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SYNERGY

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Trump ‘s Latest Move to Open Arctic Refuge to Drilling

Last week, the Trump administration took another step in opening up formerly protected parts of the Arctic, in the Arctic National Wildlife Refuge, to drilling for oil and natural gas. On November 17th, the Bureau of Land Management (BLM) began the process of allowing oil and gas companies to pick which areas should be auctioned off in the Refuge, formally referred to as a “call for nominations.”

Though President Trump’s close relationship with the oil and gas industry is no secret, it is the timing that is drawing much attention. Since the call for nominations is open to submissions for 30 days, followed by another 30-day notice of sale before the actual sale, the BLM could begin auctioning off the land just a few days before January 20th, which is when the term of the current President would end.

Indeed, given that it seems increasingly likely that Joe Biden will be inaugurated as the 46th President of the United States, Trump is facing a tight schedule to follow through with the promises he made to the oil and gas industry when he took office.

The Arctic National Wildlife Refuge has been a contentious area since the 1980s but was opened to oil development through a 2017 tax bill. This bill requires one lease sale by 2021 and at least a total of two by 2027. The proponents of opening up the Refuge to development, or drilling, argue that it is long overdue and an important step for American ‘energy independence’. Its opponents point out environmental concerns regarding the impacts of drilling both on the local ecosystems as well as more broadly on climate change.

While certain areas of the Refuge have now been opened to drilling in theory, it remains to be seen whether oil and gas companies will actually wish to pursue such activities in the region. The issue of environmental concerns could especially pose a problem for bigger companies that have much more public name recognition and could face public backlash, especially as many are trying to establish a new and more sustainability-focused image. Though the risk of facing even more legal action over environmental concerns may put off a number of companies, it is not the only obstacle in the way of actual drilling to take place.

Indeed, drilling in an environment as remote as the Refuge, where infrastructure and roads have purposefully not been constructed, comes with quite a hefty price tag. These expenses may perhaps have been seen as worth it when oil prices were high, but with the current prices at a historic low, it becomes even more difficult to justify investing in such expensive projects, especially when cheaper alternatives are present, for instance in West Texas. There is the additional challenge of approximately two dozen major banks, including Goldman Sachs, JPMorgan Chase, Citigroup, Morgan Stanley, and Wells Fargo, having said that they will no longer provide funding for fossil fuel development in the Arctic Refuge.

Last, but certainly not least, there is the looming change in administration that is looking more and more likely by the day. With Biden having campaigned on protecting such lands from drilling and promising to “permanently protect” the Refuge, it would not be difficult to assume that this could add on to the aforementioned challenges to make the prospect of drilling in the Refuge less appealing than one might initially think.

