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# Turkey's "Green" Transformation and the CBAM:

## Challenges and Opportunities

TURKEY PROGRAMME

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## Summary

- The relationship between the EU and Turkey with regard to the green transition is of high importance, given the Customs Union and the close trade and business relations between the two sides. Some of the measures adopted by the European Union, and the Carbon Border Adjustment Mechanism (CBAM) in particular, constitute an important empirical case study to assess the adaptability of the Turkish economy to new challenges, and the compatibility of the EU and Turkish visions of the green transition more generally.

- As a major EU trade partner and a carbon-intensive economy, Turkey is expected to face rising costs because of the implementation of the mechanism. Although the immediate effects of the CBAM appear concentrated in specific sectors, such as aluminum, iron, and steel, the wider repercussions of the new policy could adversely affect growth and employment in the medium to long run.

- On the other hand, Turkey maintains a set of comparative advantages that can both minimize the impact of CBAM as well as prepare the country's economy for a set of reforms that will make its economic model sustainable in the long run. To do so effectively, however, Turkey will need to recalibrate relations with the EU and raise the salience of the issue in the domestic political sphere. For the time being, the prospects of doing so remain minimal.
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## Introduction

Turkey is one of the many countries around the world that finds itself in a vulnerable position regarding the effects of climate change, both at societal and economic level. According to a 2021 report by the United Nations' Intergovernmental Panel on Climate Change (IPCC), Turkey will face more severe weather conditions in years to come, mostly due to three reasons, namely dehydration, rising sea levels and rising temperatures. Already, so-called "once in a century event" have mutliplied in recent years, with severe flooding and widespread wildfires leading to scores of dead people and massive destruction. At the same time, the European Union (EU) approach to climate change is premised on mitigation and prevention measures that include a series of measures, interventions and funding instruments aimed at neto zero emissions and sustainable growth. The relationship between the EU and Turkey with regard to the green transition is of high importance, given the Customs Union and the close trade and business relations between the two sides. Some of the measures adopted by the European Union, and the Carbon Border Adjustment Mechanism (CBAM) in particular, constitute an important empirical case study to evaluate the adaptability of the Turkish economy to new challenges, and the compatibility of the EU and Turkish visions of the green transition more generally.

*The relationship between the EU and Turkey with regard to the green transition is of high importance, given the Customs Union and the close trade and business relations between the two sides.*

In response to climate change evidence and the adoption of a "green growth" pattern by the EU, Turkish authorities have sought to respond through the ratification of the Paris Agreement in 2021, the adoption of a Green Deal Action Plan and the announcement that Turkey will strive for net zero emissions by 2053. Apart from being an obvious challenge, however, climate change also constitute an opportunity for an economy like Turkey's: possessing a rather sophisticated private sector and a high degree of integration in global value chains, Turkish firms face the challenge of integrating their operations in the newly formed green value chains and taking advantage of emerging opportunities in wind and solar technologies in particular. Moreover, the country can opt to integrate a form of emissions trading system (ETS) in its own economy, offsetting anticipated costs incurred through the introduction of a Carbon Border Adjustment Mechanism (CBAM) by the European Union (EU), thus paving the way for a more sustainable pattern of economic growth. Doing so is far from straightforward, however: the government's environmental record is not particulary promising and opposition forces have failed to raise the salience of the issue in the domestic policy front. Moreover, relations with the EU remain semi-frozen, which discourages progress.

*Turkish firms face the challenge of integrating their operations in the newly formed green value chains and taking advantage of emerging opportunities in wind and solar technologies in particular.*

This paper is structured as follows. The first section provides an overview of developments pertaining to climate change adaptation and mitigation measures in the EU, focusing on the introduction and gradual implementation of the Carbon Border Adjustment Mechanism (CBAM). The next section discusses Turkey's efforts to adjust its "green" policies to societal and economic needs, before moving to the section that takes stock of reactions and estimates as to the CBAM effects on the Turkish economy and export sectors to date, including the political aspects that may yet hamper such a transition, despite its long-term salience. Finally, the policy paper will summarize the findings in the conclusion, outlining both the challenges and the opportunities associated with the "green" transition.

