

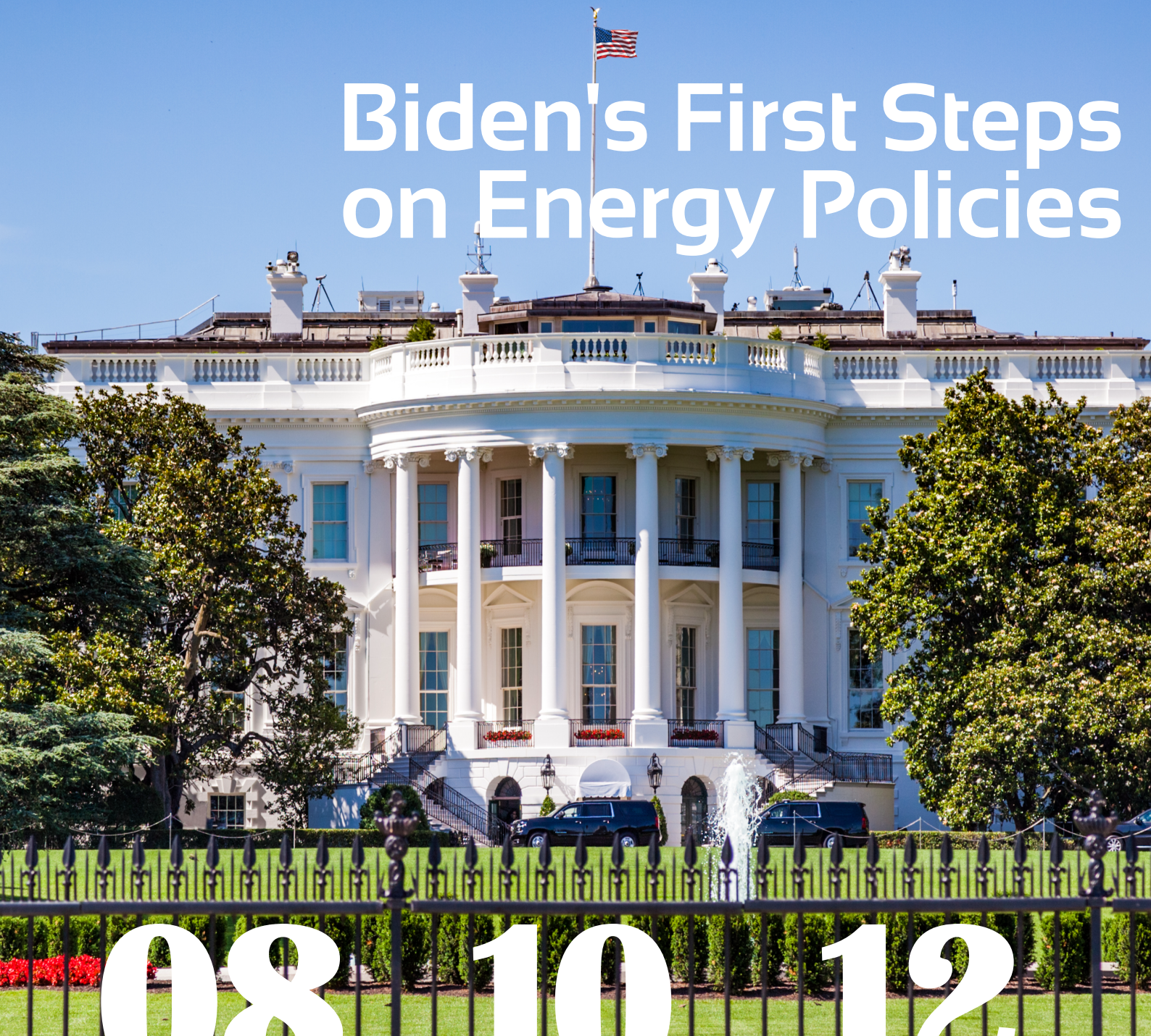
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BILKENT ENERGY POLICY RESEARCH CENTER NEWSLETTER

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BRENT OIL

55.09 \$/BL

GASOLINE

7.28 ₺/LT

USD/TRY

7.39

DIESEL

6.64 ₺/LT

EUR/TRY

8.98

FUEL OIL

4.40 ₺

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ABOUT US



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Biden's First Steps on Energy Policies

Gökberk Bilgin 

On January 20, Joseph Robinette Biden Jr. was sworn in as the 46th president of the United States of America. After the inauguration ceremony, the new US president began working on reverting the policies of his predecessor. In the first hours of the office, Biden signed executive orders on rejoining the Paris Climate Agreement and canceling the Keystone XL pipeline project.

