

CHANNELS OF COOPERATION BETWEEN THE EU AND TURKEY ON GREEN TRANSFORMATION

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Research Article***

Abstract

This paper demonstrates the potential channels of cooperation between the EU and Turkey on green transformation. The European Green Deal (EGD) coherently brings together the existing regulatory frameworks. Moreover, EGD introduces measures such as the Carbon Border Adjustment Mechanism and extends the regulations under the Circular Economy Action Plan. These regulations will affect not only firms in the EU but also all non-EU trade partners of the EU. Adapting to the EGD is, hence, crucial for minimizing the potential costs on the Turkish exporters. In response to the EGD, Turkey prepared a European Green Deal Action Plan in July 2021 consisting of 81 targets under 9 themes. This paper argues that cooperation through the relevant decentralized EU agencies would help to revitalize the EU-Turkey relations.

Keywords: *European Green Deal; European Green Deal Action Plan; EU-TR Relations; Decentralized EU Agencies*

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AB ve Türkiye Arasında Yeşil Dönüşüm için İşbirliği Kanalları

Öz

Bu makalenin yeşil dönüşüm sürecinde AB ve Türkiye arasında işbirliğinin hangi potansiyel kanallar üzerinden geliştirilebileceğini ortaya koymaktır. Avrupa Yeşil Mutabakatı (AYM) var olan düzenlemeleri birbiriyle uyumlu bir biçimde toplulaştırmıştır. Dahası, AYM Sınırdaki Karbon Düzenlemesi gibi yeni mekanizmalar tasarlamış ve Döngüsel Ekonomi Eylem Planı'ndaki düzenlemeleri genişletmiştir. Bu düzenlemeler sadece AB firmalarını değil, AB ile ticari ilişkide bulunan tüm AB-dışı firmaları da etkileyecektir. Dolayısıyla AYM'ye uyum, Türk ihracatçıların karşılaşılabileceği potansiyel maliyetleri düşürmek için önemlidir. AYM'ye yanıt olarak Türkiye, Temmuz 2021'de 9 tema altında 81 politika eylemi içeren Avrupa Yeşil Mutabakatı Eylem Planı'nı açıklamıştır. Bu çalışma konuyla ilgili AB adem-i merkezi ajansları üzerinden kurulacak işbirliklerinin AB-Türkiye ilişkilerini yeniden canlandırabileceğini savunmaktadır.

Anahtar Kelimeler: *Avrupa Yeşil Mutabakatı; Avrupa Yeşil Mutabakatı Eylem Planı; AB-Türkiye İlişkileri; Adem-i Merkezi AB Ajansları*

Introduction

The European Commission released its communication on the European Green Deal (EGD) as of December 2019 and put its objective of transforming the Union by prioritizing climate change and environmental concerns in policy-making. The scope of the transformation that the EU foresees under the EGD requires many strategic regulations in different sectors, including but not limited to manufacturing, transportation, construction, packaging, and data protection. It should be noted that EGD is not only an “environmental strategy” put forward by the European Commission but it is rather an approach to design a new international trade order and a new division of labour, which are of high importance to Turkey.

EU member states aim at reaching a climate-neutral stance by 2050 under the EGD. To serve this aim, the new growth strategy prioritizes energy and raw material productivity as well as renewable energy sources. It is based on the principles of re-manufacturing and circular economy, designed to have more effective utilization of natural resources while gradually reducing the consumption of fossil fuel-based energy.

The European Commission sees effective carbon pricing throughout the whole economy as a leading prerequisite for reaching the climate-related

goals. In an attempt to mitigate “carbon leakage”¹ from the Union, the Commission works on a new system that includes new instruments such as the Carbon Border Adjustment Mechanism (CBAM)².

Following the announcement of the EGD and the accompanying CBAM and feeling the growing concerns and pressures from the private sector, the Turkish government, coordinated mainly by the Ministry of Trade, started to take active climate policy action by the end of 2020. Within a very short period of time, Turkey announced an action plan to adapt to the EGD, ratified the Paris Agreement in the parliament, and pledged to be carbon-neutral by 2053 at the Glasgow COP26 Summit.

The aim of this study is to portray possible policy areas and platforms through which EU-Turkey cooperation could be achieved and be valuable for both sides. The potentials of such cooperation in regards to the climate and green agenda are explored with a focus on available policy tools and platforms.

The organization of the paper is as follows. Section 2 outlines the motivation and the background for this research summarizing the findings of the limited literature on the issue. Section 3 presents the data and the methodology of the study. Section 4 presents the results and Section 5 concludes.

I. Background and Related Literature

The announcement of the EGD by the European Commission attracted wide attention both from state officials and particularly from the Turkish business world given the close economic relationships between the two trade partners EU and Turkey.³ The possible transmission channels and costs of the EGD for the Turkish economy have been first analysed in a study commissioned by TUSIAD in the fall of 2020⁴. The report indicated the following two elements which could negatively affect Turkish exports to the EU market: (i) *The Carbon Border Adjustment Mechanism (CBAM)*, and

¹ Which refers to a situation where production in the energy and trade intense sectors flees from carbon regulated regions to unregulated regions leading to underperforming production, employment and greenhouse gas emission target.

² Aşıcı (2022) summarizes the main pillars of the CBAM which will be implemented as of 2023.

³ Almost half of Turkish exports are sold in the EU market.

⁴ TUSIAD, Ekonomik Göstergeler., 2020.

(ii) *The Circular Economy Action Plan (CEAP)* of the EGD. The TUSIAD report measured the potential costs of *CBAM* over different sectors in Turkey as varying between 1,1 to 1,8 billion Euros annually, depending on a *CBAM* certificate price of 30 and 50 Euros per ton of CO₂. The report also calculated the shadow tax rates.⁵ A striking finding is that 13-22% tax rates which would be faced by the *non-metallic minerals sector*⁶ could make the EU market unprofitable for the Turkish cement producers. Payments at the EU border under *CBAM* will start in 2026 in the following five basic commodities: *Cement, Aluminium, Iron-Steel, Fertilizers* and *Electricity*. Turkey's market shares in iron-steel, aluminium and cement in the EU market are higher than those of most of its non-EU competitors⁷, which could explain the emergency sentiment aroused (see Figure 1).