## The EU Green Deal

In 2020, the EU adopted a Green Deal, with the ultimate goal of achieving carbon neutrality by 2050 after reducing greenhouse gas emissions by 50% by 2030 compared to 1990 levels, not only as a response to environmental challenges but also as a growth strategy. The aim is a competitive economy that uses resources efficiently through a resource-efficient, clean, and circular economy. How can such lofty goals be achieved? EU quantitative targets include the use of 49% of renewables in buildings, an increase in renewable energy usage by 40% and a reduction in energy consumption of 36%. In 2021, the "Fit for 55" package turned EU goals into a legal obligation, forcing the Union to reduce its greenhouse gas emissions (GHG) by 55% in 2030 compared to 1990 levels, making the EU a global leader in the sector.

*The Carbon Border Adjustment Mechanism*

*From a political point of view, the CBAM is an attempt to expand the sphere of EU-wide regulations to the bloc's main trade partners, given that non-compliance with CBAM-related policies and practices entails the danger of steep tariffs on imported goods.*

After introducing carbon pricing and an emissions trading system (ETS) in 2003, the EU has now adopted a Carbon Border Adjustment Mechanism (CBAM). The ramifications of the new policy are extensive and deserve scrutiny.

Through a 2023 Council and Parliament Regulation, the EU introduced CBAM to impose a tariff on imports based on the carbon content of the goods it imports in its single market and has offered a two-year grace (transition) period to non-EU states to comply with the Regulation. The central logic of the CBAM is a certain product's carbon intensity measured in carbon dioxide equivalent ($CO_2e$), emitted during their production, and the goal of the new measure is to ensure that products produced within the single market as well as outside it will receive equal treatment, i.e. that their carbon intensity will be accurately priced both within the ETS framework (applicable to EU member states) and outside it (CBAM). From a political point of view, the CBAM is an attempt to expand the sphere of EU-wide regulations to the bloc's main trade partners, given that non-compliance with CBAM-related policies and practices entails the danger of steep tariffs on imported goods. Importantly, CBAM applies both to imported goods based on non-preferential rules of origin as well as domestic products, so that potential attempts to offset strict EU rules through production relocation in more carbon-intensive destinations or higher imports of carbon intensive goods can be prevented. The CBAM follows the climate logic of the EU ETS by prioritizing sectors with the highest absolute emissions, such as cement, iron, steel, aluminum, fertilizer, hydrogen, and electricity (Benson, Majkut, Reinsch, & Steinberg, 2023). It should be stressed, however, that these are the high-priority sectors that will enroll in the scheme first, and chemicals, glass or petroleum products are likely to introduced at a later stage as well. Payments at the EU border under CBAM will start in 2026 for Aluminum, Cement, Fertilizers, Iron and Steel as well as Electricity, and will be phased in gradually until 2034. EU members will pay per ton based on the price of Carbon Certificates in the ETS to compensate for the emissions resulting from the products they import, and the CBAM certificate price will reflect the EU ETS price.

Importers must submit a report (referred to as the 'CBAM report') to the Commission on the total emissions that are embedded in the product reported, the indirect emissions generated from it, the quantity of each type of good, the actual total embedded emissions and the carbon price attributed to the embedded emissions in the imported goods for the country of origin. The EC will assess the CBAM reports submitted, and in case a report is inaccurate or inadequate, the competent authority will be required to provide any additional information considered necessary by the EC. An important role in the process is played by customs authorities, since they are the

ones who will need to transmit information specific to the said good to the European Commission, and, if they so wish, share confidential information as to the carbon pricing with the Commission or the EU state that has authorized the declarant. If declarants fail to submit the CBAM certificates by 31 May of every year they will be held accountable for paying an emissions penalty calculated based on each ton of carbon dioxide emitted by the given installation (European Council, 2003). A penalty is also foreseen for non-authorized declarants who import goods within the EU based on the severity of the non-compliance.

