Issue No: 1
Ekim-Aralık 2020

CLIMATE REVIEW

TSKB
Economic Research

GREEN SWAN PLATFORM
A TSKB INITIATIVE

Increasing Contribution of Development Banks to **climate finance**

CO_2 emissions to decline by **%4-%9 in 2020**

Climate Crisis on Our Dining Table

Global food consumption per capita will be 26 kilogram less by 2050 due to climate crisis.

Never Waste a Crisis!

Read further on page 6

Green Swan

TSKB Economic Research proudly presents the first issue of our new quarterly publication Climate Review!

Every quarter, we will share studies, articles and news items regarding the ongoing global climate crisis through a responsible development banking perspective. The climate crisis is one of the biggest barriers facing efforts for global sustainable development. The multidimensional nature of the problem requires global cooperation. Just in line with this, Climate Review aims to contribute to this shared effort with high quality research.

The first issue of Climate Review will start with the "Green Swans".[1] No, that's not a typo. I am aware that 'Black Swans' are more popular in the financial sector, but times have changed, and so has the color of the uncertainty.

Obvious enough from the color code, the Green Swan represents tail risks related to the climate crisis. Until recently, many of us may have thought that the climate crisis could be a problem for the next generations to deal with. Therefore, only a bunch of academics and Non-Governmental Organizations (NGO) were wholeheartedly dealing with this issue. But recently, the world has woken up to the bitter reality of the climate crisis being an issue of today.

That is indeed where the green swans - also called climate black swans - came into the picture. Green swans, just like the black swans, point to the tail risks which are not possible to predict. And yet climate catastrophes have the potential to wreak more serious damage than a financial crisis. Meanwhile, green swans could deliver a more complex crisis beneath their wings than black swans. In other words, the climate crisis has the potential to trigger multidimensional problems with environmental, societal, financial aspects. The threat is real – and so should be the struggle.

In my own experience, it is often the case that whenever I speak about climate issues and green swans, they are taken as being 'unrelated' to the economy and finance. We strongly disagree. I would therefore offer a humble and friendly reminder; when even swans change color, it means nothing will be the same again. Those seeking to be prepared for tomorrow's world will be those who invest responsibly. Climate Review is our invitation to be a part of this responsible step forward!

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Upcoming Events

OECD will hold Centre on Green Finance and Investment Forum 2020 on October 6-9.

The European Commission will hold webinars as a part of the EU Green Week on October 19-22.

[1] https://www.bis.org/publ/othp31.pdf

Multinational Development Banks continue to increase their contribution to climate finance!

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The Paris Agreement sets ambitious targets to tackle the climate crisis and Multinational Development Banks (MDB) play a critical role in achieving these goals.

This year the report combines data from the African Development Bank (AfDB), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), the Inter-American Development Bank Group (IDB Group) and the World Bank Group (WBG) and – for the first time – the Islamic Development Bank (IsDB), which joined the working group in October 2017. In 2019, the climate funds provided by MDBs reached a record USD 61.6 billion. The consequences of climate change, such as drought, floods, diminishing biodiversity and loss of human life undoubtedly have a deeper impact on less developed countries and put their development prospects at risk. Climate financing by seven of the world's largest multilateral development banks (MDBs) amounted to USD 61.6 billion in 2019, of which USD 41.5 billion (67%) was in low- and middle-income economies.

