bring outside investment, needed financial windfalls, and rapid development.

Politically, partnerships have been established that foster needed intra-regional cooperation. Both Brussels and Capitol Hill have turned their eyes toward the Eastern Mediterranean.

States from outside the region such as Quai d'Orsay and the U.S. State Department have sought to elevate engagement in the region. All this brings hope for the possibility of a bright and cooperative future for the Eastern Mediterranean.

However, the onset of hydrocarbon diplomacy in the Eastern Mediterranean is accompanied by a counterpart gunboat diplomacy. Firebrand rhetoric and tense foreign policy threatens to negate opportunities at hand. The region experiences increasing militarization as warships accompany drillships on exploration, or are sent from other countries, and alarming arms procurements and military exercises are conducted. Rivalry threatens to take away hard-won progress toward cooperation and instead manifest deadlock and contests in which there is no winner.

At the heart of these tensions is the ongoing dispute over regional maritime boundaries. Of the 13 maritime boundaries in the Eastern Mediterranean, 11 of them remain unresolved or disputed. Inclusive and equitable resolution of such disputes is of urgent importance if the Eastern Mediterranean is to successfully realize its projects, attract further investment, and formulate lasting ties that bind among neighbors.

Disagreements over maritime boundaries occur precisely because of the economic opportunities within the waters. Rather than using the potential windfalls as a launching point for closer ties, the region's neighbors have felt undercut in the full extent of their Exclusive Economic Zone (EEZ) or excluded from consultation. This isn't necessarily always due to coercive action from another state; the most internationally agreed-upon method for defining maritime boundaries and a country's EEZ is in and of itself undefined, and always situational.

At the same time, one can only imagine the immense achievements that could follow boundary resolution in the Eastern Mediterranean. Delimitation would build upon the commendable efforts of actors inside and outside the region to

use hydrocarbon discoveries as a launching point for reconciling political differences, and working together on deals that benefit all associated. Resolution would remove obstacles to windfalls so desperately needed in the region. It would empower the countries of the Eastern Mediterranean to take ownership in building a concrete framework for intra-regional development.

Without the stronger ties built by cooperation, the countries of the Eastern Mediterranean become sitting ducks to exogenous shocks, particularly given the ongoing COVID-19 crisis. Following the pandemic and its immense health concerns is a grim economic outlook that has world markets entering a recession and oil dropping to an 18-year low. Amid this, many members of the international community have drawn together to prevent the spread of the virus, provide medical assistance, and to persevere. The countries of the Eastern Mediterranean can learn their lesson from this exemplary leadership; the time to stop goofy behavior in the Eastern Mediterranean is now, before halted investment or receding prices cripple the markets.

Understanding the need in the region and the potential that awaits the precise resolution of equitable delimitations, how is that best achieved? Energy executive **Roudi Baroudi** offers up the United Nations Convention on the Law of the Seas (UNCLOS) as a pathway to this achievement in his expert commentary and seminal work, soon to be published by the Transatlantic Leadership Network and distributed by Brookings Institution Press.

Using precise satellite imagery produced by the maritime boundary software used by the UN and by international courts and tribunals, Baroudi makes the following contention: when followed with a by-the-book approach, inclusive of all associated actors, and gaining precedent from successfully-resolved maritime issues, UNCLOS can be an effective tool in reaching legal certainty and mutual agreement of boundary

conflicts in the Eastern Mediterranean.

Whatever the solution may be, the independent international legal experts on maritime borders must be engaged through an equally independent and preferably US-based platform to address best ways to link the methods of delimiting contentious areas to achieve equitable outcomes that UNCLOS has not fully addressed, allowing judicial decisions on best methods available.

Exclusion, unilateral decision-making, and aggression will only maintain, if not intensify, the status quo.

Characterization of the Eastern Mediterranean must go beyond the dispute and conflict to include the opportunities awaiting it. Many actors are already beginning to do their part and must be celebrated for it. Coming to inclusive agreements on energy exploration holds immense potential for the region.

Jonathan Roberts is a researcher at the Transatlantic Leadership Network in Washington DC. Ambassador

John B. Craig is a senior fellow at the Transatlantic Leadership Network in Washington D.C., former Special Assistant to the President for Combatting Terrorism under Bush 43, and former United States Ambassador to Oman.