## Turkey's Green Adaptation

*Turkey's geographic, climatic, and socioeconomic conditions make it highly vulnerable to the impacts of climate change and other environmental hazards. This vulnerability is due to a combination of climate factors, including an expected increase in extreme heat days and exposure of the population to climate impacts (for example, the share of the population exposed to floods), as well as socioeconomic factors, such as the share of agriculture in the economy.*

*The Challenge*

According to an OECD report, although Turkey's GHG and carbon dioxide ($CO_2$) emissions have been slower than economic growth over the last 20 years, and its per capita emissions remain lower than the average for both the OECD and EU countries, Turkey has a high vulnerability rating in 9 of 10 climate vulnerability dimensions, compared with a median of 2 of 10 elsewhere in the OECD. Its geographic, climatic, and socioeconomic conditions make it highly vulnerable to the impacts of climate change and other environmental hazards. This vulnerability is due to a combination of climate factors, including an expected increase in extreme heat days and exposure of the population to climate impacts (for example, the share of the population exposed to floods), as well as socioeconomic factors, such as the share of agriculture in the economy.

In recent years and in contrast to past practices, the Turkish government has sought to adapt to the requirements states face in dealing with climate change. In doing so, it has adopted a series of policies that demonstrate a higher level of ambition regarding switching to a more sustainable type of economic growth befitting the "green" challenge. It is unclear how far these policies will go, yet they suggest a qualitative change compared to the recent past.

To start with, Turkey ratified the Paris Agreement in 2021, having originally signed the Treaty back in 2016. The fact that it decided to proceed with ratification is open to various interpretations. To start with, because of this ratification, Turkey is receiving $3.2 billion in loans from Germany and France for its domestic clean energy transition, a shot in the arm that came at a time of acute need for the Turkish economy. Moreover, CBAM is not necessarily unrelated to this development: the former executive Vice-President of the European Commission Frans Timmermans has argued that CBAM has forced the hand of Turkish authorities in ratifying Paris because the absence of external support (signaled through ratification) would leave the country vulnerable to face the cost of adjusting to CBAM without supporting mechanisms, including financial aid.

In July 2021, the government released its Green Deal Action Plan to help Turkey transition to a sustainable and resource-efficient economy and in response to the comprehensive changes envisaged by the European Green Deal. The government has also proceeded with the drafting and updating of important policy documents pertaining to climate change, such as the National Climate Change Action Plan (NCCAP) 2011-2023, while its 12th National Development Plan (NDP) 2024-2028 devotes an entire section to discussing the country's transformation towards green and digital change as well as environmental sustainability. Furthermore, Turkey has announced its "Net-Zero" and green development objectives for the year 2053, while the country's

Nationally Determined Contribution (NDC) in the Paris Agreement context calls for a 41 percent cut in CO2 emissions by 2030 compared to the reference year 2012. The 2053 decarbonization objective is an ambitious goal, among the most ambitious ones that emerging market economies have pledged to in recent years. Further, the government has sought to underline its commitment to it with various policy initiatives in a noticeably brief period. The government aims to scale-up solar energy to 52.9 gigawatts (GW) by 2035 from 9.5 GW in 2022 and has signed an agreement with the World Bank worth $1 billion to expand its solar energy capacity and a pilot program to store batteries.

*The fact that Turkey relies on energy imports to fuel its economic model means that this dependence enhances the country's vulnerability to global price fluctuations and geopolitical tensions, as highlighted by the wars in Ukraine and the Middle East.*

It is not surprising that successive programs aim at the energy sector in the context of the decarbonization objective. The energy sector is the country's single largest contributor to greenhouse gas (GHG) emissions, as it accounts for approximately 75% of the nation's total emissions. The fact that Turkey relies on energy imports to fuel its economic model means that this dependence enhances the country's vulnerability to global price fluctuations and geopolitical tensions, as highlighted by the wars in Ukraine and the Middle East. In that sense then, switching to green forms of energy to fuel economic growth in line with the government's ambitions is much more than a sensible policy choice; it should be seen in the context of the country's larger foreign policy objectives and in particular its decision to decouple its growth from the preferences and choices of its largest raw minerals partners.