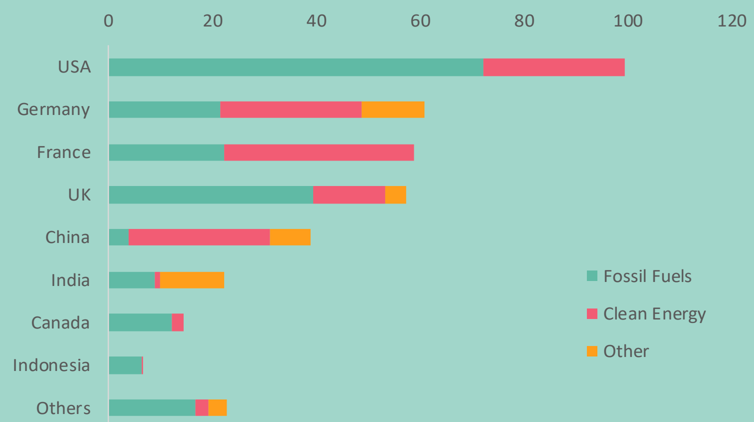
In the next 6 to 18 months, countries are expected to invest more than USD 20 trillion to mitigate the effects of the COVID-19 outbreak. During this time, transferring financial instruments to the right channels will improve the ability to find solutions to ongoing climate and environmental crises. Many leaders underline the need for a green economic recovery to overcome the economic bottlenecks which have mounted during the pandemic. The latest report published by TSKB Economic Research on the impacts of COVID-19 on global Outlook and Turkish economy highlights crucial points for urgent call to ensure "better, greener and fair recovery". In achieving these goals, MDBs will need to step up their pioneering role in climate finance and develop more innovative approaches to pave the way for flexible and less risky financing for less developed countries.

G20 Recovery Packages Benefit Fossil Fuels More Than Clean Energy

In the midst of the global economic slowdown following the outbreak of the COVID-19 pandemic, governments around the world have continued to implement support packages to help various sectors, and the energy sector has been one of the beneficiaries. Through these packages, public money flows to energy generation and consumption through direct budgetary transfers, tax expenditure, loans, loan guarantees, transfers induced by government regulations and various hybrid mechanisms.

The International Institute for Sustainable Development tracks energy-specific responses by G20 governments based on analysis of official government documents. Their research found that between the outbreak of the COVID-19 pandemic in early 2020 and August 26, 2020, G20 countries had committed at least USD 204 billion in spending on fossil fuels and at least USD 39.5 billion on vaguely defined "other energy" in their stimulus and recovery packages. However, only USD 138.6 billion has been allocated to clean energy. Among G20 countries, support for clean energy only surpassed spending on fossil fuels in Germany, Brazil, China and France.

Support Packages Based on Energy Sources (bn USD)



Source: energypolicytracker.org, TSKB Economic Research

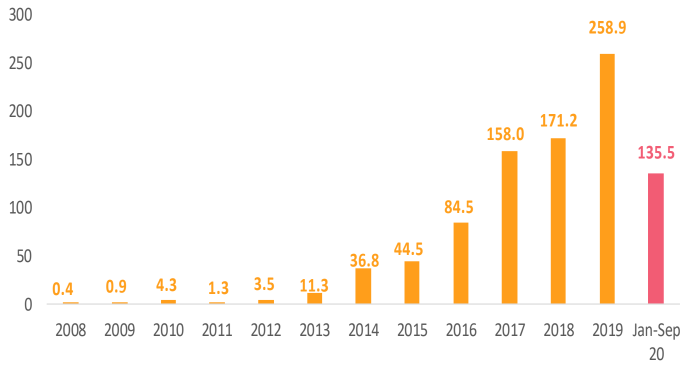
In August 2020, the average precipitation in Turkey was **1.7 mm below the seasonal normal.**

Climate Finance

G20 Recovery Packages Benefit Fossil Fuels More Than Clean Energy

The European Commission is considering issuing green bonds for the first time, as a part of the EUR 750 bn economic stimulus plan. In accordance with the promise from EU leaders to spend at least 30% of the recovery fund on sustainable and low-carbon investment, EUR 225 bn of the total borrowing will be in the form of green bonds. The funds are earmarked for investment in various sectors across the EU and are aimed at mitigating the economic effects of the COVID-19 outbreak. The unprecedented debt-raising exercise is expected to begin early next year.

