

WARMING A FROZEN POLICY: CHALLENGES TO TURKEY'S CLIMATE POLITICS AFTER PARIS

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The last day of the Paris Climate Conference (COP 21) on 12 December 2015 once more revealed Turkey's difficult position in international climate negotiations. Although it was not noticed by many observers, French Minister of Foreign Affairs Laurent Fabius' rejection of the request from the chief of the Turkish delegation to hold the floor just before the Paris Agreement, which was to be announced at the beginning of the final plenary session, was an important insight for those who scrutinized Turkey's attitude during the negotiations. It was later understood that the Turkish delegation was preparing, once more, to point out its "special circumstances" when it comes to accepting, with all 195 countries as signatories, one international agreement. [1] There could hardly be a better gesture to capture Turkey's historical fixation with the climate regime. Turkey's climate change politics have been defined elsewhere as contentious, ambivalent, and deferred, but after the Paris negotiations, Turkey may be even more hesitant and puzzled because the world, not just its climate, is changing. [2] Faced with the difficulty of adapting to many new conditions, Turkey may still be trying to define itself through its old developmentalist reservations.

This article will examine challenges to Turkey's climate change politics at this inevitable turning point, the dawn of the post-Paris era. It is an issue that deserves consideration in order to understand the significance of the short transitional period that Turkey is experiencing. Like other countries, Turkey is trying to place itself in the best possible position inside the new regime, but it faces even more arduous challenges because of the country's extremely protective — even frozen — climate policies, partly due to its unfortunate categorization over the years. Diplomats now need to be more careful than ever so that Turkey's so-called "special circumstances" do not slip through their fingers, although it is not easy to explain what their real use actually is. Overprotectiveness, however, can create even more unsolvable problems.

In this article, I will first explore why climate change is a crucial issue for Turkey, on the one hand, but has been avoided by successive governments, on the other. A brief summary of advances in Turkey's climate politics, as well as some facts about its emissions and economy-energy policies, will provide insight into the reasons for what I call "frozen policy." The second part of the article will summarize the institutional framework that was created because of this approach, and why and how Turkish climate governance is so non-transparent and reticent. In this section, I will largely refer to the results of my research on the actor mapping of Turkey's climate policies in 2014. The article will conclude by explaining possible changes in international climate politics after the Paris Agreement and suggest proposals for how Turkey can adapt them accordingly.

Turkish Climate Policies in a Nutshell: The Ongoing Refrain of Mitigation Efforts

The International Panel on Climate Change (IPCC) reported that the main impacts of climate change in the Mediterranean region are related: less precipitation and the increased risk of drought. [3] Turkey is located in one of the most vulnerable regions on Earth, situated in a climate change hotspot. [4] Observed and projected impacts of climate change in Turkey are mainly related to increased temperature and reduced precipitation: increases in the intensity and duration of droughts and hot spells, as well as the retreat of mountain glaciers and reduced river flows, expansion of the regions suffering from water stress, and a decline in crop yields. [5] In addition, the sea level rise is

expected to affect large coastal areas and quite a high number of the populations in the Black Sea and Mediterranean regions. [6] Seasonal changes, more frequent hot spells, reduced precipitation, and the subsequent periods of drought are already visible in Turkey, where semi-humid and semi-dry climate conditions have become semi-dry and dry in the Aegean, Mediterranean, and Central Anatolian regions. [7] The most severe and widespread drought periods in the last 40 years were in 1971-1974, 1983-1984, 1989-1990, 1996, 2001, 2007-2008, and 2013-2014. The decline in electricity production from hydropower plants, recurring reduction in water levels in drinking water reservoirs and irrigation dams, and subsequent water scarcity in some metropolitan cities and agricultural land are among the drought-related socio-economic effects of climatic changes in Turkey. [8] Droughts, as well as warmer winters and unusually hot summers, are ultimately important for public awareness of climate change. Studies show that popular concerns and media coverage of climate change, as well as civil society movements and partly state reactions, first peaked in 2007-2008 during one of the longest and most severe warmer and dryer periods in recent years. [9]