Private sector preparedness for climate change and rapid decarbonization, however, is uneven in Turkey. According to the World Bank's 2022 Country Climate and Development Report, although larger companies are much better prepared, and more eager to invest in policies that mitigate against climate changes, compared to SMEs, structural preparations to mitigate climate-related risks remain at an early stage of development. Although Turkish firms tend to be sophisticated, and large conglomerates are fully integrated in European and global value chains, they are unprepared to face the decarbonization challenge. Very few firms, about 5 percent, monitor issues pertaining to sustainability at a managerial level, and although most firms monitor their energy consumption regularly (due to pricing concerns) $CO_2$ emissions are only monitored by 2 percent of surveyed companies. In terms of firms' orientation, the same study revealed that export-oriented firms are a lot more focused on climate-change related adaptations compared to companies focused on the domestic market. This is the natural result of enhanced awareness that the competitive export sector obtains of international developments, and in particular the way in which EU laws and requirements necessitate policy adjustments to meet contemporary needs. Other characteristics of firms that appear ready to adapt their practices to the climate challenge and enhance their sustainability footprint are those that are more inclined towards innovation and higher R&D expenditure, as well as manufacturing companies.

Beyond the role that the private sector can play, however, political variables compound the challenge Turkey faces. To start with, the government's environmental record is far from stellar and raises doubts as to the longevity of its commitment to the green transition. To illustrate, a Climate Transparency report asserts that Turkey intends to increase power generation by use of domestic goal, a target that stands in contrast to its Green Economy targets. More generally, the economic model of the last two decades, fundamentally premised on a carbon-intensive extraction of resources, is not questioned; carbon emissions shot up by 138% between 1990 and 2020, overtaking those of industrialized nations such as France or Italy. The Canal Istanbul waterway project, propagated by the government, is well-known primarily because of the environmental costs it is very likely to entail.

Issues such as the Canal Istanbul project offer a golden opportunity to opposition parties to raise the profile of environmental issues and gain electoral benefits. This is because environmental concerns are increasing in Turkey, especially among urban young voters in large metropoles such as Istanbul and Ankara. After all, the Gezi Park protests of 2013 were triggered by a heterogeneous coalition of activists centered on the need to protect one of the few remaining green spaces of Istanbul. This is one of the reasons behind the promise aired by the opposition presidential candidate and former CHP leader Kilicdaroglu to set up an Environment Ministry in the runup to the 2023 election. Nevertheless, the opposition has yet to articulate a growth plan different from the government's, and the CBAM issue has not entered its vocabulary as of now. Its important gains in the 2024 local elections have been the result of various factors, but concern with the country's environmental record and ability to implement a green transformation has not been one of them.

Finally, the overall political environment within which this transition is meant to take place matters as well. Relations between the EU and Turkey remain transactional, and premised on a rather narrow, interest-based approach that caters to short-term expediency and to the detriment of long-term thinking. What is more, Turkey expand and diversifies its political, trade and economic relations with states such as China, which raises doubts as to its smooth cooperation with the EU on this important policy area. To illustrate, the recent announcement that the world's largest electric vehicle (EV) manufacturer, the Chinese firm BYD, will build a $1 billion production plant in Manisa, precisely at a time when the EU is raising tariffs on Chinese EV imports, illustrates that the issue entails an important geo-economic dimension that sets EU interests at the opposite end of Turkey's ambitions.

*Turkey and the CBAM*

*Most studies suggest a net loss for Turkey and its economy as a result of CBAM.*

According to a recent study on the effects of CBAM, the products subject to the CBAM account for approximately 10.5% of Turkey's total exports to the EU, and are likely to increase costs in specific sectors, such as electricity, cement, and the fertilizer sector. Moreover, iron steel, aluminum and cement are three sectors in which Turkey's exports to the EU are larger than those of other non-EU exporters. The publication of the Commission's plans pertaining to CBAM has led to a flurry of reactions in Turkey, including econometric studies as to its impact, discussed below.

