

ROLES OF DOMESTIC AND INTERNATIONAL FACTORS IN CLIMATE
CHANGE POLICY MAKING

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ABSTRACT

ROLES OF DOMESTIC AND INTERNATIONAL FACTORS IN CLIMATE CHANGE POLICY MAKING

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This thesis maps domestic and international factors which are influential on the international climate change politics of countries. Moreover, it seeks an answer to the question of “why domestic factors such as climate change vulnerability and policy readiness are not sufficient to explain the climate change policies of countries?” Based on the review of the existing literature and research of this dissertation, the main argument of the thesis will be as follows: Contrary to the views considering the primacy of domestic drivers for the design of international climate change policies; this thesis argues that international drivers particularly concerns for competitiveness are also influential in climate change policy making process. Moreover, the analyses of the US, the EU, China and Turkey imply that actors can utilize international climate change policies as market access and business development tools keeping their international trade concerns in mind.

Keywords: Climate change policies, domestic and international factors, trade and climate change, market development

ÖZ

İKLİM DEĞİŞİKLİĞİ POLİTİKASI YAPIMINDA İÇ VE ULUSLARARASI FAKTÖRLERİN ROLÜ

Koşan, Ezgi

Doktora, Uluslararası İlişkiler Bölümü

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Bu tez, ülkelerin uluslararası iklim değişikliği politikalarında etkili olan iç ve dış faktörlerin haritasını çıkarmaktadır. Ayrıca, “neden iklim değişikliği kırılganlığı ve politika hazırlığı gibi yerel faktörlerin ülkelerin iklim değişikliği politikalarını açıklamak için yeterli olmadığı” sorusuna cevap aramaktadır. Mevcut literatürün taraması ve bu tezin araştırmasına dayanarak, tezin ana argümanı şu şekildedir: Uluslararası iklim değişikliği politikalarının tasarlanmasında iç faktörlerin önceliğini dikkate alan görüşlerin aksine; bu tez, dış faktörlerin, özellikle rekabetçiliğe ilişkin endişelerin de, iklim değişikliği politikası oluşturma sürecinde etkili olduğunu savunmaktadır. Ayrıca, ABD, AB, Çin ve Türkiye’nin analizleri, aktörlerin uluslararası ticari kaygılarını göz önünde bulundurarak uluslararası iklim değişikliği politikalarını pazara giriş ve iş geliştirme aracı olarak kullanabileceklerini iddia etmektedir.

Anahtar kelimeler: iklim değişikliği politikaları, iç ve dış faktörler, ticaret ve iklim değişikliği, pazar geliştirme

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LIST OF ABBREVIATIONS

APEC	Asia Pacific Economic Community
BCAs	Border Carbon Adjustments
CBDR	Common but Differentiated Responsibilities
CCPI	Climate Change Performance Index
CCS	Carbon Capture and Storage
CDM	Clean Development Mechanism
CLIMI	Climate Laws, Institutions and Measures Index
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
CO ₂	Carbon Dioxide
COP	Conference of the Parties
CPC	Communist Party of China
EITs	Economies in Transition
EGA	Environmental Goods Agreement
EPA	Environmental Protection Agency
ETS	Emission Trading Systems
EU	European Union
FYPs	Five Year Plans
GATT	General Agreement on Tariffs and Trade
GEF	Green Environmental Facility
GHG	Greenhouse gasses
IEA	International Energy Agency
INDCs	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change

IR	International Relations
ITO	International Trade Organization
JI	Joint Implementation
KP	Kyoto Protocol
MFN	Most Favoured Nation
NDRC	National Development and Reform Commission
NDCs	Nationally Determined Contributions
NLCCC	National Leading Committee on Climate Change
NGOs	Non-Governmental Organizations
NT	National Treatment
OECD	Organization of Economic Cooperation and Development
PA	Paris Agreement
PV	Solar Photovoltaic
PMR	Partnership for Market Readiness
RGGI	Regional Greenhouse Gas Initiative
UN	United Nations
UNCHE	United Nations Conference on the Human Environment
UNCTAD	United Nation Conference on Trade and Development
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
WRI	World Resource Institute
WTO	World Trade Organization

CHAPTER 1

INTRODUCTION

Environment has been a glamorous topic for International Relations (IR) scholars especially since the end of the 1970s. The diversity of environmental problems ranging from climate change, ozone layer problem, and biodiversity erosion to prevalent pollution, environmental degradation together with deforestation have been studied within the context of international politics mostly by focusing on environmental cooperation and conflict, environmental security, international regimes, international institutions, environmental governance and sustainable development.

This dissertation mainly analyzes the international climate change politics of countries with a view to account for the domestic and international drivers of those politics. Among all, this thesis particularly attempts to highlight the linkage between the international climate change politics and international competitiveness concerns of countries. Based on the discussions undertaken, this thesis argues that on contrary to the views considering the primacy of domestic drivers on international climate change policies' design; the international drivers particularly concerns for international competitiveness are influential in design of climate change policies of countries as well as domestic factors. Furthermore, the analyses of the US, EU and China imply that the countries can utilize the international climate change policies as market access and business development instruments.

1.1 Scope and Objective

Among the worldwide environmental hurdles, the climate change is among those having adjacent ties with economic activity as a result of being causally linked to energy politics. Indeed, on one hand climate change is triggered by economic activity; on the other hand, it affects the economic activity. In this regard, it has lots of things to do with energy and industrial policies of countries with respect to mitigation of emissions, besides it has stark influences on the safety of nutrients together with access to clean water. Accordingly, the efforts for emission reduction and adaptation to combat with those negative effects of climate change create a set of repercussions for global development agenda. These repercussions illuminate why the connection amongst global warming and ecological development is so close.

Emerging economies have been among those who are most adversely affected and these countries will have difficulties in overcoming the projected shocks of global warming on the economies, system and society surrounding them.¹ Therefore, the sustainable development Goal 13 of UN, maintains taking “urgent action to combat climate change and its impact.”² Indeed, “Inter- Governmental Panel on Climate Change (IPCC)” defines relationship between sustainable development and climate change as “dual”.³ According to IPCC;

¹ “Climate Change.” Sustainable Development Knowledge Platform. Accessed March 19, 2018. <https://sustainabledevelopment.un.org/topics/climatechange>

² Climate Change.” Sustainable Development Knowledge Platform.

³ Bert Metz, *Climate Change 2007: Mitigation of Climate Change: Contribution of Working Group Three* New York: Cambridge University Press, 2007 Accessed November 12, 2017. https://www.ipcc.ch/publications_and_data/ar4/wg3/en/ch2s2-1-3.html

On the one hand, climate change influences key natural and human living conditions and thereby also the basis for social and economic development, while on the other hand, society's priorities on sustainable development influence both the GHG emissions that are causing climate change and the vulnerability.⁴

Owing to that duality of climate change problem with respect to sustainable development; the global compromise on climate change has been a troublesome experience as compared to the easiness of solution of some further ecological difficulties globally.

In consequence, that close link between energy and industrial policies and the climate change trouble evolve out the reality that it is assumed to be direct result of the GHGs coming mostly out of power production and manufacturing production efforts.⁵ This distinctive relation exhibits the reason why there might be an impact on the trade competitiveness of countries depending on the mitigation policies and measures employed by countries at the domestic and international level.

For that reason, this dissertation mainly focused on driving forces of international climate change politics of countries with a view to highlight the dynamics of the relations between domestic and international factors driving climate change policies.

So as to contribute to the literature on the dynamics of factors driving climate change policies either domestic or international, the central objective of this dissertation is mapping domestic and international factors that are influential in the

⁴ Bert Metz, *Climate Change 2007*.

⁵ For further information on the anthropogenic causes of climate change, the reports of IPCC could be visited from <https://www.ipcc.ch>

international climate change policy making processes of individual countries and trying to account for the linkage particularly between the climate change politics and international competitiveness concerns of countries.

1.2 Main Research Question

Just like any other policy area, although either domestic or international climate policies are designed and implemented by domestic actors these policies are not driven merely by domestic factors. As a consequence, the core examination of this exposition is related to climate change policy making processes of countries.

With this regard, this thesis searches reasons for a very common dilemma: despite the fact that climate change policies have lots of immediate impacts on the daily life of individual countries, these impacts are not sufficient to account for particularly international climate change policy design of countries. To put it in another way; this thesis searches for an explanation for the question of “why domestic factors such as climate change vulnerability and policy readiness are not sufficient to explain the climate change policies of countries?”

Moreover, this thesis searches for the paths on which various domestic and international factors influencing climate change policy making processes interact with each other with an aim to search for any possibility to make a conclusion for an “inside to outside” or “outside to inside” policy orientation for the climate policy making practices.

1.3 Review of Literature

The literature on climate change politics in social sciences is getting richer every day. Despite its current popularity, there has been an extensive debate on whether the response of international relations has been timely and sufficient for environmental problems. Contrary to some arguments for “slow response”, International Relations (IR) scholarship could be claimed to have a more productive response to climate change as a global environmental challenge.⁶ Although, the literature on either effects of climate change mitigation policies’ over trade or on consequences of trade policies on greenhouse gas emissions is rich.⁷ and the cures for this problem from global environmental governance perspective⁸; this research particularly has built upon the discussions on climate change policy design rooting to the works on this linkage between trade and climate change policies.

From this respect, the track of research which investigates the underlying factors which are influential on climate change policies of countries is rather relevant. Scholars dealing with the factors driving climate change policies of countries either deal with a wide set of countries with quantitative analyses such as Berneuer et al.,

⁶ For a comprehensive discussion on the response of IR to the climate change problem treated as “slow” by Robert O. Keohane and evaluating it as more productive by Arild Underdal please refer to the review of Arild Underdal, “Climate Change and International Relations (After Kyoto).” *Annual Review of Political Science* 20, no. 1 (November 2017): 169–88.

⁷ Dellink et al., “International Trade Consequences of Climate Change.” *OECD Trade and Environment Working Papers*, 2017.

⁸ Robert O Keohane and David G. Victor, “The Regime Complex for Climate Change.” Discussion Paper, 10-33, Harvard Project on Climate Agreements, Belfer Center, January 2010. Accessed on 27 August 2019 from http://belfercenter.ksg.harvard.edu/publication/19880/regime_complex_for_climate_change.html

2010⁹; Fankhauser et al., 2015a¹⁰ and 2015b¹¹ did or they undertake qualitative analyses which are country specific or comparative in nature such as Harrison and Sundstorm, 2010¹²; Skjærseth et al., 2013¹³; Never and Betz, 2014¹⁴; Bailer and Wailer 2014¹⁵ did.

Moreover, a broad set of works focus on the dynamics of climate change policy drivers of countries. For instance, Bailer and Weiler argued that their international climate change policies mirror more of structural, economic, and domestic factors as compared to strategic factors. Accordingly, they contend that domestic factors such as the vulnerability of country, its democratic position and power are amid the leading explanation for international climate change policies more specifically

⁹ Bernauer et. al., "A Comparison of International and Domestic Sources of Global Governance Dynamics." *British Journal of Political Science* 40, no. 03 (2010): 509-38.

¹⁰ Sam Fankhauser, Caterina Gennaioli, and Murray Collins, "Do international factors influence the passage of climate change legislation?" *Climate Policy* 16, no. 3 (2015): 318-31.

¹¹ Sam Fankhauser, Caterina Gennaioli, and Murray Collins, "The political economy of passing climate change legislation: Evidence from a survey." *Global Environmental Change* 35 (2015): 52-61.

¹² Kathryn Harrison and Lisa McIntosh Sundstrom, *Global commons, domestic decisions: the comparative politics of climate change*. (Cambridge, MA: MIT Press, 2010).

¹³ Jon Birger Skjærseth, Guri Bang, and Miranda A. Schreurs, "Explaining Growing Climate Policy Differences Between the European Union and the United States." *Global Environmental Politics* 13, no. 4 (2013): 61–80

¹⁴ Babette Never, and Joachim Betz, "Comparing the Climate Policy Performance of Emerging Economies." *World Development* 59 (2014): 1–15.

¹⁵ Stefanie Bailer and Florian Weiler, "A political economy of positions in climate change negotiations: Economic, structural, domestic, and strategic explanations." *The Review of International Organizations* 10, no. 1 (2014): 43-66.

international negotiation position as compared to the international factors such as interconnectedness.¹⁶

While Fankhauser et al. reviewed main domestic factors that drive domestic climate change policies of countries and found that the quantity and quality of previous legislation were significantly decisive on the final track as compared to the political orientation¹⁷. Similarly, in somewhere else Fankhauser et al. assessed the main international factors and found that climate change politics was profoundly affected by the passage of alike legislation to another place, based on which they suggested the significance of international policy diffusion¹⁸.

Alternatively, Harrison employed an analytical framework of ideas, interests and institutions to dig into the reasons why Canada was willing to ratify Kyoto Protocol (KP) as compared to US having similar economic stance and concluded that “the institutional setting was conducive to the victory of norms over material interests in Canada, but not in the United States.”¹⁹

¹⁶ Stefanie Bailer and Florian Weiler. "A political economy of positions in climate change negotiations", 43.

¹⁷ Sam Fankhauser, Caterina Gennaioli, and Murray Collins, "The political economy of passing climate change legislation: Evidence from a survey." 52.

¹⁸ Sam Fankhauser, Caterina Gennaioli, and Murray Collins, "Do international factors influence the passage of climate change legislation?" 318.