Although Turkey's National Adaptation Strategy and Action Plan recognizes that climate change will cause temperature increases of 2.5-4 degrees Celsius all over Turkey and 5 degrees Celsius in the inland regions, as well as related socio-economic impacts, Turkey's position on international negotiations and national actions regarding mitigation and adaptation are disproportionate both to Turkey's vulnerability and its rising emissions. Turkey has increased its emissions 135.4 percent since 1990. The Turkish Statistical Institute reported that the 2016 greenhouse gas (GHG) emissions were 496,1 MtCO₂eq, while 1990 emissions were 207.8 MtCO₂eq. Per capita emissions were 6.3 tons, or 64 percent higher than 1990 levels. [10] Although Turkey is not among the top polluters in terms of either historic or current emissions, ongoing increases indicate that Turkey is a country without a foreseeable peak. Turkey's GHG emissions amount to 0.4 percent of the cumulative and about one percent of current global emissions. It is ranked 19th in total GHG emissions in the world and 81st in per capita emissions. [11] Energy production is the main source of Turkey's emissions: 72.5 percent of total GHG emissions and 85.2 percent of CO₂ emissions are attributed to the energy sector. Emissions from the energy sector have been increasing faster than in other sectors. The annual increase in energy-related emissions in 2014 was 9.4 percent, but 6.5 percent for overall emissions. The increase in energy-related emissions was also more than overall emissions, with an increase of 156 percent compared to 1990. [12] Economic growth is what fuelled most of the increase in CO₂ emissions between 1971 and 2010, while population growth was another significant driver. However, the effect of economic growth has clearly been the predominant factor since 1980. [13] A breakdown of emissions by sector shows that the major source of emissions growth in the Turkish electricity, manufacturing, and transportation sectors, which are among the top contributors to energy-related emissions, is their growing size and scale. [14] Unlike many developed and developing countries, there is no reduction in emissions intensity, and there is a constant connection between economic growth and CO₂ emissions. [15] Nevertheless, expansion of coal utilities in the energy sector has been continuing due to the new coal-fired power plants in the pipeline. These data show that the growing Turkish economy has been fossil fuel dependent.

In order to understand Turkey's hesitant climate policies, we must keep in mind, a) economic growth is primarily what fuels the rapidly growth in emissions; b) energy production has been increasing along with economic growth; c) the intensity of emissions from energy production has not changed; d) national energy policy has made coal the preferred fuel for expanding Turkey's energy production capacity; and, e) therefore, the energy-economy nexus is strongly dependent on fossil fuels, thus creating a constant rise in emissions. [16]

Turkey's position in international climate politics has been shaped against this background. The impacts of climate change on Turkey have been acknowledged, but are not perceived as urgent, and are considered to be the fault of industrialized countries and unrelated to Turkey's emissions and economic policies. Mitigation efforts are viewed as conflicting with the "realities" of developmental policies. The "realities" of Turkey's economic and energy policy have inevitably coexisted and grown together and are dependent on "cheap" and "domestic" coal and other fossil fuels although 58 percent of the total coal supply and 80 percent of all fossil fuel supply is imported, and the levelized costs of renewable energy sources are decreasing. [17] Technologies of low-carbon alternatives are also perceived as new, expensive, and imported. Therefore, the renewable alternatives to fossil fuels are viewed as unsatisfying niche developments and optional, not as a part of a shift to a low-carbon system.