With rejoining to the Paris Climate Agreement, the new administration gave a signal on recognizing the climate threat and working with collaboration on providing solutions to the issue. However, they will be able to make an actual difference by following a strict action plan in the future. The director of Payne Institute, Morgan Bazilian, claims that the policy will create only diplomatic benefits in the short term. The implementation of decarbonizing US power generation by 2035 and achieving net-zero emissions by 2050 will require a massive paradigm shift in the American government, economy, and community. At this point, Biden's \$2 trillion recovery plan on climate and economy will take a crucial role. The plan focuses on investments in accelerating clean energy usage in transportation, electricity, and building sectors while providing economic opportunities. To achieve this goal, Biden nominated Jennifer Granholm, the former governor of Michigan, as the energy secretary. Granholm is known for her close ties with energy and chemical firms and her ambition for electric and autonomous cars.

Biden signed another executive order on energy issues by canceling the Keystone XL pipeline project permit, which aimed to carry 800,000 barrels of oil sands crude from Alberta to the United States. The environmentalists criticized the pipeline for contributing to global warming by helping the oil sands sector to develop. The Canadian government did not enjoy the decision and focused on the importance of collaboration in energy security and economics. While the operating company still hopes to review the decision, farmers in the area are also frustrated. According to Global News, if the oil companies use trains to



send their product, it will create congestion in the railroads, which will impact the agricultural sector. Finally, the industry's loss of jobs creates an additional economic burden in the region, which is not desired by any government, especially during the Covid pandemic.

Despite the huge ambitions on shifting the energy to green products, the Biden administration will need earth materials to achieve its goals. On this matter, lithium and rare earth materials will have a crucial role. Today, we use lithium for rechargeable batteries found in electronics, and developments in these technologies make the metals highly valuable.

Nowadays, much of the lithium is provided from Australia and South America, where it gets heavy investments from Chinese companies. In such areas, countries began competing for the mines. Therefore, investing in American mines might reduce the price of the materials for the American companies. However, although the end goal is to slow down our climate damage, these mines cannot be considered



friendly to the environment. Lithium mines have adverse effects on water and soil. Since it requires huge amounts of water, it depletes water sources, and hazardous gases damage the soil. A Chilean biologist, Cristina Dorador, claims that we are fooling ourselves if we call this sustainable and green mining because lithium mining directly damaging salt flats, the ecosystem, and local communities.

The nominated energy secretary Jennifer Granholm has investments in many renewable energy companies. According to Fox Business, Granholm holds shares in solar energy, chemical companies that provide lithium for electric vehicles and batteries, and Proterra. This Silicon Valley-based company designs and manufactures electric bus and battery systems. Granholm will terminate these investments when she begins the duty and will use her experience for the American energy transition.