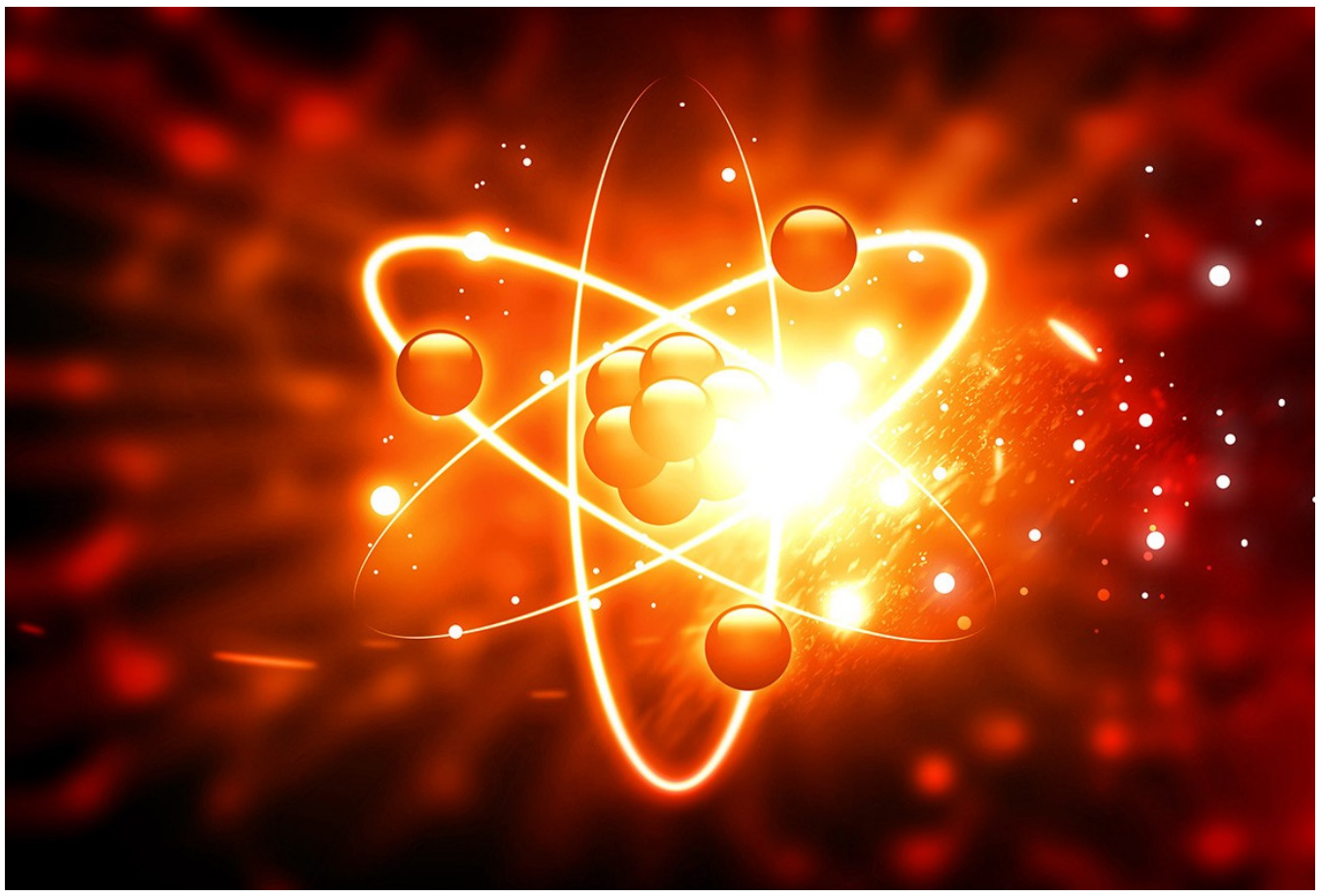
Nonetheless, though Biden has taken a firm stance against drilling in the area, what he can actually do will change depending on how far the process of issuing leases has progressed by the time he takes office on January 20th. According to Erik Grafe, a lawyer with the non-profit Earthjustice, if the auction takes place by January 17th but there has not been any actual issuing of leases, the Biden administration may be able to simply not issue them. However, it becomes more difficult to take back the leases if they are actually issued by the Trump administration, though according to Grafe, “the Biden administration could seek to withdraw the leases if it concludes they were unlawfully issued or pose too great a threat to the environment.”

In either scenario though, Biden would run into the issue of the federal law necessitating at the very least one lease sale by the end of 2021. Nonetheless, the new administration could make the process of obtaining the necessary permits difficult and time-consuming enough that, especially in combination with the aforementioned challenges, the companies involved would themselves come to the conclusion that the effort is not worth it.

It remains to be seen how this latest move by the Trump administration will play out in the long-term and how exactly Biden will react if he is indeed the one sworn into office on January 20th.

Selin Kumbaracı

New Age Nuclear Plants and Foreign Policy



Many people perceive nuclear energy as a risky energy production method that can generate more harm than good. After the Chernobyl and Fukushima plants' incidents, governments also disregarded it as an option in their energy policies. However, there is still room for nuclear plants to improve and become safer. The technology used in nuclear plants is rather old compared to other energy production mechanisms. Most of them belong to 1950s to 1970s technology. Technological improvements require expensive investments, and due to its popularity level, not many companies are interested in the nuclear energy sector.

Bill Gates, on the other hand, works on safer nuclear energy for nearly a decade. His initiative, TerraPower, tries to eliminate the risks that older technologies have by improving the plant's system. In the documentary series Inside Bill's Brain: Decoding Bill Gates, Bill Gates explains how the new design of nuclear reactor can minimize human errors resulting in massive catastrophes.