On the other hand, the starting point for the official narrative was not ongoing economy-energy policies. Turkey was classified as a "developed country" in the United Nations Framework Convention of Climate Change (UNFCCC) architecture in 1992. To make a long story short, this inappropriate categorization could be defined as a result of the early post-Cold War era. All Organisation for Economic Cooperation and Development (OECD) countries and ex-Eastern Bloc countries were simply listed under Annex I of UNFCCC, namely industrialized and responsible for climate change, disregarding their GDP levels. Turkey, however, was also included in Annex II with other OECD countries as if it were rich and technologically advanced enough to provide financial and technological assistance to developing countries. In the meantime, many oil-producing countries were listed as non-Annex since they were not in the OECD, treating them as if they were not responsible for climate change and financially less capable. The latter part of this diplomatic mistake was corrected in 2001, but Turkey was still classified as an Annex I country. This status meant that Turkey was not supposed to be a country that supported developing countries anymore, but that it should assume a quantified emissions limitation and reduction obligation under the Kyoto Protocol. Turkey has also not been eligible to receive projects from Clean Development Mechanisms since it is an Annex I country, but it was eligible to get funding for capacity building from the Global Environmental Facility (GEF), which is the financial mechanism of the Convention. However, the most important part of this 24-year story has turned out to be Turkey's approach to emissions reduction, namely mitigation, not about climate finance because Turkey became a party to UNFCCC in 2004 after the Kyoto Protocol, and it did not become a party to the Protocol until 2009. This deliberate reluctance created an institutional and policy-based lock-in, and Turkey never agreed to assume an actual mitigation commitment although it finally stated a target last year.

The intended nationally determined contribution (INDC) that Turkey submitted just before the Paris Climate Conference in 2015 revealed that Turkey still did not intend to change its policies and was not willing to reduce its greenhouse gas emissions in the near future. Although Turkey signed the Paris Agreement and pledged to reduce its emissions 21 percent below the projected business-as-usual (BAU) level by 2030, experts and observers state that this target would not mean a reduction since the BAU level was unrealistically higher than possible under the 5 percent generic growth rate. While Turkey most probably will not be able to reach the official BAU level in 2030 because its actual growth rate is around 3.5 percent, some other unexpected global economic contractions could propel Turkey's current 21 percent BAU deficit above BAU levels by 2030. Since Turkey does not express its intentions regarding a peak year, emissions intensity reduction, or lowering the percentage of fossil fuels in its economic activity — and since the methodology of the BAU or how the reduction level was determined are not transparent — its INDC could be defined only as a relativistic "what if" exercise. Therefore, the real reason for Turkey's never-ending request for the recognition of its special circumstances is not only related to eligibility for mitigation effort funding,

but rather about not having a real emissions reduction target that would push the country to change its developmental policies to a low-carbon trajectory. An economic analysis shows that economic growth between 2003 and 2009 became more energy and pollution intensive compared to 1995-2002, and high-carbon economic activities related to construction, such as real estate as well as transportation were among the leading sectors.[18] Current investments like mega projects (highways, airports, Canal Istanbul, etc.) and urban transformation may make this tendency more apparent. In addition, coal has become Turkey's strategic choice for energy expansion in the future.[19] Coal accounted for one-third of Turkey's total GHG emissions in 2012, and emissions from coal-fired power plants increased by 219 percent between 1990 and 2012.[20] This percentage could increase even more because the total installed capacity of more than 70 coal-fired power plants in the pipeline corresponds to nearly 66.5 GW with almost 400 million tons of additional emissions, while current installed coal-fired power plant capacity is 15 GW.

Consequently, this may be viewed as the easiest way for Turkey to continue its commitment to its domestic lignite and imported hard coal resources. Its ongoing high carbon investments are long way from global mitigation efforts thanks to Turkey's special circumstances. It is not clear whether this old style developmentalist approach will be acceptable anymore for a growing G20 country like Turkey.

