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The effects of the EU Green Deal harmonization policies in Turkey

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Abstract

This study examines the highlights related to the adaptation process to the EU Green Reconciliation, and it deals with the economic findings related to the process. The method of the study is based on the interdisciplinary findings about process. The current steps of the process had been visualized, then conveyed in a simple and understandable way. The study also deals with the economic findings related to the same process on the literature of the economic with graphics. The study focuses on issues such as the results of environmental pollution created by the cement sector on a sectoral basis for international trade. It examines the affections of sectoral environmental pollution on the economy and its reflections on carbon pricing at the border and make predictions about the near future. The research is important in terms of illuminating the critical points of the compliance process of the EU Green Consensus on the reflections of our country.

1. Introduction

This study first examines the highlights related to the adaptation process to the EU Green Reconciliation. The research deals with the economic findings related to the process.

2. Material and Method

The highlights related to the adaptation process to the EU Green Reconciliation are process steps. The study first examines this developing process. The method of the study is based on the interdisciplinary findings about process. The current steps of the process had been visualized, then conveyed in a simple and understandable way.

The study deals with the economic findings related to the same process on the literature of the economic with graphics. The first material of the study is historical agreements on the process. These are international and national documents.

Paris Agreement has entered into force on 5 October 2016 after signing in 2015 [1]. The European Green Reconciliation (EGD) can only be put into effect in 2019 [2]. Turkey has published the Green Reconciliation Action Plan in 2021 [3]. The Paris Agreement of Turkey Paris has signed in 2021 again [4].

Turkey is now in this final process involving EGC and must speed up their preparation for transition. Turkey's participation in the party in the immediate past such as the following way in the following way (Figure 1).

In this final process from the Paris Agreement to Europe, the digital conversion will be determinant in this final process. The solutions that the process will provide is particularly important for the future. For this purpose, new moves must be seen in Turkey's policies.