¹⁹ Kathrayn Harrison. "The Road Not Taken: Climate Change Policy in Canada and the United States". *Global Environmental Politics* 7, no.4, 93.

Contrariwise, Townshend et al. maintained as a change can happen in the international climate change policies of countries from an inwards to outwards orientation; in other words domestic factors can affect the international outcomes.²⁰ Likewise, Lachapalle and Paterson reviewed the domestic climate change responses and named the following paths as the drivers of national climate policies: disparity in the official practices of climate change ascendancy at domestic sphere, degree of reliance on hydrocarbon sources, extensive complete variances between nations (such as per capita incomes, demographic patterns and economy intensities), together with disparities of rituals of commercial interference of states.²¹ As opposed to him, Bernauer et al. examined how much the linkages of states with the international system, in contrast to domestic factors, such as income and democracy, effect the dynamics of global governance efforts by utilizing environmental treaties and concluded that international factors are more influential on the cooperative behavior of states and therefore the effects of internal and external variables should not be examined in isolation in the study of international politics.²²

Steves and Teytelboym developed “Climate Laws, Institutions and Measures Index” (CLIMI) for measuring countries’ policy reactions against the climate

²⁰ Townshend et al, "Legislating Climate Change on a National Level." *Environment: Science and Policy for Sustainable Development* 53, no. 5 (2011): 5.

²¹ Erick Lachapelle and Matthew Paterson, "Drivers of national climate policy." *Climate Policy* 13, no. 5 (2013): 547.

²² Bernauer et al, "A Comparison of International and Domestic Sources of Global Governance Dynamics.", 509.

change risk.²³ CLIMI comprises institutions and policies in 95 countries which constitute 90% of the global GHG emissions. Thanks to CLIMI, they scrutinized the political and economic factors that drive countries' choices to implement policies to tackle climate change. According to their findings, the level of democracy on its own is not a main driver of climate change policy adoption, whereas the public awareness of climate change is. Moreover, they conclude that an extensive carbon intensive industry in the country hampers the climate change policy adoption. In conclusion countries with higher public knowledge of climate change; house more effective climate policies irrespective of the existence of democratic institutions.

Because, global warming problem has economic causes with results, literature on economics of climate change is valuable. In this regard, a valuable contribution came from Stern, who argued that the damage of climate change to the global economy will be extremely high unless urgent and concrete measures are taken by the nations, made a novel epoch regarding economics of global warming by pointing out magnitude of negative consequences of problem over economies when compared with the earlier scholars.²⁴ The earlier works such as those of Parry et. al²⁵, and Fischer et al.²⁶ took the issue as an economic phenomenon and searched

²³ Franklin Steves and Alexander Teytelboym. "Political Economy of Climate Change Policy." *SSRN Electronic Journal*, 2013.

²⁴ Nicholas Stern, *The Economics of Climate Change: The Stern Review*, (Cambridge University Press, 2007).

²⁵ Parry et. al, "Effects of climate change on global food production under SRES emissions and socio-economic scenarios." *Global Environmental Change* 14.1 (2004): 53-67.

²⁶ Fischer et. al "Climate change and world food supply, demand and trade." *Global Environmental Change* 4, no. 1 (1994): 7-23.

how the trade affected the climate change or other way around by utilizing econometric models.

As to the economics of mitigation policies, the discussion is actually originated from the economics of climate change. From this aspect, climate change could be taken as a resource allocation problem. That is to say, as Mabey et al reminded it is basically a trade off between how much eager the society is to reduce the consumption today or future aiming for mitigation of adverse impacts of climate change; in other words between the greenhouse “damage costs” and “abatement costs”.²⁷

Additionally, there are many works devoted to frame the climate change and international trade interaction from the aspect of competitiveness. In another study, this competitiveness effect is modeled and finally concluded that “energy-intensive manufacturing industries are more likely to experience decreases in production and increases in net imports than less-intensive industries.”²⁸ With this regard a very comprehensive literature on carbon leakage emerged which assesses the coverage, extent and measures to deal with such a phenomena. Mabey defines carbon leakage in technical terms as follows: “market behavior may undermine the effect of emission reductions in one region by increasing pollution from uncontrolled countries”.²⁹

²⁷ Mabey et al, “Optimal Climate Change Policy” in *Argument in The Greenhouse the International Economics of Controlling Global Warming*, ed. by Hall, Stephen et al. (London: Routledge, 1997), 175.

²⁸ Joseph E. Aldy, and William A. Pizer, *The Competitiveness Impacts of Climate Change Mitigation Policies*, (Cambridge, MA: National Bureau of Economic Research, 2011)

²⁹ Mabey et al, “Optimal Climate Change Policy”

For example, Babiker asserted that If Kyoto Protocol is implemented; the competitiveness of the countries might be affected since it might induce relocation in the energy intensive production of developed countries.³⁰ Alternatively, Zhang and Baranzini discussed the impacts of carbon taxes on income and competitiveness and claimed that losses in competitiveness and distributive effects are usually not significant and certainly less than often remarked.³¹ Sindico emphasizes that carbon leakage and competitiveness concerns shed a light into why a developed country might target products coming from emerging economies and deals with US judicial attempts related to global warming with imports besides to WTO compatibility of such attempts.³²

Apart from above discussed economic and legal aspects of carbon leakage at international and state level analyses; there are a few more works³³ which searches for place of competitiveness concerns over final design and track for global warming policies of countries. To give as an example of such works, Asselt and Biermann's evaluation should be noted which deals with various proposed measures such as direct support for some energy intensive sectors, limiting energy intensive imports to the European Union (EU) with border tax adjustments,

³⁰ Mustafa H Babiker, "Climate change policy, market structure, and carbon leakage." *Journal of International Economics* 65, no. 2 (2005): 421.

³¹ Zhongxiang Zhang and Andrea Baranzini, "What Do We Know About Carbon Taxes? An Inquiry into Their Impacts on Competitiveness and Distribution of Income." *Energy Policy* 32, no. 4 (2004): 507.

³² Francesco Sindico, "Climate Change and Trade in a Divided World: Can Measures Adopted in the North end up shaping climate change legislative frameworks in the South" in *Climate Law and Developing Countries*, ed. Benjamin Richardson (Cheltenham: Edward Elgar, 2011), 361- 385.

³³ For a more detailed discussion please refer to Harro Van Asselt, and Frank Biermann, "European emissions trading and the international competitiveness of energy-intensive industries: a legal and political evaluation of possible supporting measures." *Energy Policy* 35, no. 1 (2007): 497-506.

technical regulations and cost compensations proposed with political or legal basis for saving the competitiveness of European enterprises are analyzed while satisfying its Kyoto Protocol commitments.³⁴

If the matter is perceived as purely as problem of international negotiation position, the prominent contribution came from Putnam with his famous “two level game” theory which combines the domestic and international politics. Based upon Putnam’s theory, there are two level processes before a decision being made on an international agreement. While the initial sphere, stated as international level, indicates haggling practice between delegates; the second level characterizes national domestic confirmation practice of settlement that was compromised at the end of the negotiations. In Putnam’s model, very rudimentary inspiration of a country is to make best use of returns at global sphere to please its own domestic oppressions.³⁵

Nevertheless, the dynamics of the interplay amongst the global warming and trade policies of countries; more specifically the impact of the trade related factors on the international climate change policies of countries are not examined in detail. The central objective of the proposed research is mapping domestic and international factors that are influential in the international climate change politics of individual countries and trying to account for the role of competitiveness related factors on the final design of international climate change policies of the countries by analyzing selected country examples.

³⁴ Asselt, Harro Van, and Frank Biermann. "European emissions trading and the international competitiveness of energy-intensive industries", 497- 506.

³⁵ Robert D. Putnam, "Diplomacy and Domestic Politics: The Logic of Two-Level Games". *International Organization*. 42, no. 3 (1988): 427-460.

Actually, for a country deciding upon the international climate change policy encapsulates a number of domestic and international drivers. However, the domestic and international level drivers or the games in Putnam's saying shouldn't be taken in isolation all the time. The unique contribution of this research is expected that the driving forces or two level games could be linked by international trade though it seems as if it is a pure international driving force. Besides, the proposed research is aimed to map the various domestic and international factors that are influential in designing international climate change policies of countries with a view to stress the role of competitiveness concerns among all.

1.4 Argument

Based on the review of the existing literature presented above and research of this dissertation the main argument of the thesis will be as follows: Contrary to the views considering the primacy of domestic drivers for the design of international climate change policies; this thesis argues that international drivers particularly concerns for international competitiveness are also influential in climate change policy making process. Therefore, the thesis claims that neoclassical political realist approach could be used to explain the interaction between domestic and international drivers in shaping climate change policy making processes.

Furthermore, the analyses of various countries such as the US, the EU, China and Turkey imply that the countries and supranational entities can utilize international climate change policies as market access and business development instruments keeping their international trade concerns in mind.

The reason why these countries have been selected is that; these counterpart from Turkey are the major three emitters of the world representing three-quarters of

global emissions currently³⁶ as well as they are all among the largest 20 exporters and importers of the world as of 2015³⁷. Turkey has been focused on with a view to reflect the viewpoint of an emerging economy which has been listed in Annex-I to the United Nations Framework Convention on Climate Change with developed countries.

Along with the argument of the function of international factors besides to the domestic factors in climate policy making this thesis argues that there is an interplay based on particularly competitiveness dynamics among domestic and international factors driving climate policies.

1.5 Methodology and Theoretical Framework

In order to examine the answers for the research question of “why domestic factors such as climate change vulnerability and policy readiness are not sufficient to explain the climate change policies of countries?”; this research adopts a mixed approach of qualitative and quantitative research where the quantitative data is utilized to provide background and perspective to the qualitative data.

The reason why I have preferred a mixed approach for this work is that for undertaking such a comprehensive and wide array research; neither qualitative nor quantitative research matters are sufficient enough. For making more healthy deductions on climate policies of countries, one should be capitalizing on primary

³⁶ Johannes Friedrich, Mengpin Ge and Andrew Pickens, “This Interactive Chart Explains World’s Top 10 Emitters, and How They’ve Changed”, World Resource Institute, April 11, 2017.

³⁷ World Trade Statistics Review, 2016, Accessed September 2017, available at https://www.wto.org/english/res_e/statis_e/wts2016_e/wts16_chap9_e.htm

data and previous quantitative data and the results produced by various models as well as other qualitative research methods. For primary data of trade statistics of this research, database of International Trade Center- Trademap, which rests on WTO statistics, has been utilized while the energy statistics have been taken from International Energy Agency (IEA).

The main research tool of this work has been the documentary analysis. Within this scope, comprehensive documentary analyses are undertaken by utilizing mostly primary sources and data which are obtained from national and international institutions' reports, policy papers, strategies, blueprints, minutes of meetings, database etc. Therefore, the official gazettes and official web portals of main institutional bodies and ministries of the US, the EU, China and Turkey as well as the web portals of international institutions such as UNFCCC, IEA, WTO and G77 have been referred. Additionally, for tracking the route of national and international politics the rhetoric analyses have been applied very often within this research as a way of discourse analysis.³⁸ With this regard; national and international news portals, newspapers, journals, dailies, blogs and personal websites have been visited. Both background and analysis chapters have utilized subsidiary data and results and findings of previous quantitative and qualitative works serving as a basis for policy analysis together with the interpretation of primary sources.

The fundamental limitation of this research can be thought as the limited access to the reports and notes of political bodies where the policy decisions are evaluated and actions are decided accordingly.

³⁸ In general, the qualitative discourse analysis methods outlined in Ruth Wodak, and Krzyżanowski Michał, *Qualitative Discourse Analysis in the Social Sciences*. Basingstoke, Hants.: Palgrave Macmillan, 2009 analyzed.

1.6 Structure of the Thesis

For attaining its examination objective; this thesis is organized into nine chapters. After framing the research question at the beginning, the scope, objective and methodology of this dissertation is presented in Chapter 1. This will be followed by a comprehensive literature review which is going to constitute as a basis for the argument of this work which is launched in Chapter 1 as well.

After introducing the research question and argument of this dissertation; Chapter 2 sets the theoretical foundation of the research by elaborating on the main theoretical approaches dealing with climate change policies as realism, liberalism and critical approaches within IR literature by briefing on their evolution in IR literature and on their basic arguments for climate change politics. At the final part of this chapter; the theoretical perspective of this dissertation is publicized.

Following this chapter, two background chapters are presented. While one of those, Chapter 3, explains the climate change policies from a trade; the other, namely Chapter 4, chapter accounts for the trade from an environmental perspective. While doing this, Chapter 3 summarizes the historical developments in international climate change policies; moreover, it points out the economics of global warming as transition towards trade related aspects of global warming problem. This chapter ends with a detailed analyses of trade related aspects of global warming such as flexibility mechanisms and trade related climate change measures including border carbon adjustments. On the other hand, Chapter 4 starts with a very brief introduction to the trade theories and later introduces market access concept with highlighting its unique relation with international trade. In this regard, it also briefs about the evolution and development of international trade system. The Chapter continues with the discussions on market access from trade perspective of

environmental goods, where market development and business development aspects of the issue are illustrated.

After these detailed background chapters; Chapter 5, 6, 7 and 8 undertake analyses and discussions for climate change policies of countries successively for the US, EU, China and Turkey. In a typical country analysis chapter; firstly, energy and climate outlooks of countries are provided. Following this, policies of countries both domestic and international are discussed. In the final parts of the country analyses chapters; domestic and international drivers of climate change policies which are presented below with Table-1 are analyzed.