Institutional Aspects of Turkey's Climate Policies [21]

Turkey views its involvement in international climate policies as an issue of international environmental politics. In the early stages, the State Meteorological Institute was appointed to follow the negotiations, and the first ten years after the Convention were almost completely dedicated to its struggle to extricate Turkey from the annexes. [22] Only after it was excluded from Annex II and its special circumstances were noted in 2001, Turkey started to establish a national climate policy structure. But this defensive position persisted, and efforts for international recognition of Turkey's special circumstances remained the number one priority in Turkish climate politics. Turkey's special circumstances were recognized in 2010, but efforts to capitalize on this recognition, i.e. getting financial assistance and being exempt as much as possible from any mitigation commitment, continued until the Paris Conference.

Environmental ministries have been the coordinators of the Joint Committee and point of contact for the Convention. But the power and impact of the Ministry of Environment has not been as great as expected. For a long time, the Ministry of Foreign Affairs (MFA) has been the head of the Turkish delegation in the negotiations. The role of the MFA was especially important when Turkey decided to become a party to the Kyoto Protocol in 2009. Although public debate on the Kyoto Protocol between 2006 and 2008, including a parliamentary hearing and civil society campaigns, influenced Turkey's belated adoption of the Protocol, foreign political interests played a key role because of Turkey's candidacy to the UN Security Council. The MFA used this policy change in order to show its open and constructive diplomacy. The Ministry of Environment and Urbanization (MEU) began leading the negotiations only after 2014 when the deputy undersecretary of the Ministry was appointed as the chief negotiator. But the MFA still has a lot of influence. Further, departments related to climate change in many ministries and public institutions are still under the General Directorates of Foreign Affairs or even EU Departments. This shows that in many public institutions climate change is still viewed as an international issue rather than a socio-economic threat to Turkey.

Another important characteristic of the institutional background of Turkey's climate policies is the weight of the economic bureaucracy. The Ministry of Development (MoD), along with the Ministry of Energy and Natural Resources (MENR), has been representative of Turkey's defensive position on

climate policies. Conventional developmentalist policies and energy security discourse took priority over sustainability or low-carbon development in the plans and policies of these two ministries and related institutions. The conventional policy of the MoD, stated that “environmental policies should not harm development,” and was strictly implemented until the 2009 Copenhagen Climate Conference (COP 15). This policy still prevails today although the concepts of sustainable development and even low-carbon development have been mentioned in the latest documents. Additional economic bureaucracy such as the Treasury and Ministry of Finance, which are members of the Economy Coordination Committee, also played a defensive role since mitigation efforts are viewed as a burden to the budget, and because of their sceptical position on carbon pricing. MENR’s positive approach to renewable energy, on the other hand, aimed to support emissions limitation targets but could not be realized because coal became increasingly dominant in energy policies. Public institutions that are interested in adaptation to climate change, such as the Ministry of Forestry and Water Affairs and Ministry of Food, Agriculture and Livestock, may be categorized as more progressive since their roles do not directly relate to emissions. However, they are still not very proactive because of their reluctance to impose a regulatory role on the framework of a predominantly neoliberal agenda and also because the adaptation policies are permeated by developmentalism. [23] Most of the other public actors undertake similarly limited policies as stated in the National Climate Change Action Plan. These policies are mostly unquantified and without time restrictions. [24]

Turkey improved its institutional capacity after 2004 with the help of international organizations such as the UNDP, REC Turkey, and the EU. Businesses, civil society, academia, and other actors also contributed both to public awareness and policy making. But an actual multi-actor process did not take place. The Climate Change Coordination Committee was established in 2001 and included different state actors. It was later enlarged to include major business organizations after 2010, but civil society, academia, and independent experts were not included, and the Committee remained a state-business debate. Although some project-based dialogue with civil society and experts was established, policy building was limited to bureaucracy, and some input from business actors. Lack of transparency, participation, and deliberation became characteristics of the climate policy field. One of the most prominent signs of such a policy process was the non-transparent economic projections that were conducted by or for state institutions. For instance, the most important chapter, i.e. Greenhouse Gas Emission Projections, was not included in the 5th Climate Change National Communication that was submitted to the UNFCCC in 2013 and remained confidential. This secrecy is one of the primary reasons for insufficient research-based policy making in the climate change policy field in Turkey and not a lack of scientific expertise or technology. This approach could also be attributed to the unwillingness of the governments to adopt a sound mitigation policy because of the perceived contradiction to its developmentalist policies.