In traditional nuclear plants, electricity outages create enormous risks. After disposing of the fuel from the reactor, it continues to get heated. To cool them, they are transferring to the water pools. However, the system can only pump the cooling water if there is power. In these cases, when the electricity is out, the facilities use fuel-based power generators. In natural disaster cases safety of these generations also become vital. When the earthquake happened near the Fukushima nuclear plant, the generators were mistakingly locating near the shore, and the following tsunami hit them, so they could not work. Eventually, they could not cool down the disposed of fuel, and an explosion happened. With a better design of the facility, Japan could avoid the accident.

To fix the previous model's problems, the TerraPower team created a new design named Travelling-Wave Reactor, which does not use water for cooling. Instead, it uses liquid metal, which has a very high boiling temperature than the heat in the reactor and airflow to cool down. Bill Gates claims that, in this model, the worst-case scenario can be halting electricity production. The company also uses depleted uranium stocks to power the reactors that used to be carefully stored and indisposable. This amount of uranium is enough for the United States to cover 125 years of its energy consumption.

Even though the idea seems very promising, TerraPower faces problems with realizing it. After the Fukushima incident, public opinion on nuclear energy completely turned negative, and investment opportunities disappeared in the Western countries. TerraPower then began negotiations with China. After several years of discussions, there was a deal between the two parties. However, the diplomatic problems between the two states led to trade wars, and all operations stopped.

If they do not explode, nuclear energy provides many advantages for the environment and economy. After the facility's initial cost, the price is relatively very cheap to an alternative option. It provides zero-carbon emissions, which means they do not contribute the global warming. With nuclear, you can generate energy 24 hours when there is no maintenance that happens every two years.

According to the Straits Times, the Chinese governments want to benefit from these advantages by investing in nuclear energy. Since China has a zero-emission target for 2060, having nuclear energy can help them achieve the goal. According to the reports, China wants to add five times more nuclear power to its production capacity. Cooperation with the TerraPower can help them build these plants if they can resolve the diplomatic problems with the United States.

Nowadays, the United States and China are also competing in the technology sector. China is investing billions of dollars in artificial intelligence, quantum computing, and 5G technologies to challenge the hegemony of Silicon Valley, which is the center of the Western tech firms with four companies now worth more than $1 trillion and many others. By doing hacking activities China also tries to steal the intellectual properties. Under

such envioronment, many U.S. tech companies are shutting down their businesses in China and moving to other Asian countries or United States.

In these circumstances, sharing technical information on each other seems impossible, especially for the nuclear energy sector. I expect the Biden administration's policies to be similar to the Trump administration with a more cautious approach in the technology sector. They will try to avoid intellectual property theft and limit Chinese technological developments while supporting their companies to remain dominant.

Since 2018, the interest in TerraPower and nuclear energy increases in the United States. The U.S. Department of Energy's Advanced Reactor Demonstration Program supports TerraPower to improve its reactors and decrease the expenses. Bill Gates willing to invest several billion dollars and raise more from the venture capitalists if the U.S. congress supports nuclear energy more. With these investments, the nuclear power plants will be smaller, safer, and more efficient than the previous ones.

Overall, we see developments in producing nuclear energy ideas in the last decade. We also see that developing good ideas is not enough to materialize if the public is not ready to grasp them. If the Fukushima explosion did not happen, TerraPower would have better chances to receive these funds, yet their model would not be this much safer. Furthermore, diplomatic relations also play a significant role in the development of the energy sector. If the United States diplomatic tension with China, the TerraPower nuclear plant would have already been implemented to the Chinese economy. However, Chinese interest in the project also helped Americans realize its importance, and now they are funding the project.

Now probably, China is also trying to develop similar technology with its nuclear plants. These races can help us discover breakthroughs in our technology. We can achieve our goals of lowering carbon emissions that seem too ambitious at a time can be reachable suddenly.

As a new investor in nuclear technology, Turkey should closely follow these developments and try to participate in the process. We should start training our scientists and provide the funds to develop such technologies for our nuclear technology. Another option can be funding the existing companies that develops these technologies and making arrangements with tem. In the Akkuyu Nuclear Plant, we still will be using the water pools to cooldown our nuclear wastes. However, for future investments, we can consider using newer technologies.