Table 1: Drivers of Climate Change Policies

DRIVERS OF CLIMATE CHANGE POLICIES
Domestic Drivers
Vulnerability
Sufficiency of National Climate Policy and Mitigation Potential
Legislative Factors
Attitudes of the Leaders/Politicians
Power of Industrial Lobby Groups and Civil Society
International Drivers
Foreign Policy Objectives
Climate Change and Foreign Trade Interplay
Financial Returns and Outlays

In this vein, in Chapter 5, the energy and climate policy outlook of the US is provided at the outset. Subsequently, climate change policy developments of the county are provided for serving as a basis for the discussions. Following this overview; domestic together with international drivers behind international climate policies of US is discussed extensively . Finally, the chapter ends with an overall discussion for the drivers of US climate change policy taking into account its specific policy outlook. In Chapter 6, the energy and climate policy outlook of the

EU is provided at the outset. Subsequently, national and foreign policy developments about climate change are presented for the EU as a basis for the discussions. Following this overview; domestic and international drivers of international climate change policies for it is discussed. Finally, the chapter ends with an overall discussion for the drivers of EU climate change policy taking into account its specific policy outlook. In Chapter 7, the energy and climate policy outlook of China is provided at the outset. Subsequently, domestic and international climate change policy developments for the EU are presented as a basis for the discussions. Following this overview; domestic and international drivers of international climate change policies of China is discussed. Finally, the chapter ends with an overall discussion for the drivers of China climate change policy taking into account its specific policy outlook. As the last analyses chapter in Chapter 8, the energy and climate policy outlook of Turkey is provided at the outset. Subsequently, domestic and international climate change policy developments of the country are presented as a basis for the discussions. Following this overview; domestic and international drivers for international climate change policies of Turkey is discussed. Finally, the chapter ends with an overall discussion for the drivers of Turkey climate change policy taking into account its specific policy outlook.

The research ends with a comprehensive conclusion, Chapter 9, which summarizes and highlights crucial points and findings of this dissertation with a comparative evaluation for the countries analyzed.

CHAPTER 2

THEORETICAL FRAMEWORK AND ANALYSIS

2.1 Introduction

What this chapter aims are drawing the theoretical framework of this thesis. With this motivation, following a short overview on the conceptualization of climate change problem in IR, this part provides a general review of prevalent IR theoretical perspectives; namely realism, liberalism and critical approaches. Moreover, the theoretical conception of climate change problem within each approach is debated. In the last part of the chapter, the theoretical perspective of this thesis is presented and discussed.

2.2 Conceptualization of Climate Change in International Relations

Discussions regarding transboundary environmental problems such as air pollution, biodiversity and climate change are often assessed within the discussions on “global commons”. Global commons are resources and areas defined as “any of the earth’s ubiquitous and un-owned natural resources such as the oceans, the atmosphere and space”³⁹ which are beyond sovereign jurisdiction traditionally

³⁹“Global commons.” The Oxford Pocket Dictionary of Current English. *Encyclopedia.com*.

including the atmosphere and outer space, the high seas and deep seabed, the Antarctic⁴⁰.

The global commons problem, named as “Tragedy of Commons” by Garrett Hardin, is usually recognized as the basis for the debate of environmental issues within the international politics literature.⁴¹ The essence of “Tragedy of Commons” which emphasizes that problems resulted from exploitation of common resources require complicated technical solutions⁴² attracts many IR scholars from different perspectives debating on cooperation and conflict, international regimes and institutions, governance and sustainable development.

As a matter of fact, the discrepancy of the problem solving and critical theory by Cox⁴³ is quite useful for categorization of different approaches whose subject matter is environment. While the scholars who explore international regimes, institutions and environmental governance try to fix the environmental problems from the standpoint of cooperation, in other words the ones who stay within the prevailing contexts; those take the issue from a critical standpoint (green theorists) question the notion of sustainability and search for ways to imagine a realm not

⁴⁰ John Vogler, "Global Commons Revisited". *Global Policy*. 3, no. 1 (2012): 61-71

⁴¹ Matthew Paterson, “Green Politics” in Scott Burchill, Andrew Linklater et al, *Theories of International Relations*, 2009, 4rd edition, Palgrave: London, 343.

⁴² Garrett Hardin, “The Tragedy of the Commons”. *Science* 162, (1968): 1243-1248.

⁴³ Robert W., Cox, “Social Forces, States and World Orders: Beyond IR Theory” in *Neorealism and Its Critics*, ed. Robert Keohane. Columbia Univ. Press, 1993.

only concentrating the peoples but also considers all other interactions where actually people are a piece.⁴⁴

With this regard, Paterson argues that the prescriptive applications of IR theory to the climate change problem remain incapable to identify the distinctiveness of climate change problem as a political matter.⁴⁵ As a result, given the importance attached to environmental politics globally, identifying the way and extent of contribution by the scholars engaging in environment and environmental politics to IR literature is very salient.

2.3 The Main International Relations Theories and Climate Change

This chapter aims to draw a theoretical perspective for this dissertation because of the fact that efforts try accounting for and foreseeing behavior and comprehending the realm “inside the heads” of other players.⁴⁶ In other words, theories equip us with a choice of framework for analysis. Conceptualization of global issues such as environment, energy, and trade have been quite popular in IR theoretical debates. Climate change as a sub item of environment, which has close connections with energy policies as well, has taken great attraction from international relations scholars. With this regard, several proposals from different strands have been made

⁴⁴ “Theory Talks”, *Theory Talk # 37: Robert Cox*, Accessed November 18, 2014. <http://www.theory-talks.org>

⁴⁵ Matthew Paterson, “IR Theory- Neorealism, neoinstitutionalism and the Climate Change Convention”, in ed. Imber, Mark, and John Vogler. in *Environment and International Relations*, ed. Imber, Mark, and John Vogler. 2005, 65.

⁴⁶ Hollis M. and Smith S., *Explaining and Understanding International Relations*, Oxford, 1990 cited in Scott Burchill and Andrew Linklater, “Introduction” in *Theories of International Relations* ed. Burchill et al., (Palgrave, 2005), 11.

for theoretical conception of climate change policies within international relations. The most prevalent traditions dealing with climate change are realism, neoliberal institutionalism and critical theory. The detailed information regarding these approaches is presented below, for each tradition treatment of climate change problem is provided as well.

2.3.1 Realist Approaches

Realism, as a common term for many disciplines such as literature, philosophy, and arts can be taken as the most influential approach in International Relations for nations' foreign policy designs principally during the Cold War. Before elaborating on the realist conception of climate change policies, a very brief summary of realist paradigm has been provided.

Classical realism rooted to Machiavelli's popular argument: "men are wicked and that they will always give vent to the malignity that is in their minds when opportunity offers"⁴⁷. Classical realism, whose leading advocates are H.E. Carr, Hans Morgenthau, Henry Kissinger, primarily elaborates on the origins and utilization of state power within international politics in addition to difficulties that politicians come across when performing foreign policy. In this context, Hans Morgenthau systematized realism by identifying the importance of national interests in politics among states and underlining the role of power in international

⁴⁷ Niccolo Machiavelli, "Discourses", Harmondsworth, 1970, cited in Jack Donnelly, "Realism" in *Theories of International Relations* ed. Burchill et al. (Palgrave, 2005), 30.

relations.⁴⁸ Moreover, according to Morgenthau “realism maintains that universal moral principles cannot be applied to the actions of states”.⁴⁹

As a matter of fact, as Taliaferro et al argued that that those twentieth-century classical realists were engaged in philosophical considerations about statesmanship or drawing inductive theories of foreign policy resting on the practices in Europe in between the sixteenth and mid-twentieth centuries. Nonetheless, classical realism has never been “a coherent research program, but rather a vast repository of texts written by different authors for different purposes and in different contexts over the course of 2,500 years.”⁵⁰

On the other hand, neorealism focused on elucidating common international behavior forms in time. As the prominent scholar of neorealism in other words structural realism Kenneth Waltz, on the other hand, attempted to build a more scientific approach by shifting the focus from human nature to structure by arguing the significance of relative dissemination of abilities or the power balances in anarchical international system with no higher decision making body.⁵¹

⁴⁸ Hans Morgenthau, *Politics Among Nations: The Struggle*, 1948.

⁴⁹ Hans Morgenthau, *Politics Among Nations: The Struggle for Power*, 1973 cited in Jack Donnelly, “Realism” in *Theories of International Relations* ed. Burchill et al., (Palgrave, 2005), 31.

⁵⁰ Jeffery W. Taliaferro, Steven E. Lobell, Norrin M. Ripsman “Introduction: Neoclassical realism, the state, and foreign policy” in *Neoclassical realism, the state, and foreign policy*, ed. by Steven E. Lobell, Norrin M. Ripsman, and Jeffrey W. Taliaferro. (Cambridge: Cambridge University Press, 2010), 16.

⁵¹ Kenneth Waltz, *Theory of International Politics*, (Addison Wesley Publishing Company, 1979).

The international system is very important for structural realism since according to Waltz “politics conducted in a condition of settled rules and politics conducted in a condition of energy” are not identical.⁵² As a matter of fact, as Taliaferro et al highlights: “drawing upon analogies from microeconomics, Waltz focuses on the properties and constraints imposed by the international system on all states” the state becomes a “black box” in neorealism.⁵³ In sum, the principal idea of realism is that within an no authority international system without order, nations being unitary rational actors try to maximize their gains.

2.3.2 Climate Change Politics from Realist Perspective

As identified above, realist perspectives mainly deal with, national interests, survival, power maximization, balance of power in an international system which they think as anarchic. As a result, the climate change policies of states are assessed from the challenges and opportunities emanating from these dynamics. Since the climate change problem is multifaceted with many implications for energy, trade and finance policies of countries; a realist perception of climate change problem often handle with also these conceptual areas which seem beyond the climate change at first look.

From a neorealist perception of climate change, the distribution of power among states can be handled by taking “power” either in economic terms, where trade sanctions might become a form of sanction, or in terms of a state’s ability to

⁵² Kenneth Waltz, *Theory of International Politics*, 61.

⁵³ Jeffery W. Taliaferro, Steven E. Lobell, Norrin M. Ripsman “Introduction: Neoclassical realism, the state, and foreign policy”, 17.

contribute the solution of climate change problem with its mitigation and adaptation actions.⁵⁴

If the climate change negotiations are assessed from a neorealist perspective the existence of a hegemon appears as a requirement. That is because of the very basic premise of neorealism. Gilpin⁵⁵ and Kindleberger⁵⁶, as the leading scholars of neorealist research program, were pessimistic about cooperation in general; still they saw a possibility for it provided that a single actor with a material power existed, which was named as “hegemon” later on.⁵⁷ In other words, neorealist scholars were less convinced about the centrality of international institutions for solving the environmental problems such as climate change and they put more emphasis on power structure and noted the necessity of hegemonic leadership.

So as to ascertain the climate hegemon; the economic power of states can be checked. Formerly, when the international climate change regime, in other words UNFCCC and KP had been under construction, the US used to be thought as nearly

⁵⁴ Gareth Porter, and Janet Welsh Brown. *Global Environmental Politics*. 2nd ed. Boulder, CO: Westview Press, 1996 cited in Ian H. Rowlands, “Classical Theories of International Relations” in ed. Luterbacher, Urs, and Detlef F. Sprinz. *International Relations and Global Climate Change*, (Cambridge, MIT, 2001), 44.

⁵⁵ Robert Gilpin, *US Power and the Multinational Corporation: the Political Economy of Foreign Direct Investment*, (London: Macmillan, 1976).

⁵⁶ Charles P. Kindleberger, *The International Corporation: A Symposium*. (Cambridge, Mass.: MIT Press, 1973)

⁵⁷ For further details on the discussions on hegemonic stability theory please refer to Robert O. Keohane. “The Theory of Hegemonic Stability and Changes in International Economic Regimes, 1967–1977”. In *Change in the International System*, ed. O. R. Holsti, R. M. Siverson, and A. L. George (Boulder, CO: Westview Press, 1980)

“climate hegemon” with its power to reflect its preferences and priorities on the architecture of climate regime.⁵⁸

Currently, in neorealist accounts it is argued that the US is no longer a climate hegemon as a result of its hegemonic decline.⁵⁹ Furthermore, a strand of literature in neorealist accounts have been evolved advocating that relative gains matter for climate policy makers. Within this framework Vezirgiannidou⁶⁰ and Grundig⁶¹ showed that neorealist analysis hold for climate change problem where the relative gains matter for policy makers.

Similarly, the analysis of Copenhagen Climate Change Conference where pursuit of national interests overcame the international cooperation towards common interests viewed as a turn to realism by Bodansky.⁶²

⁵⁸ Ian H. Rowlands, “Classical Theories of International Relations” in ed. Luterbacher, Urs, and Detlef F. Sprinz. *International Relations and Global Climate Change* (Cambridge, Mass: MIT, 2001), 45-47.

⁵⁹ For comprehensive discussions on the American hegemonic power please refer to J. Timmons Roberts. "Multipolarity and the New World (Dis)Order: US Hegemonic Decline and the Fragmentation of the Global Climate Regime". *Global Environmental Change*. 21, no. 3, 2011, 776-784; and John Vogler, "The European Contribution to Global Environmental Governance". *International Affairs* 81, no. 4 (2005): 835-850.