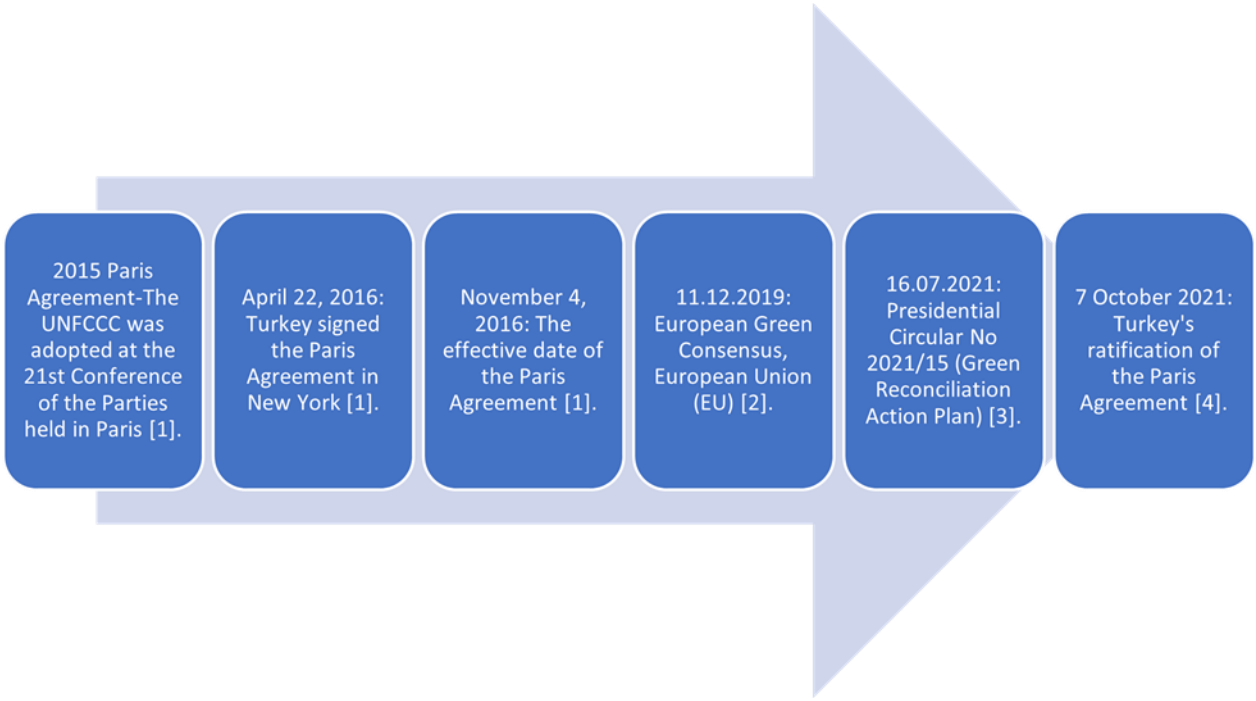

Figure 1. Turkey's accession to the party countries in the Historical Process from the Paris Agreement to the European Green Consensus.

Economic data is visualized with tables and graphs to facilitate clarity and country-product comparisons in findings part below. Besides process steps are also collected in a figure again for 2021 year (Figure 2).

3. Findings

Turkey's some tasks and events in 2021 are given in Figure 2.

Figure 2. Turkey's some tasks and events in 2021.

The Climate Council is also completed after serial meetings. This and another process summary also explained with the sub-titles.

3.1. Emissions reduction plan in long-term

Minister (Ministry of Environment, Urbanization and Climate) said that "There is a critical threshold in front of the world: to limit global warming to 1.5°C. To achieve the 1.5°C target, it is required that global emissions be reduced by 45% by 2030 and that net zero is achieved by 2050. The way to achieve this goal is for all countries to reduce by 7.6% each year by 2030" [5].

Countries join process promising dated to be carbon neutral and emission reduction (%) before (Table 1). Australia, Switzerland and Norway also promised date outside of EU, Turkey, China.

Table 1. Carbon Neutral Promise dated for Countries

Countries	Promise dated	% Emission reduction	Carbon Neutral
EU		50-55	2030
EU			2050
Turkey			2053
China	22.09.2020		2060

3.2. The COP26

Turkey attended the 26th COP (Conference of Parties). It held in Glasgow. Turkey attended it as a party to the Paris Agreement in December and we also hosted 21 Mediterranean countries in Antalya. At the same time, Türkiye have taken over the Presidency of the Secretariat of the Barcelona Convention for 2 years.

3.3. Climate Change and Adaptation Coordination Board Meeting

We held the Climate Change and Adaptation Coordination Board Meeting with members to determine plans, policies, strategies, and actions regarding climate change on January 11. There are members from different institutions, private sector, and civil society representatives in meeting.

3.4. The Climate Council 2022 Committees

The Climate Council 2022 committees established in line with the specified aim and their working subjects are as given in Figure 3.