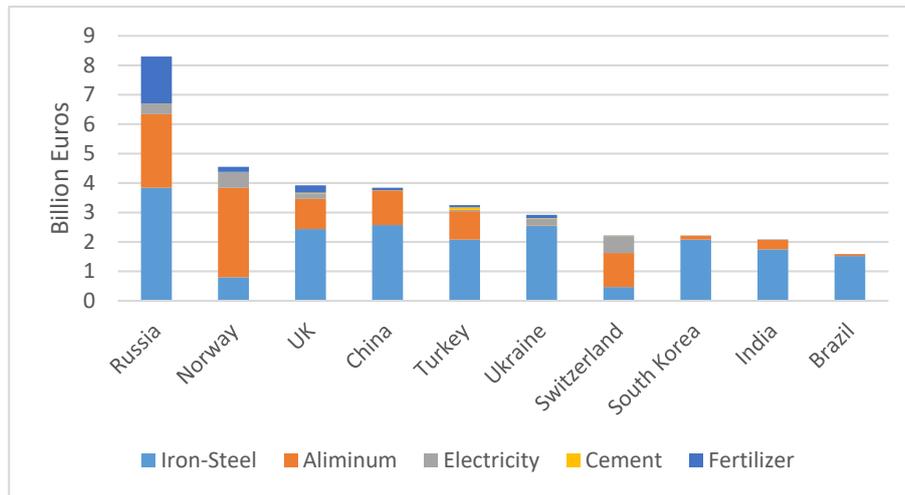


Figure 1. Top-10 Non-EU CBAM Product Exporters to the EU27 Market (2015-2020 average, billion Euro)

Source: Eurostat

As compared to *CBAM*, relatively little research on the potential impacts of *CEAP* on the Turkish manufacturing sectors such as textiles, chemicals, electronics, white-goods, packaging, and battery sectors has been

⁵ *CBAM* costs as a share of EU export revenues.

⁶ which includes *CBAM*-covered cement.

⁷ UNCTAD, A European Union Carbon Border., 2021.

done given the methodological complexities. The sense of urgency created by CEAP is lower than that created by CBAM since most of CEAP regulations are older than CBAM⁸, and Turkish exporters in these sectors have already undertaken a certain level of transformation to be able to protect their shares in the EU market.⁹ Yet, it does not automatically imply that Turkish exporters are ready to face CEAP since it introduces new regulations such as a minimum rate of recycled fibres in the apparel produced. For material and energy-efficiency, there are steps to be taken both at the company and at the state level.

In addition to the EGD-related risks, another threat that increases the urgency of green transformation of the Turkish economy is the *corporate sustainability due diligence* directive proposal adopted by the EU commission in February 2022, which will require EU and non-EU companies operating in the EU to report human rights and environmental abuses along their direct supply chains¹⁰, the proposal aims to extend the implementation to the EU. To be able to keep their existing business contacts with EU companies, Turkish SMEs will feel the need to transform their production processes and human resource management.

CBAM and CEAP as part of the European Green Deal, as well as the corporate sustainability due diligence proposal are the three layers through which effects of the green transformation will be transmitted to the Turkish economy. Noting the similar developments in other export markets of Turkey¹¹, it could be argued that a green transformation of the Turkish economy would be a rational choice to decrease the associated economic and social risks. The EU's experience after numerous years of similar transformations with regards to the energy sector, material efficiency and decarbonisation could help Turkey in adopting similar regulations.

On the bureaucratic front, the EGD and its implementation have been closely watched from the very beginning by Turkey. A working group

⁸ e.g. Eco-design and Energy Labelling directives covered under CEAP go back to 2009.

⁹ (e.g. Eco-design requirements for large electrical goods have already been met.

¹⁰ EU Commission, 2022). While a number of EU member states have already introduced national rules (i.e. German due diligence law will go into effect in 2023 for roughly 600 large companies with 3,000 or more employees, and in 2024 for another 3,000 companies with 1,000 or more employees.

“DW”, Retrieved on April 16, 2022. <https://www.dw.com/en/german-bundestag-passes-new-law-on-supply-chain-ethics/a-57855174>

¹¹ Ahmet Atıl Aşıcı, Türkiye Küresel İklim., 2021.

consisting of several Turkish ministries was formed in February 2020 under the coordination of the Ministry of Trade. Following the meetings with different stakeholders (mainly the business community), The European Green Deal Action Plan (EGDAP) of Turkey was announced in July 2021.¹²

While EGDAP addresses most of the problematic areas, and foresees a close cooperation with the EU, the current status of EU-Turkey relations is far from promising. The Turkish accession negotiations with the EU dates back to 2005. Yet, it has been highly volatile¹³. With the announcement of the EGD and the induced need of Turkey to adapt to it, establishing cooperation over green transformation can be seen as a new window of opportunity for enhancing stalled and frozen relations with the EU. Taking action to adapt to a green transition with the EGD would be in favour of third countries, such as Turkey, that have trade relations with the EU. The economic structure that will be reshaped with the green transformation will eventually turn into a global practice¹⁴. While CBAM and CEAP regulations might pose a threat to Turkey, which makes nearly half of its foreign trade with the EU, it also opens the door to new opportunities, given the urgency of taking action in the climate field and the spread of steps taken in this regard throughout the world.¹⁵

II. Data and Methodology

The analysis of the paper is based on the matching of the Turkish EGDAP items with the EGD's policy areas and the relevant EU decentralized agencies.

A. EGD Policy Areas and the Turkish EGDAP

EGD offers an opportunity to cooperate under the following major policy areas:

- GHG Emissions, Clean Energy and CBAM
- Sustainable Industry and Circular Economy
- Sustainable Agriculture

¹² Ministry of Trade, 2021.

¹³ For the milestones of the EU-TR relations see Müftüler-Baç (2015).

¹⁴ Kübra Ecer et al. Avrupa Yeşil Mutabakatı., 2021.

¹⁵ TUSIAD, 2020; STM ThinkTech, 2021.

- Sustainable Mobility
- Green Finance/EU-Turkey Cooperation and Capacity Building

Turkish EGDAP, on the other hand, contains 81 actions and 32 targets under 9 themes that are listed below:

1. Carbon Border Adjustment
2. Clean, Affordable and Secure Energy Supply
3. Fight against Climate Change
4. Green and Circular Economy
5. Green Finance
6. Sustainable Agriculture
7. Sustainable Smart Mobility
8. Diplomacy
9. Informative and Educational Activities

Table 1 presents the list of actions under these 9 themes.