⁶⁰ Sevasti-Eleni Vezirgiannidou, "The Kyoto Agreement and the Pursuit of Relative Gains". *Environmental Politics* 17, no. 1 (2008): 40- 57.

⁶¹ Frank Grundig, "Patterns of International Cooperation and the Explanatory Power of Relative Gains: An Analysis of Cooperation on Global Climate Change, Ozone Depletion, and International Trade". *International Studies Quarterly* 50, no. 4 (2006): 781-801.

⁶² Daniel Bodansky. *The Copenhagen Climate Change Conference: A Postmortem*. *The American Journal of International Law* 104, no. 2 (2010): 230- 40.

In sum, realist accounts of climate change mostly dealt with national interests, power relations in the international sphere together with fashioned rich discussions about hegemonic power and its nature and role in the international climate change policy sphere.

2.3.3 Liberal Approaches

As opposed to dominance of realism in IR theory, liberalism has been the following prevalent approach with its well based historical and philosophical origins. As one of the consequences European Enlightenment, liberalism might be said to be rooted to eighteenth and nineteenth century idealist thinkers such as Kant and Rousseau.⁶³ In contrast to realist premises of human nature is bad, liberal thought assumes that “human beings are not saints and they are surely self-interested, but they remain essentially good, seeking peace and stability without recourse to arms”.⁶⁴ Besides, liberalism championed rationality, democracy and political freedom in addition to market capitalism.⁶⁵ Kant’s correlation between trade and war is clear from its words: “The spirit of commerce sooner or later takes hold of every people, and it cannot exist side by side with war.”⁶⁶

⁶³ Scott Burchill, “Liberalism” in *Theories of International Relations* ed. By Burchill et al., (Palgrave, 2005), 58.

⁶⁴ Eric Laferriere and Peter J. Stoett. *International Relations Theory and Ecological Thought: Towards a Synthesis*, (London: Routledge, 1999), 109.

⁶⁵ Scott Burchill, “Liberalism” in *Theories of International Relations* ed. Burchill et al., 55.

⁶⁶ Immanuel Kant, *Perpetual Peace and Other Essays*, 1795 cited in Laferriere and Stoett, *International Relations Theory and Ecological Thought*, Indianapolis: Hackett 1983, 111.

On the other hand, liberal internationalist scholar Fukuyama argued that history is linear and progressive.⁶⁷ According to him liberal capitalism proved to be the unchallenged as a result of cold war and he claimed “a world made up of liberal democracies...should have much less incentive for war.”⁶⁸

As for what Doyle as the father of “democratic peace school” under liberal tradition argued is that republican forms of governments or democracies serve for promoting peace in international relations.⁶⁹

Another group in liberal tradition was “interdependence” school who debated that states become more interdependent and interconnectedness makes states more vulnerable. Keohane and Nye argued that the world is not state centric anymore and non-state actors as well as states are apparent in world politics which involve in transnational relations.⁷⁰ Actually, Keohane and Nye can be thought among the founders of neoliberal school of thought by modifying their previous positions and acknowledging that neorealist school’s anarchy concept as well as centrality of

⁶⁷ Scott Burchill, “Liberalism” in *Theories of International Relations* ed. Burchill et al., 56.

⁶⁸ Francis Fukuyama, “The End of History and the Last Man”, London: 1992 in Scott Burchill, “Liberalism” in *Theories of International Relations* ed. Burchill et al., (Palgrave, 2005), 57.

⁶⁹ Scott Burchill, “Liberalism” in *Theories of International Relations* ed. Burchill et al., 59.

⁷⁰ Robert O Keohane and Joseph S. Nye, *Transnational Relations and World Politics*. (Cambridge, Mass: Harvard University Press), 1981.

states .⁷¹ Axelrod⁷² in “The Evolution of Cooperation” and Keohane⁷³ in “After Hegemony” involved in more intense discussions how cooperation can be achieved under anarchy. In their thoughts, as a consequence of interdependent relations among states, cooperation motives led to formation of international regimes, norms and institutions.⁷⁴

Similarly, Rosenau and Cziempel conceptualized the interdependence in an anarchic environment with saying “governance without government”. In this new environment, increasingly globalized economic system made a disparity with a political system split into competing sovereignties.⁷⁵

Lots of discussions have been undertaken with regard to international institutions’ advantages, structures and design. These discussions contoured a new school on international regimes within liberalism which was pioneered by Krasner and Young. While Krasner described “international regimes” like “principles, norms, rules”, where performers’ anticipations approach each other over a subject matter

⁷¹ Christian Reus Smit, “Constructivism” in *Theories of International Relations* ed. Burchill et al., (Palgrave, 2005), 190.

⁷² Robert Axelrod, *The Evolution of Cooperation* (New York, 1984) cited in Christian Reus Smit, “Constructivism” in *Theories of International Relations* ed. Burchill et al., (Palgrave, 2005), 190.

⁷³ Robert O Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy* (Princeton, 1984) in cited in Christian Reus Smit, “Constructivism” in *Theories of International Relations* ed. Burchill et al., (Palgrave, 2005) 190.

⁷⁴ Christian Reus Smit, “Constructivism” in *Theories of International Relations* ed. By Burchill et al., (Palgrave, 2005), 190 -191.

⁷⁵ James Nathan Rosenau and Ernst Otto Czempiel, *Governance Without Government: Order and Change in World Politics*. (Cambridge: Cambridge University Press, 2003).

of international relations”⁷⁶ is a constitutive metaphor within the literature. He mostly dealt with North- South problems and multinational enterprises. As for to Oran R. Young, he is assumed to be the “godfather” of global environmental issues with its extensive work on the area beginning from 1977 among all contributors to “international regimes” from environmental perspective.⁷⁷ His article on formation of international regimes written in 1980 set a full range of research program for international regimes by trying to answer the questions of why and how the international institutions are formed.⁷⁸ He also worked extensively on components of international regimes, major features of regimes, origins of regimes, formation of international regimes and transformation of regimes.⁷⁹ In short, Young made enormous contributions on the literature on regime theory by elaborating on what are the regimes, why and in which way these regimes have been settled, whether they transform and in which ways to assess the effectiveness of international regimes.

As a matter of fact, neoliberals dealing with cooperation under anarchy also known as liberal institutionalists. These schools’ main contribution to the literature came

⁷⁶ Stephen D. Krasner, “Structural causes and regime consequences: regimes as intervening variables”, *International Organization* 36, No2, (Spring 1982), 185- 205.

⁷⁷ Ronald B. Mitchell, “Oran Young and International Institutions”, *International Environmental Agreements: Politics, Law and Economics* 13, 2013, 2.

⁷⁸Oran R. Young, “International Regimes: Problems of Concept Formation”, *World Politics* 32, No. 3, (1980), 331- 56.

⁷⁹ For more details, please refer to Oran R. Young, “International Regimes: Problems of Concept Formation”, *World Politics*, Vol. 32, No. 3, 1980; Oran R. Young, “The Politics of International Regime Formation: Managing Natural Resources and the Environment”, *International Organization* 43, No.3, (1989), 349- 75; Oran R. Young, “*International Cooperation: Building Regimes for Natural Resources and the Environment*”, (Ithaca: Cornell University Press, 1989) and Oran R. Young, “*Governance in World Affairs*” (Ithaca, NY: Cornell University Press, 1999).

after their discussions on “absolute gains” instead of “relative gains” of neorealism.⁸⁰ As opposed to neorealists’ arguments for states could cooperate only if they would be happy less gain than competitors’; neoliberal institutionalists asserted that international relations did not need to be a zero- sum game.⁸¹ This type of cooperation is categorized as “contractarian” or “constitutive” cooperation under anarchy and the states as actors are assumed to be utility maximizers.⁸²

As a result, liberal accounts made great contribution to international politics in terms of their efforts for explaining conditions for peace and cooperation under even anarchic environment.

2.3.4 Climate Change Politics from Liberal Perspective

Liberal tradition maintains the prevalence of international cooperation for tackling with climate change problem. The formation and functioning of international climate change regime is often taken from liberal framework with its close connections with economics. With this regard, it is argued that particularly the main constituents of UNFCCC echoes heart of neoliberalism from an economic

⁸⁰ Scott Burchill, “Liberalism” in *Theories of International Relations* ed. Burchill et al., (Palgrave 2005), 65.

⁸¹ Scott Burchill, “Liberalism” in *Theories of International Relations*, 65.

⁸² Oran R Young, “Global Governance: Toward a Theory of Decentralized World Order” in *Global Governance: Drawing Insights from the Environmental Experience*, ed. O. R. Young. (Cambridge, MA: MIT Press 1997) cited in Ian H. Rowlands, “Classical Theories of International Relations” in ed. Luterbacher, Urs, and Detlef F. Sprinz. *International Relations and Global Climate Change*. (Cambridge, Mass: MIT, 2001) 55.

aspect where gains and proceeds determines the tolerable Greenhouse gasses concentration.”⁸³ For instance, Bernstein asserts that

Rather than driving the response to climate change, multilateral cooperation is more likely to be an effective means of guiding and regulating a response driven by existing practices in the carbon markets and other extra-Kyoto initiatives.⁸⁴

Among all liberal accounts the ones most related to explaining environmental politics are from neoliberal institutionalist accounts. For most of the debates, the climate change problem has been hypothesized as the dealing with “interdependence in a system of sovereign states lacking the kind of central authorities which are assumed (often quite erroneously) to be capable of providing order and regulation within domestic societies.”⁸⁵

The discussions within the regime theory related to climate change have been also common. Regime theorists particularly have centered around mitigation aspect of climate change.⁸⁶ On the other hand, stretching the discussions within regime

⁸³ Mizan R. Khan, “Climate Change, Adaptation and International Relations”, in ed. Sosa-Nunez, Gustavo, and Ed Atkins. *Environment, Climate Change and International Relations*. E-International Relations, 2016, 16.

⁸⁴ Steven Bernstein et al., “A Tale of Two Copenhagens: Carbon Markets and Climate Governance”, *Millennium: Journal of International Studies* 39, Vol. 1 (2010), 161-73.

⁸⁵ John Vogler and Mark F. Imber. *The environment and international relations*. (London: Routledge, 1996), 8.

⁸⁶For more details on works on regime theory and climate change please refer to Oran R Young, *The Institutional Dimensions of Environmental Change: Fit, Interplay, and Scale*. Cambridge, Mass: MIT Press, 2002; Jinnah, Sikina. 2011. "Climate Change Bandwagoning: The Impacts of Strategic Linkages on Regime Design, Maintenance, and Death". *Global Environmental Politics*. 11, no. 3: 1-9; Nina Hall and Åsa Persson. 2018. "Global climate adaptation governance: Why is it not legally binding?" *European Journal of International Relations*. 24, no. 3: 540-566.

approaches to the governance literature; some others argued the limitations of regime approaches in understanding the climate change politics.⁸⁷

As a matter of fact, Keohane and Victor assert that refining the institutional architecture of the “climate change regime complex” would lead international exertions being more effective. In detail, they argued that as opposed to “continuing to pursue the elusive goal of a comprehensive, integrated regime, ... regime complexes have some distinctive advantages over integrated comprehensive regimes.”⁸⁸

Essentially, neoliberal institutionalism has brought about vital comprehension for climate change politics. In this respect, conceptualization of climate change problem with game theory became quite popular. Contribution by Axelrod for the repeated games into game theory was instrumental in accounting for the essence of neoliberal institutionalism, where the states are no longer assumed to be seek for relative games instead they are thought to seek for absolute gains where they balance their positions in the long term.⁸⁹

The neoliberal institutionalism is often applied to highlight the diverging interests of actors for the case of climate change. As a result, cooperation becomes a more

⁸⁷ For more comprehensive analyses please refer to Bulkeley, Harriet and Newell, Peter. 2010: *Governing Climate Change (Global Institutions)*. Abingdon and New York: Routledge; Okereke, Chukwumerije, Harriet Bulkeley, and Heike Schroeder. 2009. "Conceptualizing Climate Governance Beyond the International Regime". *Global Environmental Politics*. 9, no. 1: 58-78.

⁸⁸ Keohane, Robert O. and David Victor (2011) 'The Regime Complex for Climate Change', *Perspectives on Politics* 9(1): 19.

⁸⁹ Robert Axelrod., and W. Hamilton. "The evolution of cooperation." *Science* 211, no. 4489 (1981): 1390-396.

common feature of international relations thanks to this treatment. Nonetheless, Rowlands notes the difficulties of applying contractarian cooperation to climate change.⁹⁰

In contrast, it is proposed that international environmental institutions can “increase governmental concern”, “enhance the contractual environment”, and “increase national capacity”.⁹¹ Within this framework, Rowlands claims the central role played by United Nations Environment Programme (UNEP) in establishing IPCC.⁹²

Like in various grasps of Young⁹³ the approach was problem-solving rather than critical since he showed how institutions enabled cooperation for the settlement of global environmental problems.

⁹⁰ Ian H. Rowlands, “Classical Theories of International Relations” in ed. Luterbacher et al *International Relations and Global Climate Change*. 49, 57.

⁹¹ Marc A. Levy, Robert O. Keohane, and Peter M. Haas. 1993. Improving the Effectiveness of International Environmental Institutions. In *Institutions for the Earth: Sources of Effective International Environmental Protection*, ed. P. M. Haas, R. O. Keohane, and M. A. Levy. Cambridge, MA: MIT Press cited in Ian H. Rowlands, “Classical Theories of International Relations” in ed. Luterbacher et al *International Relations and Global Climate Change*, 57.