How Can Turkey Adapt to the New Conditions after the Paris Agreement?

The adoption of the Paris Agreement marks the beginning of a new era in the international climate regime. Turkey elected not to become a player in the last quarter of a century during the reigns of the Convention and the Kyoto Protocol. The question now is will it miss another 10-15 years of climate negotiations, or will it change its policies according to the redefined conditions. The first signs are not promising, but we are still in the beginning, and a handful of simple policy arrangements can help Turkey to catch the train.

The Paris Agreement produced several new conditions and opportunities despite its many defects. The most important difference between the Paris Agreement and the Kyoto Protocol is the decision to abandon the multilaterally negotiated binding emissions targets and instead replace these targets with a new system based on voluntary country pledges. [25] Voluntary contributions are assumed to increase political willingness. Although this change could impair effective climate action due to insufficient country pledges, it may be welcomed in Turkey because it also makes the annexes and developing-developed dichotomy almost inconsequential. [26] Under the Paris Agreement, every country can determine its own contribution, and reviewing mechanisms can be implemented according to these nationally determined emissions reduction targets. This makes the importance of Turkey's special circumstances quite outdated and singularly related to climate finance debates, which also remain controversial. This change creates an opportunity for Turkey to stop wasting its time and energy claiming special circumstances and instead concentrate on what kind of a balanced contribution it can make as an emerging country. Claiming to be a developing country makes no sense anymore under the Paris Agreements, except in the cases of the most vulnerable countries such as the least developed countries since both developed and developing nations determine their contributions themselves. Now the most important point is determining whether a country's contribution would be proportionate to its emissions increase or historical responsibility, and how scientific and transparent this decision is. The Paris Agreement's voluntary pledges do not mean that the process is not legally binding. [27] Transparency, regular reporting, and review mechanisms are important features of the Agreement.

The second difference in the Paris Agreement is the acceptance of a goal to limit "the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C" in Article 2. [28] Acceptance of such a goal makes the global carbon budget that was calculated by IPCC an official guideline for an equitable approach to mitigation efforts. One example of how Turkey could make use of this guideline in order to decide what Turkey's fair share is of the global carbon budget and emissions reduction targets on the basis of "minimum historical responsibility" and "maximum development needs" was given by Yeldan and Voyvoda. [29] According to the study, Turkey should cut its total CO₂ emissions by 2.98 billion tons relative to BAU by 2030. In order to meet its fair share and fulfil its responsibility for the 2 degrees Celsius target by 2030, Turkey should reduce its annual CO₂ emissions to its 2010 level of 340 million tons. This target means that emissions would peak around 2020. Under these circumstances, Turkey would still not have an absolute reduction target based on a certain year. Turkey should determine its emissions reduction target through a scientific projection using the global carbon budget by assuming a responsibility level and the country's development needs based on this example instead of adopting a haphazard methodology aimed at minimizing both expected costs and policy changes. If Turkey revises and strengthens its INDC with a scientific and transparent methodology based on its fair share of the global carbon budget, its efforts to become a beneficiary of climate finance mechanisms will be easier and more just.

The last major difference in the Paris Agreement is its implicit acceptance of the need to decarbonize the global economy until the second half of this century. The long-term objective of the Paris Agreement is "to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century" (Article 4). [30] Although the negotiators who wrote the Paris Agreement deliberately ignored mentioning words and concepts like decarbonization or fossil fuels, many commentators agree that this objective implies the end of the fossil fuel era in the next 40-50 years. The implications of such a tendency are already supported by evidence, such as China's peak coal and the UK's coal phase-out. [31] Turkey's ambitious coal-friendly energy policies, on the other hand, are clearly turning the country's climate policy in the opposite

direction. Given the fact that a new coal-fired power plant has a minimum of 40 years of economic life, Turkey's coal rush could create an inextricable carbon lock-in. [32] Being an active player in the Paris Agreement will help Turkey gradually break away from this path of dependency. Turkey should also observe the co-benefits of low carbon development policies, such as improving air quality, embracing new technologies, enhancing welfare benefits like employment, etc.