Green Bond Issues (bn USD)



Source: Climate Bond Initiative, TSKB Economic Research

The EU targets to cut its carbon emissions by 40% by 2030 and become the world's first carbon-neutral continent by 2050. Thus, the decision to issue green bonds came in response to calls from several investors and politicians for the EU to use its recovery funds to support Europe's transition to a green economy. Under the borrowing plan, the EU is expected to become the largest green bond issuer worldwide. According to figures from the Climate Bond Initiative, issuances of green bonds more than tripled to USD 259 bn in the last three years before falling back due to COVID-19 pandemic.

Various member countries of the EU, including the Netherlands, France, Sweden and Poland have issued green bonds on the back of bourgeoning interest around the globe. In early September, Germany raised EUR 6.5 bn billion from its first-ever green bond issuance. Investors put up bids for EUR 30 bn worth of Germany's 10-year green bonds, with the issue around five times oversubscribed. Germany hopes to issue a range of bonds of varying maturities to build a green yield curve which other countries and companies looking to sell their own green bonds can then use as a reference point.

TÜSİAD released the "New Climate Regime through the Lens of Economic Indicators" report.

Burcu Ünüvar, the Head of TSKB Economic Research, participated in the report as a consultant. The report analyzes the impact of the Carbon Border Tax within the European Green Deal on Turkey's exports to EU countries in 24 sectors. Although the European Green Deal stands as a risk for Turkey, it is also considered an opportunity for the transition to sustainable development. The report also necessitates a Green Economic Transition scenario which would be centered around emission mitigation, funding for the green transition of firms, renewable energy and energy efficiency, specifying that such a scenario would increase national income while cutting greenhouse gas emissions.

Climate 101

Greenhouse Gas: a gas that contributes to the greenhouse effect by absorbing infrared radiation.

Paris Agreement: Agreement which was signed in 2015 in Paris under United Nations Framework Convention on Climate Change, aiming to limit increase in global warming by 2°C.

Carbon Neutral: a state in which the net amount of carbon dioxide or other carbon compounds emitted into the atmosphere is reduced to zero because it is balanced by actions to reduce or offset these emissions.

Impact of COVID-19 on Carbon Emissions

Recent study held by Massachussetts Institute of Technology (MIT) revealed short-term and long-term effects of COVID-19 on nature and pointed that the direction and magnitude of impact might vary depending on pandemic policy responses. Researchers found that from the end of March until June 7th jet fuel consumption declined by 50% and gas consumption declined by 30%. Natural gas consumption in residential and commercial buildings declined by 20%, whereas decrease in total electricity demand had declined by less than 10%

These declines resulted in a 15% of reduction in total emissions, marking the steepest decline in annual emissions recorded in American history.

On the other hand, researchers stated that economic shutdown due to lockdown measures had halted investment flows aimed at transitioning to a low carbon economy. Low oil prices along with a fall in car sales are expected to set the stage for a 43% fall in global electrical vehicles sales in 2020.

The number of clean energy jobs was also reported to have declined by 600,000 by the end of April 2020.

Researchers evaluate two scenarios an "optimistic" one and a "pessimistic" one. Under the optimistic scenario, where lockdowns are totally removed by the end of 2020, investments in low carbon would recover back to pre-pandemic levels.

However, under the pessimistic scenario, where efforts the pandemic prove fruitless and bring major damage to global supply chains, a prolonged recession is estimated to occur. Under such a situation, the long-term impact on carbon emissions could outweigh the short-run reductions. Delays in investments in renewable energy and improving vehicle fuel economy could lead to an additional 2,500 million tonnes of carbon emissions between 2020-2035, which could cause 40 deaths per month on average, or a total of 7,500 deaths during that time.

CO_2 emissions return to their pre-pandemic levels

According to the report "United in Science 2020", although the COVID-19 pandemic had precipitated a record decrease in CO_2 emissions - the key cause of climate change - global CO_2 emissions have returned to their pre-pandemic levels. Six organizations, including the World Health Organization (WHO), the Global Carbon Project (GCP), the United Nations Educational, Scientific and Cultural Organization Intergovernmental Oceanographic Commission (UNESCO-IOC), the Intergovernmental Panel on Climate Change (IPCC), the United Nations Environment Program (UNEP) and the UK Met Office, contributed to the report under the coordination of the WHO. GCP, one of the six organizations, stated that the rate at which emissions were growing had declined from 3% in the 2000s to 1% in the 2010s, despite some pick-up in the rate towards 2020. Despite a 17% fall in daily global CO_2 emissions at the height of the pandemic restrictions in April, GCP noted that average CO_2 emissions in 2020 will drop by only 4-9% compared to 2019. According to the report, as CO_2 levels rise, global temperatures will also rise by about 1.1°C above pre-industrial levels. In the meantime, scientists warn that a rise of more than 1.5-2°C in global temperatures would result in more destructive storms, droughts and changes in sea level.

CO_2

Global CO_2 emissions increased by 0.6% in August compared to the previous year, reaching 414.48 ppm*.

* parts per million.

Never Waste a Crisis!

ECB Board member Isabel Schnabel delivered a speech on the relationship between COVID-19, climate and monetary policy.

In her speech, Schnable stated that the total carbon dioxide emissions were expected to be between 4% and 7% lower in 2020 compared to last year, emphasizing that in order to comply with the 1.5° target of the Paris agreement, it would be necessary to reduce CO_2 emissions by 7.6% each year between 2020-2030. Schnable stated that the pandemic was a warning that would give us an opportunity to realize the magnitude of the problems caused by climate change. Schnable suggested that the fight against climate change should be structured on three main points,

a. An effective carbon price,

b. A strong investment program and

c. Green financial markets.

She emphasized that with the EU's Emission Trading System (ETS), emissions across the EU had declined by 3.8% between 2008-2016, thus preventing the emissions of 1 billion tons of CO_2.

In addition to increasing the efficiency of the ETS system, she noted that it was critical that the both the public and private sectors implemented a strong investment program to steer consumers away from carbon-intensive technologies. Speaking of the importance of making financial markets greener, Schnable emphasized the role of central banks in this area. Emphasizing that the ECB currently buys 20% of the green bonds eligible within the scope of the Pandemic Emergency Purchase Program, Schnable stated that with the increase in the share of green bonds in total bonds in the upcoming period, the ECB's purchases may develop in parallel with this.

Germany prioritizes low carbon investments in its COVID-19 recovery package

As the global efforts to tackle the economic and social fallout of the COVID-19 crisis continue, Germany has also considered environmental and economic problems as an area of priority. With its EUR 130 bn recovery package, Germany has not only focused on economic recovery but also on support for sustainable, inclusive and job creating investments. Considering Germany's powerful economic and political position in the European Union, other countries are expected to follow Germany's thrust towards sustainability in their own recovery plans. Germany's recovery programme is expected to give momentum to EU Commission's EUR 750 billion support package (25% of which will be allocated to climate friendly projects) and the Green Deal framework aimed at the EU's transition to a low carbon economy.

Land heats twice as fast as the oceans!

Last year, land masses were 1.43°C warmer than the average over the previous century, while oceans were 0.77°C cooler. Studies on the causes of this discrepancy indicate that the heat capacity of land is lower, and with lower temperatures sufficient to generate warming on land when compared to oceans. In addition, oceans are able to cool through evaporation even with a small change in temperatures. It is understood that this temperature differential between land masses and oceans inspired Microsoft's "Natick Project". Microsoft had placed its data center, itself the size of a container ship, underwater off the shore of Scotland. In the last few months, Microsoft brought the data center back to the shore, reviewed the data and announced the results. The research indicated that the underwater data center was eight times more reliable, leading to savings in the amount of energy used for cooling systems.

Climate Crisis on Our Dining Table!