⁹² Ian H. Rowlands, “Classical Theories of International Relations” in ed. Luterbacher, et al, *International Relations and Global Climate Change*. Cambridge, 57.

⁹³ For Oran’s discussion on international regimes please refer to Oran R. Young, “International Regimes: Problems of Concept Formation”, *World Politics*, Vol. 32, No. 3, 1980; Oran R. Young, “The Politics of International Regime Formation: Managing Natural Resources and the Environment”, *International Organization*, Vol. 43, No.3; Oran R. Young, “*International Cooperation: Building Regimes for Natural Resources and the Environment*”, Ithaca: Cornell University Press, 1989 and Oran R. Young, “*Governance in World Affairs*”. Ithaca, NY: Cornell University Press”, 1999.

Despite some scholars emphasize on the significance of non-governmental organizations (NGOs), most analyses center on the interaction between nation states, where international cooperation in practice is considered as intergovernmental cooperation.⁹⁴

As a consequence, liberal accounts showed how cooperation might be a solution of the climate change problem under anarchic international system. This was a result of characteristics of international regimes where countries might pursue absolute gains instead of relative gains with the hope of balancing in the long run.

2.3.5 Critical Approaches

Although “all IR Theoretical approaches, other than realism, are the criticism of realism” is a common belief; for the purposes of classifying theoretical strands within this chapter theoretical approaches apart from realism, liberalism and cognitive approaches are classified as critical approaches which include but not limited to historical materialism, green theory and postmodernist accounts.

The roots of critical approaches are thought to extend to Marx, Hegel, Nietzsche, Weber and Kant. Resting upon the dialectical of Karl Marx, Marxist approaches in IR mirrored “processes which had led to the economic and social unification of the human race and stressed the role that modern capitalism played in accelerating this development.”⁹⁵

⁹⁴John Vogler and Mark F. Imber. *The environment and international relations*. (London: Routledge, 1996).

⁹⁵ Andrew Linklater, “Marxism” in *Theories of International Relations*, ed Scott Burchill et al. (Palgrave, 2005), 124

In other words, Marxist accounts questioned the capitalist system and globalization in a way. Despite of the fact that Marxism basically looks how production paradigm affected class structure and conflict, which at first sight seems irrelevant for world politics; the scholars in 1970 and 80s tried to account for international matters such as geopolitical rivalry and war where the dominant class forces.⁹⁶

Historical materialism triggered the popularity of Marxism in international relations. Historical materialism proclaims that “human beings are determined by the material conditions in which they can survive and reproduce.”⁹⁷ Lenin and Rosa Luxemburg made early attempts to explain the international processes from this perspective while elaborating on imperialism.

Additionally, Dependency School and World Systems Theory broadened the span of these discussions in international relations. Latin American Dependency School might be taken as among the early attempts to integrate Marxism to International Relations.⁹⁸ On the other hand, Wallerstein proposed “world systems theory”, where he divided the world among group of countries which he called as the core and the periphery besides the semi peripheral countries.⁹⁹

⁹⁶ Andrew Linklater, “Marxism” in *Theories of International Relations*, 126.

⁹⁷ Mc Glinchey Stephen, Rosie Walters, and Christian Scheinpflug. *International Relations Theory*. (E- International Relations Publishing: 2017), 43.

⁹⁸ For more details on Dependency School please refer to André Gunder, *Latin America: Underdevelopment or Revolution*. New York: Monthly Review Press, 1969 and Fernando Henrique Cardoso and Enzo Faletto Verné. *Dependency and Development in Latin America*. Berkeley, (Calif: University of California Press, 1979).

⁹⁹ Immanuel Wallerstein, *The Capitalist World Economy*, (Cambridge: 1979).

Dependency school and world systems theory, which can be regarded as the extension of imperialist theories in IR, made a material contribution to IR theory by showing how the capitalism induced nation states' international politics.

As another strand of critical approaches, Robert Cox made a great contribution to IR literature by making the difference among the problem solving and critical theory by questioning positivist neorealism with its famous assertion: "Theory is always for someone and for some purpose"¹⁰⁰ Cox elaborated on the by adapting a Gramscian perspective focused on world orders. He argued that hegemony is the configuration of material power, ideas and institutions and in IR a country can win the hegemony thanks to its dominant classes.¹⁰¹ Together with Cox, Linklater, Booth and Richard Ashley are among the forerunners of the critical international theory.¹⁰² Its definition of hegemony together with drawing significant line between two strands of IR theory is his fundamental contributions of Cox to the critical approaches to IR.

Finally, green politics as a relatively new stance in terms of IR theory builds upon on "green political theory" and "global ecology" Paterson argues; and he asserts that a green position in IR is based on three strands: "limits to growth", "ecocentric

¹⁰⁰ Robert Cox, "Social Forces, States and World Orders: Beyond International Relations Theory", 129.

¹⁰¹ Robert Cox, "Gramsci, Hegemony and International Relations: An Essay in Method". *Millennium Journal of International Studies*. 12, no. 2, 1983, 162-75.

¹⁰² Richard Devetak, "A Rival Enlightenment? Critical International Theory in Historical Mode". *International Theory*. 6, no. 3, 2014, 419.

ethics”, and “decentralization”.¹⁰³ Ecocentrism demarcated by Eckersley requires the refusal of an anthropocentric world view which locates morality merely on human beings instead argue placing value on all living beings and ecosystems.¹⁰⁴ On the other hand, Global ecology literature had two core subjects: one evaluating economic development for a reason in ecological troubles and second putting “commons” on the heart of this perception.¹⁰⁵ In this respect, the Limits to Growth argument which maintained “exponential economic and population growth of human societies was producing an interrelated series of crises”¹⁰⁶ was one of the reasons why Greens rejected notion of sustainability. Moreover, Paterson sees “decentralization” as a part of Green Politics though it is contested.¹⁰⁷ Green politics emerging from pure discussions in political theory and economics; successfully contribute to theoretical debates within IR by denying the admission of existent structures, which constitutes a significant contribution to critical approaches in IR. Taken together all critical approaches provide insights for scholars by proposing the limitations mainstream theories face.

¹⁰³ Matthew Paterson, “Green Politics” in ed. Scott Burchill et al. *Theories of International Relations*, (Palgrave, 2005), 235-236.

¹⁰⁴ Eckersley R, *Environmentalism and Political Theory: Towards an Ecocentric Approach* (London), 1992 cited in Matthew Paterson, “Green Politics” in ed. Burchill et al. *Theories of International Relations*, Palgrave 2005, 238-239.

¹⁰⁵ Matthew Paterson, “Green Politics” in ed. Burchill et al. *Theories of International Relations*, 238.

¹⁰⁶ Meadow et al, *The Limits to Growth* (London) 1972 and Dobson, *Green Political Thought* (London) 1990 cited in Matthew Paterson, “Green Politics” in ed. Burchill et al. *Theories of International Relations*, Palgrave 2005, 237.

¹⁰⁷ Matthew Paterson, “Green Politics” in ed. Burchill et al. *Theories of International Relations*, 240- 242.

2.3.6 Climate Change Politics from Critical Approaches

A wide spectrum of critical approaches such as historical materialism (or neomarxism) and green theory might be useful in explaining the climate change problem in international relations.

Marxism proclaims that material circumstances can be altered by the actions of human beings in addition to incidents such as human induced climate change. Actually, historical materialists basically depart from the power asymmetries within the framework of climate change since their assertion has been that “capital” determines the international setting or rules of climate change where North attempts to impose their preferences to the Global South.¹⁰⁸ Rowlands undertakes a substantial analysis on how historical materialism views the climate change. He asserts that interests of oil companies contradict with the mitigation measures where he defines these transnational oil companies causing most of the global carbon emissions as capital giving examples from the US.¹⁰⁹

Similar to previous analyses, Mathew Paterson relates the dissimilarities of countries with regard to their climate change positions to their endowment of energy and culture of energy industries, which he sees very strong in the US.¹¹⁰ On the other hand, being as a different strand Elliot on the other argues that

¹⁰⁸ H. Ian Rowlands, “Classical Theories of International Relations”, 49.

¹⁰⁹ H. Ian Rowlands, “Classical Theories of International Relations”, 49.

¹¹⁰ Matthew Paterson, *Global warming and global politics*. (London: Routledge, 1997), 78.

concerns about trade balances and competitiveness were noticeable in the debate on global climate change.¹¹¹

Moreover, for tackling with climate change problem Navarrete argued that “current power relations need to be fundamentally challenged”.¹¹² In this vein, he claims that it is needed to “understand climate change as a persuasive force pushing us toward reframing the power structures under which modernity and global capitalism take place.”¹¹³

Finally, Levy and Egan’s analysis for international climate change negotiations based on neo-Gramscian theoretical framework puts forward “a strategic concept of power” by concentrating over enterprises’ reactions within European, US automobile and energy sector. They claim that “neo-Gramscian framework explains some specific features of corporate responses to challenges to their hegemonic position and points to the importance of political struggles within civil society.”¹¹⁴

In short, critical approaches in a way criticizes the way climate policies are formed today by underlining the destructive role of capital in the formation of climate change policies globally. Even some strands of these approaches such as the green

¹¹¹ Lorraine Elliott, *The Global Politics of the Environment*, (Basingstoke: Macmillan, 1998), 68.

¹¹² David Manuel Navarrete, “Power, realism, and the ideal of human emancipation in a climate of change”, *Wiley Interdisciplinary Reviews*, no 6 (2010), 785.

¹¹³ David Manuel Navarrete, “Power, realism, and the ideal of human emancipation in a climate of change”

¹¹⁴ David Levy and Daniel Egan, “A Neo-Gramscian Approach to Corporate Political Strategy: Conflict and Accommodation in the Climate Change Negotiations”, *Journal of Management Studies* 40, No.4 (June 2003), 803.

politics are normative in the sense that they call for a complete restructuring for stabilizing the environmental problems.

2.4 Theoretical Perspective of This Thesis

Theories are “beacons, lenses, or filters” for comprehending the world.¹¹⁵ Similarly, making international politics more graspable is one of the objectives of studying a broad range of IR theories.¹¹⁶ To put it in more concrete terms, studying IR theories aims to “make better sense of the actors, structures, institutions, processes and particular episodes mainly, but not only, in the contemporary world.”¹¹⁷ With this respect, the theoretical perspective of a research really matters. For investigating this study’s research question, which has been “why domestic factors are not sufficient the international climate change policies of countries”; neoclassical realism is thought to be the most instrumental approach as a theoretical framework.

As a theory for accounting for the foreign policy behavior of states, neoclassical realism termed after Rose’s famous work “Neoclassical Realism and Theories of Foreign Policy” opens the black box. As opposed to neorealism which takes “relative distribution of power” as the key variable and rests on the system level analysis to explain world politics by ignoring state level analysis; neoclassical

¹¹⁵ Jack Donnelly, “Realism”, in *Theories of International Relations* ed. Scott Burchill et al., Palgrave, 2005, 30.

¹¹⁶ Scott Burchill and Andrew Linklater, “Introduction,” in ed. Scott Burchill et al., *Theories of International Relations* (Palgrave, 2005), 15.

¹¹⁷ Scott Burchill and Andrew Linklater, “Introduction, 15.

realism, neoclassical realists do not aim to build a general international politics theory; instead they intend to explain the foreign policy behavior of states.¹¹⁸

Gideon Rose summarizes how neoclassical realism incorporates internal and external variables in order to account for foreign policy as follows:

... country's foreign policy is driven first and foremost by its place in the international system and specifically by its relative material power capabilities. This is why they are realist...the impact of such power capabilities on foreign policy is indirect and complex, because systemic pressures must be translated through intervening variables at the unit level. This is why they are neoclassical.¹¹⁹

In other words, what neoclassical realists argue is that even though a nation's relative power in international system as an international factor is decisive in formulating foreign policy, domestic variables can also shape a state's foreign policy.

According to neoclassical realists as Rose argues, "understanding the links between power and policy requires close examination of the contexts within which foreign policies are formulated and implemented". Besides, in the neoclassical realism's sphere "leaders can be constrained by both international and domestic politics."¹²⁰

¹¹⁸ Gideon Rose, "Neoclassical Realism and Theories of Foreign Policy", *World Politics* 51, (1998): 144- 72.

¹¹⁹ Gideon Rose, "Neoclassical Realism and Theories of Foreign Policy", 146.

¹²⁰ Gideon Rose, "Neoclassical Realism and Theories of Foreign Policy", 147-152.

Similar to neorealist accounts, neoclassical realists take relative distribution of power as independent variable. However, while their dependent variable is foreign policy behavior, neorealists attempt to account for international political outcomes. The difference is that neoclassical realists employ domestic constraints and elite perceptions as intervening variable.¹²¹ Even the state itself might play the intervening role in neoclassical realism.¹²²

As a result, neoclassical realism is a very powerful approach for explaining the international politics of the states given the at least temporary role of domestic factors in policy formulation. Since neoclassical realism is a comparatively new approach, its application on climate change policies is limited. Within this scarcity, in his neoclassical account of climate change politics, Purdon argued that climate change cooperation is constrained “by shared norms and interests emanating from the international level” and searches for the central role of material interests.¹²³

With this regard, his inquiry of worldwide climate finance, endorses neoclassical realism’s account via signifying the superior performance of emission trading systems over green financial sources with respect to amount coming from overseas

¹²¹ Jeffery W. Taliaferro, Steven E. Lobell, Norrin M. Ripsman “Introduction: Neoclassical realism, the state, and foreign policy”, 20.