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**In Eastern Mediterranean,
resolving maritime boundary**

disputes becomes key



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<https://thehill.com/opinion/international/492341-as-eyes-turn-to-the-eastern-mediterranean-resolving-maritime-boundary>

QEW shareholders approve board's dividend proposal



The first phase of the largest solar energy project in the region in terms of size and capacity – Siraj (Solar PV Power Plant with a total capacity of 800MW) will be completed in April, 2021 at Al-Kharsaah

The ordinary general assembly of Qatar Electricity and Water Company (QEW) yesterday approved the recommendation of the board of directors to distribute cash dividends to shareholders for the fiscal year 2019, at 77.5% of the nominal value of the share.

HE the Minister of State for Energy Affairs and chairman of QEW's Board of Directors, Saad bin Sherida al-Kaabi said the electricity and water sector contributed to supporting the Qatari economy through "continuous co-ordination and co-operation" between the Qatar Electricity and Water Company and the Qatar General Electricity and Water Corp (Kahramaa).

The minister noted that QEW is keen to implement all necessary projects in accordance with the best specifications to keep pace with the country's needs. The focus is on raising the efficiency of the performance of its existing plants in line with local and international environmental standards.

He said QEW completed several projects during 2019, the most

important of which was the 'Umm Al Houll Energy' project, which is currently operating at full capacity.

The first phase of the largest solar energy project in the region in terms of size and capacity – Siraj (Solar PV Power Plant with a total capacity of 800MW) will be completed in April, 2021 at Al-Kharsaah.

Al-Kaabi said Qatar General Electricity and Water Corp will purchase energy produced by Siraj. The project is an embodiment of Qatar's efforts to diversify energy sources and enhance the efficiency of renewable energy, which is an important element for a sustainable future for future generations, in line with Qatar National Vision 2030, launched and sponsored by His Highness the Amir, Sheikh Tamim bin Hamad al-Thani.

In order to diversify the sources of income through foreign investments, Qatar Electricity and Water Company through Nebras Energy Company seeks to increase its investments in global markets by obtaining distinct rates in a number of energy projects outside the country.

In all, 14 such investments have been made in seven countries around the world.

And in terms of developing the human resources, QEWC works to enhance efforts to develop the national cadre, and increase the number of Qataris in the company and its subsidiaries.

He noted that in 2019, the company achieved a lower percentage of profits than previous years, due to some old stations ceasing operations and investing in building alternative stations.