Table 1. European Green Deal Action Plan (EGDAP) of the Ministry of Trade

Areas	Code	Actions
1. Carbon Border Adjustment	CBA.1	Analyzing the impacts on energy and material intensive sectors
	CBA.2	Identifying the sectoral decarbonization road maps
	CBA.3	Instituting a carbon-pricing mechanism
	CBA.4	Analyzing sectoral carbon costs at the EU Border and developing a support mechanism to Turkish exporters
	CBA.5	Designing an appropriate system to monitor GHG emissions of the manufacturing industry
	CBA.6	Giving technical assistance on reporting aligned with the methodology and standards determined by the EU
2. Green and Circular Economy	GCE.1	Analyzing the impacts on and needs of the sectors that are vulnerable to the circular economy action plan of the EU
	GCE.2	Preparing a Circular Economy Action Plan to adapt to the EU's Circular Economy Action Plan
	GCE.3	Completing technical and bureaucratic formalities for Green Organized Industrial Zones and Green Manufacturing Zone Certification System
	GCE.4	Supporting sectoral R&D in designing technological road maps
	GCE.5	Instituting a National Life Cycle Assessment Platform and Database

	GCE.6	Strengthening the regulatory framework to help adapting to the Sustainable Product, EU Chemicals, Eco-Design and Energy Labelling Directives
	GCE.7	Preparing sectoral informative programs about the Sustainable Product Directives
	GCE.8	Analyzing and monitoring the hazardous chemicals in fresh water sources
	GCE.9	Preparing a clean production directive in leather and textiles sectors; preparing informative programs
	GCE.10	Preparing an action plan and implementation calendar to adapt to the EU's Integrated Pollution Prevention and Control Directive
	GCE.11	Preparing a Sustainable Consumption and Production Action Plan
	GCE.12	Supporting waste water treatment and re-use
	GCE.13	Preparing a national master plan for Water Re-use
	GCE.14	Preparing a sectoral water footprint guide in accordance with the Sectoral Water Allocation Plan
	GCE.15	Conducting research on the impact of IT on governing and monitoring water resource management
	GCE.16	Popularising the Turkish Eco Labelling System, and looking for further collaboration opportunities with the EU
	GCE.17	Preparing informative programs to the SMEs on Eco Labelling and Waste Management
	GCE.18	Conducting research on material efficiency on the 26 Development Agency regions
	GCE.19	Supporting the use of IPA and international finance for the decarbonization and efficiency projects
3. Green Finance	GF.1	Revising the National Incentive System in accordance with the EU regulation
	GF.2	Developing a National Energy Efficiency Finance Mechanism
	GF.3	Working to strengthen the green finance ecosystem in Turkey
	GF.4	Preparing a directive to identify the sustainability of investments in accordance with the EU and international organizations' taxonomies
	GF.5	Completing the Sustainable Bond Framework
	GF.6	Preparing Green Bond and Green Sukuk Guides
	GF.7	Preparing a road map for sustainable banking
	GF.8	Conducting diplomatic and technical studies to ease access to international finance for green transformation
	GF.9	Engaging in diplomatic and technical activities in reaching out to financial sources designed originally for EU member states
	GF.10	Compiling information on environment and climate related technical and financial supports offered by international organizations and the EU

4. Clean, Affordable and Secure Energy Supply	CASEP.1	Evaluating progress areas in Renewable Energy and Energy Efficiency covered by the EGD
	CASEP.2	Organizing education programs in the Organized Industrial Zones on energy efficiency
	CASEP.3	Organizing informative programs on Green Tariffs and YEK-G Certificate
	CASEP.4	Targeting the installation of 1000 MW Wind Power capacity annually till 2027 in accordance with the National Energy and Mining Policies
	CASEP.5	Preparing national strategy documents, guidelines and road maps to expand energy efficient and low-carbon heating-cooling systems
5. Sustainable Agriculture	SA.1	Working to reduce pesticides and anti-microbials in line with the EU's pesticide and anti-microbial reduction targets
	SA.2	Working to generalize biological and biotechnical struggle
	SA.3	Working to reduce fertilizers in accordance with the EU's target
	SA.4	Reaching to the EU Commission for mutual recognition of organic agriculture and adapting to the EU Organic Agriculture directive
	SA.5	Supporting greenhouse and production facilities using renewable energy
	SA.6	Conducting R&D on waste reduction and waste re-use in agricultural production
	SA.7	Working to increase awareness in preventing food waste and waste recycling
	SA.8	Organizing informative programs on the EU Farm-to-Fork and Biodiversity Strategies
6. Sustainable Smart Mobility	SSM.1	Enacting Combined Transportation and Logistic Center Directives to support the balanced growth of the transportation modalities
	SSM.2	Working to ameliorate and improve the railway infrastructure between Turkey and the EU
	SSM.3	Preparing informative programs to increase awareness on the Green Port Certificate Program
	SSM.4	Working to adapt to the efforts in turning the Mediterranean region SECA
	SSM.5	Working to support green maritime and reduce maritime related pollutions
	SSM.6	Preparing strategy development and planning programs to develop EV and charging infrastructure
	SSM.7	Monitoring the effective implementation of the "Incentivizing EV and Public Transportation in the Vehicle Flotilla Action" mentioned in the 2020-2030 Action Plan and National Smart Mobility Strategy Document
	SSM.8	Completing the regulation on the use of bicycles and shared electrical scooters; constructing bicycle and e-scooter routes/parking lots/charge units
	SSM.9	Using IPA funds to construct urban transportation projects
7. Fight against Climate Change	FCG.1	Preparing "Turkey's Fight Against the Climate Change" Report
	FCG.2	Preparing the 2023-2030 Climate Change Action Plan and 2050 Climate Change Strategy documents

	FCG.3	Evaluating Turkey's position vis a vis Paris Agreement in the view of the need of international funds
	FCG.4	Organizing R&D projects to adapt to and mitigate the effects of climate change on desertification and soil degradation
	FCG.5	Preparing adaptation measures for coasts and lakes
	FCG.6	Including the "Balancing Soil Degradation" approach in the decision-making process and updating its targets
	FCG.7	Supporting carbon stocks and research on them
	FCG.8	Organizing education programs on sustainable agricultural methods
8. Diplomacy	D.1	Developing collaboration and partnership with the EU and EU member states
	D.2	Continuing to work to prevent potential losses posed by the CBAM in the Customs Union, WTO and other international agreements
9. Informative and Educational Activities	IEA.1	Preparing education and awareness building programs to support the adaptation to the EGD

The EGDAP covers most of the EGD-regulated policy areas, yet the lack of a fossil fuel phase-out pledge and the absence of an exit date, as well as the absence of concrete actions to secure the envisaged transformation in a socially just manner, similar to the Just Transition Mechanism under the EGD, can be considered among the shortcomings of the action plan.