¹²² Jeffery W. Taliaferro, Steven E. Lobell, Norrin M. Ripsman “Introduction: Neoclassical realism, the state, and foreign policy”, 4.

¹²³ Marc Purdon, “Neoclassical realism and international climate change politics: moral imperative and political constraint in international climate finance”, *Journal of International Relations and Development* 20, (2017), 1.

source relocations together with economic foundations dissemination addition to possibility of this supporting is “new and additional”.¹²⁴

When turning back to the discussion on the superiority of neoclassical realism in elucidating international climate change policies of countries; it might be concluded that this superiority comes from its realist tradition by explaining international relations as power politics with emphasizing the fundamental role of national interests and its divergence from neorealism with appraisal of domestic politics in international politics at least in the short run. Further details for these aspects of superiority are presented below.

The emphasis on *national interests*, *survival* and *power maximization* in neoclassical realism coming from its realist roots is extremely instrumental in explaining climate change policies. To begin with national interests, climate change policies might be thought as directly related to national interests since these policies are a matter of economic power with their close connection to energy and development policies. In other words, the mitigation policies which might require changes in energy production and consumptions of countries affect the economic activity therefore pose a risk for sustainability of growths for countries.

Additionally, due the fact that states try to maximize their powers in order to survive under the anarchy where there is no higher authority for making rules; no country desires to lose its power in the international system due to its own or other state’s climate policies; or each country desires to maximize its power by means of its climate policies. The power referred in this context is mostly economic power which can be affected by the mitigation and adaptation policies of states.

¹²⁴ Marc Purdon, *Neoclassical realism and international climate change politics*, 27.

Since climate change policies such as mitigation efforts which are closely linked to energy policies or adaptation policies have impacts on economic activities; countries evaluate the climate change problem as either a challenge or an opportunity for their economic powers in the international system. If any international regime bringing about mandatory emission reductions makes a country better off based on its own energy and economic outlook, in other words serves to its national interests, it might support this regime. Hence, countries aim to maximize their power by enjoying competitive advantages emanating from renewable energy technologies, low carbon technologies and best land use and forestation practices.

Besides, countries try to avoid trade related measures imposed in relation to carbon emissions which bring them burden or which hinder their development practices. That is because the competitiveness of countries, which is a fundamental concern for most countries to sustain their growth rates and reach their development goals, can be influenced by favorable and unfavorable climate change policies of countries such as market access barriers in the form import bans, additional liabilities in the form of border tax adjustments or market access opportunities for renewable energy technologies. Therefore, climate change policies might have an impact on economic power of countries via energy and trade policies.

Moreover, in terms of survival; with its adverse consequences such as rising sea levels, increasing droughts and catastrophic events, climate change appears to be a threat for many countries around the world. That is why national or global actions to prevent those negative effects due to global warming, which are actually a matter of survival for many countries by risking the sustainability of agriculture, residential areas, and even economic activity.

As a result, climate change policies might be serving the national interests of some countries, ensuring their survival and power maximization goals.

Second point why neoclassical realism is most relevant for this research is that as opposed to neorealism taking states as unitary actors; neoclassical realism deals with the dynamics within a state as well. To put in other words, this dares to unwrap the mysteries of states within an aim to scrutinize the decision making practices of states. By means of this, the role of domestic structures and policies in setting international policies can be investigated to some extent. Thus, neoclassical realism's taking into consideration how domestic or inner state factors affect the international politics of states is quite useful for my research. Because of the fact that I plan to investigate the domestic dynamics such as political factors like attitudes of leaders and other pressure groups and legislative factors such as sufficiency of domestic climate policies in addition international dynamics I argue that neoclassical realism best fits with my research structure since domestic factors which might serve as intervening variables for international climate change policies of countries being influential near term but meaningless in long term.

The unit of analysis in this study is envisaged to be state while the level of analysis is international system. As a result, looking from neoclassical realist lenses would provide an opportunity to assess the treatment of neoclassical realism for the international institutions and regimes at the system level as well as state behaviors.

As a matter of fact, neoclassical realism is proposed being a philosophy of foreign politics attempting for explaining international behavior of nations (independent variable) by taking into account the impact of their capabilities and domestic dynamics (intervening variables). Therefore it would be an opportunity for searching the role of international institutions or regimes on the international

politics of countries by assessing how these affect the above mentioned intervening variables or questioning for whether these regimes they also intervening variable or not.¹²⁵

Besides this analysis is anticipated to sort out the political economy of climate change from the realist paradigm where we see the dominance of national interests and power struggles.

2.5 Conclusion

This part has endeavored drawing a theoretical framework of the thesis. With this motivation, following a short overview how climate change is conceptualized as a problem in IR, the chapter has provided a general review of prevalent IR theoretical perspectives, namely realism, liberalism and critical approaches. In addition, the perception of each theoretical perspective is supplemented by the conception of climate change problem. Lastly, the theoretical perspective of this thesis, namely neoclassical realism, is presented and discussed extensively.

¹²⁵Jeffery W. Taliaferro, Steven E. Lobell, Norrin M. Ripsman “Introduction: Neoclassical realism, the state, and foreign policy”

CHAPTER 3

RELATIONSHIP BETWEEN CLIMATE CHANGE AND INTERNATIONAL TRADE

3.1 Introduction

Climate change as among crucial discussion axis within that research is broadly debated from the aspect of trade and market access in this chapter. The chapter starts with the general discussion on global warming being a global ecological matter and international responses for it. Subsequently, it frames the economics of climate change and finally it focuses on climate related trade measures which can improve or deteriorate the market access capacities and efforts of countries.

3.2 The International Response to Climate Change Problem

Global warming has begun to take a striking place on the agenda of international community beginning from late 1970s. With this regard, 1972 Stockholm Conference (UNCHE) has been among the early experiences when a need for “a common outlook and for common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment”¹²⁶ was strongly brought to the international agenda for the first time. As a consequence of this, environmental consciousness of international society ascended particularly after 1972 Stockholm Conference. As a result of this awakening a series of

¹²⁶ UN, “Declaration of the United Nations Conference on the Human Environment”, 1972, https://legal.un.org/avl/pdf/ha/dunche/dunche_e.pdf (Accessed on February 15, 2014).

multilateral environmental agreements were negotiated on matters ranging from endangered species to the problem of ozone depletion till late 1980s except for a specific agreement dealing with global warming problem.

In point of fact, First World Climate Conference held at 1979 could be regarded as the earliest international platform explicitly devoted to climate change concerns. Subsequent to the Conference, climate change problem attracted greater notice at the international sphere. To exemplify, United Nations (UN) referred this matter first time by embracing “resolution 43/ 53” asserting it had been “a common concern of mankind”.¹²⁷ Another significant result of the Climate Conference was creation of the scientific research program as the first step in the formation of the IPCC in 1988. IPCC was recognized so as to “assess the scientific, technical and socio-economic information relevant for the understanding of the risk of human-induced climate change”.¹²⁸ By means of the first assessment report of IPCC disclosing estimations and appraisals together with other scientific works granting for the international stimulus to handle this problem, the UN General Assembly launched the a new institutional structure to conclude for an agreement as a framework as of 1990.¹²⁹ In order for intending to realize this aim, the Committee made five consecutive negotiation meetings in 1991 and 1992.¹³⁰

¹²⁷ UN, “Protection of global climate for present and future generations of mankind”, *70th Plenary Meeting, A/RES/43/53* 6 December 1988. <http://www.un.org>. (Accessed on January 1, 2019).

¹²⁸ IPCC, “About IPCC”, <http://www.ipcc.ch/about/about.htm>, (Accessed on June 6, 2014)

¹²⁹ Paul G. Harris, “The Glacial Politics of Climate Change”, *Cambridge Review of International Affairs* 21, No.4 (2008): 455- 64.

¹³⁰ The Five Interstate Negotiation Sessions are as follows: 1. Chantilly-USA (February 1991), 2. Geneva- Switzerland (June 1991), 3. Nairobi-Kenya (September 1991), 4. Geneva- Switzerland (December 1991), 5. New York (February 1992). For further details, please see: Matthew Paterson, *Global Warming and Global Politics*, (Routledge: 1996, London), 49-71.

3.2.1 Formation of UNFCCC and Kyoto Protocol Period

By means of the impetus brought by Intergovernmental Negotiation Committee negotiations, UNFCCC was signed at the in June 1992 as one of the three Rio Conventions.¹³¹

The UNFCCC was formally released for signature in 1992 and came into effect in 1994.¹³² Main goal of the Convention was disclosed in Article 2: “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate.”¹³³

As it is seen from its main goal, UNFCCC aims to address the “externalities” due to transboundary climate change problem.¹³⁴ Being as globally recognized, there are currently 195 states which completed ratification procedures of the UNFCCC. These countries are divided into some groups with respect to their economic status and obligations. Those countries are named as Parties to UNFCCC and grouped into three: Annex I (Organization of Economic Cooperation and Development

¹³¹ United Nation Conference on Environment and Development is broadly known as Rio Earth Summit. The other Rio Conventions are Convention on Biological Diversity (CBD) and United Nations Convention Combat Desertification (UNCCD).

¹³² For further details on Rio Conventions please see: UNFCCC, “What is the United Nations Framework Convention on Climate Change?”, http://unfccc.int/essential_background/convention/items/6036.php, (Accessed on 17/02/2014).

¹³³ UNFCCC, “United Nations Convention on Climate Change (FCCC/INFORMAL/84)”, 1992, 9 http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf. (Accessed on 17/02/2014).

¹³⁴ Externalities are costs incurring due to some processes which are not reflected within their normal costs. For further details, please refer to Part 3.3.

(OECD) members and Transition Economies (EITs), non-Annex I (emerging economies) and Annex II (OECD members). The Convention enforces differentiated commitments for these three groups. For example, industrialized countries listed in Annex I and II, were seen as “the source of most past and current greenhouse gas emissions” and they were “expected to do the most to cut emissions” at the time of signature.¹³⁵

As a result, Annex I countries targeted to curb their GHGs by 2000 taking 1990 as the base¹³⁶ while Annex II countries were urged to deliver monetary support and to encourage technology transmission to developing country parties.¹³⁷ In addition, all parties to the Convention had the reportage commitment. Nevertheless, the Parties stated that specific pledges for Annex I Parties under the Convention were not satisfactory and started negotiations for a more binding legal instrument in 1995¹³⁸

¹³⁵ UNFCCC, “Climate Get The Big Picture” <https://unfccc.int/resource/bigpicture/> (Accessed on January 2,2019).

¹³⁶ Although United States and Turkey are included in Annex I, they did not have quantified emission reduction targets since when the Convention entered into force Turkey was not a party to the Convention.

¹³⁷ UNFCCC, “United Nations Convention on Climate Change (FCCC/INFORMAL/84)”.

¹³⁸ Farhana Yamin and Joanna Depledge, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures*, (Cambridge University Press: Cambridge, 2004), 27.

Finally, Kyoto Protocol, bringing compulsory emission decrease targets for industrialized countries as an international agreement linked to the UNFCCC, was agreed, opened to signature and finally came into effect 2005.¹³⁹

Consequently, KP put substantial liability on developed countries with respect to the principle of "common but differentiated responsibilities" (CBDR).¹⁴⁰ CBDR Principle is defined in "Rio Declaration on Environment and Development Principle 7" as:

In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command. ¹⁴¹

As it is seen, CBDR Principle assures the varying responsibilities of developed and developing countries but notes that they should struggle together.

Originally, Kyoto Protocol was designated to last till 2012. However, due to the failure to compromise on a new regime beyond 2012 on a timely basis; a new commitment period, thereafter named as second commitment period was agreed. The next pledge time frame for the KP has intended for bridging the gap between

¹³⁹ UNFCCC, "Kyoto Protocol", http://unfccc.int/kyoto_protocol/items/2830.php. (Accessed on 18/02/2014).

¹⁴⁰ UNFCCC, "Kyoto Protocol".

¹⁴¹ UN, "Rio Declaration on Environment and Development 1992", https://wedocs.unep.org/bitstream/handle/20.500.11822/19163/Rio_Declaration_on_Environment_and_Development.pdf?sequence=1&isAllowed=y, (Accessed July 14, 2018), 2.

the Kyoto Period and conclusion of a new post Kyoto regime for 2020.¹⁴² Therefore the original time interval of the Protocol is named as the first pledge period of KP. This period commenced in 2008 and ended in 2012.¹⁴³ In this period, the parties given in Annex B of KP, being as Annex I Parties of the Convention, admitted to make individual emission targets varying from –8% to +10% and summing up to aggregate reduction of 5%.¹⁴⁴ Emission of GHGs included to be reduced or limited are determined to be CO₂, CH₄, N₂O, HFCs, PFCs, SF₆.¹⁴⁵

Actually, United States and Turkey were the only Annex- I Countries not taking binding emission reduction commitments on account of the point that the US failed to complete the ratification procedures for the Protocol and Turkey was not a Party to the Convention during the phase of KP'S conclusion in 1997. Therefore, it was discluded in Annex B of the KP as an Annex I party to taking quantified emission targets.¹⁴⁶

¹⁴² European Commission, “Kyoto 2nd commitment period (2013–20)”, https://ec.europa.eu/clima/policies/strategies/progress/kyoto_2_en, (Accessed on January 6, 2019).