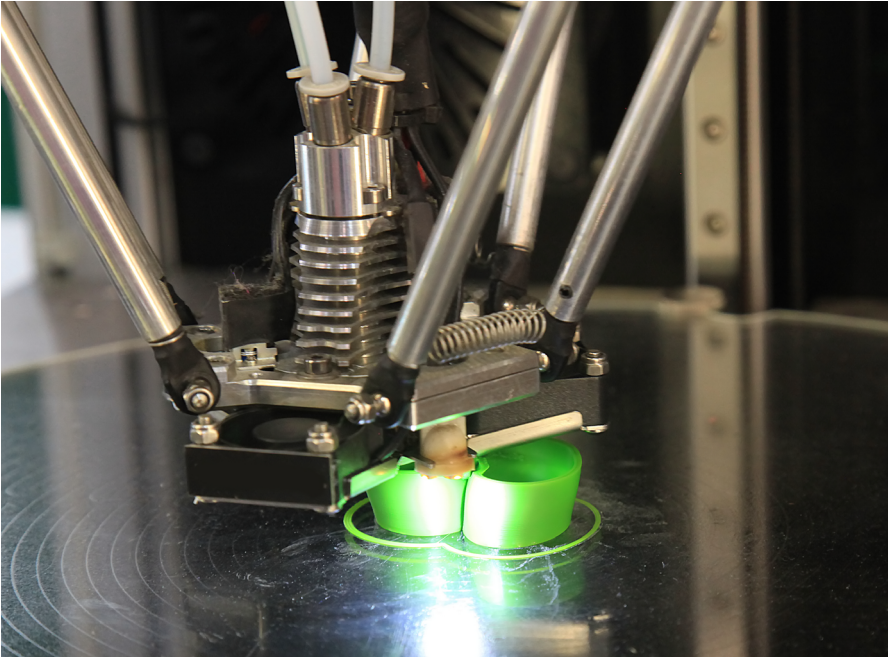
Aside from lithium, other rare earth materials will play a critical role in the energy transition. As I mentioned in one of my previous articles, Dysprosium, neodymium, terbium, europium, and yttrium, consist of many renewable energy hardware components. Currently, the largest reserves of such elements are located in China, and the working conditions in these areas are not suitable for the American standards. At some point in the future, importing these goods from China might play an important role in the climate policy.

As a result, the American government intends to begin a new era of energy and climate policies. However, the road will be filled with full of challenges. The cooperation of China and the United States may play a vital role in achieving these goals, yet the conflicts can postpone for decades. Do I think that the Biden administration will be successful? Well, I do not know. As Greta Thunberg said, time will tell.

What the Present of Tech Tells About the Future of Energy

Bariş Sanlı  

3D printing technology has yet to transform our industrial world. It has started, but it will need some time to be the main stream...



think that the "prosumer" concept is revolutionary. So does decarbonization and digitalization. But if you look at the 3D printers and the Maker movements, you see another prosumer movement. The basic logic is simple, and the tech should give people more freedom. It should foster their creativity and contribution to society. 3D printing technology has yet to transform our industrial world. It has started, but it will need some time to be the main stream.

The Maker society of the 3D printing world quite resembles our "prosumer society." It didn't crash any industrial

Once upon a time, there was Napster. The decentralized file-sharing system was revolutionary. It transformed the music industry and created what we called the "streaming industry." But the whole process was not without hurdles. The creation of new models and their implementation took a long time. Now we have prosumers and then what?

The people of the energy business





mogul yet, but who knows what will happen.

The internet's progress from central servers to VPN or more privately owned spaces is also another similar example. It looks like the microgrids of the energy landscape have a sibling from the internet world. Are the VPNs or microgrids future of our world? We hope not. Microgrids are useful, but we may not want to live in a federated microgrids' world...

Now the electricity system is likely to dominate mobility and other areas. Just like the electrification of our energy system, digitization is also expanding like never before.

Just like switching from cassettes and videotapes to streaming services, we are moving from thermal and steam-based systems to more solid-state like systems such as power electronics, solar systems, inverters, and hopefully to solid-state batteries.

There are limits to how tech and energy inspire each other. For example, years ago, Facebook was a prime example of how energy companies should move forward. However, now, no energy company wants to be like Facebook.

The telecom has also moved from landlines to cell phones, but we couldn't see that either in energy. Centralized energy is more or less the dominant power. The invention of automobiles has replaced most railway travel. We couldn't see that in energy, too.

However, the future of energy still looks to tech for inspiration. Whether it is AI or digitalization, the interaction is inescapable. Therefore we

may use the current trends in tech to forecast future energy systems.

The biggest tech innovations are merging with energy in the field of clean energy. But the biggest privacy concern is creating new discussions. These discussions will be carried to the energy realm. Like the tech companies becoming more powerful than the governments, renewables may shift the power balance in favor of companies. Electric cars may not be the private spaces that diesel cars provide. Contrary to what is believed, tech didn't bring the freedom we imagined. So energy transition may follow the steps.

Consumer wise, there will be more options in the clean energy world. But all of these options will carry the risks of privacy concerns and the control of the consumer side. The future of energy will see more private discussions.



The Implications of the Drop in Libyan Oil Exports

Can Arihan 

World Oil notes that Libyan (GNA's) oil production has plummeted to about 110,000 barrels a day, from 1.2 million in 2019.

Just like the other OPEC members, Libya's economy is heavily dependent on oil exports. The country holds the largest oil reserves in Africa, but it has been suffering from continuous civil war and instability after the long-time ruler Muammar Gaddafi was toppled in 2011. There are currently two rival governments in Libya, and both compete to seize control of the country's most important source of economic power: the oil fields. This rivalry has inflicted a heavy price as it resulted in a dramatic drop in Libya's oil exports in 2020.

Internationally recognized Government of National Accord (GNA) and the Libyan National Army (LNA) led by the warlord Khalifa Haftar have been clashing to eliminate one another and unite the country under one banner. Although the Tripoli-based GNA was established in 2015 as an UN-sponsored entity, the

country's status quo did not allow for a swift unification. LNA, being supported by Egypt, the UAE, Russia, and France, overwhelmed GNA militarily for a significant period of time. Until mid-2020, it was only one step away from capturing the capital Tripoli. Nevertheless, Turkey weighed in, and it provided GNA with advanced drones, economic assistance, and military training. Currently, the situation is not so dire for GNA militarily as Tripoli safely remains in their hands.

However, the war with LNA also had significant economic complications for the GNA because their main source of income (that is to say, oil exports) was disrupted by the forces loyal to Haftar.

According to Anadolu Agency, Libya's (GNA's) oil revenues decreased an astonishing 92 percent in 2020. That meant GNA could only earn \$652

million from oil exports (as opposed to \$7.04 billion in 2019) when it desperately needed financial resources to fund its years' long civil war against LNA. This was largely caused by the LNA blockade on GNA exports and the continued attempts to seize oil fields. Such a strategy could not hinder the military gains of the GNA thanks to the noteworthy Turkish backing but still crippled the finances of the government in Tripoli.

Parallel to previous figures, World Oil notes that Libyan (GNA's) oil production has plummeted to about 110,000 barrels a day, from 1.2 million in 2019. Similarly, in an article that describes the impact of the Libyan war on oil production, Libya Herald quoted Chairman of Libyan National Oil Corporation Mustafa Sanalla saying: "The first quarter of 2020 was a huge decrease in revenues for Libya,



as a direct result of the illegal blockade of numerous oil and gas facilities. This is only part of the picture, as the corrosion in pipes caused by still oil and saltwater is resulting in physical damage that will cost millions to fix when the crisis is over".

Considering all these dramatic figures, it seems obvious that an end to Libya's civil war will significantly boost oil production in the country and give the nation the much needed financial resources to rebuild the country that has been torn by years of conflict. Unfortunately, although the violence subsided after Haftar's campaign to capture the GNA capital (i.e., Tripoli) failed, the country is far from being united. The North African nation is very much divided from the east (Tobruk, where the pro-Haftar government is located) and to the west (Tripoli).

Oil production is, in fact, an economic issue. Still, in Libya, which hosts the third civil war (along with Syria and Yemen) that continues after the Arab Spring, this economic issue can only be settled with a political solution. And to achieve the political solution, international powers should decide which entity in Libya is the rightful government. The GNA in Tripoli is, de jure, the internationally recognized government in Libya, and it enjoys the UN's recognition. By the UN's policies, Turkey, Italy, Malta, Qatar back the GNA headed by Prime Minister Fayez al-Sarraj. Nevertheless, many countries (including Egypt, the UAE, France, and Russia) support the warlord Haftar, and his LNA for political and economic (mostly related to production and sales of oil) ends. This de facto split of the regional powers in Libya leads to the Libyan people's continued agony and a never ending civil war.

As both GNA and LNA fall short of completely overwhelming the other and uniting the country, the Libyan people keep suffering from terrible living conditions. They even risk dying in the Mediterranean waters while trying to cross to Europe in the hope of a better life. Of course, oil production is not the only problem in Libya. Still, once a political solution is reached, increased oil revenues seem like the only option to provide for the country's rebuilding. Such an increase in the Libyan oil exports will also contribute to the world oil markets as the oil demand is likely to increase rapidly after the Covid-19 Pandemic is over. Libya, which is located right below Europe, might emerge as a strategic country to supply the expected increase in oil demand. Still, the years-long civil war must come to an end for Libya to emerge as a stable oil producer once again.

Fabricated Climate Funding

Mihael Gubas



The countries of the economic core falsely present their expenditures for financing climate adaptation in peripheral countries, presenting investments worth 20 billion dollars as part of the rehabilitation. However, these subsidies also include projects that have nothing to do with climate. The biggest offenders are Japan, which has included \$ 1.3 billion in bridges and roads (and later power plants in Vietnam) in adjustment projects, followed by the World Bank, which has invested \$ 832 million, 86 percent of which has been spent on rehabilitation projects since the earthquake in Nepal. However, the earthquake is considered a geohazard that is not caused by climate change.

There is also France, which incorrectly reported \$ 104 million. As much as \$ 93 million has allegedly gone to climate adaptation as part of a program to strengthen the Philippines' local government. An in-depth analysis showed that only 5 percent of the

budget is earmarked for adjustment, the CARE International report notes. According to a study by the humanitarian organization Care International, the consequences of false financial statements mean that the most vulnerable countries in the world and the least responsible for climate change receive only a fraction of the support promised to them.

The Paris Agreement requires core countries to provide increased funding, balanced between climate change mitigation and adaptation. They have committed to mobilizing \$ 50 billion a year by 2020. According to the report, official OECD figures show that in 2018, donors allocated only \$ 16.8 billion. Based on the most comprehensive estimate to date, CARE has calculated that figure is, in fact, incredibly lower at \$ 9.7 billion.

Part of the answer to how this is possible lies in the Paris Agreement itself. The warnings and dissatisfaction

of environmental activists from 2015 now prove to be completely justified. The focus of the negotiations in Paris was on lobbyists' efforts to keep the Agreement "positively framed" and not to resort to sanctions and penalties, which allowed the countries to apply its provisions in a relaxed manner, without fear of the consequences of violating the Agreement.

In collaboration with civil society organizations in Ghana, Uganda, Ethiopia, Nepal, Vietnam, and the Philippines, CARE conducted an audit of 112 projects representing 13% of the total funding for adaptation in the period 2013-2017. The survey found that climate adaptation funding was frizzy by as much as 42 percent. How finances are misrepresented boils down, according to Care International, that many institutions routinely over-report funding for climate change in peripheral countries, leaving climate budgets "short" by those mentioned above \$ 20 billion.



Therefore, the Care International study highlights "the urgent need to improve the accuracy and transparency of international climate adaptation reports to meet the climate change financing objectives of the Paris Agreement." Equally relaxed is the treatment of gender inequality and poverty. The study shows that these measures have generally remained on a symbolic level, with no significant improvements on the ground. In this regard, 47 percent of adaptation projects in all six countries do not include gender equality. The Paris Agreement requires that adaptation action "should follow the state, a gender-sensitive, participatory and fully transparent approach, taking into account vulnerable groups, communities, and ecosystems."

Research shows that institutions under climate remediation obligations report projects with nothing to do with adaptation and that donors overstate the adaptation component

overestimating the amounts they spend on climate adaptation. Also worrying is that "the largest financial provisions often fail to take into account the poorest in society adequately. This is especially true for infrastructure and market projects that are often financed in the form of loans. For projects assessed in Ghana and Ethiopia - both at high risk of debt trouble - 28 percent and 50 percent of total financial contributions, respectively, are secured as loans," the study said. The report calls on donors to stop over-reporting on adjustment finance, ensure that adjustment loans do not exacerbate debt, and increase the transparency of adjustment finance reporting, with gender equality and poverty reduction integrated into adjustment activities.

Recall, according to the UN climate process, core countries have promised to mobilize \$ 100 billion in climate finance annually by 2020, with the obligation to take care of the

balance between mitigation projects (greenhouse gas reduction) and adaptation (to floods, droughts), etc.). According to Climate Change News last month, the world's poorest countries have called on rich countries to provide more funds to help them adapt to climate change.

UN chief Antonio Guterres has called on donor governments and development banks to commit at least 50% of their climate finance to adaptation and resilience before Cop26 next year.

The funds invested so far amount to only 20 percent of the funds needed for rehabilitation and adaptation to climate change. The UN recently warned that the annual costs of adjustment in peripheral countries would rise to 300 billion dollars by 2030. The CARE report was released ahead of the UN summit on climate adaptation on January 25 and 26, at which world leaders will discuss strengthening adaptation funding before COP26 in November.

The Drought at The Door

Başak Bozoğlu 

Climate change is one of the world's major problems, and its impact becomes more serious than ever. Climate change creates a severe impact on reducing biodiversity in the wildlife, melting the glacier, and increasing the carbon ratio in the air, unstable weather conditions. These are all global effects in people's lives, and it is serious for the continuation of life. Although every element in nature is significant in climate change, water has a vital influence on humanity.

When a one-degree increase in average air temperature causes natural disasters such as floods and droughts worldwide, to briefly remind, the water cycle is an endless circle. The water in the oceans in liquid form mixes with the atmosphere by evaporating, condenses from there, and descends to the surface as rainfall. It is then mixed with streamflow water into the oceans and merges with groundwater. People generally forget the groundwater

sources, but its importance was reminded again with NASA's latest warning. NASA has published a map showing Turkey's underground water reserves late last week.

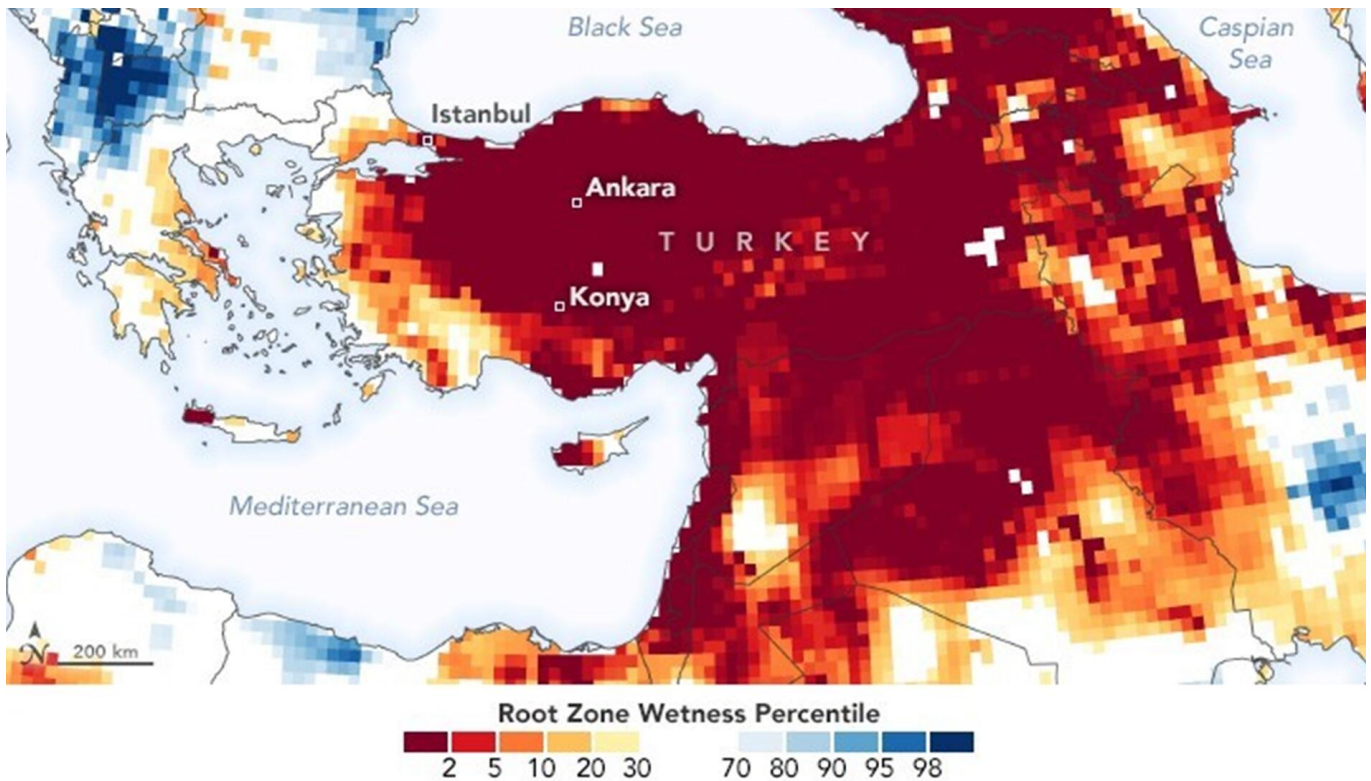
This map demonstrates Turkey's groundwater resistance and the level of danger. Since 2019, Turkey is experiencing severe drought, and NASA explains that numerous reservoirs around Istanbul and Ankara have reached their lowest water storage in 15 years. NASA states that since July 2020, nearly all provinces in Turkey have received below-average rainfall almost every month.

From October to December, precipitation across the country was 48 percent lower than the average for 1981-20. Turkey is living driest season in the last five seasons with the beginning of 2021. The decrease in precipitation is below the average across the country. Without seasonal raining conditions,

dams are not enough to provide long-term water to the mains water with insufficient groundwater reservoirs. If this situation continues and measures are not taken, agricultural production conditions also may be in severe danger. With NASA showing the decline in underground resources, the task is left to the people's conscious and responsible behavior in the scenario where the amount of precipitation does not increase.

After NASA shared the map, WWF (World Wide Foundation) started an awareness campaign to draw attention to the decrease in water reservoirs. Among the countries experiencing water scarcity, Turkey ranks 32 in the world.

WWF claims that the lack of planning plays a massive role in the drought and warns water scarcity in 10 cities included Istanbul and Ankara. WWF releases the video of 'Water's Journey,'



the video demonstrates the dams, farmland, Lake of Bafa, and Basin of Büyük Menderes to show remarkable water connection in Turkey. WWF urges people to watch this video, share it, and raise awareness with the hashtag that everyone becomes quiet if the water runs out (#SuBiterseHerkesSusar).

Of course, water scarcity is a serious problem globally, and serious planning needs to be made by government policies. Still, people can create significant differences with tiny changes in their daily habits. A person can save tons of water with a few changes to save water. What are the measures and changes that can be taken in everyday life?

In the houses, washing machines, bathrooms, and kitchen are places to use most of the water. A person can

use a washing machine or dishwasher when the machines filled. Do not use machines when it is almost empty, so you can save 9 tons of water per year by operating fewer machines once a week. Washing the dishes without rinsing beforehand will also save an average of 9 liters of water per minute. Energy-saving machine choices will also make it easier for you to save water.

While you are waiting for the water to warm up in the bathroom, filling a container with water can allow you to use this water later in places such as cleaning. When one person takes a shower a minute shorter, one causes to saves 18 tons of water a year.

If you have a car, you can wipe your car instead of washing it, and it saves tons of water by extending the intervals of washing.

At the same time, you can prevent liters of water from flowing in vain by choosing water-saving nozzles in your bathrooms and kitchens.

An average of 7600 liters of water is consumed in the production of 1 pair of jeans, and an average of 2500 liters of water is used for a t-shirt, one of the most significant water savings you can make to reduce your shopping frequency. These are only a few examples to make a reminder actually to show how tiny solutions can create big differences when we are experiencing drought and water scarcity.



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