B. In Search for Possible Platforms: EU Decentralized Agencies

EU-Turkey relations continue at different levels. On technical issues¹⁶ decentralized EU agencies are often indicated as effective channels of cooperation between the EU and neighbouring countries.¹⁷ Kaeding and Krull¹⁸ note that Turkey and the EU have been cooperating through 18 agencies out of 34 agencies at different engagement levels.¹⁹ Table 2 lists the decentralized EU agencies which are identified as relevant to green transformation.

¹⁶ e.g. adapting to the EU directives.

¹⁷ Sandra Lavenex, *The External Face.*, 2015.

¹⁸ Michael Kaeding and Frederic Krull, *Assessing the Potential.*, 2021.

¹⁹ e.g. on a more formal and sustained bilateral agreement through the European Environment Agency, as well as on a temporary ad hoc technical arrangement through the European Chemicals Agency.

Table 2. Decentralized EU Agencies and Turkey's Level of Engagement

Official name	Abbr.	Turkey's Level of engagement
European Chemicals Agency	ECHA	Ad hoc Technical Arrangement
European Environment Agency	EEA	Bilateral Agreement
European Maritime Safety Agency	EMSA	Ad hoc Technical Arrangement
European Aviation Safety Agency	EASA	Bilateral Agreement
European Railway Agency	ERA	Ad hoc Technical Arrangement
European Training Foundation	ETF	Ad hoc Technical Arrangement
European Agency for Safety and Health at Work	EU-OSHA	Ad hoc Technical Arrangement
European Foundation for the Improvement of Living and Working Conditions	EUROFOUND	Ad hoc Technical Arrangement
European Food Safety Authority	EFSA	Ad hoc Technical Arrangement
European Fisheries Control Agency	EFCA	None so far but Potential Engagement
European Institute of Innovation and Technology	EIT	None so far but Potential Engagement

Source: Keading and Krull (2021)

These agencies can be used as channels to enhance EU-TR relations on green transformation. The following section aims to match the EGDAP policy actions with relevant agencies after summarizing the state of affairs in Turkey.

III. Results: Exploring Potential Policy Areas and Platforms for an Effective EU-TR Cooperation on Green Transformation

This section aims to portray the state of affairs in Turkey on the policy areas covered under the EGD and to match them with 80+ actions of the **Turkish EGDAP**. See Table A1 in the appendix for details.

a. On Greenhouse Gas Emissions, Clean Energy and CBAM

As of 2020, Turkey's per capita carbon dioxide (CO₂) and other greenhouse gas (GHG) emissions are approximately 6.3 tonnes, while total GHG emissions have reached 524 Mt CO₂ equivalent.²⁰ In relative terms,

²⁰ TurkStat, Greenhouse Gas., 2022.

Turkey's per capita emissions are close to the average of the world's and lower than the average of OECD countries' per capita emissions.²¹ However, Turkey is among the 10 countries with the highest increase in CO₂ emissions. While Turkey's GHG emissions were at a level of 220 million tonnes in 1990, it is observed that this figure increased by 138% cumulatively by 2020.²²

According to TurkStat data²³ in Table 3, Turkey's energy sector CO₂ emissions more than doubled between 1990 and 2020. Depending on the rise in energy demand, emissions are expected to continue to increase in the medium and long term. The energy sector is the sector that contributes most to GHG emissions with a share of 72%. According to 2019 data, the energy sector is followed by agriculture with 14%, industrial processes with 12.7%, and waste with 3.1% shares in total GHG emissions.

Table 3. Greenhouse gas emissions by sectors (CO₂ equivalent), 1990 – 2020 (Million tonnes)

Year	Total	Change compared to 1990 (%)	Energy	Industrial processes and product use	Agriculture	Waste
1990	219.6	.	139.6	22.8	46.1	11.1
2020	523.9	138.4	367.6	66.8	73.2	16.4

Source: TurkStat (2022), Greenhouse Gas Emissions Statistics, 1990 – 2020.

The most recent official document stating Turkey's national emission reduction target is the Intended Nationally Determined Contribution (INDC) document submitted to the UNFCCC Secretariat prior to the 2015 COP 21 meeting in Paris. In this plan, which is expected to be carried out during the 2012-30 period, Turkey states that it will reduce CO₂ and other GHG emissions from the expected level of 1.175 million tonnes to 929 million tonnes by 2030, with a total decrease of 21%. However, in response to growing criticisms from the civil society²⁴ and in line with the 2053 carbon-neutrality pledge in Glasgow COP26 in 2021, the Turkish government announced that it will submit a more ambitious NDC as of 2022.

²¹ World Bank, 2021.

²² TurkStat, Greenhouse Gas., 2022.

²³ TurkStat, Greenhouse Gas., 2022.

²⁴ "Climate action tracker", Retrieved at April 15, 2022. <https://climateactiontracker.org/countries/turkey/>

Currently, Turkey does not have an emissions pricing strategy via a carbon tax or an emissions trading scheme. Nevertheless, Turkey is attempting to establish the legal infrastructure for a monitoring, reporting and verification (MRV) system in harmony with the EU Emissions Trading Scheme (EU ETS) motivated by the perspective of membership to the European Union. For this purpose, Turkey published the “Regulation on the Monitoring of Greenhouse Gas Emissions” on June 25, 2012, the “Communiqué on Monitoring and Reporting of Greenhouse Gas Emissions” on July 22, 2014, and the “Communiqué on Verification of Greenhouse Gas Emissions Reports and Authorization of Verifying Bodies” on April 2, 2015. After a long period of preparations and analysis, it should be noted that initiation of its national emission trading system, preferably linked to the EU ETS, would be in Turkey’s benefit.