¹⁴³ UNFCCC, “Kyoto Protocol”.

¹⁴⁴ Farhana Yamin and Joanna Depledge, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures*, 25.

¹⁴⁵ UNFCCC, “Kyoto Protocol Reference Manual”, https://unfccc.int/resource/docs/publications/08_unfccc_kp_ref_manual.pdf. (accessed on January 6, 2019).

¹⁴⁶ Ministry of Foreign Affairs, “United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol”, <http://www.mfa.gov.tr/united-nations-framework-convention-on-climate-change-unfccc-and-the-kyoto-protocol.en.mfa> (Accessed on January 6, 2019).

Along with the issues of firmer reportage practices regarding Annex I Countries, obedience arrangement to report the instances of non-obedience with the KP, and systematic reviews for commitments; there are a number of issues having commercial implications with regards to content of KP.¹⁴⁷ These are flexibility mechanisms, that is to say “joint implementation, Clean Development Mechanism (CDM) and emissions trading”.¹⁴⁸

3.2.2 Post- Kyoto Climate Change Negotiations

After the failure for conclusion a post 2012 climate change regime at Copenhagen Climate Change Conference in 2009; Durban 2011 Summit, was a progression in the sense that Parties settled on going on negotiations for a new post- Kyoto climate change regime with the decisions “ to launch a process to develop a protocol, another legal instrument or an agreed outcome with legal force under the Convention applicable to all Parties”¹⁴⁹ and “...to adopt this protocol, another legal instrument or an agreed outcome ...to come into effect and be implemented from 2020.”¹⁵⁰ As a final point for the post Kyoto track, Green Climate Found was the lunched with numerous issues to assist its operationalization.¹⁵¹ Furthermore,

¹⁴⁷ UNFCCC, “Kyoto Protocol Reference Manual”.

¹⁴⁸ UNFCCC, “Kyoto Protocol Reference Manual”.

¹⁴⁹ UNFCCC, “Report of the Conference of the Parties On Its Seventeenth Session, Held At Durban From 28 November to 11 December 2011 (FCCC/CP/2011/9/Add.1)”, 2,

¹⁵⁰ UNFCCC, “Report of the Conference of the Parties On Its Seventeenth Session, 2.

¹⁵¹ UNFCCC, “Report of the Conference of the Parties On Its Seventeenth Session, 55.

during Doha Climate Summit in 2012, the extension of the KP for the another pledge term was finalized which would begin in 2013 and end in 2020 thanks to the momentum regained in Durban¹⁵² For the second commitment period, Parties agreed to curb GHGs more than 18 percent in comparison to 1990 levels for a revised list of GHGs.¹⁵³ Nonetheless, the figure of parties undertaking quantified emission targets in the extended pledge term was decreased. Some developed country parties like Russia did not make commitments for emission reductions.¹⁵⁴ Because of the ratification rule regarding this new extended term of the KP necessitating approval from 75 % of countries, precisely 144 Parties, has not been reached yet, the Amendment has not been in force.¹⁵⁵

A full listing of UNFCCC Annual meetings are displayed below as a reference in Table 2.¹⁵⁶

¹⁵² UNFCCC, “Report of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol on its eighth session, held in Doha from 26 November to 8 December 2012” FCCC/KP/CMP/2012/13/Add.1, 3, <http://unfccc.int/resource/docs/2012/cmp8/eng/13a01.pdf>, (Accessed on 15/06/2014).

¹⁵³ UNFCCC, “Kyoto Protocol”.

¹⁵⁴ UNFCCC, “Doha Amendment to Kyoto Protocol (C.N.718.2012)”, <https://treaties.un.org/doc/Treaties/2012/12/20121217%2011-40%20AM/CN.718.2012.pdf>, (Accessed on 18/02/2014).

¹⁵⁵ UNFCCC, “Doha Amendment”, <https://unfccc.int/process/the-kyoto-protocol/the-doha-amendment>, (accessed on 6 January 2019).

¹⁵⁶ Adapted from UNFCCC Official Website accessed from <https://unfccc.int/>

Table 2: The List of UNFCCC Annual Meetings

PLACE	DATE	
Katowice	2018	Post- Paris Negotiations
Bonn	2018	
Marrakech	2016	
Paris	2015	Post- Kyoto Negotiations
Lima	2014	
Warsaw	2013	
Doha	2012	
Durban	2011	
Cancun	2010	
Copenhagen	2009	
Poznan	2008	
Bali	2007	
Nairobi	2006	
Montreal	2005	
Buenos Aires	2004	
Milan	2003	
New Delhi	2002	
Marrakech	2001	
Bonn	2001	
The Hague	2000	
Bonn	1999	
Buenos Aires	1998	
Kyoto	1997	Kyoto Negotiations
Geneva	1996	
Berlin	1995	

Source: Adapted from UNFCCC Official Website accessed from <https://unfccc.int/>

3.2.3 New Climate Era: Paris Agreement

Despite the endless sessions often coming to deadlocks and ever rising tensions between 2013- 2015; at Paris Climate Change Conference (COP 21) 195 nations

achieved to adopt Paris Agreement (PA) in December 2015.¹⁵⁷ Paris Agreement has been a “historic agreement to combat climate change and unleash actions and investment towards a low carbon, resilient and sustainable future” and a historical moment it has brought “all nations into a common cause based on their historic, current and future responsibilities”.¹⁵⁸

Paris Agreement’s heart is “Nationally Determined Contributions” which makes it completely unique for the achievement of main goal of Paris Agreement:

to keep a global temperature rise this century well below 2 degrees Celsius and to drive efforts to limit the temperature increase even further to 1.5 degrees Celsius above pre-industrial levels.¹⁵⁹

“Nationally Determined Contributions (NDCs)” incorporates every Party’s efforts for curbing GHGs besides to acclimate to climate change effects. The PA necessitates “each Party to prepare, communicate and maintain successive nationally determined contributions (NDCs) that it intends to achieve”. Moreover, Paris Agreement requires that “Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions.” The NDCs makes PA a platform where both industrialized and industrializing states undertake mitigation activities with conformance of respective domestic capabilities. In that regard, PA is more inclusive as compared to its predecessor Kyoto Protocol.

¹⁵⁷ UNFCCC, “Report of the Conference of Parties on its twenty-first session, held in Paris from 30 November to 13 December 2015”, <https://unfccc.int/documents/9097> (Accessed November 1, 2019)

¹⁵⁸ UNFCCC, “Historic Paris Agreement on Climate Change”, 13 December 2015 <https://unfccc.int/news/finale-cop21> (accessed on January 6, 2019)

¹⁵⁹ UNFCCC, “Paris Agreement”, 2015, <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement> (accessed on January 6, 2019).

Besides, instead of mandatory emission reductions; the PA recognizes the importance of national policymaking in climate change also permits states to determine “their own level of ambition for mitigation”.¹⁶⁰ Additionally, periodical review and revisions of NDCs every five year, rather than giving the PA a pure deadline makes the PA more dynamic.¹⁶¹ However, some works highlight that “many key indicators are currently broadly consistent with emission scenarios that keep temperatures below 2 °C, but the continued lack of large-scale carbon capture and storage threatens 2030 targets.”¹⁶² Finally, the absence of a punishment mechanism neither in PA text nor in PA rule book negotiations is both a curse and bless for the adoption of the Agreement by the Parties.

3.3 Climate Change as a Global Environmental Problem

Environmental problems necessitating collective action to be fixed evaluated as transboundary and global environmental problems. Problems of ozone depletion, atmospheric pollution, deforestation, ocean acidification, waste management, erosion of biodiversity and global warming are prominent transboundary problems whose

¹⁶⁰ Robert Falkner, *The Paris Agreement and the new logic of international climate politics. International Affairs* 92, vol. 5, (2016), 1107.

¹⁶¹ UNFCCC, “What is the Paris Agreement?”, <https://unfccc.int/process/conferences/pastconferences/paris-climate-change-conference-november-2015/paris-agreement> (Accessed on January 6, 2019).

¹⁶² Glen P. Peters et al, “Key indicators to track current progress and future ambition of the Paris Agreement”, *Nature Climate Change* 7, Vol 2, (2017): 118–122.

solution requires collective action.¹⁶³ Transboundary nature of these problems makes their solution a bit more complicated as compared to national environmental problems.

As a prevalent phenomenon of today, climate change is referred in various forms such as global warming and global environmental change. However, the most common usage is still climate change. It is basically defined as “a long-term shift in global or regional climate patterns.” and it is usually attributed to “the rise in global temperatures from the mid-20th century to the present.”¹⁶⁴

For more technical descriptions we might refer to UNFCCC which defines it in Article 1 Paragraph 2 as “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.”¹⁶⁵ or IPCC which asserts it as “...any change in climate over time, whether due to natural variability or as a result of human activity.”¹⁶⁶

Climate change problem, in fact, has been a global environmental problem with negative “externalities”. Externalities denotes circumstances whenever the impact

¹⁶³ Gustavo Sosa- Nunez, “Transversal Environmental Policies”, *Environment, Climate Change and International Relations*. in ed. Sosa-Nunez, Gustavo, and Ed Atkins (E-International Relations: 2016), 94.

¹⁶⁴ Climate Change, “National Geographic Resource Library Encyclopedic Entry”, <https://www.nationalgeographic.org/encyclopedia/climate-change/> (accessed on January 1, 2019).

¹⁶⁵ UNFCCC, “United Nations Framework Convention on Climate Change”. https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf, (Accessed on January 2, 2018), 7

¹⁶⁶ IPCC, "Observed Changes in Climate and Their Effects." *AR4 SYR Synthesis Report*, www.ipcc.ch (Accessed on January 6, 2019), 7

of making and consuming of goods and services inflicts burdens or else advantages that have not been replicated within the charges demanded.¹⁶⁷ Therefore, climate change could bring about disastrous worldwide impacts with its negative externalities on economies. In addition to more unstable weather, more severe droughts might impose water shortages and more common excessive precipitations could increase flooding risks.¹⁶⁸ Furthermore, spread of diseases in a warmer weather could be easier and the agricultural crops could undergo losses from warming.¹⁶⁹ The sea level rises impede coastal islands through heavier erosion and the leakage of salted water into drinking water and irrigation systems.¹⁷⁰ Nevertheless, the anthropogenic climate change was not taken like a problematique about future until very recently.¹⁷¹ However, the adverse effects of it on ecosystems, economies as well as society steer a way of thinking where climate change is tightly linked to economic activity.¹⁷²

¹⁶⁷ OECD, "Externalities", *Glossary Of Industrial Organisation Economics And Competition Law*, 1993, <http://www.oecd.org/regreform/sectors/2376087.pdf>, (Accessed December 3, 2019)

¹⁶⁸ Paul G Harris, "The Glacial Politics of Climate Change", 456.

¹⁶⁹ Paul G Harris, "The Glacial Politics of Climate Change"

¹⁷⁰ Farhana Yamin and Joanna Depledge, *The International Climate Change Regime*, 22.; Paul G Harris, *The Glacial Politics of Climate Change*, 456; European Commission, "Climate Action" http://ec.europa.eu/clima/policies/brief/consequences/index_en.htm, (accessed on February 13, 2018).

¹⁷¹ Paul G Harris, *The Glacial Politics of Climate Change*, 456.

¹⁷² IPCC, *Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. (Paris: IPCC Secretariat, 2007), 26.

Consequently, considering the negative consequences of it over society, ecosystems and economies, climate change is an ultimate concern in international arena and numerous attempts have been made to cope with those adverse effects.

3.4 Economics of Climate Change

Nicholas Stern made a breakthrough by turning the attention to the debate to the “economics of climate change” by expounding the effects of it on economic welfare quantitatively. Stern estimates that if no action is taken

the overall costs and risks of climate change will be equivalent to losing at least 5% of global GDP each year ... the estimates of damage could rise to 20% of GDP or more... In contrast, the costs of action - reducing greenhouse gas emissions to avoid the worst impacts of climate change - can be limited to around 1% of global GDP each year.¹⁷³

Besides the above mentioned costs, “there are also significant new opportunities across a wide range of industries and services” Stern concludes and estimates that “markets for low-carbon energy products are likely to be worth at least \$500bn per year by 2050.”¹⁷⁴ According to Stern “reducing the expected adverse impacts of climate change is therefore both highly desirable and feasible.” and three indispensable components of reducing those risks are “carbon pricing, technology policy, and removal of barriers to behavioral change.”¹⁷⁵

¹⁷³Nicholas Stern, *The Economics of Climate Change: The Stern Review: Summary of Conclusions*, (Cambridge, UK: Cambridge University Press, 2007), vi.

¹⁷⁴ Nicholas Stern, “Stern Review Executive Summary”, http://webarchive.nationalarchives.gov.uk/20130123161956/http://www.hm-treasury.gov.uk/d/Executive_Summary.pdf, (accessed on June 5, 2017) p. Xvi.

¹⁷⁵Nicholas Stern, Stern Review Executive Summary, Xvi.

Furthermore, William Nordhaus estimates that

we take to be a 3 °C rise in global mean surface temperature along with the associated changes in climate. The flow of damages identified from this climate change is estimated to be about ¼ % of output for today's United States economy. ..., which might raise this impact to 1 % or at most 2% of total global output...¹⁷⁶

However he has still been severely criticized for having unrealistic models and underestimating the catastrophic effects of global warming.¹⁷⁷ After briefing those effects on economies in general, how the economic activity is related climate global warming, to put it other way, the relation between global emissions and industrialization should be focused so that it could be understood better why the countries see the climate change as an economic problem as well.