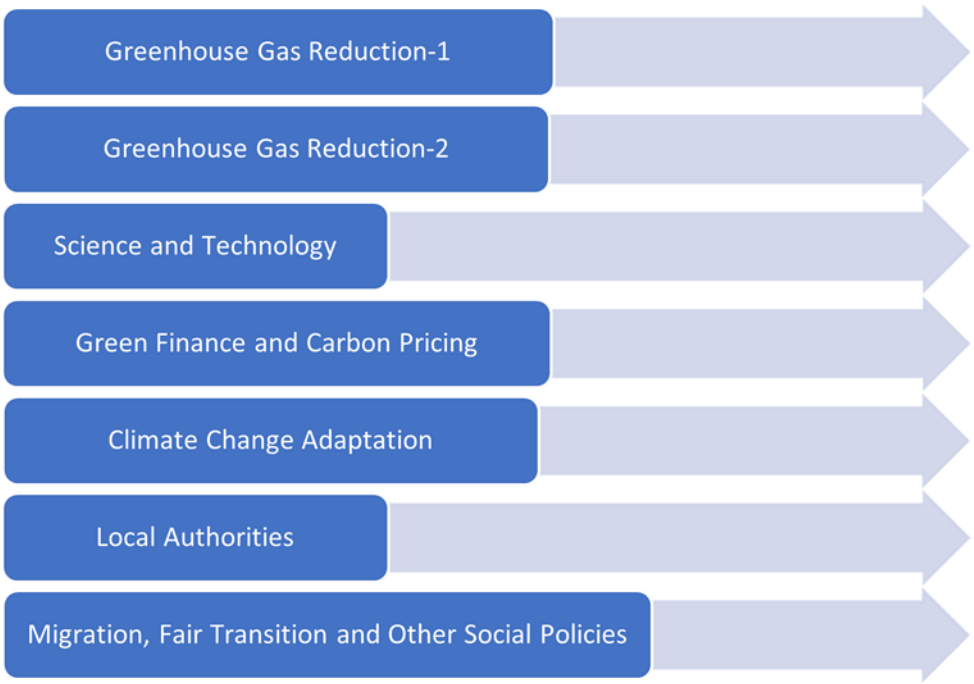

Figure 3. The Climate Council 2022 Committees Derived by the author, taken from the relevant source [6].

3.5. Turkey's Green Development Revolution

We held the Consultation Meeting, "Türkiye on the Road to Green Development" in Antalya. We shared our 11-point final declaration with our nation on the fields (Figure 4).

11-point final declaration	Climate change
	Zero waste
	Energy
	Finance
	Green technology
	Circular economy
	Low emission zones
	Social housing
	Urban transformation
	Green buildings
	Youth employment
	Education mobilization

Figure 4. 11-point final declaration with our nation on the fields.

3.6. 2053 Target for Turkey: Carbon Neutral

T.R. President announced our 2053 Carbon Neutrality target for Turkey at the UN General Assembly. Our roadmap and primary policies have been setting yet.

For GD (2021-2050); Expected cost of all conversions totalling €28 trillion (5% of annual EU national income) (included Energy, Transportation, Building Housing Industry Agriculture Infrastructure) [7-8].

3.7. New Strategies (Action Plan for 2022)

Nationally Determined Contribution and Long-Term Strategy and Action Plan for 2022 should be prepared immediately together. We will finish all consultations by the end of this year. We will also submit it to the Secretariat of the UN Framework Convention on Climate Change (UN FCCC) like that (Figure 5).

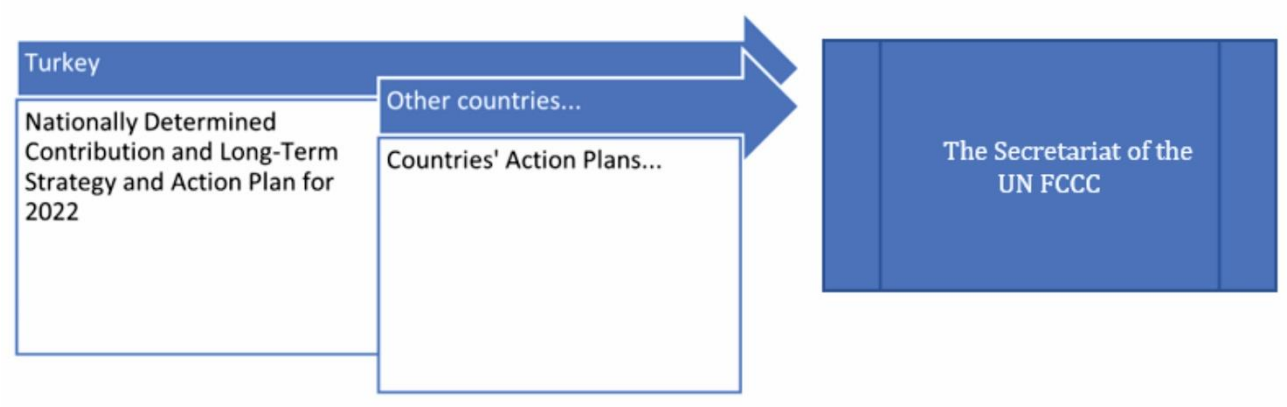

Figure 5. Turkey Strategy and Action Plan 2022 with Countries' Action Plans.

3.8. The Border Carbon Adjustment (BCA)

The European Union adopted a new growth strategy under the EU Green Agreement in 2021. In this case, the Border Carbon Adjustment is a vital issue for Turkey. Turkey's exports 45% to EU countries.

3.9. Draft of Climate Law Preparations

The council members and committees will reflect the scientific bases filtered from perspectives on 7 different fields on our Climate Law. Draft of Climate Law can be prepared after they will present all their studies to our assembly in detail.

3.10. Carbon Pricing with Statistical Data for Sectors (24#)

It is stated that if Turkey does not take precautions, it will be isolated in the extremely near future. According to 2018 data, Turkey is 4 times more polluting than the EU average (EU27 region) as shown in Figure 6.

17,5 (kg CO_2e/€) = ~4x4,5 (kg CO_2e/€)

(CO_2e/€: Emission Pricing in €: Amount of CO_2e/€ released into the air per ton of product)

Figure 6. Turkey is 4 times more polluting than the EU average (2018) for electric energy sector emission density (CO_2e/Added Value) (kg CO_2e/€) Derived by the author, taken from the relevant source [8].

2# Bar: Blue: 2017; Orange: 2018.

In the Turkish economy, the electricity generation sector is seen as the sector with the highest emission density with 154.9 Mt CO_2e, which corresponds to a 34% share in total greenhouse gas emissions.

Statistical data cover 24# sectors and two categories for the carbon pricing in EU trade (million €) with a bar graphics below (Figure 7).

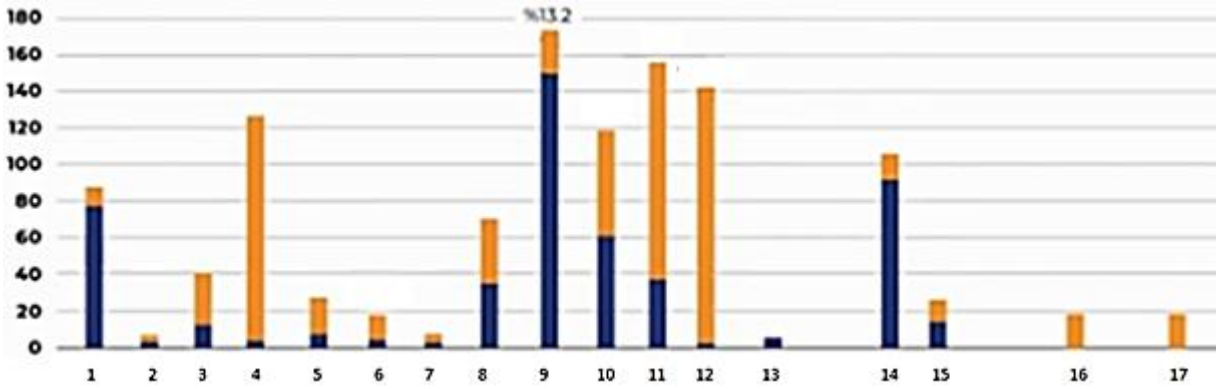

Figure 7. Carbon Pricing (Derived by the author) from the relevant source [8].

There are two categories in this graphic (Figure 7).

Categories:
Blue: Carbon cost (million €, EUA=30€) (directly affect) For example, Cement sector (9.bar), etc.
Orange: Carbon cost (million €, EUA =30€) (indirectly effect)

There are also some of 24# categories in this graphic (Figure 7). Cement sector is the biggest one between these 24# sectors (Table 2).

Table 2. Sector list in Figure 5 [8].

Sectors				
1.Agriculture	6.Paper	11.Machine	16.Transportation	21.Finance
2.Mine	7.Oil	12.Automotive	17.Airline	22.Tourism
3.Food	8.Chemistry	13.Electricity	18.Mail	23.Education
4.Textile	**9.Cement**	14.Construction	19.Accommodation	24.Health
5.Other	10.Iron-Steel	15.Retail	20.Service	

Scenario-A: Total carbon cost also defines with two categories sum in all sectors. It is **1085** million € (Table 3).
Scenario-B: Total carbon cost also defines with two categories sum in all sectors. It is **1809** million € (Table 3).

Scenario-A: If the tax per ton (EUA) is 30 Euros, 478 million Euros - **1085** million Euros
Scenario-B: €797 million – €**1809** million even if the tax per tonne (EUA) is €50
Total carbon pricing with two categories (1, 2) in all sectors are shown in Table 3.

Table 3. Total carbon pricing with two categories (1, 2) in all sectors.

	Scenario-A	**Scenario-B**
Categories	Million €	Million €
EUA €	30	50
1	478	797
2	607	1012
1+2	**1085**	**1809**

Derived by the author, taken from the relevant source [8].

GDP (billion TL) graphs for 30 and 50 categories with 2018 price in Border Carbon Regulation (BCA) is given by figure below (Figure 8).

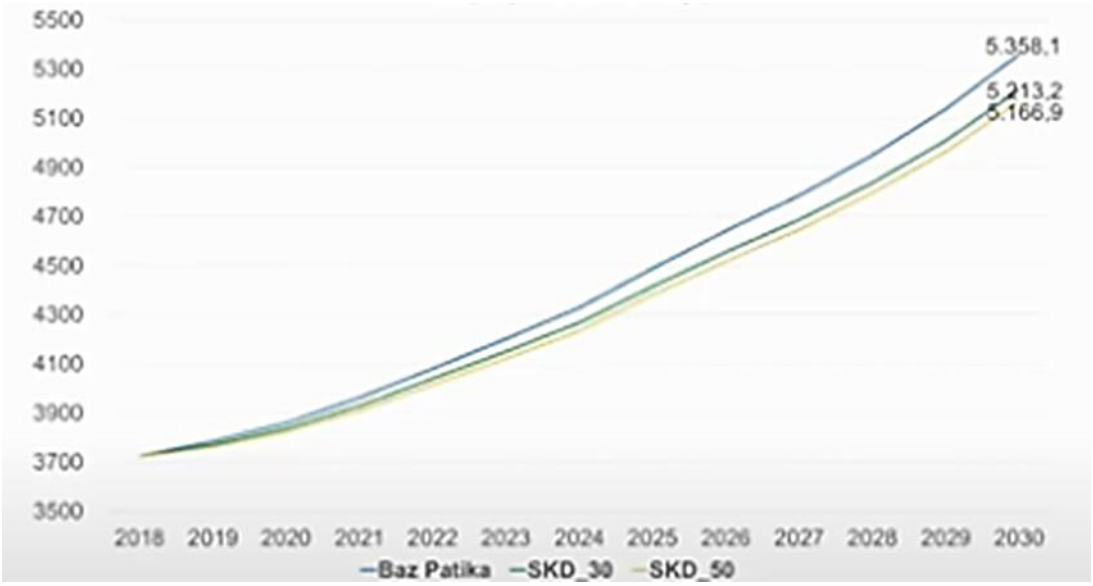

Figure 8. 3# GDP (billion TL) * graphs for 30-50-Base categories with 2018 price in Border Carbon Regulation (BCA) [8].

Total Carbon (CO_2) Emission graphs (million ton) for €30- €50-Base categories are given in Figure 9.

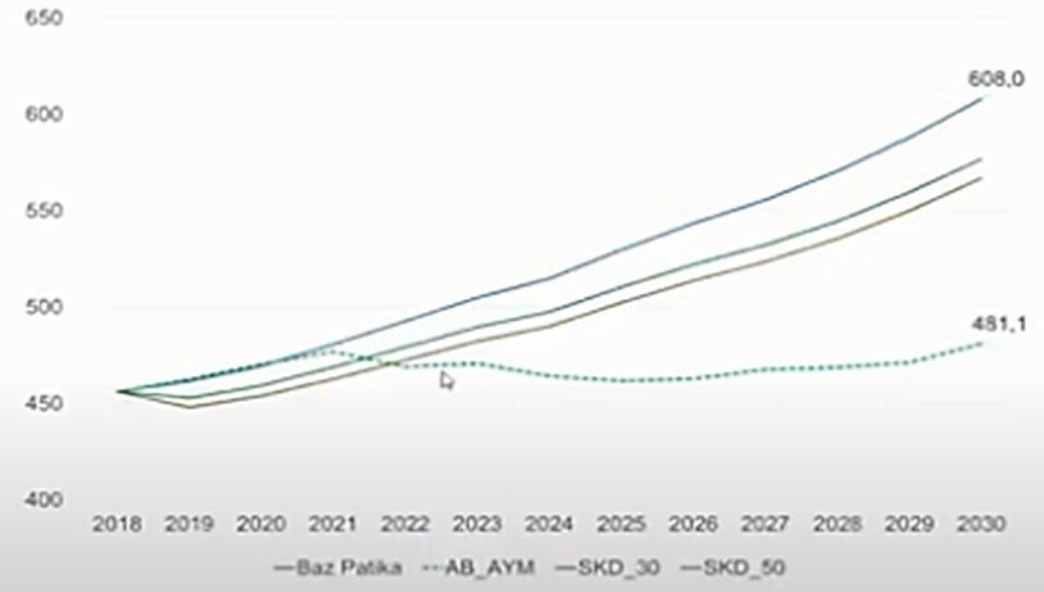

Figure 9. Total Carbon (CO_2) (million ton) Emission graphs for 30-50-Base categories [8].

4. Results

The study focuses on issues such as the results of environmental pollution created by the cement sector on a sectoral basis for international trade. It examines the affections of sectoral environmental pollution on the economy and its reflections on carbon pricing at the border and make predictions about the near future.

For the EU, since carbon regulation will partially shift production abroad, it is a loss of production and employment. However, when the sectors that must reduce emissions in the EU go abroad, this obligation will not be eliminated, so they will be able to keep their current emissions at a global level and keep them low (carbon leak). In an analysis, the weighted effects of the sectors on each other were also discussed with a network structure modelling [8]. The effects of the regulations in Turkey were also analysed numerically with this modelling.

The data will also be fully equipped with time in concrete and relational context in time. As can be foreseen from field examples in Turkey, the general situation is quite thought provoking. Especially in recent years, increased immigration from rural areas to metropolis continued to develop rapidly and irregularly.

On the other hand, measurement processes are rapidly approaching according to EGC criteria. Countries that supply products from Turkey to abroad will also comply with EGC criteria. In 2023, carbon footprint calculations will be started at 2023. Activities are known to be evaluated in this context. For example, wastewater, renewable energy etc. Therefore, the concrete and accurate measured documents will be revealed. First, models based on these measurements should be determined.

It is a fact that tax items to be paid for carbon emissions have also begun to gain visibility. For this purpose, the institutions, and organizations of the state acted (Ministry of Commerce and so on).

The action plan was prepared and published. In this process, the stakeholder institutions and their related tasks need to become clear. Thus, the relevant activities will be executed within the areas of more definite responsibility.

5. Discussion

EU-Green Deal (GD) is aimed:

- Don't leave anyone behind.
- Financial support.
- New targets and investments.
- Alignment with EU climate policies.

Today is entered into a smart transformation process. After the EGC approval, this interaction should be increased through the existing trade with the EU. Therefore, digital transformation approaches should be confirmed and verified. This transformation in institutional structures started in the 2000s and continues to increase to the present day.

What should be done?

- Smart approaches will be very important.
- Realism and analysis of country realities will be at the forefront.
- Follow and adapt developments
- Constantly re-evaluating opportunities and threats
- Recognize and better use flexibility mechanisms
- Developing new scenarios by prioritizing national interests

6. Conclusion

The need to increase global efforts for a sustainable world by all stakeholders at all levels has become increasingly evident in recent years. The reflections of the social and economic crisis created by the COVID-19 pandemic in 2020 further reinforced this process. In the recovery period after the COVID-19 crisis, the building of a sustainable and inclusive global economy is the priority agenda of the international community. In addition to all these, it is seen that an increasing number of international companies and investors are aiming to accelerate the transition to a low-carbon, green economy by determining green transformation roadmaps. Among these initiatives are the Zero Emission Race [9], to which 1397 companies and 74 investors have participated under the umbrella of the United Nations, and RE1002 (Renewable Energy 100) [10], to which 280 companies have participated. The research is important in terms of illuminating the critical points of the compliance process of the EU Green Consensus on the reflections of our country.

Capacity increases in all action categories in developing commercial activities in the world and Turkey are also highly evident. This complexity of commercial processes is increasing. Recent commercial processes have also made mixed professional groups stakeholders. This constantly increases the interaction between stakeholders. Therefore, the coordination of processes must be facilitated by utilizing information and communication technologies.

Problems with the issues drawn in the study can only be overcome by effective and timely plans. The difficulties arising from increasing competition in international trade are the most important of these problems. For this purpose, Turkey's economic planning, public administration and politics were required to start making new moves.

Other technical details exceeding the boundaries of the work will be the subject of recent studies.

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Conflicts of interest

The authors declare no conflicts of interest.

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