Consequently, a better climate policy needs political will. It also needs courage to challenge old-fashioned, low-tech, and high-carbon developmentalism. Deliberative and participatory policy building needs transparency and independent research. Many things need to be changed. Cerit Mazlum states, "Turkey tends to join environmental cooperation if participation is seen as being in its national interests. National interests in environmental cooperation are defined with reference to economic development, sovereignty over natural resources, and security." [33] Climate change is not only a matter of saving the planet but also a matter of sustaining sovereign lands in which to live and exist in the near future. In the new era after the Paris Agreement, Turkey should use this opportunity to work towards a sustainable future, better international recognition, and public health and economic benefits. National interests, too, cannot be sustained in a country and in a world without a future.

*** This paper has previously been published in Turkish Policy Quarterly, Summer 2016 issue, Vol 14, No 2, p. 117-129. It has been slightly updated.**

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Notes

[1] Turkish chief negotiator Mehmet Emin Birpınar delivered a speech during the same plenary session after the adoption of the Paris Agreement, which was announced by Laurent Fabius. The speech conveyed loyalty to Turkey's past climate governance, in which Turkey emphasized its "special circumstances," namely claiming to be a developing country while being categorized in Annex I of the United Nations Framework Convention of Climate Change (UNFCCC) together with other OECD, and developed, countries.

[2] Ethemcan Turhan, et al., "Beyond Special Circumstances: Climate Change Policy in Turkey, 1992–2015," WIREs Climate Change, Vol. 7, No. 3 (2016), p. 448–460.

[3] IPCC, "Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change" (Cambridge: Cambridge University Press, 2007)

[4] Ömer Lütfi Şen, "A Holistic View of Climate Change and Its Impacts in Turkey," (Istanbul: Istanbul Policy Center-Sabancı University-Stiftung Mercator Initiative, 2013), <http://ipc.sabanciuniv.edu/en/wp-content/uploads/2012/09/A-Holistic-View-of-Climate-Change-and-Its-Impacts-in-Turkey.pdf>

[5] Ömer Lütfi Şen (2013), p. 10-19; Met Office, "Climate Observations, Projections and Impacts: Turkey", (Devon: Met Office, 2011); Leo Meyer, "IPCC Fifth Assessment Report Synthesis Report Presentation", IPCC Outreach Event Istanbul, 10 September 2015, Bogazici University,

<http://ipcc.ch/apps/outreach/documents/301/1441858899.pdf>; Burak Şen, et al., "Projecting Climate Change, Drought Conditions and Crop Productivity in Turkey," *Climate Research*, Vol. 52 (2012), p. 175-191.

[6] K. Allenbach, et al., "Black Sea Beaches Vulnerability to Sea Level Rise," *Environmental Science & Policy*, Vol. 46 (2015), p. 95-109; Met Office (2011), p. 3.

[7] Murat Türkeş, "Spatial and Temporal Variations in Precipitation and Aridity Index Series of Turkey," in HJ Bolle (ed.), *Mediterranean Climate—Variability and Trends, Regional Climate Studies*, (Heidelberg: Springer Verlag, 2003), p. 181–213; Şen, B. (2012), p. 180-188.