3.5 Trade Related Aspects of Climate Change

There are many mechanisms and measures regarding climate change that can be influential on foreign trade dynamics of countries. For the simplicity of the analysis, the most prominent ones; namely flexibility mechanisms and trade related measures are outlined below.

¹⁷⁶ William Nordhaus. "To Slow or Not to Slow: The Economics of The Greenhouse Effect". *The Economic Journal*, 101(407), (1991), 936.

¹⁷⁷ Fitzroy and Papirakis, The Costs of Climate Change and the Benefits of Mitigation in *An Introduction to Climate Change Economics and Policy*, (Routledge, 2016) 158-159.

3.5.1 Flexibility Mechanisms: Carbon Trade

Flexibility mechanisms or with their popular name market and non-market approaches are crucial elements of international climate regime for countries achieving their mitigation targets. KP has three kinds of mechanisms namely CDM, JI, and Emission Trading Systems (ETS) for ensuring flexibility. First two are based on specific projects as tools feeding the carbon market. The CDM encompasses “investment in emission reduction or removal enhancement projects in developing countries that contribute to their sustainable development”, whereas JI permits “developed countries to carry out emission reduction or removal enhancement projects in other developed countries”.¹⁷⁸ These two mechanisms have unique eligibility criteria for JI and CDM in addition to being a non-Annex I and Annex-I country respectively.¹⁷⁹ Regarding the ETS, KP enables Parties having emission permits not used in the reference period to be traded separately within a framework.¹⁸⁰

After the termination of KP market and non-market approaches of PA will be in effect as of 2021. The Article 6 of PA lays the foundation for international mechanisms for carbon markets by stating “The use of internationally transferred mitigation outcomes to achieve nationally determined contributions under this Agreement shall be voluntary and authorized by participating Parties.”¹⁸¹

¹⁷⁸ UNFCCC, “Mechanisms under the Kyoto Protocol”, <https://unfccc.int/process/the-kyoto-protocol/mechanisms> (Accessed on May 27, 2019).

¹⁷⁹ UNFCCC, “Mechanisms under the Kyoto Protocol”.

¹⁸⁰ UNFCCC, “Mechanisms under the Kyoto Protocol”

¹⁸¹ UNFCCC, “Paris Agreement”, 2015.

Under the PA; there will be two categories of emission trading: ETS and a new voluntary scheme based of the definition of article 6.2 of the PA. In the voluntary scheme, the implementation of the countries’ NDCs permits more striving emission reduction actions.¹⁸² Therefore, Parties are going be capable of incorporating mitigation amounts achieved somewhere else to the national actions voluntarily.¹⁸³ The negotiations have been still continuing under the track of Paris Rule Book for operationalizing these mechanisms. The design of them will be influential since some countries have prospects from carbon trade.

3.5.2 Trade Related Climate Change Measures

Most of the mitigation policies with regard to climate change has some economic impacts. These impacts are generally originated from the asymmetries of carbon policies across various countries. In other words, the effect of emission reduction differs across countries with respect to the carbon intensity of their production. Aaditya Mattoo and Arvind Subramanian examined into the literature on costs of climate change and asserted that the existing literature typically promotes “static efficiency” via unvarying emission pricing besides endorsing supports to industrializing states with means of funds with know-how transfers to avoid the negative effects of the global carbon policies. But, they pointed out the failure of this literature in exploring the rigidity among the “static efficiency” and “dynamic” effects arising due to alterations about production and export structure of the developing countries due to the global uniform carbon pricing. In their work to

¹⁸²UNDP, “Carbon Markets”, <https://www.sdfinance.undp.org/content/sdfinance/en/home/solutions/carbon-markets.html#mst-1> (Accessed on May 6, 2018).

¹⁸³ UNDP, “Carbon Markets”.

account for these dynamic effects, they obtained empirical findings for different scenarios. Accordingly, they concluded that some of the high carbon intensive geographies like Central Asia, Europe (Eastern), North Africa, together with China will undergo significant decreases in their manufacturing production and exports on account of mitigation practices. In their estimation, those effects will be severe for particularly China with a fall in manufacturing production around 6-7 % and exports 9-11 %.¹⁸⁴

Despite the fact that there is a rising consensus that pricing GHGs with taxation them or implementing an ETS is among best ways of handling climate change; carbon leakage, thereby competitiveness fears disturb countries. Therefore, governments desire to incorporate trade related measures packages since they do not want to face carbon leakage problem and they wish to level the playing field so as to compete with their trade and investment partners and finally to encourage the other countries to adopt similar environmental policies or penalize the free riders.¹⁸⁵

However, the impacts of those kinds of measures on international trade; either directly or indirectly; vary. As a matter of fact, while some of the measures influential on international trade can be justified under the various provisions of WTO; some cannot. Moreover, some measures need more elaboration and discussion whose status is unclear under the WTO.

¹⁸⁴ Aaditya Mattoo and Arvind Subramanian. *Greenprint: A New Approach to Cooperation on Climate Change*. (Center for Global Development, 2013), 70- 72.

¹⁸⁵ Gary Clyde Hufbauer, Steve Charnovitz, and Jisun Kim. *Global warming and the world trading system*. (Washington: Peterson Institute for International Economics, 2009), 65- 66.

The outstanding measures affecting international trade are border adjustments on imports and/or exports, unilateral countervailing duties and sanctions, greenhouse gas performance standards, utilizing an all-party climate treaty to inaugurate instructions on commerce and/or as a sword against import restrictions, output based rebates, climate safeguards and allocating emissions allowances to other countries etc.¹⁸⁶ Most common measures are presented below.

The most common debated among those measures are *border tax adjustments (BCAs)*. The border tax adjustments are designed as “tariffs on imported goods, mimicking tax levied on domestic goods or compensations to domestic producers on exports.”¹⁸⁷ Nevertheless their WTO compatibility changes drastically with respect to their design despite these are legally possible alternatives. Provided that they do not deteriorate the certain principles of WTO, the border tax arrangements are compatible with WTO.¹⁸⁸

Border tax adjustments have been popularized recently by academia and politicians to alleviate negative effects of climate policies about competitiveness. For instance Paul Krugman proceeds as inducements need to replicate “the marginal cost of

¹⁸⁶ Gary Clyde Hufbauer, Steve Charnovitz, and Jisun Kim. *Global warming and the world trading system*, 65-92.

¹⁸⁷ Victoria Alexeeva-Talebi, Niels Anger, and Andreas Löschel “Alleviating Adverse Implications of EU Climate Policy on Competitiveness: The Case for Border Tax Adjustments or the Clean Development Mechanism?” in *Reforming Rules and Regulations: Laws, Institutions, and Implementation* ed. by Vivek Ghosal, The MIT Press: Cambridge, 2011, 106.

¹⁸⁸ Ludivine Tamiotti, Robert Teh, and Vesile Kulacoglu. *Trade and Climate Change A Report by the United Nations Environment Programme and the World Trade Organization; [WTO-UNEP Report]*, (Geneva: WTO Publ, 2009), 104.

greenhouse gases in all goods”, no matter where they have been manufactured with the aim of indicating “border adjustments”.¹⁸⁹

Environmental policy polluter heaven problem in climate change is called as carbon leakage or laundering.¹⁹⁰ Without global carbon pricing, BCAs are thought among the best solutions to prevent carbon leakage. In developed states considering mitigation actions, border carbon adjustments were demanded for products coming from regions where carbon underpriced.¹⁹¹ States with overpriced carbon might demand BCAs for balancing competitiveness disadvantage over domestic industries and for forestalling carbon leakage problem which is expected to be originated from the raises of production in states where carbon is underpriced.¹⁹² Three alternative types of BCAs could be discussed as “border taxes”, “mandatory emissions allowance purchases by importers” and “embedded carbon product standards”; each of which aims to avoid at least lessen the risk of

¹⁸⁹ Paul Krugman, “Climate, Trade and Obama”, *New York Times*, June 29, 2009, <https://krugman.blogs.nytimes.com/2009/06/29/climate-trade-obama/> (accessed on March 20, 2018).

¹⁹⁰ Gary Clyde Hufbauer, Steve Charnovitz, and Jisun Kim. *Global warming and the world trading system*, 65.

¹⁹¹ For a detailed examination of previous US Proposals please refer to Climate Strategies, “Designing Border Carbon Adjustment Mechanisms for Enhanced Climate Action”, December 2017 https://climatestrategies.org/wp-content/uploads/2017/12/CS_report-Dec-2017-4.pdf (accessed on May 2019).

¹⁹² Aaditya Mattoo, Arvind Subramanian, Dominique van der Mensbrugghe, and Jianwu He “Trade effects of alternative carbon border-tax schemes”. *Review of World Economics: Weltwirtschaftliches Archiv* 149, Vol. 3 (2013): 588.

competitiveness effects of carbon pricing.¹⁹³ Nordhaus argued that countries with high domestic carbon prices could generate “climate clubs”; which would reach agreement to enforce a pricing adjustment on products incoming from countries without emission pricing equivalently.¹⁹⁴ In this way, BCAs could be thought as a measure for indicating the true costs of production more precisely and being facilitated under Article XX of WTO, these clubs would not create arbitrary or unjustifiable discrimination.

The second type of measures are *trade remedies*. Trade policy tools enabling national authorities for taking counteraction against imports which bring about material injury to domestic industries called as trade remedies as a whole. Those remedies are examined in three types: “antidumping”, “countervailing duty measures”, also “safeguard action” within WTO domain.¹⁹⁵

These trade remedies have extremely complicated technical and legal implementation conditions and procedures which are all based on relevant WTO Agreements.¹⁹⁶ The impacts of these remedies on international trade flows are

¹⁹³ Dieter Helm, Cameron Hepburn and Giovanni Ruta, “Trade, climate change, and the political game theory of border carbon adjustments, *Oxford Review of Economic Policy* 28, Vol 2, (2012): 370-372.

¹⁹⁴ William Nordhaus, “Climate Clubs: Overcoming Free-riding in International Climate Policy1, *The American Economic Review* 105, No. 4, (April 2015): 1339-1370.

¹⁹⁵ WTO, “Anti-dumping, subsidies, safeguards: contingencies, etc.”, https://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm8_e.htm (accessed on September 15, 2019)

¹⁹⁶ For a comprehensive examination on these administrative and legal aspects please refer to WTO Anti-Dumping Agreement and WTO Agreement on Subsidies and Countervailing Measures, and Agreement on Safeguards available at: https://www.wto.org/english/docs_e/legal_e/legal_e.htm#subsidies

tremendously significant. For instance, the coverage of trade remedy initiations is around USD 18.4 billion for G-20 Countries in 2018 while the total coverage of trade for existing measures is around USD 335.9 billion.¹⁹⁷

Because of the fact that climate friendly environmental technologies are taking increasing attention globally, countries which are pursuing competitiveness on these technologies are applying trade remedies more often to preserve their domestic industries. Renewable energy technologies and clean power for example wind turbines, PV cells and biodiesels are uttermost common products that have been subject to trade remedies.¹⁹⁸

In a research undertaken by “United Nation Conference on Trade and Development (UNCTAD)” the import volume affected by these remedies in renewable energy is disclosed as USD 31 billion.¹⁹⁹ The rise of application these remedies in renewable energy have reached such a high point that some scholars underlined the importance of concluding a bilateral agreement dealing with imposition of tariffs

¹⁹⁷ WTO, Report on G20 Trade Measures, 24 June 2019, https://www.wto.org/english/news_e/news19_e/g20_wto_report_june19_e.pdf (Accessed on September 15, 2019), 2.

¹⁹⁸ Jonas Kasteng, “Trade Remedies on Clean Energy: A New Trend in Need of Multilateral Initiatives, The E15 Initiative, Strengthening the Multilateral Trade System”, September 2013, https://unctad.org/meetings/en/Contribution/ditc_ted_03042014e15.pdf (Accessed on September 15, 2019).

¹⁹⁹ UNCTAD, “Trade Remedies Targeting Renewable Energy Sector”, 2014 https://unctad.org/en/PublicationsLibrary/ditcted2014d3_en.pdf (Accessed on September 15, 2019).

between large actors such as EU and China²⁰⁰ or disciplining these remedies in some methodological approaches.²⁰¹

In short, with their enormous volume, trade remedies applied on renewable technologies and clean energy highlight the centrality of competitiveness concerns for countries on those industries.

Another type measure is *Greenhouse Gas Performance Standards*. According to GHG performance, the product emitting more than relevant performance standard is not allowed to be retailed in the market. These standards are compatible with WTO if they treat the domestic and imported products similarly provided that it is not treated as a Technical Barriers to Trade issue based on an international standard.²⁰²

Besides these individual measures, there are *other measures* to be taken to reinforce climate objectives and/ protect competitiveness. There have been a number of suggestions to implement these practices on global scale within a system with clear rules. For example, Hufbauer, Charnovitz, and Kim urged for a Trade and Climate Code delineating a green space where the climate measures.²⁰³

²⁰⁰ Fang Meng, “The Rise of Trade Remedies in the Renewable Energy Sector and the Need for Bilateral Agreement Between the EU and China”. *Climate and Energy Protection in the EU and China*, (2018): 73–84.

²⁰¹ Kim Kampel, “Options for Disciplining the Use of Trade Remedies in Clean Energy Technologies”, *ICTSD Issue Paper*, May 2017.

²⁰² