

# SYNERGY

Bilkent Energy Policy Research Center Newsletter



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## Energy Demand on Quarantine Days

As the spread of Coronavirus continues in Turkey, the government warns people to stay at their homes in isolation. Almost every business keeps its operations by working from home, and today schools and universities began remote education.

While we are trying to adopt a new lifestyle, we change our energy consumption patterns.

The main decline is in transportation usage. According to TomTom Live Traffic Index, the traffic congestion declined significantly.

Table1: Traffic Congestion Changes

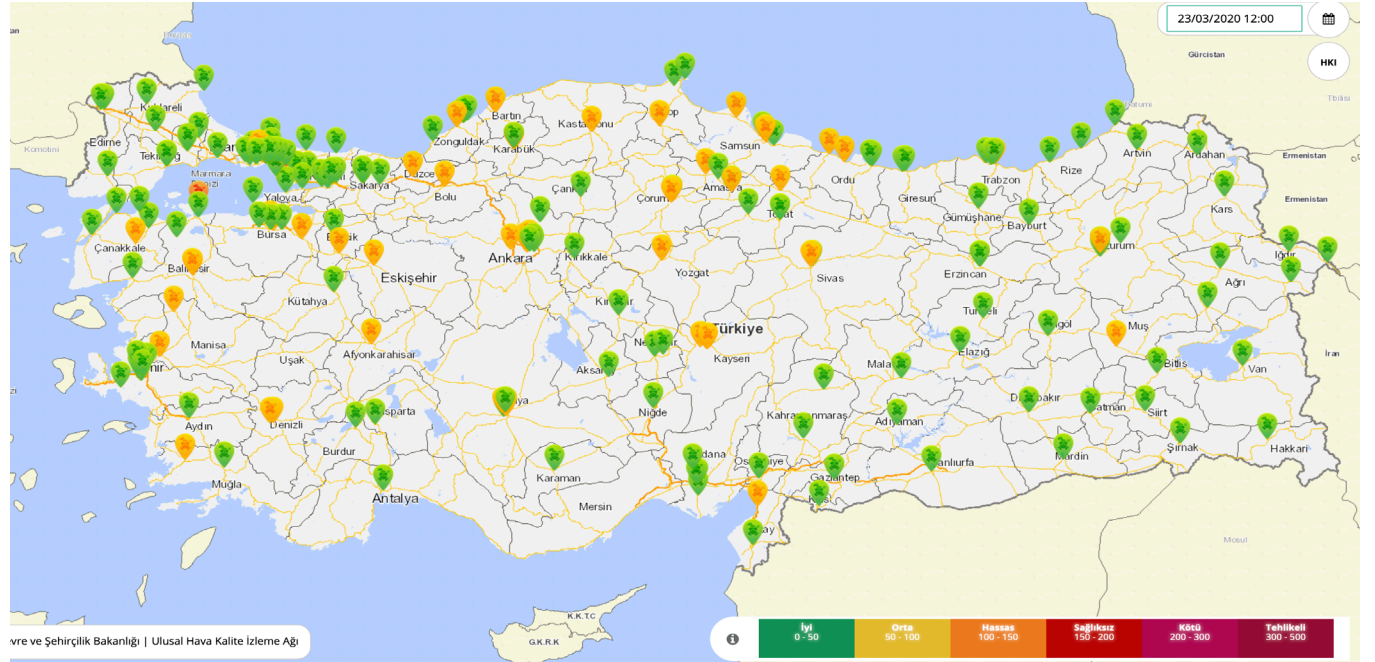
Major Cities	Today	Last Weekend
Ankara	-78%	-61%
İstanbul	-83%	-90%
İzmir	-82%	-57%

Source: TomTom

According to data, the most significant declines in traffic congestion happened in İstanbul. Last weekend, it was down to 6%, which meant a 90% decline. While in the weekdays the smallest drop was in Ankara, the previous weekend the least reduction in traffic congestion happened in İzmir.

With the oil price war and the coronavirus, we faced increasing supply and decreasing demand for oil and petroleum products. In Turkey, the price of gasoline declined by 25% in one month.

Another significant indicator of understanding energy consumption patterns in the quarantine days is electricity usage.



According to TEİAŞ (Turkish Electricity Distribution Company), yesterday, the electricity consumption was 755,600-megawatt-hours. Since it was Sunday, I compared with three weeks ago. On March 1, 2020, electricity consumption was 704,880-megawatt-hours. The change indicates that there was a 7,1% increase in weekend consumption.

When we look at the weekdays, we see that last week, on March 18, 2020, Turkey consumed 845,455-megawatt-hours, which is fewer 871,769-megawatt-hours on January 14, 2020. Since the weather conditions on two dates were surprisingly similar, I took these data to the comparison. As a result, electricity consumption declined by 5%. During these days, around 55% of the electricity production came from renewable energy. However, to understand the real impact on electricity consumption, we have to wait for quarantine to end. Only after that, we will have reliable data to compare.

In terms of air quality, we see improvements in all of the major cities. According to air quality indexes, all parts of Turkey categorized under good and

medium air quality standards since the quarantine began. Last month the major industrial zones and city centers were considered as sensitive and unhealthy mostly.

When I look at the rest of the world, I see similar patterns. According to FT, almost every country in Europe has a 10-15% decline in energy consumption.

In China, where the new Coronavirus cases stopped to develop, we see a minor increase in energy consumption and traffic congestion, yet the numbers are still far away from usual.

As a global pandemic, the coronavirus's impacts will be seen in future years. Working from home and remote education options are severely being tested, and it might change our understanding of doing some of the businesses. However, the factories that had to shut down their operations due to pandemic may generate further adverse effects for our economies. We will see how it goes. Until then, please stay at home.

Gökberk Bilgin



## Oil Price War: What has happened so far?

Oil prices crashed on March 9, 2020. The chain of events leading to March 9th and the following days are historical. We lived a very rare moment in the oil price (Brent price for this article) movements. What will happen tomorrow? Understanding tomorrow deserves a more careful examination of yesterday. How the dynamics developed, when the covid19 effect kicked in? These are important questions.

The signals for a volatile year were there in January, but not to this extent. The opening of the year was 2.6% higher at 68\$. That was the highest since May 2019. But the second week didn't end well as well as the start of the third week. There was an expectation that there may be a military confrontation between Iran and the US. As this scenario faded away, gains were lost.

IEA's Oil Market Report from January 16th reads "Our global demand growth forecasts for 2019 and 2020 remain unchanged, at 1 mb/d and 1.2 mb/d". So the expectations were 2020 will be a better year than 2019. Meanwhile Covid-19 was spreading.

During that time, no coronavirus effect on prices was observed. The world growth was a little bit better, and expectations were on the positive side. On January 23, the Chinese government locked down Wuhan. This news pushed oil prices lower as Brent moved below 60\$ the next day.

The slide continued till February 10. Oil price has found some relief and climbed upwards from the low of 10th at 53\$ as its lowest level in a year. The primary reason at that point became Covid-19. The second reason was Russian reluctance to an OPEC+ plan. On February 4, Russian Energy Minister Alexander Novak said that he is not sure about tightening output further. From 4-6th February, the Joint Technical Committee was having their meeting on cuts.



At that time, OPEC+ was cutting supply by 1.7 million bpd. There are also supply cuts due to sanctions. Venezuela, Iran, Libya's civil war, and UEA's output fall by 0.3 mb/d were the deficits on the supply side.

On the 8th, OPEC published a press release following the extraordinary meeting of the Joint Technical Committee (JTC) in Vienna. The press release states the adverse effects of the coronavirus epidemic mostly limited to China. So there were no worries of a global crises at that point.

JTC recommended current cuts to last till the end of 2020, which is 1.7 mb/d. In addition to that, advised on further cuts till the end of the 2nd quarter of 2020. But the Russian side has already given the signals that no more additional cuts will be supported.