[8] Ümit Şahin and Levent Kurnaz, "İklim Değişikliği ve Kuraklık," (Istanbul: Istanbul Policy Center-Sabancı University-Stiftung Mercator Initiative, 2014), http://ipc.sabanciuniv.edu/en/wp-content/uploads/2014/10/IPM_KuraklikRaporu_22.10.14_web_rev2.pdf

[9] Mehmet Ali Üzelgun and Paula Castro, "Climate Change in the Mainstream Turkish Press: Coverage Trends and Meaning Dimensions in the First Attention Cycle," *Mass Communication and Society*, Vol. 18, No. 6 (2015), p. 730-752; Ömer Lütfi Şen, "Media Coverage of Climate Change: The World Versus Turkey, (Istanbul: Istanbul Policy Center-Sabancı University-Stiftung Mercator Initiative, 2013), http://ipc.sabanciuniv.edu/en/wp-content/uploads/2013/07/Omer_Lutfi_Sen_Policy_Brief_Final.pdf; Ümit Şahin, "Türkiye'nin İklim Politikalarında Aktör Haritası," Actor Mapping of Turkey's Climate Policies (Istanbul: Istanbul Policy Center-Sabancı University-Stiftung Mercator Initiative, 2014), http://ipc.sabanciuniv.edu/wp-content/uploads/2014/12/AktorHaritasiRapor_25.11.14_web.pdf

[10] Turkish Statistical Institute, "Greenhouse Statistics, 2016" 13 April 2018, <http://www.tuik.gov.tr/PreHaberBultenleri.do?id=27675>

[11] Erinç Yeldan and Ebru Voyvoda "Low Carbon Development Pathways and Priorities for Turkey, Climate-Friendly Development in Turkey: A Macro Level Evaluation," (Istanbul: WWF-Turkey, Istanbul Policy Center, 2015), <http://ipc.sabanciuniv.edu/en/wp-content/uploads/2015/11/Low-Carbon-Report1.pdf>

[12] Turkish Statistical Institute (2016), p. ii-iv.

[13] Congrong Yao, et al., "Driving Forces of CO2 emissions in the G20 Countries: An Index Decomposition Analysis from 1971 to 2010," *Ecological Informatics*, Vol. 26 (2015) p. 93-100.

[14] Gürkan Kumbaroğlu, "A Sectoral Decomposition Analysis of Turkish CO2 Emissions over 1990-2007," *Energy*, Vol. 36 (2011), p. 2419-2433.

[15] Ümit Şahin, "Coal's Involvement in Turkey's Energy and Climate Policies," in ed. Ümit Şahin, *Coal Report: Turkey's Coal Policies Related to Climate Change, Economy And Health*, (Istanbul: Istanbul Policy Center-Sabancı University-Stiftung Mercator Initiative, 2016), p. 13-30; Congrong Yao, et al. (2015), p. 100,

[16] The share of coal, oil, and gas in primary energy was 88% in 2013. More than 70% of electricity is generated from fossil fuels. See: Ümit Şahin (2016), p. 7.

[17] According to a Bloomberg New Energy Finance (BNEF) Report, the levelized cost of energy for an onshore wind project in Turkey is 120 USD per MWh and is expected to fall to around 60-80 USD per MWh in 2030. On average, this is below the current 73-116 USD per MWh for coal. Also, solar power is expected to decrease from current 150 USD per MWh to 85-120 USD per MWh by 2030. BNEF

states that in the medium to long term the levelized costs of power generation from solar and wind power may become comparable to the costs of fossil fuels in Turkey. See: Michael Wilshire, et al., "Turkey's Renewable Power: Alternative Power Supply Scenarios for Turkey," Istanbul: WWF-Turkey, BNEF, 2014, http://awsassets.wwftr.panda.org/downloads/wwf_turkey___bnf___turkey_s_renewable_power___alternative_power_supply_scenarios_until_.pdf

[18] Ahmet Atıl Aşıcı, "On the Sustainability of the Economic Growth Path of Turkey: 1995-2009," *Renewable and Sustainable Energy Review*, Vol. 52 (2015), p. 1731–1741.