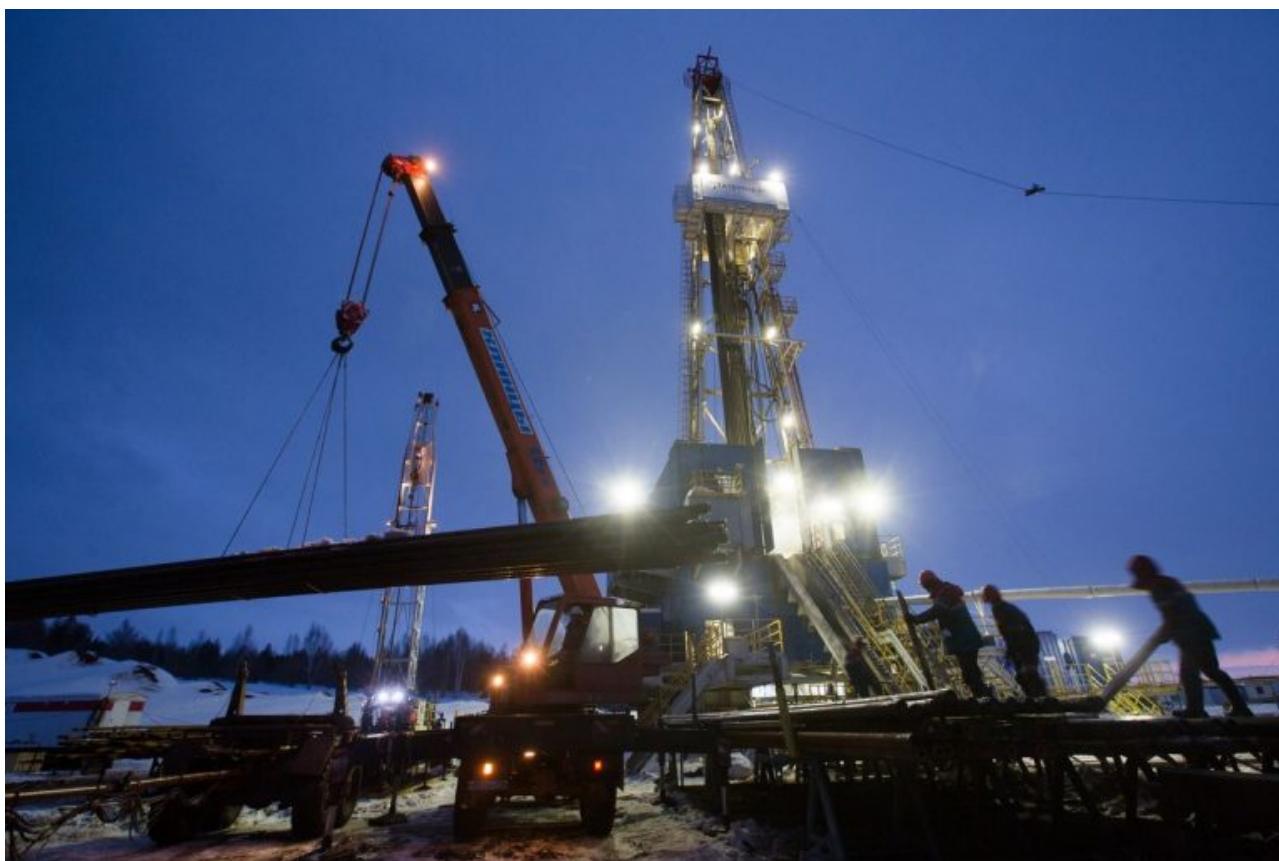
QEWC had posted a net profit of QR1.41bn in 2019, down 8% on 2018. The earnings per share stood at QR1.29.

QEWC general manager and managing director Fahad Hamad al-Mohannadi spoke about the company's projects and future plans. He also spoke about QEWC's thrust on developing the Qatari workforce in the company and its subsidiaries.

It works in co-operation with accredited universities, institutes and training centres at home and abroad with the aim of developing and training Qatari employees.

Currently, the company's Qatarisation rate stood at 24%. Al-Mohannadi highlighted QEWC's focus on safety in its operations and said it clocked very high rating in this respect.

Billion-Barrel Oil Flood From OPEC Fight to Strain World's Tanks



(Bloomberg) – The oil-price war between Saudi Arabia and Russia is set to unleash the biggest flood of crude ever seen, perhaps more than the world can even store.

As producers ramp up shipments in a battle for dominance of global markets, and the coronavirus crushes demand, more than

a billion extra barrels could flow into storage tanks. That could strain the available space and send oil prices crashing further, with brutal consequences for the petroleum industry and producing nations.

“I don’t see how you don’t exhaust global storage capacity, if this goes on until summer at the production numbers being talked about,” said Jeffrey Currie, global head of commodities research at Goldman Sachs Group Inc.

The feud between Riyadh and Moscow has already inflicted a heavy toll.

Oil prices have slumped 32%, to about \$34 a barrel, since the two exporters fell out over how to deal with the virus, severing the global alliance of producers they’d led for three years and launching a competition to offer customers the steepest discounts. The rout has driven American shale drillers such as Occidental Petroleum Corp. and Apache Corp. to cut dividends and spending.

The looming glut may still be held in check: President Donald Trump promised to take oil off the market on Friday by filling up the U.S. strategic reserve. Producers could take months to fully activate the idle assets they need to flood the market. And as low crude prices batter the two belligerents’ economies, a “truce” will probably be reached, according to Ed Morse, head of commodities research at Citigroup Inc.

But if hostilities continue, the tide of oil is likely to become a tsunami.

Saudi Arabia announced it will supply record volumes, of more than 12 million barrels a day next month, and the United Arab Emirates will push oil fields beyond their normal capacity to bolster output by about a third. Russia will add 500,000 barrels a day, while others in the fractured OPEC+ coalition, such as Iraq and Nigeria, also plan production increases.

If storage is maxed out, oil prices will likely fall until producers with the highest operating costs, most probably American shale drillers, are forced to halt output. Or the loss of revenues could strain one of the more politically-fragile producing nations – such as Venezuela or Iran – to breaking point.

U.S. shale production “won’t really start dropping until the end of the year,” said Paola Rodriguez-Masiu, an analyst at consultant Rystad Energy AS in Oslo. “So the market will be completely saturated.”

Global supply is already exceeding demand at an unprecedented rate of 3.5 million barrels a day, due to the impact of the coronavirus, according to the International Energy Agency, which advises major economies.

Surplus Supply

Once the OPEC+ nations increase supply, the surplus will balloon in the second quarter, to more than 6 million a day, Bloomberg calculations show. Goldman Sachs anticipates stock builds of a similar magnitude. By the end of the year, more than 1 billion extra barrels will have been dumped onto world markets.

In total, global crude inventories stand to expand by 1.7 billion barrels this year, according to Bloomberg’s calculations, about three times as much as during the biggest-ever surplus recorded by the IEA. That was in 1998, when Brent fell to an all-time low of less than \$10 a barrel.

About 65% of the world’s total 5.7 billion barrels of oil-storage is currently in use, according to energy data provider Kayrros SAS. At current rates the theoretical limits, which are somewhat below the full figure, could be approached in just over a year, the company estimates.

“The fill rate that we are experiencing now is totally

unprecedented,” said Antoine Halff, Kayrros’ chief analyst. “But even at this staggering pace, we are not running out of storage altogether. On paper, we still have some runway.”

For oil traders, there are opportunities to earn massive profits by hoarding barrels and then exploiting the difference between low short-term and higher long-term prices. Vitol Group, the largest independent trading house, has leased tanks in South Korea that could be used to take advantage of the price spread.

As tanks on land are exhausted, companies will increasingly use supertankers at sea to accommodate the excess, said Rodriguez-Masiu. The cost for storing crude on such vessels has doubled in the past three months, E.A. Gibson ship brokers estimates.

But when there’s no longer anywhere to put unwanted barrels, oil producers will have no choice but to reduce operations.

“At some point the oil price will have to drop in such a way that makes it uneconomical for producers in the U.S. to keep pumping oil,” she said.

As many of these companies have locked in revenues by selling futures contracts as a hedge, the production slowdown probably won’t occur until the end of year, Rodriguez-Masiu said. For some of the countries that rely on high oil prices to fund government spending, that may be too late.

Even before the latest crisis, prices were challenging for the “fragile five” OPEC members of Algeria, Iraq, Libya, Nigeria and Venezuela, said Helima Croft, head of commodity strategy at RBC Capital Markets LLC. Iran, facing the twin onslaught of American sanctions and depressed oil prices, is now high on the list of the vulnerable.

“This is a catastrophe for the fragile five,” she said. “It’s now become the shaky six.”

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Green energy's \$10tn revolution faces oil crash test



In 2014, when the price of oil last crashed, the world's governments had no agreement in place to fight climate change. The following year leaders signed the Paris accord. Green investments have soared since then. Some \$1.2tn has been poured into renewable energy, and global electric vehicle sales reached 2mn last year. Bloomberg NEF expects as much as \$10tn poured into clean energy by 2050. The accord also marked a cultural watershed, with emissions targets now policed by a

growing environment movement that's shaping politics from Germany to India. In a sign of the times, activist Greta Thunberg and Tesla Inc founder Elon Musk are now two of the most famous people in the world. So when this week Saudi Arabia and Russia joined in a price war that wreaked havoc on global markets already rattled by the coronavirus, it looked like the major oil-producing nations reasserting their supremacy in the short term. Instead, it may prove to be another step in a longer-term trend towards ending oil's power to hold the world to ransom. The price of a barrel of oil remains an important economic indicator. But the relentless push to move away from fossil fuels suggests that its geopolitical impact is likely to be softer than in the past, with the imperative to combat global warming assuming its place. "The impact of the oil price on broader economic growth has been decoupling ever since the 1980s," said Shane Tomlinson, deputy chief executive officer at environmental think tank E3G. "We could see exceptional movements in the oil price in the next few months, but I don't think that changes the fundamental need to address climate change." Oil's fall to some \$35 a barrel from \$55 just last week has major implications for addressing climate change. Low prices incentivise more use of oil; it squeezes the budgets of oil companies, putting clean-energy projects in doubt; and some governments feel pressured to prop up struggling oil companies. All that drives up emissions, which is bad news for global warming. However, if low prices are sustained this time, there might be big positives for fighting climate change. Renewable energy is a more mature industry than five years ago. As it becomes a less risky investment, it has attracted big investors who are showering a lot of cash and building some projects that rival the capacity of conventional power plants. At the same time, oil exploration is becoming less viable economically, with an increased risk that even those projects that go ahead no longer yield good returns and with worries about stranded assets growing. "Now it doesn't make sense to reduce your investment in renewables if the oil

price crashes,” said Mark Lewis, head of sustainability at BNP Paribas Asset Management. “It’s more logical to reduce your investment in oil.” That reality points to a broader change in investor sentiment since Paris that affects companies and governments alike. A number of large investors have come together under groups such as Climate Action 100+ to demand companies put sustainability at the heart of their business models, and that isn’t likely to change. Tesla has effectively become a proxy for how the green economy is viewed by investors. Musk has demonstrated that a mass-market electric car is viable, prompting all the major carmakers to follow his lead. He’s building his latest plant outside Berlin, in a show of his intention to take the fight to the heart of Europe’s leading luxury car producer. Tesla is after all the world’s second-most valuable carmaker by market value after Toyota Motor Corporation. For governments worldwide, pressure for policy measures has mounted as the issue increasingly resonates, in part due to the kind of direct action and media campaigning espoused by Greta Thunberg. Low oil prices offer one reason to heed that voter call, since it’s a good time to end fossil-fuel subsidies or to raise taxes on consumption of fossil fuels. Such a move can also help avoid the sorts of destabilising anti-government protests seen in France, Iran and Ecuador when energy-price increases were proposed. It could even be done in a way that “protects or even benefits poorer households and communities,” said Helen Mountford, vice president of climate and economics at the World Resources Institute. The goal of reaching out to “left-behind” communities is a dynamic driving policy from the post-Brexit UK to South Africa and swaths of Latin America that suffered waves of unrest late last year. During the last down cycle, between 2014 and 2016, when oil briefly dipped below \$30 per barrel, India cut annual fossil-fuel subsidies from \$29bn to \$8bn and even raised taxes on consumption. Some of the money raised was diverted to renewable-energy subsidies, after setting an ambitious goal to deploy as much as 175GW of mainly solar and wind power by 2022 – about twice the power

generation capacity of the UK. "Many countries are pursuing electrification and decarbonisation to make them less dependent on the volatility of oil markets," said Adnan Amin, former director general of the International Renewable Energy Agency. "This kind of event will only reinforce that momentum." Also since 2014, the power of Opec's 14 nations to shape the market has been weakened by the impact of US shale production. (Opec's Vienna base is home to an Austrian government that now includes the Greens as junior coalition partner.) The US – which is not a member of the group – became an oil exporter again on the back of its shale revolution, surpassing Russia and Saudi Arabia in 2018 to regain its status as the world's biggest producer. President Donald Trump has cheered America's energy resurgence as an example of taking back control. However, the collapse in oil prices weakens the shale industry's ability to pump at a profit and even pushes some of the producers toward bankruptcies, adding to economic uncertainty surrounding the virus that may hurt Trump's re-election bid, says Amin. Since Trump unilaterally pulled the US out of the Paris agreement, it could yet tilt the presidential race in favour of a candidate more in favour of climate action. In Brussels, meanwhile, European Commission President Ursula von der Leyen doubled down on European Union plans to achieve climate neutrality by 2050, despite the emergence of what she called "unforeseen challenges." "Today it's no longer the question if there will be a European Green Deal or whether the EU will become climate-neutral but the question is how we're proceeding and how far-reaching will the transition be," Von der Leyen said on Monday. That stance is understandable given that EU citizens say they want the bloc to focus on tackling climate change and preserving the environment as its No 1 priority, according to a recent Eurobarometer survey for the European Parliament. "Clearly we cannot ignore what's going on globally," said EU Environment Commissioner Virginijus Sinkevicius on Bloomberg TV. The global "climate emergency didn't go anywhere."

Clean energy is also resilient energy



NASSAU – The Caribbean and its surroundings are on the front lines of climate change. The Bahamas, the archipelago that stretches over the crystal-blue waters between Florida and Cuba, have been battered in recent years by devastating hurricanes, which have increased in severity and frequency as a result of global warming. As is the case worldwide, there is an element of injustice to this. Given that the Bahamas and Caribbean countries emit relatively minuscule amounts of carbon dioxide, their residents bear very little of the blame for the climate crisis.

But the people of the region are now flipping the script, transforming themselves from victims of climate tragedies into global leaders in clean, secure energy. The Caribbean countries have compelling economic reasons for embracing the

green-energy transition. For generations, they have relied on imported fossil fuels to power their economies, which means they have long had to deal with the uncertainties of world oil markets and thus significant cost fluctuations for electricity.

Thanks to advances in renewable energies, that economic challenge has created an opportunity. Unlike imported fossil fuels, which are subject to rising costs, the prices of solar power and other clean energy sources, along with the necessary battery storage systems, continue to fall. As these technologies have become more affordable and competitive with older, dirtier fuels, they have created a powerful incentive for island countries to move away from conventional fossil fuel-fired power plants. Moreover, this trend will only grow more pronounced from here on out, as the cost advantages of newer, cleaner energies make them increasingly attractive relative to fossil fuels.

For regions like the Caribbean, solar and battery storage systems do more than simply reduce the costs of electricity; when deployed in the right way, they also improve climate resilience. As the Bahamas and other countries across the region have demonstrated over the past few years, solar- and battery-powered microgrids can provide critical services for island communities during and after severe weather events that otherwise would knock traditional energy sources offline.

But in order for these new energy solutions to provide real resilience, they themselves need to be able to withstand the storms, which tend to ravage power lines and disconnect communities from centralised sources of energy generation. Thus, in the case of solar, much depends on the methods used to secure solar panels to the ground and to rooftops.

We already know that it is possible to construct photovoltaic (PV) systems capable of surviving even the most severe category of hurricane. Through a collaboration between the

Rocky Mountain Institute, the government of the Bahamas and the country's national utility, the Bahamas Power and Light Company, we have developed and installed a solar parking canopy at the National Stadium in Nassau that can withstand the winds of a category-five hurricane. We have also built the country's first category-five resilient solar and battery storage microgrid on Ragged Island, and are now focusing on designing and delivering sustainable and resilient microgrids for critical facilities on Abaco, following the destruction wrought by Hurricane Dorian in September 2019.

As the planet continues to warm, increased moisture in the air will translate into even more severe and frequent tropical storms and hurricanes. What we saw with Dorian and Hurricane Maria in Puerto Rico in 2017 is likely to become commonplace. Fortunately, as the partnership in the Bahamas shows, many of the same measures needed to build resilience are also those needed to limit greenhouse-gas (GHG) emissions and slow the pace of global warming. Far from requiring a tradeoff, resilient PV systems check both boxes.

The Caribbean and Atlantic are hardly the only regions that will need to build more resilient energy infrastructure to prevent power disruptions. Communities around the world are increasingly confronting the challenges posed by severe and extreme weather, including the devastating fires in Australia, Indonesia and the western United States.

In all of these cases, clean, localised energy solutions offer unique advantages in terms of reducing emissions and keeping the lights on after a disaster. They point the way to a better future for our electricity system. By embracing the clean-energy transition, the Bahamas is setting an example for the rest of the world – and particularly for those countries that are responsible for the overwhelming share of global GHG emissions.

Jules Kortenhorst is CEO of the Rocky Mountain Institute.

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Why the OPEC-Russia Blowup Sparked All-Out Oil Price War



First Russia tossed a hand grenade into global oil markets. Then Saudi Arabia dropped a bomb. After the dramatic collapse of an alliance between the OPEC oil cartel and Russia, a one-day plunge of more than 30% in oil prices sent shockwaves through global financial markets already reeling from the fallout of the coronavirus epidemic. The blowup of Russia's deal with the 13-member club of oil exporters – an alliance that has underpinned world oil prices for three years – triggered a sudden price war.

1. What's the bustup?

Russia had joined forces with OPEC in 2016, along with nine other non-member countries, and the alliance controlled almost half of the world's oil production. The "OPEC+" pact led to a resurgence of the cartel, which wields immense power over the world's most critical commodity. Russia stunned oil traders when it refused to go along with production cuts pushed by Saudi Arabia at a March 6 meeting in Vienna. The kingdom – OPEC's biggest producer and its driving force – wanted to trim output further to prop up prices as the coronavirus ravaged energy demand. Saudi Arabia responded aggressively just hours later: Its state-owned oil behemoth said it would reverse course on March 8, open the taps and slash crude prices.

2. What led to the fallout?

Talks between Russia and the Organization of Petroleum Exporting Countries broke down because the country didn't want to be strong-armed into further cuts to its lucrative oil production. It complained that the OPEC+ deal had aided America's shale industry. Russia was also increasingly angry with the willingness of U.S. President Donald Trump to employ energy as a political and economic tool. It was irked by the use of U.S. sanctions to prevent the completion of a pipeline linking Siberia's gas fields with Germany, known as Nord Stream 2.

3. What does this have to do with shale?

The Kremlin was reluctant to cede further market share to U.S. shale drillers – known as frackers – that have been adding millions of barrels of oil to the global markets. An attack on shale has been tried before: When the new technique was expanding in 2014, Saudi Arabia's strategy was to flood the market, expecting that a collapse in prices would thwart the new competition. As shale producers found cheaper ways to

operate and a global supply glut dragged on, OPEC then returned to its traditional tool of constraining output, sending oil to a four-year high of more than \$85 a barrel by mid-2018. The victory proved self-defeating. Higher prices reinvigorated U.S. fracking, propelling the U.S. to overtake Saudi Arabia and Russia as the world's No. 1 crude producer. Many drillers in Texas and other shale regions look vulnerable, as they're overly indebted and already battered by rock-bottom natural gas prices.

4. Can Russia and Saudi Arabia live with lower prices?

That remains to be seen – the two sides could always return to the negotiating table. In the short run, Russia is in a good position to withstand a price slump. Its government budget breaks even at a price of \$42 a barrel and it has squirreled away billions of dollars in a rainy-day fund. Saudi Arabia, which is almost entirely dependent on oil to fund lavish government spending, holds about \$500 billion in foreign currency reserves to cushion the blow. One source of potential stress: The kingdom's currency, the riyal, has been pegged to the U.S. dollar for more than three decades, providing economic and financial stability. OPEC has a built-in competitive advantage, since its Middle Eastern members can produce crude at about a third of the cost of U.S. shale.

5. What about other countries?

Such a dramatic crash in the price of oil, if it were sustained, would savage national budgets of petro-states from Venezuela to Iran, threatening to upend politics around the world. To policy makers, volatile oil prices are an added complication as they try to shield economies from the impact of the coronavirus epidemic.

6. What's the wider fallout?

There are winners from rock-bottom oil prices – among them China, the world's largest oil importer, whose recovery from the virus will be key for the global economy. The U.S. – once a beneficiary of low oil prices – is now an exporter rather than a buyer. Sudden surges in oil prices are feared because of the way they could jack up costs across the global economy and slow economic growth. Now a world reeling from an economic slump triggered by the virus is enduring another sort of oil shock.

Shale's New Reality: Almost All Wells Drilled Now Lose Money



America's shale producers already had a profitability problem. It just got a lot worse.

At a stroke, Saudi Arabia and Russia and their battle for market share have made almost all U.S. shale drilling unprofitable. Only five companies in two areas of the country have breakeven costs lower than the current oil price, according to data compiled by Rystad Energy, an Oslo-based consultancy.

Wells drilled by Exxon Mobil Corp., Occidental Petroleum Corp. Chevron Corp. and Crownquest Operating LLC in the Permian Basin, which stretches across West Texas and southeastern New Mexico, can turn profits at \$31 a barrel, Rystad's data show. Occidental's wells in the DJ Basin of Colorado are also in the money at that price, which is where oil settled Monday.

But that's not the case for the rest of the shale industry – more than 100 operators in a dozen fields. For them, drilling new wells will almost certainly mean going into the red.

Shale projects are heralded for their ability to be quickly ramped up and down. But because output from these wells declines much faster than from their old-school, conventional cousins, companies have to drill more of them just to keep output flat. That has meant sluggish investor returns, one of the main reasons oil and gas represents less than 4% of the S&P 500 Index.

At this point, “companies should not be burning capital to be keeping the production base at an unsustainable level,” said Tom Loughrey, a former hedge fund manager who started his own shale-data firm, Friezo Loughrey Oil Well Partners LLC. “This is swing production – and that means you're going to have to swing down.”

Already, producers including Diamondback Energy Inc. and Parsley Energy Inc. have said they're cutting their drilling budgets and dropping rigs. Others, such as Apache Corp. and

Occidental, have indicated they'll rein in activity.

"What they're not saying is that they're going to suspend activity," Loughrey said.

In his view, a typical well in the Midland sub-basin of the Permian requires \$68 oil for investors to make an adequate return within 24 months.

BloombergNEF expects producers to move away from using breakeven costs that leave out overhead and other necessary expenses as investors shift their focus to cash flow.

"At a minimum, they will need to add back interest costs to their calculus," BloombergNEF said in a report. That means the profitability floor for most new wells will rise to \$50 a barrel "in the not too distant future," according to the report, up from \$45 in the past.

The shale boom turned the U.S. into the biggest oil producer in the world and, in recent months, a net exporter of petroleum. But if prices remain near \$30 a barrel, producers will be forced to ax so much drilling activity that U.S. oil production could fall by 2 million barrels a day from the end of this year to the end of next, according to Rystad.

That would be about a 20% drop.

On Monday, West Texas Intermediate crude fell 25% to settle at \$31.13 a barrel, and some forecasters see it falling toward \$20. Prices clawed back some of those losses Tuesday, reaching as high as \$33.73.

"Even the best operators will have to reduce activity," said Artem Abramov, head of shale research at Rystad. "It's not only about commerciality of the wells. It's a lot about corporate cash flow balances. It's almost impossible to be fully cash flow neutral this year with this price decline."

IEA: Oil Demand To Drop For First Time Since 2009



Global oil demand is set to drop this year for the first time since the financial crisis in 2009, the International Energy Agency (IEA) said on Monday, as it slashed its demand outlook by 1.1 million bpd due to the coronavirus outbreak and its impact on economies.

The IEA now sees global demand falling by 90,000 bpd year on year in 2020, the agency said in its Monthly Oil Market for March 2020, after its executive director Fatih Birol warned two weeks ago that the coronavirus outbreak could hit global oil demand growth more than initially expected.

In the February market report, the IEA had slashed its 2020 oil demand growth forecast by 365,000 bpd to just 825,000 bpd—the lowest oil demand growth since 2011, and warned that the coronavirus outbreak would lead to the first quarterly contraction in global oil demand in more than 10 years.

In view of the global spread of the coronavirus and its impact on the global economy, the agency now expects full-year oil

demand to drop.

“While the situation remains fluid, we expect global oil demand to fall in 2020 – the first full-year decline in more than a decade – because of the deep contraction in China, which accounted for more than 80% of global oil demand growth in 2019, and major disruptions to travel and trade,” the IEA said in its March report.

The report commented on the collapse of the OPEC+ coalition, saying that the implication is that “the OPEC+ countries will be free to exercise their commercial judgement when assessing future levels of production.”

The IEA report comes a day after Saudi Arabia effectively launched an oil price war on Russia after the former allies abruptly ended the OPEC+ agreement last Friday. Over the weekend, the Saudis slashed their official selling prices by \$6-7 a barrel to all markets including Asia, and signaled they would boost production as of April, sending oil prices into a tailspin on Monday to the biggest fall since 1991.