On the clean energy front, despite the acceleration in renewable energy development in recent years, the thermal installed power was 5,000 MW in 2018.²⁵ This was above the hydro, geothermal, wind and solar installed power in total. The strategic direction for Turkey’s energy sector still focuses on the expansion of coal-fired power generation using domestic resources. The fact that domestic coal production is mainly lignite and many of the power plants operate on hard coal implies that domestic coal production is not compatible with the energy security targets. Increasing dependence on imported coal will not only worsen current account deficits, but also deadlock the country’s energy security efforts.

While Turkey has ambitious plans for deployment of renewable energy, these are likely to be compromised by the continued existence of subsidies to coal-fired power generation and coal mining including the capacity remuneration mechanism, regional development packages with investment support and loan guarantees, and direct treasury transfers to the sector. According to a SHURA study in 2019 on energy sector subsidies, the 2018 total magnitude of non-market flows, including special energy taxes, was 8 billion USD, 3,9 billion USD of which flowed to the production and consumption of fossil fuels.

The debate over a subsidy reform is hindered by the lack of transparent data on the magnitude and impacts of these subsidies. A computable general equilibrium (CGE) modelling study conducted by Acar & Yeldan²⁶

²⁵ TEİAŞ, Türkiye Elektrik Üretim., 2020.

²⁶ Sevil Acar and Erinç Yeldan, Environmental Impacts., 2016.

investigates the effect of fiscal subsidies on coal on total CO₂ emissions and finds that elimination of these subsidies could have reduced gaseous emissions by 5,5% over the base run trajectory through 2015-2030. A report published by the Istanbul Policy Centre ²⁷ finds that the Turkish economy could be largely decarbonized within 30 years and approach the net-zero target by abandoning fossil fuels, switching to renewable energy, energy efficiency and electrification in related sectors in the early 2050s. Another report published by Europe Beyond Coal²⁸ further asserts that exiting coal by 2030 at the latest is a realistic and achievable target for Turkey if coherent policy tools such as pricing carbon and removing coal subsidies are implemented. In this respect, the coal exit plan stands out as the first and easiest step on the way to the net-zero emission target for 2053. The results of a SHURA study in 2021 address the feasibility of more than 50% renewable generation in the power sector in Turkey by 2030 and 2040, indicating a replacement of the fossil-fired plants by renewable technologies (mainly wind and solar) in case a carbon tax on emissions is levied, relatively higher subsidies on renewables are provided, and electricity demand decreases owing to efficiency improvements.

In sum, a transition to low carbon energy together with higher energy efficiency is crucial for maintaining low levels of per capita emissions and securing Turkey's contribution to global climate change mitigation.

The Turkish EGDAP contains 6 actions on adapting to the CBAM as listed in Table 1 above. Among them, *identifying sectoral decarbonisation road maps* (CBA.2); *designing an appropriate system to monitor GHG emissions of the manufacturing industry* (CBA.5) and *instituting a carbon-pricing mechanism* (CBA.3) are the actions on which a cooperation can be achieved through the **European Environment Agency** (EEA). Turkey has been in contact with the EEA in the form of a bilateral agreement. This relationship can be enhanced by transferring expertise on the design of regulations on decarbonisation of the economy, such as Turkish Emission Trading System.

The Turkish EGDAP contains 3 additional actions under the Clean, Affordable and Secure Energy Supply (CASEP) and Fight against Climate Change (FCG) themes. On *preparing national strategy documents and sectoral road maps to expand energy efficient and low-carbon heating and*

²⁷ Ümit Şahin et al., Türkiye'nin Karbonsuzlaşma Yol., 2021.

²⁸ Europe Beyond Coal, et al, Karbon Nötr Türkiye., 2021.

cooling systems (CASEP.5), Turkey and the EU could cooperate through the EEA. Although there has been no contact before, a potential cooperation could be achieved by *organizing R&D projects on desertification and soil degradation* (FCG.4) and *preparing adaptation measures for coasts and lakes* (FCG.5) through the **European Institute of Innovation and Technology** (EIT).

b. Sustainable Industry and Circular Economy

Transforming economic activity in a way to decouple it from energy and material use is necessary in order to align the Turkish industry with sustainable production and circular economy principles of the EGD. To achieve circularity, measures should be taken to address the entire life cycle of products, from design and manufacturing to consumption, repair, reuse, recycling, and bringing resources back into the economy.

Economic growth has not been decoupled from resource use, energy depletion, and environmental degradation in Turkey yet. The lack of such decoupling has been observable for a long period of time. For instance, Turkey is among the top GHG emitters of the region with rising emissions, whereas total GHG emissions of the EU have been on a decline since 1990s.²⁹

Comparing with the 2018 levels, domestic extraction of materials, including biomass, metal ores, non-metallic minerals, and fossil energy materials in Turkey has not been declining. In 2018, domestic material extraction (*DE*) reached 909 Mt, whereas it was 890 Mt in 2010. Direct material input, as a sum of *DE* and imported material input (*I*) also exceeded its 2010 level by 2018 (See Figure 2 below).

²⁹ WRI/CAIT Climate Data Explorer, 2021.

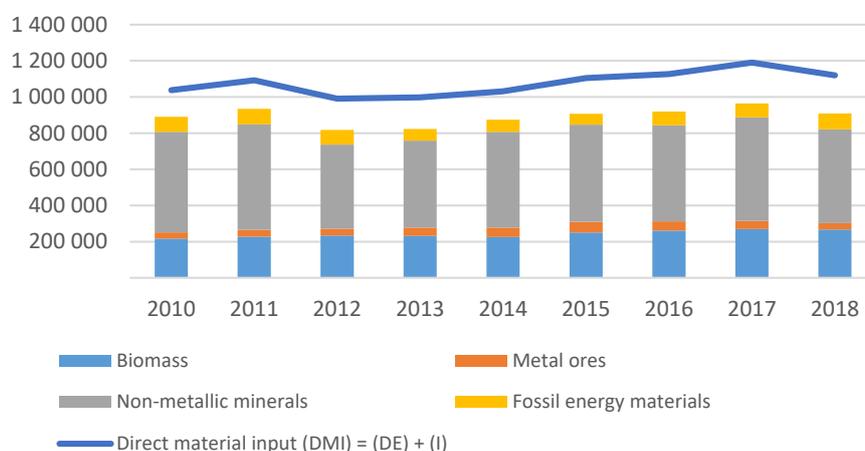


Figure 2. Domestic material extraction and direct material input in Turkey (thousand tonnes)

Source: TurkStat (2021). Material flow accounts, 2010 – 2018.