Turkey's country position on the CBAM was published soon after the Commission publicized the plan and preceded the set of measures linked to the green transition highlighted above. The Turkish government emphasized the obstacles that EU-Turkey trade would face because of the CBAM, in line with pre-existing commitments by both sides. It also stressed that the Customs Union (CU) between the two sides ought not to suffer any negative consequences resulting from CBAM, mindful of the benefits that CU is associated with for both parties and in line with principles of fairness and reciprocity. Turkey's Green Deal Action Plan aimed to model the impacts of CBAM on Turkey's energy-intensive and resource-intensive sectors through scenario-based analyses, identifying sector-specific actions. It also included a discussion on carbon pricing, not least due to the introduction of the CBAM, and underlined the need for a monitoring mechanism to be set up to take stock of the rise of industrial GHG.

A study prepared by the Turkish Industrialists Association (TÜSİAD) calculated that the annual average cost for Turkey would stand at 1.1 to 1.8 billion Euros, depending on the final certificate price per ton of $CO_2$ introduced through the CBAM. In another study of the European Roundtable on Climate Change and Sustainable Transition (ERCST) in

2021, it was estimated that an additional amount of €399 Million could be incurred by 2026 due to direct emissions, and the price would be even higher, namely €776 Million, if Scope 2(indirect emissions) are calculated as well. In a business as usual scenario with no change, a further study on the net economic result of the Green Deal for the Turkish economy estimated that, absent of change, Turkey may incur losses of 2.7% to 3.6% of GDP by 2030.

Most studies suggest a net loss for Turkey and its economy as a result of CBAM. However, a few important qualifications are in order. First, CBAM affects only a small portion of the country's economic interactions with the EU, given that few Turkish industries are highly emissions-intensive and highly exposed to trade with the EU member states at the same time; essentially, these include cement, aluminum and iron and steel, which sends a large portion of total production to the EU for export. As has been reported, the EU absorbs close to half of all of Turkey's exports, yet at the moment only about 4 percent of those are covered by the CBAM. Overall, the business-as-usual, baseline scenario entails costs for the Turkish economy, which may be sizable in specific sectors, without however hurting the overall competitiveness of the Turkish export industry in its dealing with the EU member states, at least during the CBAM's initial phase.

*The Opportunities*

Apart from challenges, however, CBAM and the green transformation also entails opportunities, some of which offer an invitation for the kind of structural change in the Turkish economy that has proven elusive in the past.

*If Turkey were to implement domestic carbon pricing measures this would incentivize the reduction in greenhouse has emissions in the country and at the same time reduce the costs faced by importers.*

Turkey's comparative advantage is more aligned with the green products necessary for the green economy. While Turkey lags comparator countries in terms of the overall complexity of its exports (ranking 100th of 231 countries on the Economic Complexity Index), its competitiveness in green technologies and products with environmental benefits is comparably higher (ranking 26th on the Green Complexity Index, or GCI). Many of the products necessary for the green transition are also technologically sophisticated and therefore associated with greater knowledge spillovers. Turkey's potential to diversify into green, technologically sophisticated products is also excellent. Ranked 6th in Green Complexity Potential (GCP) over the 2018-2023 period, Turkey has made steady gains since 1995–99, when it ranked 25th, suggesting it is well placed to develop competitiveness in additional green complex products. The country is already competitive in some segments of green value chains—such as wind turbines and electric vehicles—that are set to see significant demand uplift in the next 10 years. The rise in market share for EVs, for instance, is projected to continue over the medium term and Turkey stands to gain from this development, as well as the range of sub—components necessary to fuel energy through wind (wind turbine components and hubs). A broad horizontal policy agenda to help Turkey seize these opportunities should focus on strengthening capabilities and the enabling environment to participate in global value chains, though public sector investment in hydrogen technology and attracting private sector capital.

Turkiye can also use the Green Deal, as well as CBAM, to accelerate its decarbonization startegy by making strategic use of the emissions tradign system. For instance, the number of CBAM certificates to be surrendered can be reduced if the product is subject to a carbon price in the country of origin. If Turkey were to implement domestic carbon pricing measures this would incentivize the reduction in greenhouse has emissions in the country and at the same time reduce the costs faced by importers. The study by

Acar et al. demonstrated that GDP will *increase* by 1 percent in 2032 if Turkey implements an ETS where the carbon price is 50 EUR per ton of $CO_2$ emission. By introducing an economic cost, the CBAM is also set to affect the absolute volume of Turkish exports to the EU.

In terms of absolute national GHG emissions, under the modelled CBAM scenarios, total GHG emissions are set to decline by 2 and 3 percent at CBAM certificate prices of EUR 75/t$CO_2$e and EUR 100/t$CO_2$e, respectively, by 2032. It has been shown, however, that Turkey could achieve a cut in GHG if it were to introduce a domestic carbon price that mirrors the ETS. This would undoubtedly involve some costs, especially during the early phase of the new scheme and as exporters attempt to adjust to the new reality. On the other hand, a Turkish version of the ETS would over time convince all sorts of firms that a low carbon pathway to growth is both possible and profitable, which would then lead to the realization of the decarbonization goal set for 2053. In that sense, then, the introduction of the CBAM could assist state authorities and the private sector in adopting a policy package that would accelerate progress towards decarbonization and reap the benefits of change through green investments and products. The cost incurred through CBAM could then be offset through the development and utilization of new markets, which are already expanding and seek ways to growth in hospitable policy environments.

*…a Turkish version of the ETS would over time convince all sorts of firms that a low carbon pathway to growth is both possible and profitable, which would then lead to the realization of the decarbonization goal set for 2053.*

## Conclusion

Despite the recent backlash against some of the EU's green initiatives, a series of policies and measures pertaining to the European Green Deal will have a decisive impact on the EU economy as well as those of the Union's major trading partners. Turkey is one of these economies (others being the likes of China, Russia, and Ukraine), and is directly affected by the introduction of the EU's CBAM due to its elevated level of interaction with the Union economy. Moreover, while European economies are projected to cope better with the introduction of CBAM, the same is less true for emerging market economies. As a major EU trade partner and a carbon-intensive economy, Turkey will face rising costs because of the implementation of the mechanism. Although the immediate effects of the CBAM appear concentrated in specific sectors, such as aluminum, iron, and steel, the wider repercussions of the new policy could adversely affect growth and employment in the medium to long run. In that sense, the CBAM introduces material risks to the Turkish economy, particularly given the inadequate preparation of most of the private sector in realizing a transition to a carbon-neutral pattern of growth, suggesting that both the government and industry need to consider taking adequate actions to manage this exposure accordingly. At the same time, political variables complicate the picture still further: relations between Ankara and Brussels remain largely frozen and the economic model premised on carbon intensity is not seriously questioned by the government or opposition parties. Finally, Turkey's investment diversification towards countries sch as China suggests that geoeconomic factors are likely to hinder EU-Turkey collaboration on this matter.

Given the scale of the challenge, working out an adequate response and implementing appropriate measures is important. Therein lies the opportunity for the Turkish economy, discussed earlier in this paper. To start with, one of the policy's most distinguishing features is the fact that the CBAM deducts the existing carbon price in the country of origin and allows for a domestic carbon price to be deducted from the CBAM charges. This then means that it could potentially encourage others to adopt similar mechanisms of pricing carbon. The degree to which the new mechanism will be

successful will also determine whether other states will go down the same route, and that decision is linked to Turkey's decarbonization goal.

By implementing a domestic Emissions Trading System, Turkey could internalize costs as ETS revenues instead of sending the resources to the EU. Introducing a type of ETS could then be used as something more than a mechanism to boost domestic revenues: it could be the start of a reform process aimed at a sustainable, decarbonized economy in line with the 2053 goal. Nonetheless, such a policy will not happen by default: it requires bold decision-making by way of rapidly increasing investments in hydrogen technology and reducing, before phasing out, heavily inefficient fossil fuel subsidies.

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