If we rewind a little bit to December, Russia has achieved to exclude condensates from production data regarding OPEC+ targets. Gazprom and Novatek's growing gas production and hence condensate production of 7-8% of oil output was excluded.

On February 13, IEA published its monthly report. The agency downgraded the global demand growth forecast to 0.82mb/d. In a typical year, this should be 1-1.5 mb/d.

By the end of February, it was already apparent that Covid-19 was something much bigger than initially thought. On the 27th and 28th February, the Brent slid to the boundary of 50\$. At that point, additional OPEC+ cuts were nearly for sure.

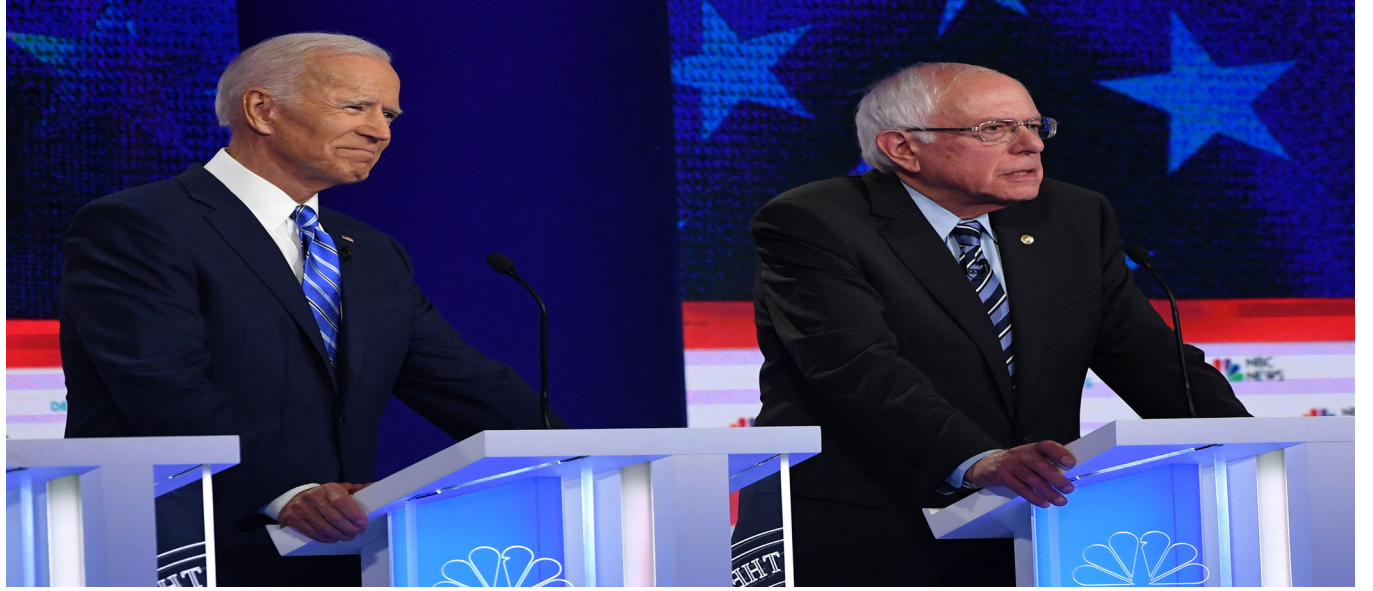
On March 4, Goldman Sachs slashed its estimates and mumbled possibility of 45\$ by April. Their research note was also considering additional OPEC+ cuts. Novak arrived in Vienna for talks. Iranian oil minister stated that the Russian side was reluctant, and OPEC has no plan B.

The next day OPEC advised 1.5 mb/d cuts on top of the already going on cuts of 1.7 mb/d. But Novak flew to Moscow to talk with Putin. That was strange since he may call Putin, but instead, he made a round trip and returned to Vienna on Friday. During his visit, OPEC ministers met and decided to cut 1.5 mb/d more if Russia and everyone join.