Additionally, natural resource use policies and environmental policies developed to tackle the negative externalities of economic activity are often designed and evaluated at the national level. However, these policies usually have regional impacts. Hence, a regional approach that considers the direct regional consequences of environmental policies, as well as energy policies, can help to address unsustainability problems within a country. EU-Turkey cooperation is of utmost importance with both partners being highly integrated in terms of trade and economic activity, as well as resource interdependence.

In response to the EGD, the Turkish business community initiated the **Materials Marketplace Project** under the Turkish Circular Economy Platform³⁰, which aims to develop secondary raw material marketplace in Turkey. In an aim to increase the circularity in the Turkish economy, it is designed to match waste-producer firms with waste-user firms.

The Turkish EGDAP contains around 20 actions under the Green and Circular Economy theme as listed in Table 1. On *preparing a circular economy action plan to adapt to the EU's CEAP (GCE.2), Sustainable*

³⁰ "SKD", Retrieved at April 14, 2022. <https://donguselekonmiplatformu.com/>

Product, Eco-Design, and Energy Labelling directives (GCE.6); on *adapting to the EU's Integrated Pollution Prevention and Control Directive* (GCE.10); on *waste water treatment and re-use* (GCE.12, GCE.13); and *preparing a sectoral water footprint guide* (GCE.14), a cooperation could be achieved through the **European Environment Agency** (EEA).

Moreover, on *adapting to the EU's Chemicals Directives* (GCE.6), on *monitoring hazardous chemicals in fresh water sources* (GCE.8) and on *preparing clean production directive in leather and textiles sectors* (GCE.9), there is room for cooperation through the **European Chemicals Agency** (ECHA).

One of the shortcomings of the Turkish EGDAP is the lack of actions to secure a **just transition**. Expecting that these missing aspects will be addressed in the future, cooperation is possible through the **European Agency for Safety and Health at Work** (EU-OSHA) and the **European Foundation for the Improvement of Living and Working Conditions** (EUROFUND).

c. On Sustainable Agriculture

It is a well-known fact that radical changes in the climate, such as constantly changing extreme weather conditions, drought, floods, sea level rise, and the disruption of ecosystems, are at the root of the volatility in agricultural production (including farming, animal husbandry, fisheries, etc.) not only in Turkey but also in Europe. At their reproductive and maturation stages, most crops become more sensitive to high temperatures. Monthly rainfall variability proliferates the predictability problem for agricultural productivity as feed availability and pasture conditions are highly seasonal and unpredictable depending on climatic changes.

Additionally, according to a McKinsey Global Institute³¹ report, Turkey will be among the countries that will suffer the most from water stress due to climate change, along with Iran and Mexico. This will significantly put the fertility of agricultural lands and overall food systems at risk, given expected droughts and possible unavailability of fresh water resources. The amount of water available in the country is gradually becoming unable to meet the needs of agriculture and industry as a result of the increasing demand, drought and pollution in the water collection basins. Issues such as

³¹ McKinsey Global Institute, *Climate Risk*, 2020.

inadequate planning, monitoring, evaluation and inspection, lack of a common database and information flow, and weak coordination between institutions are the main problems encountered in water resources management.

Turkish agriculture also faces other challenges apart from climate change and water constraints. One of these challenges is the sector's highly dependence on agricultural imports, either in the form of raw materials or intermediate products. Although Turkey has been known to be self-sufficient in food production, the share of its agriculture sector in total gross domestic product (GDP) has been declining for several decades. As such, the country is becoming more and more dependent on agricultural products from abroad. Turkey has gradually become import-dependent in some of its agricultural products such as meat and meat preparations, live animals and feeding stuff for animals.

Another challenge is the considerable loss in arable land as well as total utilized agricultural land despite a rapidly growing population. According to TurkStat data, the total utilized agricultural land area³² declined from 41.000 thousand hectares in 2001 to 37.762 thousand hectares in 2020. Organic crop production rose from 310 thousand tonnes in 2002 to 1.632 thousand tonnes in 2020. However, annual organic crop production is highly volatile and subject to significant declines in some years. For instance, it declined by 20% from 2019 to 2020, reflecting the decline both in the number of organic farmers and the area utilized for organic farming purposes in recent years. Moreover, the use of pesticides increased from around 45 thousand tonnes to 54 thousand tonnes between 2006 and 2020 according to data by the Ministry of Agriculture and Forestry and TurkStat, while the EU is working on specific pesticide reduction targets³³.

The Turkish EGDAP has 8 actions under the Sustainable Agriculture theme. On 4 of these actions there is room for cooperation through the **European Food Safety Authority (EFSA)**, and the **European Fisheries Control Agency (EFCA)**. While Turkey had an ad hoc technical arrangement with the EFSA in the past, there is currently no cooperation with the EFCA.

³² Consisting of the area of cereals and other crop products, including sown and fallow land, the area of vegetable gardens, the area of ornamental plants, the area of fruits, beverage and spice crops, and land under permanent meadows and pastures.

³³ "EU Commission", Retrieved at April 5, 2022. https://ec.europa.eu/food/plants/pesticides/sustainable-use-pesticides/farm-fork-targets-progress_en

On *adapting to the EU's pesticide and anti-microbial reduction targets* (SA.1); on *generalizing biological and biotechnical struggle* (SA.2), on *conducting R&D on waste reduction and waste re-use in agricultural production* (SA.6), & on *preventing food waste and waste recycling* (SA.7), Turkey could cooperate with the EU through the EFSA.

d. On Sustainable Mobility

The Turkish transport sector is the sector that uses refined petroleum products most intensively. It is expected that in the next decades, Turkey will transform its carbon-generating transport sector by increasing the share of renewable resources in its energy use, ensuring energy efficiency, accelerating the penetration of zero-emission vehicles, and developing low-carbon transportation techniques such as rail or combined transportation. In addition to land-based pollutants, studies are continuing to prevent pollution caused by maritime transportation, to be prepared for possible accidents, to intervene and to compensate for damages.

One of the commitments of the European Commission with regards to green, smart, and affordable mobility is to *make mobility fair and just for all – for instance by making the new mobility affordable and accessible in all regions and for all passengers including those with reduced mobility and making the sector more attractive for workers*. Turkey needs to align with this goal as well as the goal of *achieving transport safety and security across all modes*.

The Turkish EGDAP has 9 actions on the Sustainable Smart Mobility theme. On 4 of these actions, a cooperation through the **European Maritime Safety Agency** (EMSA), the **European Aviation Safety Agency** (EASA) and the **European Railway Agency** (ERA) could be possible. Turkey has a bilateral agreement with EASA, but only ad hoc technical arrangements with EMSA and ERA in the past.

On *green port certification* (SSM.3) and *supporting green maritime and reducing maritime related pollution* (SSM.5), Turkey can cooperate with the EU through EMSA.

On *supporting balanced growth of the transportation modalities* (SSM.1), Turkey can cooperate with the EU through EASA.

On *improving railway infrastructure between the EU and Turkey* (SSM.2), Turkey can cooperate with the EU through ERA.

e. On Green Finance, EU-Turkey Cooperation and Capacity building

Turkey is a beneficiary of the Environment and Climate Regional Accession Network, which aims to strengthen regional cooperation between the EU candidate countries and potential candidates in the fields of environment and climate action and assist their progress in the transposition and implementation of the EU environmental and climate *acquis*³⁴.

Also, as Turkey is party to the **EU Environment Partnership Programme for Accession** and the **EU Support for Climate Action** (Transition towards the low emissions and climate-resilient economy) as an Instrument for Pre-Accession Assistance (**IPA II**) beneficiary, the country received €3,533 million (not including the allocation for Cross-border Cooperation) during the IPA 2014-2020 period. The priority sectors for funding in this period were democracy & governance, civil society, rule of law & fundamental rights, home affairs, transport, as well as energy, environment and climate action. Turkey is also listed as a beneficiary of the **IPA III** for the current period 2021-2027.

Despite its continuous struggle, Turkey is listed as a developed country in climate negotiations and therefore it has not benefited from the financial resources that have been allocated to mitigate the effects of climate change. Notably, Turkey finally withdrew its demand for being listed as a developing country at the 2021 COP26 meeting. In particular, Turkey's inability to benefit from the flexibility mechanisms in the Kyoto Protocol in the past and its dependence on the transfer of high-cost technology for its transformation weakens the impact of the country's efforts to develop the necessary financial resources to reduce emissions and mitigate the negative effects of climate change. For this reason, there has been a delay in capacity building, awareness raising and the dissemination of low-cost emission reduction options in the context of carbon pricing in Turkey.

The Turkish EGDAP has 10 actions under the Green Finance theme. Apart from actions such as revising the national incentive system in accordance with the EU regulation, there is a clear interest to gain access to green climate funds. In that respect, Turkey can engage in cooperation with the financial entities of the EU such as the European Bank for Reconstruction and Development (**EBRD**) and the European Investment Bank (**EIB**) to increase Turkey's access to global green finance.

³⁴ "ECRANETWORK", Retrieved at April 3, 2022. <http://www.ecranetwork.org/>

f. Other Channels

Although not mutually exclusive, cooperation on green transformation can be enhanced via joining the **industrial alliances** created by the EU as well. Industrial alliances are expected to play important roles in achieving key EU policy objectives through joint action by all interested partners (EU countries, regions, industry, financial institutions, private investors, innovation actors, academia, research institutes, civil society, trade unions, and others) along the value chain. The five EU industrial alliances, which are open for Turkish participants, are listed as follows³⁵:

1. European Raw Materials Alliance (500+ participants; 6 from Turkey)
2. European Clean Hydrogen Alliance (1700+ participants; 5 from Turkey)
3. European Battery Alliance (700+ participants; 1 from Turkey)
4. Circular Plastic Alliance (300+ participants; none from Turkey)
5. Industrial Alliance on Processors and Semiconductor Technologies (none from Turkey)

Relevant Turkish ministries can encourage Turkish stakeholders (companies, research institutes, etc.) to engage in these alliances.

Conclusion

The European Green Deal is at the centre of the European policy agenda for the coming decades with the goal of reducing the EU's net greenhouse gas emissions by at least 55% by 2030, becoming the world's first climate-neutral continent by 2050 and decoupling economic growth from resource use, while ensuring a secure and just socio-economic transformation for its citizens.

Consequently, the green agenda will also shape relations with neighbouring and partner countries, especially with candidate and potential candidate countries. Similar to the Green Agenda for the Western Balkans, the Green Deal can play a crucial role in EU-Turkey relations.

³⁵ "EU Commission", Retrieved at April 2, 2022. https://ec.europa.eu/growth/industry/strategy/industrial-alliances_en

Active climate action is both in the EU's and Turkey's interest and the EU's experience on climate-friendly transformation constitutes a good example and offers valuable best practices for other countries, including for Turkey. The successful initiation and maturation of the EGD, and the popular support behind it show clearly that a green transformation of an economy cannot be achieved without the effective governance of the process which should secure the participation of all related stakeholders, i.e. trade unions, business chambers, consumer rights organisations in decision-making.

Achieving climate neutrality by 2050 in the EU and by 2053 in Turkey will necessitate that the two trade partners as well as all the relevant actors within the European and Turkish economies and society will play a role. The uplifted ambitions for climate mitigation on both sides have the potential to move the EU and Turkey to the grounds of cooperation for climate neutrality by 2050s.

The current study aims to explore the potentials of an EU-Turkey climate cooperation and green agenda, with a specific focus on highlighting the urgency of joint EU-Turkey cooperation, the current state of play, as well as identifying potential policy areas and platforms for an effective EU-TR cooperation on green transformation.

Five priority fields as high potential areas for cooperation identified can be listed as follows: (1) clean energy transformation and carbon pricing; (2) sustainable industry and circular economy; (3) sustainable agriculture; (4) sustainable mobility; (5) access to green finance and capacity building.

This cooperation can be achieved through relevant decentralized EU agencies and via engagement in the EU's industrial alliances. To guarantee social acceptance and broad support for the green transformation, an inclusive approach of stakeholder engagement is key. The design and modes of implementation of such an approach provide room for further research.