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What are the most essential needs to ensure the survival of humanity? If confronted with this question, I'm sure "food" would be among your answers. When each and every person depends on food for survival, not everyone has equal access to food in the world. This poses a serious threat to development. Recent statistics highlight that 690 million people on the planet (8.9% of the world's population) were unable to consume sufficient food. Between 2014 and 2019, 60 million people were at risk of hunger and given that this trend is set to continue, number of undernourished people could exceed 840 million by 2030. However, another factor has emerged which risks affecting these forecasts negatively - yes, it is the Climate crisis.

Lately, researchers have incorporated climate crisis scenarios into their forecasts on total and per capita food consumption globally. According to forecasts released by the International Food Policy Research Institute (IFPRI), global food consumption is expected to reach 546 kilograms (kg) per capita by 2050. This would be 26 kg in the absence of the climate crisis. In other words, the loss of 523 million tonnes in food production is at stake.

In Turkey, annual cereal consumption is expected to reach 196 kg by 2050, with consumption of fruit and vegetables set to reach 367 kg and meat consumption reaching 38 kg per capita. These numbers are significantly lower than the levels envisaged in the "no climate crisis scenario" (by 6.6 kg, 8.4 kg and 0.5 kg respectively).

The forecasts clearly necessitate policy interventions aimed at mitigating the risks of climate crisis on food production and consumption in order to tackle hunger and ensure food security.

Greenland's ice sheet recorded its biggest ever contraction in 2019

An international team of polar researchers reported that the contraction in Greenland's ice sheet had reached a record high in 2019, with the loss of 532 billion tonnes of ice. The previous record was in 2012, when 464 billion tonnes of ice was lost from the ice sheet. The melting of Greenland's ice sheet is a major contributing factor the rise in global sea levels, accounting for 0.76 mm of the total 3.5 mm increase in global sea levels between 2005-2017.

Support from the World Bank on Climate Crisis

In 2020, the World Bank (WB) allocated approximately USD 21.4 billion to climate-related investments. With these funds allocated to climate-related investments, the WB has exceeded its target amount for the last three years. The WB, aiming to lend 28% of its total financing in 2020 on climate-related issues, exceeded its target and approached 29%. Over the last five years, when the Climate Change Action Plan (2016-2020) has been in effect, the WB's total climate financing exceeded USD 83 billion.

In August 2020, Turkey's average temperature exceeded the long term August average by

0.7°C

In Short

The World Meteorological Organization (WMO) updates climate projections.

The WMO expects global average temperature to be at least 1°C higher in 2020-2024 than over the 1850-1900 period. According to the WMO, the probability of temperatures being at least 1.5°C higher over the next 5 years is estimated to be 20%.

EU carbon credit prices reach their highest for 14 years.

Carbon credit prices rose by 5% on the back of rising demand for carbon credits following statements pointing to a Green Recovery.

Mediterranean Region expected to receive 40% less precipitation over the next 10 years.

Carbon footprint calculator released.

The calculator, which was designed by the United Nations Framework Convention on Climate Change (UNFCCC), aims to demonstrate the effects of consumer goods on the climate crisis. The project is expected to raise awareness of the climate crisis while providing an opportunity to assess the effects of mitigation measures.

Global oil giant Saudi Aramco announces carbon reduction aimed at climate mitigation.

The Oil and Natural Gas Climate Initiative, which includes Shell, BP and ExxonMobil, announced that participant firms would reduce their carbon emissions by 20-21 kilograms per barrel produced by 2025. Petroleum firms are required to reduce their emissions of methane from petroleum and gas projects, reduce gas burning activities, enhance carbon capture technologies and operate their oil stations with renewable energy resources.

About TSKB Advisory Services

While TSKB supports Turkish private sector investments with its thematic loans and innovative financing products, we continue to create added value for the business world and all of the drivers of development with our sector specific advisory services which we have been offering for 35 years. With our advisory teams consisting of financial advisors, engineers and economists, we guide the companies operating in the sectors driving the Turkish economy in its journey of transformation, development and sustainability. TSKB supports businesses to assess the risks and opportunities with data-based methods associated with environmental, social and governance (ESG) policy and to analyse the public and political expectations.

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