Gökberk Bilgin

BRENT OIL	45.66 $/BL	GASOLINE	6.71 ₺/LT
USD/TRY	7.88	DIESEL	6.34 ₺/LT
EUR/TRY	9.33	FUEL OIL	3.85 ₺

Renewables: Europe is Counting More Heavily on the Sea

To help achieve the European Union's (EU) 2050 climate neutrality goal, the European Commission unveiled, a few days ago, a strategy for offshore renewable energy. The Strategy proposes to increase the capacity of European offshore wind farms from the current 12 GW to at least 60 GW by 2030 and to 300 GW by 2050, respectively. The European Commission (EC) also proposes that by 2050, the capacity of ocean power plants and other new technologies such as floating wind and solar power plants be 40 GW. This ambitious growth will be based on the great potential of such energy in all European sea basins and the leading global role of EU companies in this sector. It will create new opportunities for industry, create green jobs across the world, and strengthen the EU's global leadership in all energy technologies. Besides, the protection of the environment, biodiversity, and fisheries will be ensured, the EC said.

"Today's Strategy shows that we have the opportunity to increase our investment in offshore renewable energy, which we must make urgent use of. Given the vastness of our sea basins and our industry's leading position, the European Union has everything it takes to meet this challenge from renewable sources at sea is already a real example of European success. Our goal is to turn it into an even greater opportunity for clean energy, high-quality jobs, sustainable growth, and international competitiveness," said Frans Timmermans, Executive Vice President for European Green Plan.

"Europe has a world-leading role in producing energy from renewable sources at sea and can become a leader in its global development. We must do even more to fully exploit the potential of offshore wind and improve other technologies such as wave energy and tides or a floating solar power plant. The Strategy provides a clear direction and a stable framework, which is important for public bodies, investors, and project promoters in this sector. We need to increase domestic production in the EU to meet climate goals, meet growing electricity demand and support the economy is recovering from the coronavirus crisis, "said Energy Commissioner Kadri Simson.
"Today's Strategy shows how we can develop renewable energy production at sea in combination with other human activities such as fishing, aquaculture, or shipping, all in harmony with nature. The proposals will allow us to protect biodiversity and face possible socio-economic consequences for sectors that depend on marine ecosystems' good health. This is how we promote good coexistence within the marine space, "said Environment, Oceans and Fisheries Commissioner Virginijus Sinkevičius.

To encourage and increase in offshore energy production capacity, the Commission will encourage cross-border cooperation between members in the long-term planning and deployment of technologies. To this end, the objectives for the development of energy from renewable sources at sea need to be

integrated into the national spatial planning plans for the marine area, which must be submitted to the Commission by March next year. Besides, as part of the revised TEN-E Regulation, the Commission will propose a framework for the offshore network's long-term planning, involving regulators and members from each sea basin. The Commission estimates that investments of almost € 800 billion are needed to meet the proposed targets by 2050. It has devised measures to generate and encourage such investments.

First of all, a clear legal framework for support will be established. To this end, the Commission clarified the electricity market rules in the accompanying Commission Staff Working Document yesterday. It will assess whether more specific and targeted rules are needed. It will revise the guidelines on state aid in energy and environmental protection and the Renewable Energy Directive to facilitate affordable production of energy from renewable sources at sea.

Then, it will help mobilize all relevant funds to support the development of the sector. The Commission encourages members to take advantage of the Recovery and Resilience Mechanism and work with the European Investment Bank and other financial institutions to obtain support for offshore energy investments through the InvestEU Fund. Horizon Europe will mobilize funds to support research and development, in particular, less developed technologies.

It will also strengthen the supply chain. The Strategy emphasizes the need to increase production capacity, improve port infrastructure, and increase the workforce with appropriate skills in line with the envisaged enhanced capacity installation. To bring together all sector actors, the Commission plans to establish a special platform for renewables at sea within the Clean Energy Industrial Forum. Also, it plans to work on supply chain development. The European Commission points out that offshore renewable energy is a fast-growing global market, especially in Asia and the US, which gives EU industry opportunities around the world. The Commission will support these technologies globally through diplomacy to achieve a green plan, trade policy, and the EU's energy dialogue with partner countries.

Mihael Gubas

Shades of Energiewende

The origins of Energiewende is very different from what we understand today. Today German Supreme Court rules against the villagers who want to stop coal field extension. 100-year-old churches may be demolished for coal. Angela Merkel may not be the Climate Chancellor that most foreigners think. Nevertheless, Energiewende, the energy transformation is moving ahead in different colors.

German EEG's 2021 version updates will include some important changes. All electricity consumed or generated in Germany should be GHG neutral by 2050. This impacts not only generation but imports and exports as well. The real implementation may have hiccups, but a local law gives a signal to a much wider community.

The capacity expansions are also very ambitious. Onshore wind is expected to jump 3-4.5 GW and reach 5.4 GW by 2029. Offshore wind will still struggle below 1 GWs. Solar is the powerhouse of renewable extension. Starting from 4.6 GW, it will reach 5.6 GW by 2029. According to CleanEnergyWire(CEW), "500-850 MW per year will be tendered in so-called 'innovation auctions'.

Germany has an early comer advantage, but this also results in the early expiration of renewables fees. Sub 100kW solar installations will not be benefiting from the FIT by 2020. Therefore an interim price "market value minus marketing costs" will be given. But there are at least 16GWs of onshore wind turbines to be decommissioned by 2025.

Energy-intensive industries will continue to be exempted from the renewables surge if they have been facing negativities because of global competition. This part is important because we are talking about an industrial strategy or a climate strategy. Its current shape shows us that it has to be a mixture.

One interesting discussion was acceptance problems. Renewable energy has more acceptance problems than natural gas power plants. To solve that problem, the wind farms will pay 0.2 cents/kWh for 20 years to local communities. In a country where renewable levies are close to 6.5 cents/kWh, 0.2 cents/kWh may not do the job.

The new law also pushes above the 500kW PV projects to tender. And in terms of green hydrogen, they will be exempted from renewables surcharge.

The most pressing issue in the whole bill is there is no "green growth" in the near term. The biggest growths are pushed to the post 2023s. This is one of the disappointments. The other is how Energiewende needs more and more government intervention. It looks as if, Energiewende is a product of the Soviets.

The original Energiewende FITs were inspired by the US's PURPA act. The qualifying facilities (QF) of the PURPA act has changed the electricity systems with the help of natural gas turbines. As a matter of accident, this inspired the solar boom of Germany, despite aimed for small hydros.

Now the times are changing, but the renewable transition is getting more and more complicated. The US can be another example, but with the loss of the Senate majority, it will take time. China, on the other hand, has promised carbon neutrality, but the devil is in the detail. There is progress everywhere, but it is not uniform, and maybe we should not expect it to be uniform.

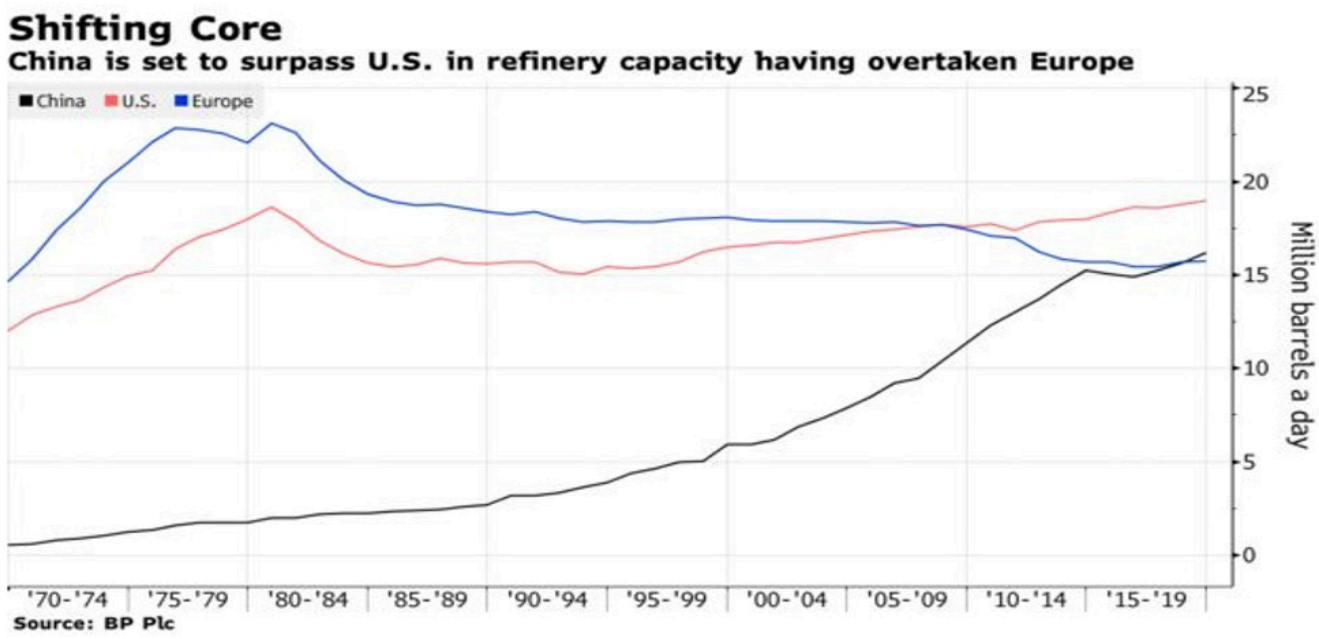
But from the new German law, we can not see inspiration or a green growth that has been promised by the EU. Yes, it is a way forward, but is it really progress?

One reason for this can be our inexperience with energy transitions. The previous transitions have happened without government regulations. But now we are trying to push an energy transition by government intervention, and we don't know what should be the efficient government intervention look like?

Barış Sanlı

China as the Rising Power of Refining Industry

As it is known, the reasons and results of China's rise have been one of the most trendy debates in academia and the business world because of the issues like Trade Wars, their great growth rates, and attraction for foreign direct investments. Another subtopic that is also notable is the increasing importance of the country in the refining industry. With the U.S. shutting down of the Convent refinery in Louisiana, China's catching up with the U.S. in terms of the refinery capacity can be discussed over the change in their capacity throughout the years, shifting the core, effects of coronavirus pandemic, etc. In the following paragraphs, information about their position in this field will be provided, and new developments will be reflected.



As mentioned before, Royal Dutch Shell terminated the Convent refinery activities in Louisiana because they decided to reduce the capacity, and they could not find a buyer. On the other hand, counterparts in China put a new unit into operation, almost as an indicator of the situation that has been mentioned in the introduction. Figure 1 shows the convergence of China to the EU and the U.S. since the '70s. The dramatic increment of China resulted in surpassing Europe. In addition to this, America has been top of the refining pack since the start of the oil age in the mid-nineteenth century. According to the International Energy Agency, China will dethrone the U.S. as early as next year. According to the news of Hydrocarbon Processing, "China is expected to lead Asia and Oceania's refinery capacity growth, contributing around 71% of the region's total capacity growth by 2024. China is likely to add 2.6 MMbpd of refinery capacity by 2024, says GlobalData, a leading data and analytics company." Coronavirus pandemic is also a crucial factor that should be taken into account. Since an economic recovery in China and other Asian countries is experienced, demand for fuels and plastics gathered strength. On the contrary, in Western countries, we still observe a crusade against pandemic's economic impacts. In these countries, the future of the oil demand is not that hopeful.

Besides the particular rise of China, the situation of Asia as a whole is also matters. Comparison between China and the U.S. can be generalized as a comparison between Asia and Western countries, including the EU. Hedi Grati says that "About two-thirds of European refiners aren't making enough money in fuel production to cover their costs." They still should decrease their daily processing capacity in the following five years. In addition to China, another BRICS country, India, is also enhancing its processing capacity to 8 million barrels per day by 2025. When we continue with the Middle Eastern producers, it can be said that they are not out of the game. There are two projects of new units that will contribute to more than a million barrels per day. They will be put into operation next year. It is evident that balances in the refinery industry race are changing in favor of Eastern countries.

In conclusion, some inferences can be deduced from the shut down of the Convent refinery in Louisiana and facts related to this development. Firstly, the global economy and the world's paradigm change, and this transition process cannot be reduced to several dimensions. Still, it should be comprehended with all aspects because of the international political economy's intertwined dynamics. For instance, a profit maximizer oil company's decision in energy markets (i.e., opening or closing a refinery in a country) may affect the host country's position in world politics and global economy and even the negotiation capability in the bargaining table. In this context, all state and non-state actors should analyze the world's current situation and take their actions realistically. The second point is the importance of countries' resilience against the crisis in a holistic way. COVID-19 pandemics has been a period that examined the countries' governance capacity, including the healthcare system, economic capacity, and policy-making processes. As seen in our example, if recovery delays, countries may suffer from it due to problems with oil demand.

Batuhan Özkan

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Editor: Gökberk Bilgin
Contact: eeps@bilkent.edu.tr
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