By Friday (March 6), there was no agreement. Novak said to the press, "From April 1 neither OPEC nor non-OPEC have restrictions," and everyone will pump at will. Saudi Minister was asked about what will happen next, and he said: "I will keep you wondering." Oil tumbled to 45.6\$ on that Friday.



## Biden vs Sanders: Climate Change Policies



The drama has not ended. On Saturday, March 7, Saudi Aramco cut April prices to Asia by 4-6\$ and US by 7\$ by email before midnight in Saudi time. But the most significant cut was to Europe by 6-8\$. Aramco's Arab light has been discounted to Brent by 10.25\$. Saudis vow to increase their production up to 13 mb/d.

On Monday(9th), the Saudi price attack has contributed to the market panic due to Covid-19. US President Trump tweeted, "oil price drop is good for the consumer."

Prices dropped to \$35 by Monday. The drop was so large, and some thought there was a mistake in the data. Price crash reached 30% as the Asian trading started. Prices gained close to 1.3\$ on Tuesday. However, on Thursday(12th) due to covid-19, as well as Saudi and UAE's plans to increase production, prices dropped again to \$31.05.

The next Monday, due to economic concerns, prices slipped further to 28\$. Now it looks as if no one can hold the price. But by Wednesday, March 18 the prices dropped below 25\$, the lowest level in 17 years. It was like a perfect storm, supply glut meeting demand destruction. On the same day, Russia admitted: "recent crash meant it would run a budget deficit."

The next day, Thursday, March 19, Trump said, "At the appropriate time, I will get involved, yes." to a question about intervention in the oil price war between Saudi Arabia and Russia. Prices moved up a little bit. By Friday, prices tumbled again as Russia rejected Trump's intervention.

In this perspective, the price crash of 2020 was not short of a soap opera. But if we step back and read a paragraph of a speech from October 24 2019, things may get a bit more interesting. "While at the previous forums in Verona we named three "regulators" on the global oil market, Russia, Saudi Arabia, and the USA, now we have only one market regulator -the USA, and we have to accept it."... These were the words of Igor Sechin.

Bariş Sanlı

On 3 November 2020, the presidential elections of the USA will be held. Thus, starting from the end of 2019, campaigns of Democratic Party candidates began to speed up. Even though there are still multiple options, it seems, as either Joe Biden or Bernie Sanders will be racing against Republican President Donald Trump. This projection consists of the presidential primary, which was held on 3 March, "Super Tuesday." The candidates' self-acknowledged actions differ significantly on several subjects such as health care, immigration, and education. Climate change is one of the topics as well, considering that their rival doesn't even accept that climate change exists. At the same time, a considerable portion of the country (and the world, obviously) expects imminent changes in US policy.

Joe Biden's Clean Energy Revolution starts with rejoining Paris Climate Agreement. The main goal is to have net-zero emissions by no later than 2050. According to the plan, even though the country might still be burning fossil fuels and releasing global warming emissions by mid-century, it would make up for it using other techniques, such as carbon capture, to remove an equivalent amount of gases from the atmosphere.

As for technology, Biden hopes to develop nuclear energy even further, and by increasing the funding for R&D of storage for radioactive waste, he aims for a viable solution. For budget's sake, Biden proposes spending \$1.7 trillion on the environment over the next decade, creating 10 million new jobs.

To create this budget, plans to reverse Trump's tax cuts for large corporations to fund his initiatives. Bernie Sanders, on the other hand, upholds a much more aggressive plan with his Green New Deal. Starting by rejoining Paris Climate Agreement, as his opponent, Sanders aims to have all of electricity and transportation fueled by 100 percent renewable energy by no later than 2030. He has pledged to dissuade the rest of the economy from fossil fuels by 2050. His plan is entirely reliant on having viable options on renewables because carbon capture and development on nuclear waste storage do not provide a permanent solution to climate change. The whole deal consists of a \$16.3 trillion budget for the next decade, which may seem considerably higher. Still, if all goes according to the plan, Sanders estimates that his plan will end unemployment by creating 20 million new jobs as part of a green economy.