[19] Ministry of Development, "Tenth Development Plan: 2014-2018", (Ankara: Ministry of Development, 2013); Ministry of Development, "Domestic Resource Based Energy Generation Program Action Plan: 2014-2018," Ankara: Ministry of Development, 2013; Ministry of Energy and Natural Resources, "2015-2019 Strategic Plan" Ankara: Ministry of Energy and Natural Resources, 2014.

[20] Önder Algedik, "Kömürü Finanse Etmek: Türkiye'nin Yüksek Karbon Aritmetiği, [Financing Coal: Turkey's High Carbon Arithmetic], Ankara, 2015 <http://www.onderalgedik.com/wp-content/uploads/2015/05/KomuruFinanseEtmek-Son.pdf>

[21] For details about this section see: Ümit Şahin, "Türkiye'nin İklim Politikalarında Aktör Haritası," [Actor Mapping of Turkey's Climate Policies] (Istanbul: Istanbul Policy Center-Sabancı University-Stiftung Mercator Initiative, 2014), http://ipc.sabanciuniv.edu/wp-content/uploads/2014/12/AktorHaritasiRapor_25.11.14_web.pdf

[22] Ethemcan Turhan (2016), p. 449.

[23] Ethemcan Turhan, "Value-based Adaptation to Climate Change and Divergent Developmentalisms in Turkish Agriculture," *Ecological Economics*, Vol. 121 (2016), p. 140-148.

[24] Turkey's governmental system was restructured to a large extent after the last presidential and parliamentary election on June 24th 2018. After the new presidential system of government has been established, Ministry of Development was abolished and transformed to the Strategy and Budget Directorate under the Presidential office. Ministry of Forestry and Water Affairs and Ministry of Food, Agriculture and Livestock were merged, and new Ministry of Agriculture and Forestry was established. Treasury, Ministry of Economy, and Ministry of Finance were merged, and new Ministry of Treasury and Finance was established. How this structure would affect Turkey's institutional scope of climate policies is yet to be analysed.

[25] Raymond Cléménçon, "The Two Sides of the Paris Climate Agreement: Dismal Failure or Historic Breakthrough?," *Journal of Environment and Development*, Vol. 25 No. 1 (2016), p. 3-24.

[26] Joeri Rogelj, et al., "Paris Agreement Climate Proposals Need a Boost to Keep Warming Well Below 2°C," *Nature*, Vol. 534 (2016), p. 631-639.

[27] Raymond Cléménçon (2016), p. 7-8.

[28] UNFCCC, "Adoption of the Paris Agreement: Proposal by the President, Draft decision -/CP.21" UNFCCC, 2015, http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf

[29] Erinç Yeldan and Ebru Voyvoda (2015), p. 33.

[30] Raymond Cléménçon (2016), p. 9.

[31] Damian Carrington, "China's Coal Peak Hailed as Turning Point in Climate Change Battle," *The Guardian*, 25.07.2016, <https://www.theguardian.com/environment/2016/jul/25/china-coal-peak-ailed-turning-point-climate-change-battle>; "UK's Coal Plants to be Phased Out Within 10 Years," *BBC News*, 18 November 2015, <http://www.bbc.com/news/business-34851718>

[32] Carbon lock-in is defined as the phase in which "once certain carbon-intensive investments are made, and development pathways are chosen, fossil fuel dependence and associated carbon emissions can become "locked in", making it more difficult to move to lower-carbon pathways and thus reduce climate risks." Peter Erickson, Michael Lazarus and Kevin Tempest, "Carbon Lock-in from Fossil Fuel Supply Infrastructure," *Stockholm Environment Institute*, 2015. <https://www.sei-international.org/mediamanager/documents/Publications/Climate/SEI-DB-2015-Carbon-lock-in-supply-side.pdf>

[33] Semra Cerit Mazlum, "Turkey's Foreign Policy on Global Atmospheric Commons: Climate Change and Ozone Depletion," in ed. PG Harris, *Climate Change and Foreign Policy: Case Studies from East to West* (London: Routledge, 2009), p. 68–84.