References

- Acar, Sevil and Yeldan, Alp Erinç. “Environmental impacts of coal subsidies in Turkey: A general equilibrium analysis”. *Energy Policy* 90 (2016), 1–15.
- Aşıcı, Ahmet Atıl. “Türkiye Küresel İklim Rejimi’ne Neden Uyum Sağlamalı?”, TESEV Değerlendirme Notları 2021/4, (2021), Istanbul Turkey.
- Aşıcı, Ahmet Atıl. “Sınırdaki Karbon Düzenleme Mekanizması İşleyişi ve Riskli Ürün Analizi”, Yeşil İz Teknik Not 1 (2022). <https://yesiliz.khas.edu.tr/arastirmalar/teknik-not-1-sinirda-karbon-duzenleme-mekanizmasi-isleyisi-ve-riskli-urun-analizi-15>
- Ecer, Kübra, Güner, Oğuz and Çetin, Murat. “Avrupa yeşil mutabakatı ve Türkiye ekonomisinin uyum politikaları”. *İşletme ve İktisat Çalışmaları Dergisi*, 9(2), (2021), 125-144.
- EU Commission. Just and sustainable economy: Commission lays down rules for companies to respect human rights and environment in global value chains. Press Release. (2022), [retrieved from https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1145]
- Europe Beyond Coal, CAN Europe, SEFiA, WWF-Turkey, Greenpeace Mediterranean, İklim Değişikliği Politika ve Araştırma Derneği, and 350.org, Karbon Nötr Türkiye Yolunda İlk Adım: Kömürden Çıkış 2030, (2021), URL: <https://sefia.org/wp-content/uploads/2020/09/komurden-cikis-2030-min.pdf>
- Müftüler-Baç, Meltem. The Revitalization of the Turkish-European Union Relations: Old Wine in New Bottles?. IPC-Mercator Policy Brief, (2015), (Istanbul: Istanbul Policy Center)
- Kaeding, Michael and Krull, Frederic. “Assessing the Potential of EU Agencies for the Future of EU-Turkey Relations, Part I: Turkey’s Full Membership without Voting Rights in the EEA and EMCDDA”, IPC-Mercator Policy Brief, (2021), (Istanbul: Istanbul Policy Center).
- Lavenex, Sandra. “The external face of differentiated integration: third country participation in EU sectoral bodies”, *Journal of European Public Policy*, 22:6, (2015), 836-853, DOI: 10.1080/13501763.2015.1020836
- McKinsey Global Institute, Climate risk and response: Physical hazards and socioeconomic impacts, (2020), Report available at: <https://www.mckinsey.com/business-functions/sustainability/our-insights/climate-risk-and-response-physical-hazards-and-socioeconomic-impacts>
- Ministry of Agriculture and Forestry, AB Entegre Uyum Stratejisi (UÇES) (2007 – 2023), (2006), Ankara.

- Ministry of Trade, European Green Deal Action Plan (EGDAP), Ministry of Trade, (2021), <https://ticaret.gov.tr/data/60f1200013b876eb28421b23/MUTABAKAT%20YE%C5%9E%C4%B0L.pdf>
- Őahin, Ümit, Osman Bülent Tör, Bora Kat, Saeed Teimourzadeh, Kemal Demirkol, Arif Künar, Ebru Voyvoda, and Erinç Yeldan. Türkiye'nin Karbonsuzlaşma Yol Haritası: 2050'de Net Sıfır. Istanbul Policy Center (2021), URL: <https://ipc.sabanciuniv.edu/Content/Images/CKeditorImages/20211103-19115588.pdf>
- STM ThinkTech, “Yeni İklim Rejimine Doğru: Avrupa Yeşil Mutabakatı ve Türkiye'ye Etkileri Üzerine Bir İnceleme”. *Trend Analizi* (2021). Available at: https://thinktech.stm.com.tr/uploads//docs/1640160571_stmyeniiklimrejiminedogru.pdf?
- TEİAŐ, Türkiye Elektrik Üretim-İletim İstatistikleri. (2020), URL: <https://www.teias.gov.tr/tr/turkiye-elektrik-uretim-iletim-istatistikleri>
- TurkStat, Greenhouse Gas Emissions Statistics, 1990 – 2020 (2022).
- TUSIAD, Ekonomik Göstergeler Merceğinden Yeni İklim Rejimi Raporu, (2020), <https://tusiad.org/tr/yayinlar/raporlar/item/10633-ekonomik-gostergeler-merceginden-yeni-i-klm-rejimi-raporu>.
- UNCTAD, A European Union Carbon Border Adjustment Mechanism: Implications for developing countries, (2021), (available at https://unctad.org/system/files/official-document/osginf2021d2_en.pdf)
- World Bank, Adjusted savings: energy depletion (% of GNI). (2021) Retrived from <https://data.worldbank.org/indicator/NY.ADJ.DNGY.GN.ZS>
- World Bank, CO2 emissions (metric tons per capita). (2021), Retrived from <https://data.worldbank.org/indicator/EN.ATM.CO2E.PC>
- WRI/CAIT Climate Data Explorer, Historic Greenhouse Gas Emissions, (2021), Retrieved from: <http://cait.wri.org/>

Appendix

Table A1. EGDAP-EGD-Agency Matching

Official name	Abbr.	Level of engagement	Related EGD Policy Area	Related EGDAP Actions
European Chemicals Agency	ECHA	Ad hoc Technical Arrangement	Sustainable Industry/REACH	GCE.6; GCE.8; GCE.9
European Environment Agency	EEA	Bilateral Agreement	CBAM/Clean Energy; Circular E./Biodiversity	CBA.2; CBA.3; CBA.5; GCE.2; GCE.10; GCE.12; GCE.13; GCE.14; CASEP.5
European Maritime Safety Agency	EMSA	Ad hoc Technical Arrangement	Sustainable Mobility; Eliminating Pollution	SSM.3; SSM.5
European Aviation Safety Agency	EASA	Bilateral Agreement	Sustainable Mobility	SSM.1
European Railway Agency	ERA	Ad hoc Technical Arrangement	Sustainable Mobility	SSM.2
European Training Foundation	ETF	Ad hoc Technical Arrangement	Just Transition	IEA.1; SA.8; GCE.7; GCE.17
European Agency for Safety and Health at Work	EU-OSHA	Ad hoc Technical Arrangement	Just Transition	
European Foundation for the Improvement of Living and Working Conditions	EUROFOUND	Ad hoc Technical Arrangement	Just Transition	
European Food Safety Authority	EFSA	Ad hoc Technical Arrangement	Farm-to-Fork	SA.1; SA.2; SA.6; SA.7
European Fisheries Control Agency	EFCA	None so far but Potential Engagement	Farm-to-Fork	
European Institute of Innovation and Technology	EIT	None so far but Potential Engagement	Clean Energy-Sustainable Industry	FCG.4, FCG.5