As an addition to reverse Trump's tax cuts for large corporations, he will also raise taxes for corporate polluters and fossil fuel investors excessively.

Nonetheless, despite the visible difference in their policies towards fossil fuels, votes from relevant states were divided on Super Tuesday. Having the most significant shares of petroleum products in the USA, Texas voted in favor of Biden, as expected. However, Dakota and California voted for Sanders. In the upcoming months, it will be concluded whether America chose significant changes for future or simple measures.

Yiğit Mert Yürekliürk



## The Comeback of the Renewal Subsidies

The price crash of oil not only shook the oil producers globally but also created new market conditions for other fossil fuels and renewables. While it had been on the table of numerous policymakers' agendas to slowly phase out the subsidies that were given for supporting the developing renewables industry, the recent oil crash will inevitably change the course of many of those plans. For making an accurate analysis of how the role of renewables might play out in the future, we should individually examine oil, gas, and coal markets. It should be noted here that the presumptions of this analysis are based on a prolonged slump in the oil prices.

In our scenario, cheap oil prices could disincentivize consumers from buying electric-powered vehicles and stimulate the demand for internal combustion engines, thus lowering potential future demand for electricity intended for usage in EVs and increase the demand for gasoline. Oil prices also serve as a vector for linking the prices of other commodities such as natural gas to and also as a prime intermediate input for operations of other fossil fuels.

Natural gas, on the other hand, has a more direct effect on the renewables. The unique blend of our current oil crisis from both supply and demand viewpoints creates a more complicated picture. Being used extensively for heating and electricity production, natural gas prices have historically moved in conjunction with oil prices. Still, this time, U.S. Marcellus gas producers are pointing out to the possible reality of Permian shale producers cutting output in the mid-to-long term, and it would be a good time to recall that these producers have also been extracting an ever-increasing amount of associated-gas from their unconventional wells causing the existing supply glut in the U.S. to get even worse. The decrease in the Permian production could also help wane the gas glut in the U.S., but the effects could also only stay domestic. The LNG prices at U.S. export terminals



are linked to the price of crude oil, and at the current prices and market structure, a shift in moving towards liberalization in these price structures seems unlikely. Globally speaking, the natural gas prices could follow suit with oil prices and remain competitively low for electricity generation.

The 'infamous' coal stands to gain from the current crisis. Being heavily fuel-intensive in its extraction process, the slump in prices will lower a significant input cost factor and potentially reduce the commodity's price. Another important cost that is embedded in coal's global trade flows is the transportation cost. Luckily for coal producers, the downturn in global economic growth will result in decreased vessel traffic and lower the shipping costs for the exporters.

Given the fragile economic situation the world is in from China to the U.S., the public may be less inclined to pay a premium for utilizing the greener choices, as it had been in certain European countries within the past decade. With a forecast of household spending to subside and government spending to increase in the upcoming years, displacing the added costs of renewable generation in the face of cheaper fossil fuel alternatives could be an undesirable choice by policymakers.

What waits then, for the stricken renewables industry? Good news is that it still remains a strong contender for the future of power generation, but the bad news is that fossil fuel production companies even make up a considerable amount of the global economy and any scenario that would lead to

them heading into a crisis, such as the current one would be heeded by the governmental/intergovernmental institutions and intervened in with great force to keep the economic harm to a minimum. An unorthodox action by the policymakers would be to make an even greater push for incentivizing and supporting the global renewables industry to enable them more reliable access for the next cycle of global economic growth that is to succeed the current slump. Based on past precedents, such an action would likely come from European Institutions but is again a scenario with a low probability of occurring.

What form and shape might the upcoming incentives come in? Had it not been for the combination of the coronavirus and the price war, then a directed loan package explicitly targeting the industry might have been probable but under the current conditions subsidies such as tax expenditures (credits, deductions, deferrals, etc.), loan guarantees and long-term guaranteed feed-in tariffs could be more viable choices. If these will be newly issued vanilla packages or extensions of existing ones is another matter of debate. In addition, whether these new subsidies will target the production or consumption side is also another controversial topic. The correct answer will likely change case-by-case, and navigating the rough waters of our modern-day will depend on more than just saving a single industry, and then the approach should be constructed based on mixing the inclination towards the preservation of status-quo with that of the new age of heightened volatility.

