69

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The Paris Agreement was adopted at the COP21 of the United Nations Framework Convention on Climate Change (UNFCCC) in Paris, France on 12 December 2015 and entered into force in 2016. The Paris Agreement, also referred to as Paris Climate Accords is an international treaty on climate change mitigation, adaptation, and financing under the UNFCCC. [1]

With the Paris Agreement, the parties agreed that the average global temperature increase should be kept below 2°C compared to pre-industrial levels and should be limited to 1.5°C if possible. Limiting global warming to 1.5 °C rather than 2 °C will greatly lessen the dangers and impacts of climate change.

Each nation must identify, plan and report on its contribution to limiting global warming under the Paris Agreement. There are no mechanisms that obligate a country to adopt a specific emissions target by a certain date, but each target must exceed the specified goals.

The convention is based on the concept that some countries should have greater responsibility for climate change since they release more greenhouse gases into the atmosphere after the industrial revolution than other countries.

As a result, broad principles for reducing greenhouse gas (GHG) emissions have been established taking into consideration the countries' development objectives and unique circumstances.

There are two lists of countries in the Agreement:

Developed Economy Parties should continue to lead by setting absolute emission reduction objectives for the whole economy.

Parties from Developing Economies should continue to improve their mitigation efforts and are urged to work toward economy-wide emission reduction or restriction objectives over time, considering their unique national circumstances.

Unlike the 1997 Kyoto Protocol, the distinction between the developed and developing countries is not clear-cut, therefore developing countries are also under the commitment to submit emission reduction plans.[2]

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[1] Paris Climate Agreement-United Nationshttps://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement#:~:text=The%20Paris%20Agreement%20is%20a,compared%20to%20pre%2Dindustrial%20levels

[2]UNFCCC and Turkey's Position-Ministry of Foreign Affairs https://www.mfa.gov.tr/united-nations-framework-convention-on-climate-change-_unfccc_-and-the-kyoto-protocol.en.mfa

1) Classification of the Parties in the Agreement

In addition to the provisions of the Convention that apply to all parties, the countries have been divided into distinct commitment categories based on their levels of development and respective positions.

This classification is as follows:
i) Obligations imposed on ANNEX 1 Parties (Article 4.2);
ii) Annex 2 Obligations imposed on ANNEX 2 Parties (Article 4.3,4.4, 4.5)
iii) Obligations applicable for all Parties (Out of ANNEX, Article 4.1).

ANNEX 1 countries are obliged to limit greenhouse gas emissions, protect and develop greenhouse gas sinks, and also notify the precautionary measures and policies towards climate change that they have adopted and communicate the level of their greenhouse gas emissions. This group includes countries that are OECD members as of 1992 (including Turkey) EU Countries and countries which are in the process of transition to a market economy (a total of 42 countries).

ANNEX 2 countries are responsible, in addition to the first group's commitments, for transferring environmentally adapted technology to partner countries for development or encouraging, facilitating, and financing access to these technologies (23 countries and the EU). Turkey is part of this group that was made up of OECD member countries.

Countries not included in the ANNEX are encouraged, but not obligated, to reduce their greenhouse gas emissions, collaborate on research and technology transfer, and safeguard their carbon sink (A total of 154 countries)[3]

2) Why did Turkey Wait 5 Years to Ratify the Agreement?

As an OECD member, Turkey has included in Annex I and Annex II lists from the commencement of the process in 1992. In 2001, the UNFCCC's 7th Conference of Parties (COP) decided to remove Turkey's name from Annex-II and Turkey was no longer obliged to give funds to developing countries. As a result, Turkey was only listed in Annex-I.

Despite being listed in Annex-I, Turkey had no historical responsibility for greenhouse gas emissions in 1992. Turkey was, in fact, in the last row of the Annex I list of 36 nations in terms of greenhouse gas emissions, with a per capita ratio of 3,88 tCO_2e (less than 1%

[3] The Intergovernmental Panel on Climate Change (IPCC)
https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_annex-i.pdf

of the world total), whereas the Annex I countries' average greenhouse gas emission was 14,37 tCO_2e per capita.

Turkey ratified the UNFCCC in 2004. Turkey's unique circumstances were recognized in the COP decisions of 2010, 2011, 2012, and 2014. The unique circumstances refer to Turkey being the only country within the scope of Annex I, which does not have a transition economy and whose "special conditions" were accepted by the resolutions of the Conference of the Parties. These decisions emphasize the significance of providing financial, technological, and capacity-building assistance to Parties that face unique challenges in implementing the Convention. These decisions, however, were unable to give a meaningful response to Turkey's request for a fair UNFCCC position.[4]

Turkey, as a party to Convention ANNEX 1, is classified as a developed nation under the rules of the Paris Agreement, despite its unique circumstances. As a result, it is not regarded eligible for assistance in the transfer of financial and technological breakthroughs, among other things. In this regard, it lacks access to the Green Climate Fund (GCF) and multi-stakeholder programs in the fight against climate change, notably the Green Climate Fund.

The announcement of the European Green Deal in 2019 had a considerable impact on Turkey's efforts in climate policy. The implementation of circular economy principles, transition towards green production and consumption and the planned Carbon Border Adjustment Mechanism (CBAM) created a sense of emergency in Turkey regarding its position vis-à-vis the Green Deal. Public opinion, civil society organizations and the business community became concerned about increasing divergence with the EU acquis and norms and standards in the Single European Market unless Turkey also took action in order to facilitate and accelerate its green transition. The first step for Turkey would be to ratify the Paris Climate Agreement and adopt a target date and roadmap for transition to a carbon-free economy. Non-governmental organizations also played an important role in the formation of public opinion. Reputable research institutions working on Turkey's development policies, Economic Development Foundation (IKV), Economic Policy Research Foundation of Turkey (TEPAV) and Istanbul Policy Center (IPC) made a call on Turkey should not be late in adapting to the "Green Transformation". Turkey should ratify the Paris Climate Agreement, of which it was one of the first signatories, in 2016. They emphasized that the first step (ratifying the Paris Agreement) is important in terms of demonstrating Turkey's will to take place as a serious actor in the global low-carbon economy transition agenda.

[4] https://unfccc.int/sites/default/files/resource/FOURTH%20BIENNIAL%20REPORT%20OF%20TURKEY.pdf

As Turkey is not a member of the EU, the Paris Climate Agreement is also a guideline for harmonization with the European Green Deal (EGD). The Carbon Border Adjustment Mechanism (TCBAM) that will start in 2023 within the scope of EGD, creates a serious cost potential for non-EU trade partners.

Taking these into account, Turkey ratified the Paris Agreement in October 2021. Turkey submitted its 2015 INDC as the NDC at the time; however, to comply with the Paris Climate Agreement, Turkey will need to submit an updated NDC goal. As in the first NDC GHG emissions of Turkey is nearly quadruple from present levels.

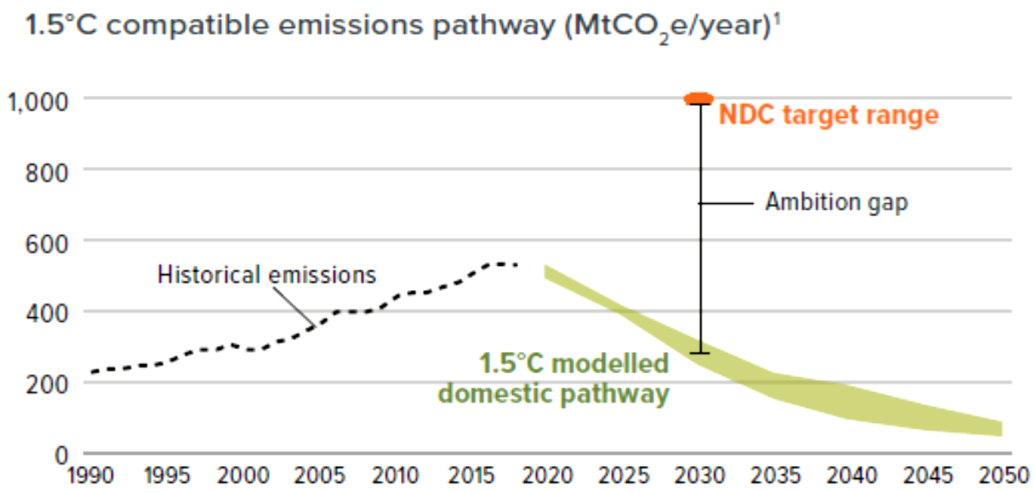
3) Nationally Determined Contributions

With the Paris Agreement, countries define how they will contribute to the achievement of the treaty's objectives. As a result, these plans are known as "nationally determined contributions" (NDCs). Unless a government delivers an update, the Intended Nationally Determined Contributions (INDC) made during the 2015 Climate Change Conference is converted to NDCs when a country ratifies the Paris Agreement.[5]

According to Article 3, NDCs must be "ambitious efforts" toward achieving the goal of this Agreement" and "demonstrate a progression over time." Every five years, the contributions shall be determined and registered by the UNFCCC Secretariat. The concept of 'progression' refers to the understanding that each subsequent desire should be more ambitious than the one before it.

[5] https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

Figure 1: Turkey's NDC Projection



Source: Climate Transparency Report 2021

4) Turkey's NDC and Its Comparative Position Regarding GHG Emissions

Turkey's policies and actions for 2030 are incompatible with the 1.5°C temperature target set by the Paris Agreement. Global temperature rise would reach 4°C if other countries followed Turkey's lead. Turkey must concentrate on enacting further policies and actions to halt the increase in emissions to comply with the agreement.

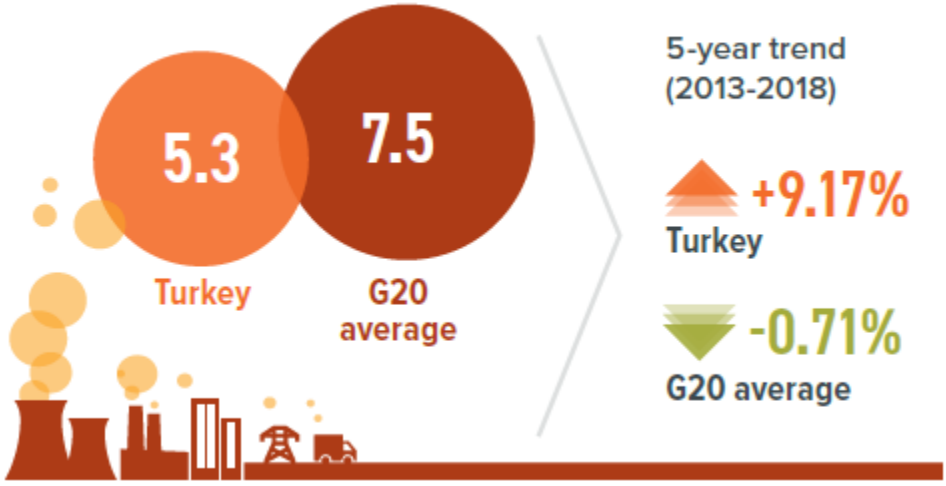
Turkey's NDC target would increase emissions to 355% above 1990 levels, or approximately 999 $MtCO_2e$, by 2030. To keep below the 1.5˚C temperature limit, Turkey's 2030 emissions would need to be around 280 MtCO2e (or 28% above 1990 levels), leaving an ambition gap of 719 $MtCO_2e$. [6]

To comply with the Paris Agreement, countries must reduce their use of fossil fuels and increase their share of renewable energy usage in energy production and other sectors. Turkey continues to rely on fossil fuels, even though renewable energy costs are at all-time lows. In 2019, the Ministry of Energy and Natural Resources issued tenders for domestic lignite coal mines, and in the same year, construction on the long-delayed 1.3 GW Hunutlu thermal power plant began.[7]

[6] https://www.climate-transparency.org/wp-content/uploads/2021/10/CT2021Turkey.pdf

[7] https://climateactiontracker.org/countries/turkey/

Figure 2: Comparison of Turkey and G20 Countries Green House Gas Emissions per capita (tCO_2e/capita)[2] in 2018



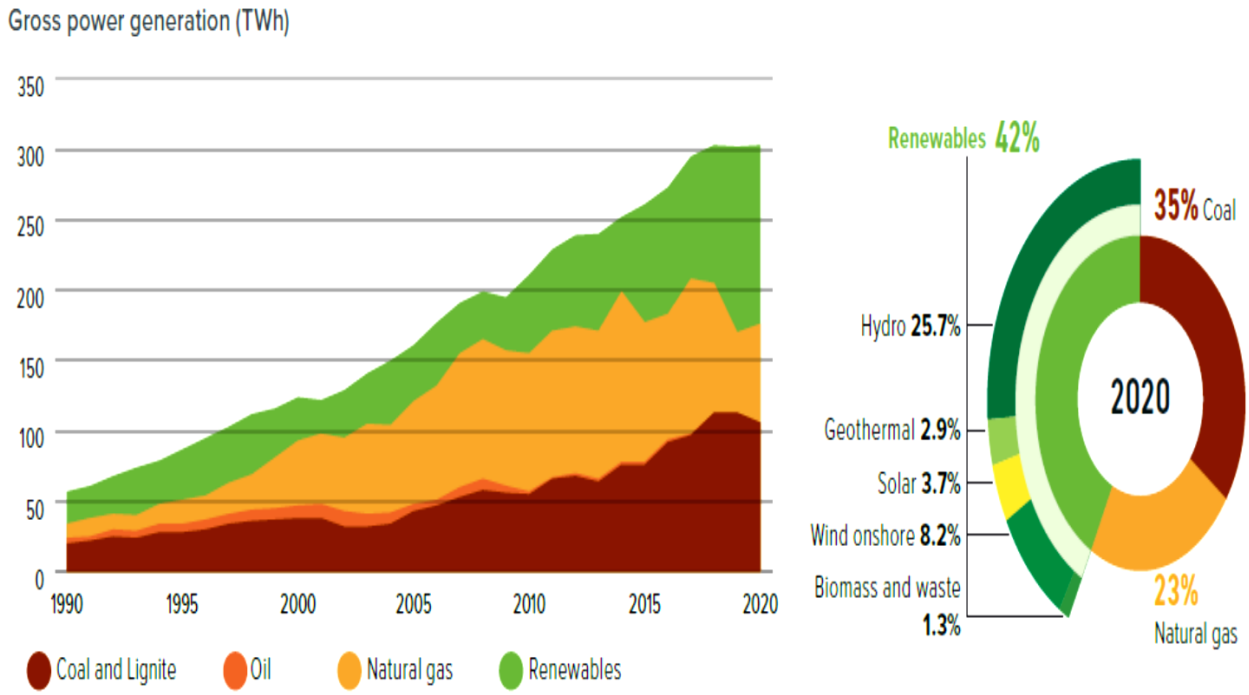
Source: Climate Action Tracker, 2021; Gütschow et al., 2021; United Nations, 2019

In 2020, Turkey generated 58 % of its power from fossil fuels, with coal accounting for approximately a third of the total (35 %). This high proportion of fossil fuels, particularly coal, is unlikely to alter in the future since Turkey has a substantial pipeline of new coal capacity scheduled to open. These advances contrast sharply with Turkey's desire to decrease coal use in energy generation to near zero by 2030. Turkey wants to raise the percentage of domestic coal in power generation by 248 % from domestic coal between 2019 and 2023, as well as boost installed capacity utilizing domestic coal by 4 GW within the same period.[8]

Although the average greenhouse gas emission per capita of Turkey is lower than the G20 countries, it is seen that the 5-year trend of emission is decreasing in the G20 countries, while it is on the increase in Turkey and there is a difference of almost 10%.

Figure 3: Turkey's Electricity Generation Mix

[8] https://www.iea.org/reports/turkey-2021



Source: Enerdata 2021

Turkey exceeded its modified 2023 objective for the share of renewables in the power mix (38.8%) the year it was updated, but government policy is trailing behind the strong improvements in renewable energy installations (2019). Turkey's energy transition has been portrayed as an engineering challenge with technology answers, with no public discussions addressing geographical and social issues, energy fairness, or energy justice.[9]

Meanwhile, Turkey's imports of liquefied natural gas (LNG) hit a new high in 2019, and the construction of Turkey's first nuclear power plant began despite protests. Renewable energy in Turkey contributed 42% of the electricity generation in 2020, and its share has increased at a faster rate (37%) than the G20 average increase (24%) between 2015-2020.

5) Turkey's Possible Future Climate Strategy

To accelerate the green transformation; public and private sector parties need to cooperate. For Turkey to minimize the new costs of emissions, the government must take steps to convince the private sector.

[9]Türkiye'nin Enerji Dönüşümü-Turkish Policy http://turkishpolicy.com/article/929/energy-transition-in-turkey

To achieve this, a new economic growth strategy; based on re-manufacturing and repairing, in other words a circular economy model should be implemented. A circular economy model proposes to use of natural resources to be more efficient, and energy consumption based on fossil fuels should be gradually reduced. It has been put forward as a model that emphasizes energy and raw material efficiency and renewable energy sources.

The EU has been implementing the Emissions Trading System (ETS) in phases since 2005, within the scope of measures to fight against climate change, and the number of emissions quotas that facilities can purchase is being reduced every year.
Turkey should establish an Emissions Trading System (ETS) to accelerate the transformation in the private sector. The emissions trading system (ETS) sets a limit (or upper limit) to greenhouse gas emissions (SGE) from the installations covered by the system. Because the cap directly limits greenhouse gas emissions, this tool gives policymakers some certainty about the amount of emissions that will occur over a period of time. Facilities covered by the ETS must use their allowances to cover the total greenhouse gas emissions they cause.

Another priority of Turkey's climate strategy is carbon pricing. Currently, Turkey does not have a carbon pricing mechanism. With the European Green Deal, the Carbon Border Adjustment Mechanism will come into effect.[10]

The Carbon Border Adjustment Mechanism (CBAM) aims to bring the competitiveness of high-emission products, which are generally produced at lower costs, to the same level as alternative products that can be produced with relatively lower emissions but at a higher cost. In other words, it brings the cost of high-emission products to the level of low-emission products with regulations such as carbon tax.

For imports to the EU from third countries, it obliges importers to purchase certificates according to carbon pricing in the EU, even though the products are not produced in the EU. However, importers located in the EU could deduct the corresponding cost if producers located outside the Union prove that the goods, they produce are subject to carbon pricing in the country in which they are located. These measures aim to prevent energy-intensive industries in the EU from relocating production to countries with relatively cheap carbon pricing. While it is stated that the sectors where SKDM will be applied are initially cement, fertilizer, iron and steel, aluminium and electricity

[10] Karbon fiyatlandırması-Dünya Bankası https://www.worldbank.org/en/programs/pricing-carbon

production, the scope of these sectors is expected to increase over time. In these sectors, Turkey exports 4.8 billion Euros and the EU's share of purchases in these sectors is 52%. The cement sector will be affected the most, with 170 million Euros.

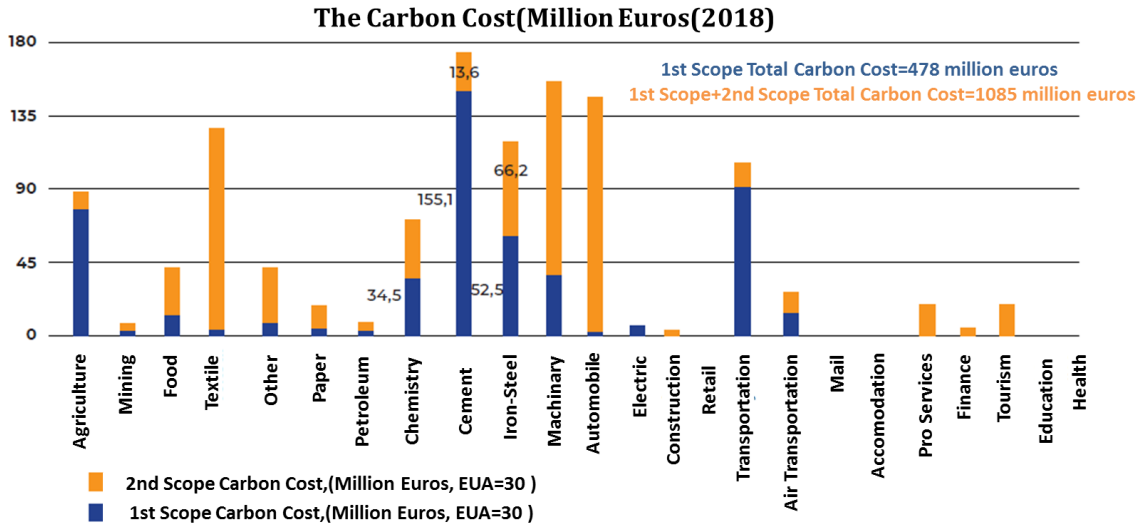
Although the EU ETS indexed carbon pricing system does not affect the competitiveness of exporting companies with foreign companies in the EU market; High costs in the domestic market can increase prices and seriously affect purchasing power.

In addition to reducing emissions, Turkey could introduce more than one carbon pricing mechanism until the amount of carbon emissions decreases with the green transformation which varies according to the domestic and foreign markets to reduce additional costs. Because the carbon tax at the border occurs if there is a pricing difference with the EU member country and the exporter third country.[11]

To determine the possible effects of the European Green Deal on Turkey and the steps that Turkey should take, with the cooperation of the private sector and 12 ministries the "Green Deal Action Plan" was created. The plan collects 81 actions under nine main headings.

[11] SKDM-Avrupa Komisyonu https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3661

Figure 4: The total carbon cost that Turkish exports would be exposed as 30 EUA

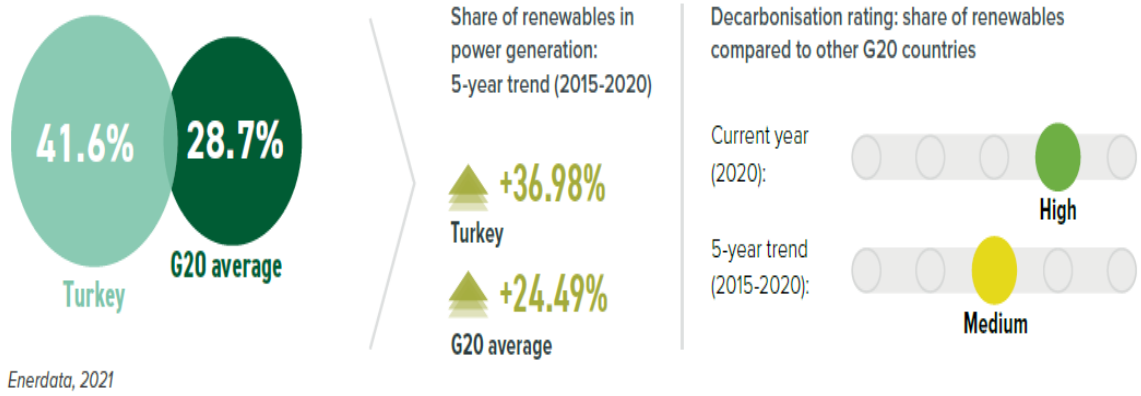


Scope 1 emissions that are the direct responsibility of the manufacturer at the factory/sectoral level where production takes place (ie emissions from stationary combustion are in this class).

Scope 2 covers the emissions caused by the production of intermediates such as Electricity, Steel, which are used as inputs in that factory/sector. Turkey is currently implementing the "Climate Change Action Plan" for the years 2011-2023. Policies and initiatives for greenhouse gas emission mitigation and climate change are included in the National Climate Change Strategy and the objectives of the Ninth Development Plan. However, in recent years, especially after 2015, the fight against climate change has gained strategic importance. Turkey should update its plan so that it can adapt to the Paris Climate Agreement and the European Green Deal. Otherwise, the possible costs will be higher for Turkey in the long run than the investments it will make in the fight against climate change.[12]

[12] Turkey's National Climate Change Adaptation Strategy and Action Plan-Ministry of Environment, Urbanisation and Climate Change
https://webdosya.csb.gov.tr/db/iklim/editordosya/uyum_stratejisi_eylem_plani_EN(2).pdf

Figure 5: Share of renewables in power generation



Source: Enerdata 2021

As seen in Figure 4, Turkey benefits from renewable energy more than G20 countries in electricity generation. The majority of Turkey's renewable energy portfolio (25.8%) consists of hydroelectric energy. Turkey is a country with a high potential in terms of wind and solar energy and is capable to diversify its renewable energy investments. Increasing renewable energy investments will reduce Turkey's use of fossil fuels with high emissions such as coal and will alleviate its responsibilities under the Paris Climate Agreement.[13]

6) Conclusion and Policy Recommendations

Until 2053 (Turkey's target year for becoming climate-neutral) Turkey should give priority to increasing renewable energy investments to have decreasing NDC targets over the years. However, the energy crisis that Europe has been experiencing with Russia since Autumn 2021 has shown that renewable energy investments should not be made without alternative sources. In this case, the European Commission's proposal on including natural gas and nuclear energy in the EU green taxonomy can be seen as an opportunity for Turkey. Commission's Complementary Climate Delegated Act, which introduces the allowance on funding nuclear and natural gas as transitional energy sources as being included in the EU Taxonomy, may pave the way for nuclear energy to be considered as a low carbon energy source for CBAM as well as to ensure the stable

[13]Energy Transition and Sustainable Road Transportation in Turkey: Multiple Policy Challenges for Inclusive Change-Gülfem Cevheribucak(2021) https://www.frontiersin.org/articles/10.3389/frsc.2021.631337/full

energy supply. Following this, if Turkey increases its renewable energy investments by diversifying its energy resources, it will give the opportunity to Turkey to achieve energy independence to a considerable extent in the coming years.

Establishing an “Emission Trading System” should be another priority for Turkey. Emission measurement centres should be established in industrial and emission-intensive cities to measure emission rates at least 1 year before the establishment of the ETS. The Turkish ETS, unlike the EU ETS, should not initially give emission limits to businesses "according to the declaration system" or "free of charge". Until the establishment of emission measurement centres in all cities, the amount of emissions in provinces with relatively little industry can be monitored with mobile measurement devices.

In Turkish ETS, the first permits should be given to the enterprises in parallel with the measurements and through tender. Allowing inter-city carbon offsets with the ETS can have positive and negative consequences. Industrially dense western provinces will want to buy carbon emission rights from eastern provinces, and this will cause a decrease in carbon emission prices per ton. But at the same time, businesses in the eastern provinces with limited financing for green transformation will have the opportunity to find additional resources in this way.

In addition, if the enterprises reduce their emission amounts below the given annual permits, carbon credits of the same value in the next year should be given in return for the amount (banking), so that the enterprise will obtain additional resources.

After Turkey starts implementing its own ETS, it should establish an independent standard certification body and give local or international carbon credit rights to businesses that reduce their emissions. The amount of reduced emissions in the projects must be approved by an independent audit firm to qualify as carbon credits. In this way, businesses will sell their acquired credit rights to large enterprises in Turkey and later internationally, thereby creating additional resources for green transformation investments. However, Turkey, by creating its standard certification system, will gain the ability to direct the private sector in the areas it prioritizes.

The "Gold Standard" and "Voluntary Carbon Standard" certification standards, for which Turkey has the highest number of projects in the voluntary carbon markets, have been accepted for new project registration from Turkey as of 2020. In the case of Voluntary Carbon Markets, currently the only option is the new standard GCC (Global Carbon Council). GCC, based in Qatar, accepts new registrations for new projects that started operating in Turkey in 2016 and later, and makes it possible to perform a 5-year retrospective certification process.