

## Oil Prices, Equities and the Covid-19 Outbreak



**Unprecedented measures including travel bans, work-from-home, canceled vacations, disrupted supply chains and even urban lockdowns have caused falling demand for motor fuel and oil demand.**

**4**

### POWER

The Coronavirus Crisis Reminds us that Electricity is More Indispensable Than Ever: Dr. Fatih Birol

**7**

### ENERGY

Ministry Of Energy Prioritizes Uninterruptable Energy Supply

**8**

### RENEWABLES

SOCAR and Sham to develop renewable gas supplies; Plus two other renewable stories

**8-10**

# Monthly Highlights

Oil Prices Hit Historical Low Over Outbreak Fears  
and Failed OPEC+ Talks

3

Oil Prices, Equities and the Covid-19 Outbreak

4

The Coronavirus Crisis Reminds us that Electricity  
is More Indispensable Than Ever: Dr. Fatih Birol

7

Ministry Of Energy Prioritizes Uninterruptable  
Energy Supply

8

Renewable Capacity Expansions Surpassed  
Fossil Fuels in the U.S.

8

SOCAR and Snam Signed Agreement to  
Promote Renewable Gas

9

Solar-Powered 10 MW Hydrogen Production Plant is  
Launched in Japan

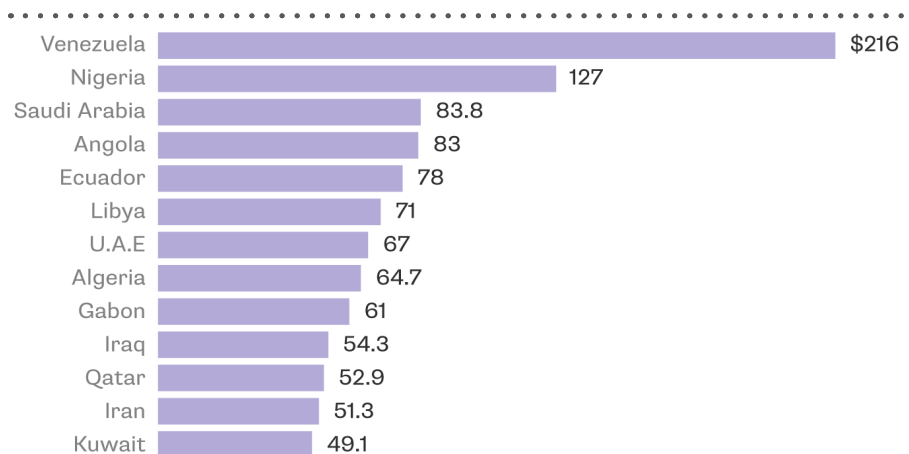
10

# Oil Prices Hit Historical Low Over Outbreak Fears and Failed OPEC+ Talks

Oil prices, along with global oil demand are in free-fall, heading for the biggest annual contraction in history, as a new oil price war between Saudi Arabia and Russia began in early March. Cooperation between Moscow and Riyadh dramatically collapsed during OPEC+ negotiations in Vienna on March 6 after Russia refused to support deeper oil output cuts desired by Saudi Arabia to fight falling oil demand as a result of the spread of the coronavirus outbreak. The failure of the talks has prompted Saudi Arabia to slash its crude prices, targeting potential buyers of Russian oil in Asia, Europe, and the U.S. On March 7, Saudi Aramco slashed its official selling price (OSP) for April for all its crude grades to all destinations.

OPEC members agreed to slash its production quotas by 1 million b/d, contingent on Russia and nine other non-OPEC allies agreeing to shrink theirs by 500,000 b/d, for the rest of the year, amid weaker global demand caused by the COVID-19 outbreak. However, with Russia refusing to go along with the deal and Saudi Arabia responding with efforts to gain market share, for now, OPEC's role of the moderator of oil market prices has again been suspended. The situation is so dire that the Texas Railroad Commission is considering reinstituting oil production quotas that it successfully employed to keep world oil prices relatively stable from 1930 to 1970 (after which U.S. spare production capacity dropped to zero).

On March 14, Russian Finance Minister Anton Siluanov said that his country's budget, which relies on oil and gas for about 40% of its revenue, could post a deficit of as much as



**Graphic – Fiscal breakeven oil price of OPEC-member countries <sup>1</sup>**



**Graphic – OPEC production (2008 – 2020) <sup>2</sup>**

1% of GDP in 2020 instead of the 0.8% surplus earlier forecast by the government. Russia also benefits from a lower breakeven oil price than many other countries, set at just over \$40 a barrel for 2020-2022, compared with about \$80 for Saudi Arabia. Nevertheless, Russian Central Bank announced that it estimated last year that \$25 oil price would push the country's economy into recession in 2020.

Based on the experience of the 2014 oil price collapse, the Russian oil industry is better equipped to deal with low oil prices than Saudi Arabia. Following the 2014 collapse, the ruble was also

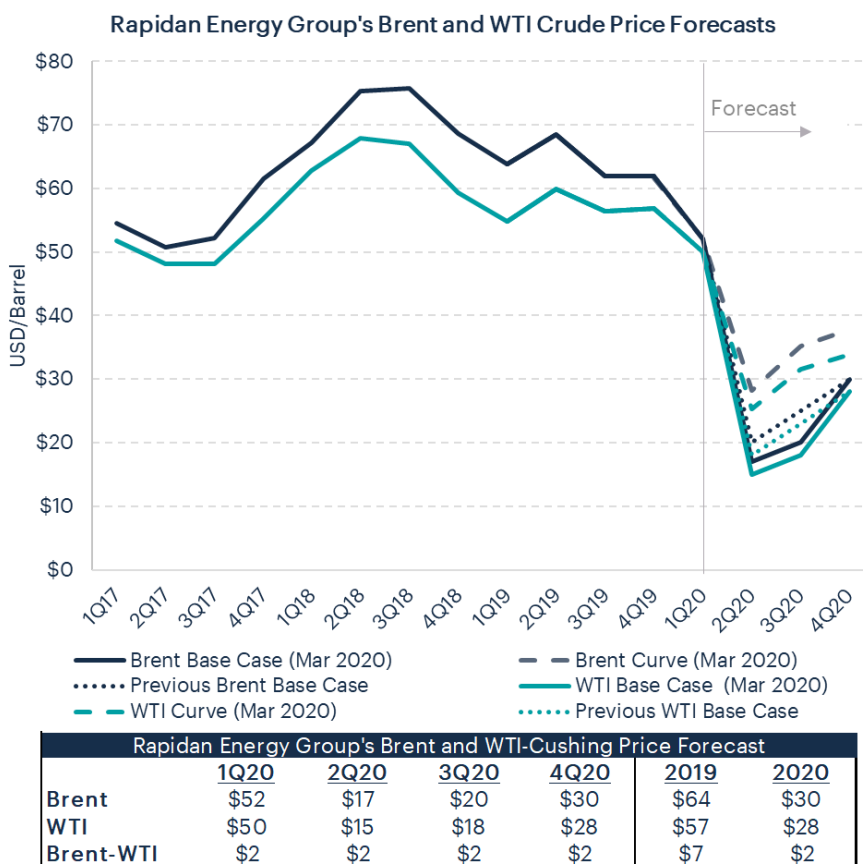
devalued moderating the impact on Russian oil companies as they had relatively few dollar-denominated obligations or expenses. While Saudi Arabia has the advantage of being able to profitably produce oil at even these extremely low prices, they have substantial social obligations that the pre-collapse oil prices were not covering (see chart above showing the fiscal breakeven price of oil for OPEC Member countries). As Saudi Arabia does not have the internal economy that Russia, or almost any other country has, almost all of their expenses are dollar-denominated as they rely so heavily on imported goods

<sup>1</sup> Bloomberg, (March 9, 2020) Bloomberg Quick Take

<sup>2</sup> S&P Global Platts, (March 6, 2020) OPEC+ coronavirus talks collapse with no deal on oil production cuts

financed by oil revenues. Russia appears to be in a more favorable position to outlast Saudi Arabia during this crisis and be in a better bargaining position for a future deal.

At the same time, it appears that Saudi Arabia is resolved to wait for Russian concessions. Given the standoff, there is a good likelihood of even lower oil prices as all players feel the consequences of completely unconstrained oil supply in a market that has suffered enormous demand destruction. President Trump and President Putin discussed the matter on Monday boosting oil prices by about \$1/b. The United States is particularly interested in getting cooperation between Russia and Saudi Arabia resumed. Whatever happens, the outlook for oil producers remains bleak. The Rapidan Energy Group, for example, has dramatically lowered its Brent and WTI oil price projections for the 2<sup>nd</sup> quarter (\$17/b and \$15/b respectively) as shown in the adjoining figure, with very low prices persisting in the 3<sup>rd</sup> quarter.<sup>3</sup>

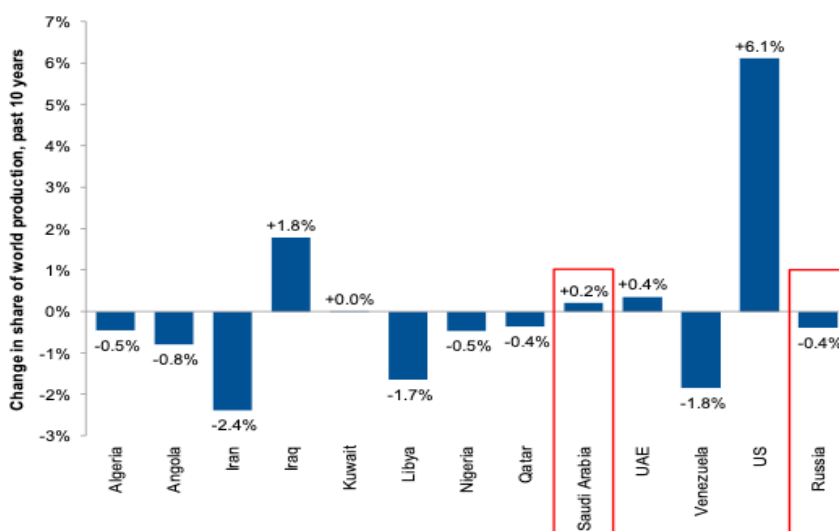


Source: Bloomberg, Rapidan Energy Group

## Oil Prices, Equities and the Covid-19 Outbreak

Unprecedented measures including travel bans, work-from-home, canceled vacations, disrupted supply chains and even urban lock-downs have caused falling demand for motor fuel and oil demand. At the height of the coronavirus outbreak in China in February, the country's oil demand fell at least 20%, or about 3 million barrels per day (m/bpd). The U.S., Germany, France, Italy, Spain, the U.K., and Canada consume 31 m/bpd, implying that a similar percentage drop in consumption would cut global oil demand by about 6 m/bpd.

Oil prices have fallen by more than 50% year-to-date as the virus's worsening impact on the global



**Graphic – Change in crude oil production market share (2009-2019)**<sup>4</sup>

<sup>3</sup> Courtesy of the Rapidan Energy Group. <https://www.rapidanenergy.com>

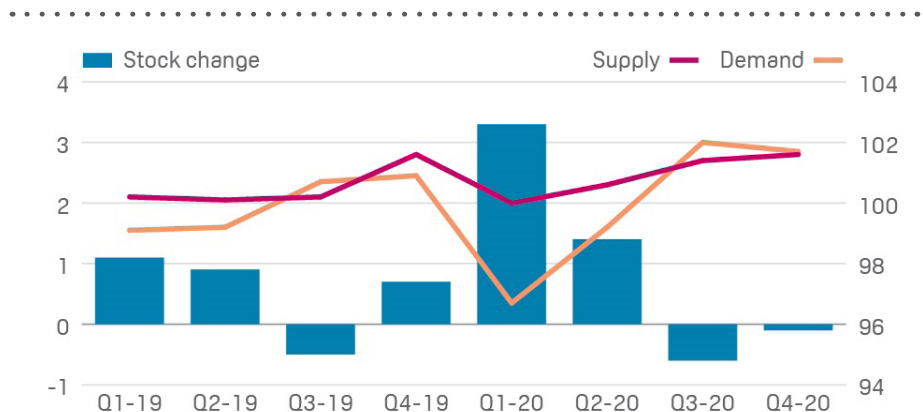
<sup>4</sup> Goldman Sachs, (March 9, 2020) SARS - Coronavirus-2 and the Economic, Investment, and Political Implications

economy coincides with a massive supply shock. On March 9, Brent crude plunged more than 20%, the largest one-day drop since January 17, 1991, when oil prices fell a third at the outset of the U.S. Gulf War. Brent crude futures LCOc1 fell \$10.91 (24.1%) to settle at \$34.36 a barrel. The contract fell by as much as 31% earlier in the day to \$31.02, its lowest since February 12, 2016. U.S. West Texas Intermediate (WTI) crude CLc1 fell \$10.15 (24.6%) to settle at \$31.13 a barrel. WTI earlier dropped 33% to \$27.34, also the lowest since February 12, 2016.

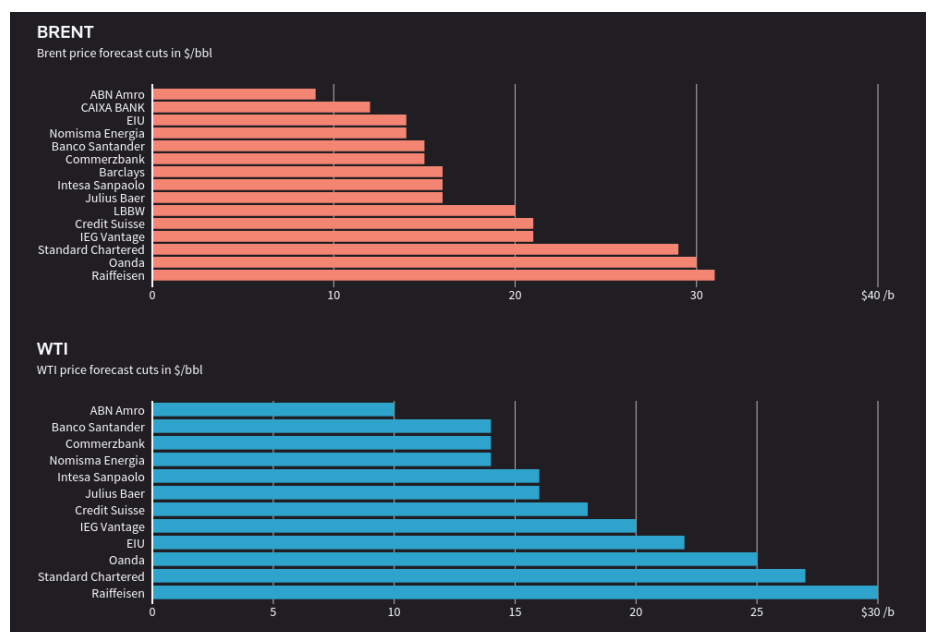
The radical slump in oil prices triggered panic selling and heavy losses in Wall Street as the rapid spread of coronavirus amplified fears of a global recession. On March 9, Wall Street's main stock indexes plummeted, and the Dow Jones Industrials crashed 2,000 points. Trading was halted immediately after the opening, as the benchmark S&P 500 tumbled 7% to its lowest since June 2019, triggering an automatic 15-minute cutout originally put in place to avoid a repeat of the 'Black Monday' crash in 1987, when the Dow slumped nearly 23%. Companies listed on the S&P 500 have lost more than \$5 trillion in value in a sell-off sparked by fears that the coronavirus epidemic could end the longest U.S. economic expansion on record.

### Oil Prices Looking Forward, Agencies' Outlooks

The growing fear among many traders is that current oil demand around 100 m/bpd may contract by the most ever this year, easily outstripping the loss of almost 1 m/bpd during the great recession in 2009 and even surpassing the 2.65 m/bpd registered in 1980 when the world economy



Graphic – World oil demand-supply balance (2019-2020)<sup>5</sup>



Graphic – Analysts' forecast changes compared to Reuters February oil price poll<sup>6</sup>

crashed after the second oil crisis. According to BP Statistical Review of World Energy 2019, global oil demand has contracted in only three years since 1985: In 1993 by 0.150 m/bd, in 2008 by 0.572 m/bd, and in 2009 by 0.839 m/bd.

Right after the stock market crash, the International Energy Agency (IEA) announced that it slashed its global oil demand outlook by 1.1 million bpd, for the first time since the financial crisis in 2009. Global demand is now expected to fall by 90,000 bpd year-on-year in 2020, the Paris-based

agency said in its Monthly Oil Market for March 2020, after its executive director Fatih Birol earlier warned 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 bp, 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. The agency said in its medium-

<sup>5</sup> International Energy Agency, (March 9, 2020) Monthly Oil Market Report

<sup>6</sup> Reuters, (March 13, 2020) Crude posts biggest weekly losses since 2008, hit by coronavirus and Saudi price war



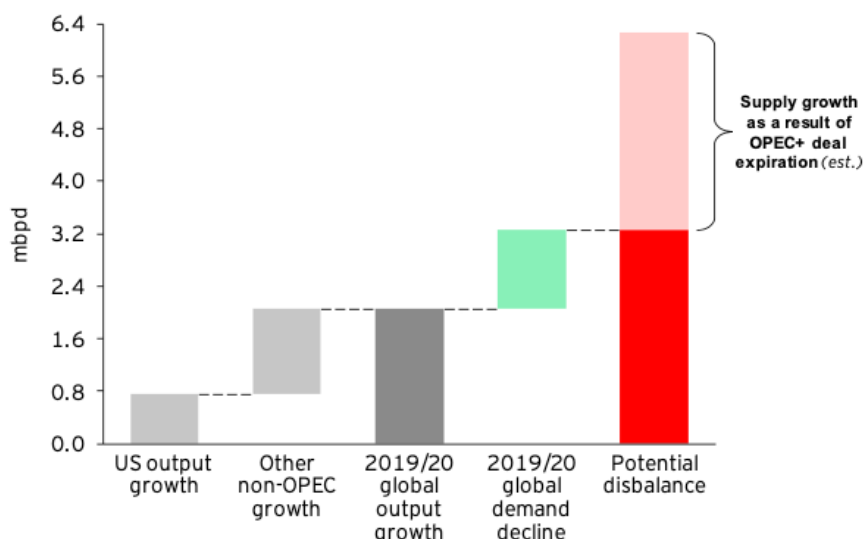
term outlook report that in an extreme scenario where governments fail to contain the spread of the coronavirus, global oil consumption could drop by up to 730,000 bpd.

On March 10, global rating agency Fitch Ratings released a report saying that the coronavirus epidemic and the sharp decline in oil prices will strain the economies of oil exporting countries in the Middle East and North Africa. The agency said it estimates that a drop in oil prices of \$10 per barrel would affect government revenues by 2% to 4% of gross domestic product (GDP) among Gulf Cooperation Council countries.

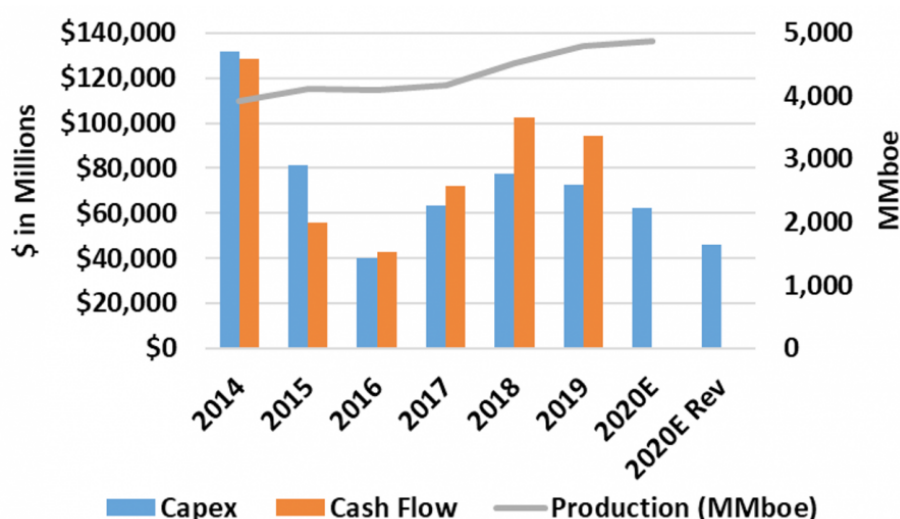
Moody's also warned that low oil prices raised financial risks for oil and natural gas companies. Although the current price tumbles are "lower in severity than the commodity price decline of 2015-2016", Moody's stressed the situation is "not a structural shift at this stage."

The U.S. Energy Information Administration (EIA), meanwhile, revised down its Brent crude oil price forecast for 2020 by \$18 per barrel (from \$63 down to \$43), according to its monthly Short-Term Energy Outlook (STEO) report for March released on March 11. While Brent crude is forecast to average \$37 per barrel during the second quarter of 2020, then it is anticipated to average \$42 per barrel during the second half of the year. The EIA said it forecasts Brent crude price increasing to an average of \$55 per barrel in 2021, as "declining global oil inventories put upward pressure on prices."

OPEC also slashed its global oil demand forecasts by 920,000 bpd from last month's assessment, saying that demand will slightly increase by 60,000 bpd in 2020. In its Monthly Oil



Graphic – Potential 2019/20 changes in oil market balance<sup>7</sup>



Graphic – Upstream capital spending (2014-2020)<sup>8</sup>

Market Report published on March 11, OPEC said that the near-zero growth projection for this year reflects slower global economic growth as a result of the spread of COVID-19 outbreak. The oil cartel now expects global GDP growth at 2.4% this year, down from a forecast of 3.0% in last month's report.

On March 12, Brent crude fell 7% after U.S. President Donald Trump restricted travel to the country from Europe as part of measures to try to halt the spread of coronavirus after the

World Health Organization described the outbreak as a pandemic. On the following day, President Trump said that the United States would take advantage of low oil prices and fill the nation's emergency crude oil reserve, in a move aimed to help energy producers struggling from the price plunge. The Strategic Petroleum Reserve (SPR) has the capacity to store up to an additional 77 million barrels of oil. But it's not clear how fast the oil would be purchased for the reserve, which currently holds

<sup>7</sup> EY, (March 17, 2020) Energy Market Note

<sup>8</sup> RBN Energy LLC, (March 19, 2020) Paint it black – E&Ps slashing already-weak capital spending amid oil price rout

635 million barrels. It is the first move by a president to fill the SPR since President George W. Bush ordered a fill to capacity in the wake of the September 11, 2001 attacks.

But this step could not stop the radical decline in oil prices. Oil prices within the week of March 9-13 posted their biggest week of losses since the 2008 global financial crisis. A Reuters survey showed analysts slashed their forecasts of Brent crude prices to \$42 a barrel on average in 2020, compared with the \$60.63 consensus in a February poll.

IHS Markit said on March 15 that global oil consumption is expected to drop by 1.42 m/bpd on average this year but stressed that it has a worst case scenario for a 2.8 m/bpd drop. FGE, another oil consultant, announced that it forecasts a 1.3 m/bpd drop on average for the year.

While the world's biggest 14 publicly-traded oil companies saw their market capitalization declined by a total of \$495 billion within the week of March 9-13, Wall Street stocks suffered their biggest plunge since 1987 on March 16 after U.S. President Trump warned of a possible recession,

with economic disruption from the coronavirus potentially extending into summer.

On March 17, crude oil prices settled below \$30 a barrel after the Saudi Energy Ministry announced that the Kingdom's crude exports are set to rise in the coming months to more than 10 m/bpd, as it plans to use more gas for power rather than burning crude. Saudi Arabia has told refiners it plans to supply 12.3 m/bpd in April. According to the IEA, the country consumes an average of 3.15 m/bpd, suggesting that exports would be capped at slightly above 9.15 m/bpd. Before the price war broke out, Saudi oil exports averaged just under 7 m/bpd from December to February.

Goldman Sachs also said on March 17 that global oil consumption was dropping right now by about 8 m/bpd. While Trafigura Group, one of the world's top independent oil traders, estimated the demand loss at 10 m/bpd as more countries lockdown across Europe, Standard Chartered Bank expects an 'extreme global surplus' of 12.9 m/bpd (13% of global demand) in the second quarter and a cumulative surplus exceeding 2.1

billion barrels by the end of the year.

As the oil price war between Moscow and Riyadh deepens, U.S. shale oil producers announce to slash spending this year. According to the latest report released by RBN Energy, the total capital spending of U.S. upstream companies could plummet to \$46 billion, 36% lower than 2019 levels of \$72.4 billion. Two leading producers, Occidental Petroleum and Apache, announced 86% and 90% reductions, respectively, in their quarterly dividends, using the retained cash to support their balance sheets. On the other hand, lower oil prices can also radically reduce share repurchases, which already fell to \$10.7 billion in 2019 from \$15.7 billion in 2018.

U.S. upstream companies already had struggled with balancing cash inflows and outflows before the recent oil-price collapse. Their initial upstream capital spending plans decreased in 2020 for the second consecutive year, by 14% to \$62.5 billion after a 7% decline in 2019. Recent announcements indicate another \$16 billion drop in Capex to \$46.1 billion.

## The Coronavirus Crisis Reminds us that Electricity is More Indispensable Than Ever: Dr. Fatih Birol

Global Covid-19 outbreak measures, particularly the suspended industrial manufacturing, caused a falling demand for electricity and natural gas. However, the importance of security of electricity and natural gas supply, even the fuel supply to vehicles, became more important

as they are all vital for undertaking necessary services for the global fight against the outbreak.