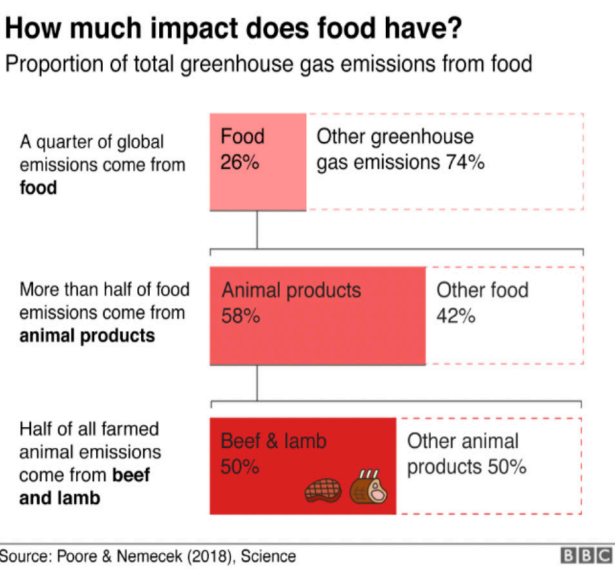
## Ups I didn't know that: Carbon footprint

What does carbon footprint mean? With every action, we actually leave our mark upon the environment, just like the one you leave with your shoes. From your transportation to cosmetics, the food you consume to utensils you purchase all of your actions affects the global level of carbon dioxide production.

From time to time, people can over-consume some foods and beverages. No matter the reason, everyone has been on a diet at least once in their life. Beauty is a social constrain, but carbon footprint is a fact. Food production creates almost a quarter of all greenhouse gas emissions, and our dieting plays a significant role in that. Scholars at Oxford University indicated that different types of foods affect our environment differently. Researches show that meat and other animal-based products crate more than half of the food-related greenhouse gas emissions.

Approximately one cow emits 65 gallons of methane gas per day while it digests its food. Methane gas emission is 25 times harmful than carbon dioxide emission. More scientifically, the emissions of 1 million metric tonnes of methane and nitrous oxide are equivalent to emissions of 25 and 298 million metric tonnes of carbon dioxide. When it comes to sheer waste production, 2.500 dairy cows' waste production is equivalent to a waste of over 400.00 people. In a way, in a day, your 'dinner' may produce more carbon footprint then you. It's a fact that by avoiding meat and dairy products, one can reduce its environmental impact. By changing our diet, we can save more water, contribute to reducing pollution and loss of forests.

Let's assume that you completely transformed your diet and minimized all the high carbon footprint products like meat, would it be enough? Unfortunately



no. To begin with, I am not a doctor or nutritionist with all the respect to your dietary preferences; your body needs different ingredients, and some of these ingredients cannot be replaced with their 'variations.' Unfortunately, decreasing our meat and dairy consumption is not enough. If you are a vegan or vegetarian but consume coffee or chocolate, your carbon footprint will be high too. Secondly, even if you lie your diet heavy on fruits and vegetables, their production origins can increase their carbon footprint. This means the transportation process of the items matters as much as their production phase.

By consuming locally produced items instead of foreign productions, you can significantly lower your carbon footprint. If you don't want to give up on any of these high greenhouse emission causing foods, we have good news for you. You don't have to give up on your favorite products. By limiting your consumption or choosing climate-friendly produced foods like tomatoes grown outdoors or within high-tech greenhouses instead of the ones heated by non-renewable resources like oil and coal, you can reduce your carbon footprint. Currently, the food industry heavily depends on fossil fuels. The population of the earth is increasing. Ladha-Sabur et. all argues that food demand is expected to increase by up to 60% percent by 2050. To

balance the supply and demand without harming the environment: production, packaging, and transportation phases of the products must be re-organized.

How can we measure our carbon footprint or track the production, transportation phases of the gods that we consume? Unfortunately, it's not an easy thing to do, especially if you are living in Turkey. However, by switching to locally produced grocery items, purchasing your foods in glass jars instead of tenet cans, and by using reusable food preserving containers instead of covering them with the plastic stretch wrap, you can significantly reduce your carbon footprint. Switching from plastic water bottles to glass ones will be healthier and reduce your waste too. Also, instead of buying small portions of packed grocery items like cheese or ham, you can prefer to purchase bigger portions. You can separate and store them in smaller pieces in your fridge by using reusable containers. Basically, even by switching your product's packaging, you can contribute to the war against global warming.

Especially these days, with the outbreak of the Covid19 pandemic, people get anxious. Naturally, with survival instincts, they started to buy and store lots of processed foods in plastic containers. Since we are enjoying staying and working from our homes, we can try new recipes like making our pasta at home instead of buying it in pre-packed containers or ordering out. Next time when you go out shopping, please consume local, prefer glass over plastic when it comes to canned foods, and tries to avoid purchasing less non-recyclable plastic as much as possible.

#StayHealthy #StayatHome

Yüksel Yasemin Altıntaş

BRENT OIL	25.45 \$/BL	GASOLINE	5.33 ₺/LT
USD/TRY	6.60	DIESEL	5.40 ₺/LT
EUR/TRY	7.06	FUEL OIL	2.32 ₺

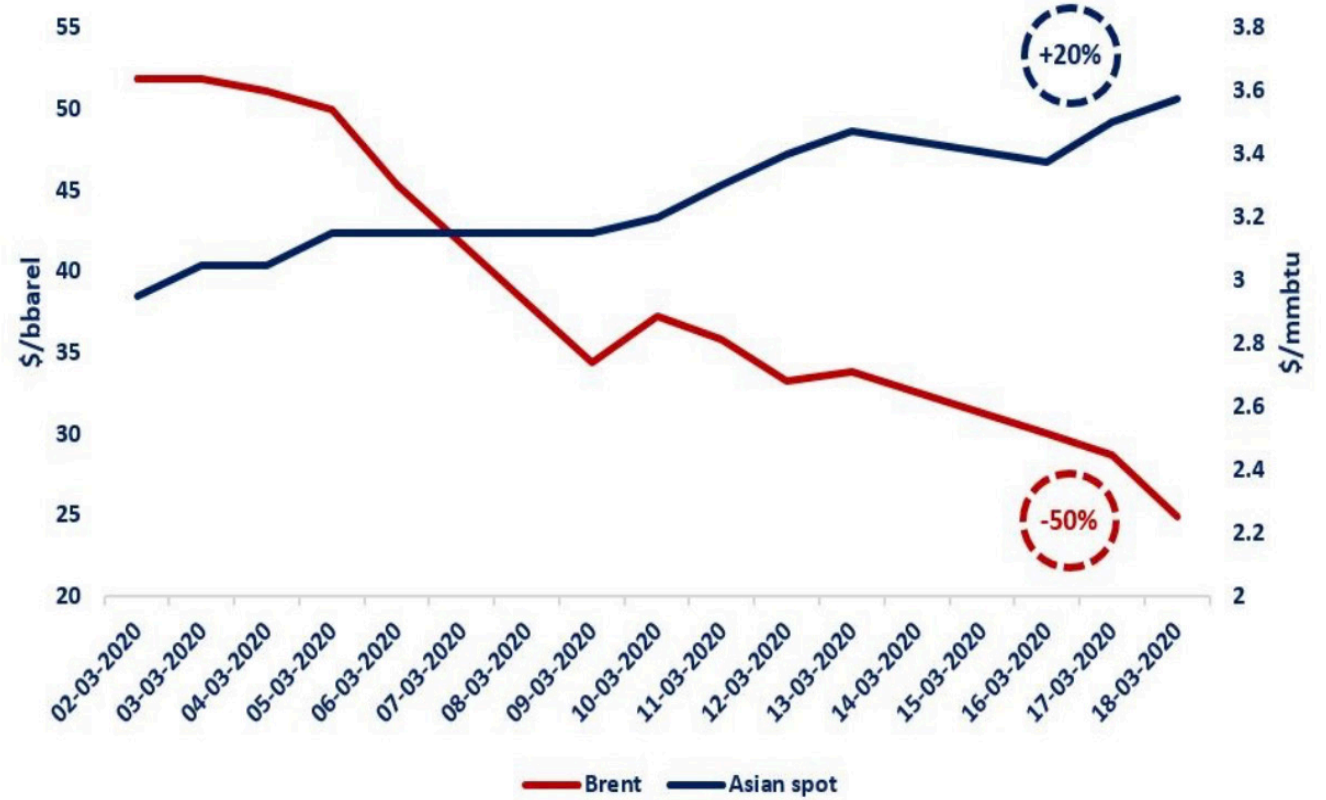


## Asia LNG Spot Strengthens Despite Oil Price Collapse

Due to Covid-19 and its effect on the energy market, oil prices more than halved since the beginning of March. For that matter, today's oil price is almost less than the 1973 Oil Crisis (\$20-21 in 1973, \$22-23 today). As one of the greatest producers in the world, China has slowed its production and had a break in most sectors to protect society from the new Covid-19 Pandemic. Because of that, as expected, the price of other energy resources would decrease, at least in Asia. However, the collapse of Brent Oil did not stop Asian LNG month-ahead prices to recover by an impressive 20% increase. Even though LNG prices are known as dependent on oil prices, according to data of the last two weeks, LNG is losing its dependency related to price.

Pandemic starting from China has affected all sectors around the world, but especially the energy market. Because China is the shining star of today's industry and the world's largest gas importer (61.5 MTPA in 2019), price decrease in energy sources was expected. However, probably due to opportunistic buyers in India and China, an unexpected increase has been observed in recent weeks. If the decrease in oil price continues, we can see a different world at the end of 2020 since oil has been losing its importance for the last few decades. New, more efficient, and cheaper alternatives have started to replace and overthrow oil in the arrangement, but the Oil Price War in 2020 can be a quarterback in the energy market.

The dilemma is low prices coupled with weak demand if oil prices hit \$10 per barrel that puts oil-



indexed pricing below spot prices. Not suitable for producers but a gift to consumers. Unlike oil, LNG producers cannot only ramp up production to compensate for lower prices. According to the graph, traders will take advantage of filling tanks because there is an uptick expectation. To paint a picture in the next few weeks and months, recent developments should be controlled.

On the other hand, again due to Coronavirus, LNG Canada which is a project of Shell with 40% stake, Malaysia's Petronas with 25%, PetroChina with 15%, Mitsubishi with 15% and South Korea's Kogas with 5% have laid off 750 people to prevent production before the virus reaches the construction site of liquefaction facility. These preventions taken by LNG companies can also cause a decrease in LNG supply and an increase in LNG price.

Furthermore, European gas demand is expected to decrease by 0.7% in 2020 compared to

expectations measured before Covid-19 Pandemic. Previous expectations were about a 6 Bcm increase. However, growth will probably be limited by only 2 Bcm, according to Rystad Energy's most likely scenario. Less demand coming from Europe can also be a parameter related to the LNG market, but it is not a significant change, though.

According to LNG experts, It is time for LNG prices to decoupling oil, and oil-indexed prices for LNG contracts was a necessary action in its own time. However, today, LNG must take off as a commodity for the sake of the energy markets as a whole. Prices indexes to oil would only distort the market fundamentals' view of the LNG. Because these two resources have different consumers, suppliers, producers, and markets, indexing to each other creates imbalance, instability, and unpredictability. Their price correlation must be cut as far as sectors and markets can do it, they say.

Kaan Demirci

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