"The coronavirus crisis highlighted how much modern societies rely on electricity," the Executive Director of IEA and IICEC's Honorary Board Chairman Dr. Fatih Birol stressed



in his latest commentary on IEA's website.<sup>9</sup>

"Millions of people are now confined to their homes, resorting to teleworking to do their jobs, e-commerce sites

<sup>9</sup> IEA, Dr. Fatih Birol, The coronavirus crisis reminds us that electricity is more indispensable than ever, March 22, 2020

to do their shopping, and streaming video platforms to find entertainment. A reliable electricity supply underpins all of these services, as well as powering the devices most of us take for granted such as fridges, washing machines, and light bulbs.” he added.

Dr. Fatih Birol revealed that the electricity demand has declined by around 15%, largely as a result of factories and businesses halting operations due to strong confinement measures in response to the coronavirus.

“If electricity demand falls quickly while weather conditions remain the same, the share of variable renewables like wind and solar can become higher than normal. In this way, the recent drop in electricity demand fast-forwarded some power systems 10 years into the future, suddenly giving them levels of wind and solar power that they wouldn’t have had otherwise without another decade of investment in renewables. This is an important moment for our understanding of



cleaner electricity systems, including some of the operational challenges that policymakers and regulators need to address to ensure electricity security.” the Executive Director of IEA added.

### Ministry Of Energy Prioritizes Uninterruptable Energy Supply

Electricity is vital for energizing the intensive care unit of the hospitals and other medical services. The energy ministries and the relevant authorities implemented sudden action plans to prevent any black-out almost in every country.

Turkey’s Ministry of Energy and Natural Resources held an emergency meeting in early March with the Association of Electricity Distribution System Operators and the Association of Natural Gas Distribution Companies, to enhance the security of supply.

“We strongly prioritize the uninterruptable supply of electricity and natural gas and reviewed all the precautions carefully with the system operators, to have reliable and sustainable supply.” said Minister Fatih Dönmez, in a written statement on March 28.

## Renewable Capacity Expansions Surpassed Fossil Fuels in the U.S.

The mix of renewable energy sources, solar, wind, biomass, geothermal, and hydropower, provided 57.3% of new U.S. electricity generating capacity added in 2019, surpassing the cumulative capacities added by coal, natural gas, oil, and nuclear power combined, showed FERC’s latest monthly “Energy Infrastructure Update” report.<sup>10</sup>

Renewable sources, driven by wind and solar, accounted for 11,857 MW of new generating capacity

Primary Fuel Type	December 2019		January – December 2019 Cumulative		January – December 2018 Cumulative	
	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)	No. of Units	Installed Capacity (MW)
Coal	0	0	3	62	4	10
Natural Gas	3	1,112	81	8,557	117	20,571
Nuclear	0	0	1	155	5	191
Oil	0	0	15	77	37	69
Water	0	0	19	131	12	240
Wind	13	2,043	52	7,165	76	8,210
Biomass	1	2	9	66	14	103
Geothermal Steam	0	0	1	10	10	119
Solar	23	751	408	4,485	659	5,558
Waste Heat	0	0	0	0	2	51
Other *	2	0	45	0	43	2
<b>Total</b>	<b>42</b>	<b>3,908</b>	<b>634</b>	<b>20,708</b>	<b>979</b>	<b>35,124</b>

**Table:** Installed capacity expansions (FERC)

<sup>10</sup> FERC, Energy Infrastructure Update, March 2020



by the end of 2019, according to FERC's data. The capacity increase in natural gas-fired power plants is 8,557 MW, nuclear 155 MW, oil 77 MW, and coal 62 MW, the report showed.

By the contribution of new capacity expansions, renewables have also surpassed 22% of the total available installed generating capacity of the U.S. and exceeded the coal capacity of 20.89%. Wind plants have the largest installed electrical generating capacity rate with 8.51%, followed by hydropower 8.41%, and solar 3.49%. The combined capacity of wind and solar accounts for 12.0% of the total electricity generating capacity of the U.S. FERC foresees renewables

	Installed Capacity (GW)	% of Total Capacity
Coal	250.29	20.89%
Natural Gas	535.10	44.67%
Nuclear	106.33	8.88%
Oil	39.79	3.32%
Water	100.80	8.41%
Wind	101.93	8.51%
Biomass	15.93	1.33%
Geothermal Steam	3.85	0.32%
Solar	41.87	3.49%
Waste Heat	1.32	0.11%
Other*	0.77	0.06%
Total	1,197.99	100.00%

*Table: Total available installed capacity in 2019 (FERC)*

significantly expanding their lead over fossil fuels and nuclear power in terms of new capacity additions during the coming three years.

## SOCAR and Snam Signed Agreement to Promote Renewable Gas

Renewable energy is an increasingly important purpose of almost all nations for a clean energy future. In addition to the progress in renewable energy sources like solar and wind, the renewable natural gas is now in the focus of researches for reducing greenhouse gases and addressing climate change.

Replacing less than 20 percent of the traditional gas supply with renewable natural gas captured from sources like dairies, wastewater treatment plants and landfills can achieve greenhouse gas emissions reductions equivalent to converting 100 percent of buildings to electric-only energy by 2030, says the Southern California Gas Company.<sup>11</sup>



The latest cooperation on renewable gases and the use of sustainable energy is inked by the Azerbaijan's state oil company SOCAR, and Italy's energy infrastructure company Snam, in Rome.

The agreement covers the possibility of delivering sustainable energy sources through the Southern Gas Corridor, including the Trans Adriatic Pipeline (TAP), in the future, said the statement of SOCAR. Representatives of SOCAR and Snam signed the

agreement in February in the presence of Italian Prime Minister Giuseppe Conte and the President of the Republic of Azerbaijan Ilham Aliyev, according to the statement.

SOCAR's President Rovnag Abdullayev said that SOCAR, taking significant steps in its operations to minimize negative environmental impact, signed the cooperation agreement declaring it an "important step towards sustainability in the energy industry."

<sup>11</sup> Southern California Gas Company, Digest the Facts on Renewable Natural Gas (RNG), March 2020.

## Solar-Powered 10 MW Hydrogen Production Plant is Launched in Japan

A Japanese consortium has finalized the construction of the solar-powered 10 MW hydrogen production unit in March and launched the Fukushima Hydrogen Energy Research Field (FH2R). FH2R uses solar energy to produce hydrogen to maximize the utilization of this energy while establishing low-cost, green hydrogen production technology. FH2R has a 20 MW of solar power generation facility on a 180,000 m<sup>2</sup> site to conduct electrolysis of water. The world's largest-class hydrogen production facility also uses power from the grid to operate continually.

The Japanese consortium includes New Energy and Industrial Technology Development Organization (NEDO), Toshiba Energy Systems & Solutions Corporation (Toshiba ESS), Tohoku Electric Power Co., Inc., and Iwatani Corporation. According to Toshiba's statement on its web site, FH2R can produce, store, and supply up to 1,200 Nm<sup>3</sup> of hydrogen per hour (rated power operation).

Hydrogen produced at FH2R will be used to power stationary hydrogen fuel cell systems and mobility devices, such as fuel cell cars and buses. Hydrogen is produced and stored



based on the hydrogen demand and supply forecasting system's forecasts for hydrogen demand in the market. Adjustments to balance supply and demand in the power grid can be made by adjusting the hydrogen volume produced by the hydrogen production unit to meet the power grid adjustment needs of the power grid control system. The most crucial challenge in the current stage of testing is to use the hydrogen energy management system to achieve the optimal combination of production and storage of hydrogen and power grid supply-demand balancing adjustments, without the use of storage batteries.

Hydrogen Fuel Cell Vehicles (HFCVs) have a growing pattern after successfully clocking more than 20 million kilometers in the last decade.

The fuel cell costs have also been cut by 80% since 2002 while achieving a four-fold increase in durability to over 120,000 miles. These developments paved the way for automotive companies (OEMs) to sell and lease HFCVs today. The global HFCV car stock reached 11,200 units in 2018.<sup>12</sup>

According to the h2.live website, refueling of HFCVs is completed in just three minutes, for ranges of 500-700 km. The number of hydrogen filling stations in Germany, the front runner in Europe, reached 83 as of March 2020. Eight stations are in the planning phase, and five stations are in the approval phase. The total number of hydrogen filling stations across Europe is 121. The number of planned stations during 2020 is stated as 100 by h2.live.

<sup>11</sup> Southern California Gas Company, Digest the Facts on Renewable Natural Gas (RNG), March 2020.

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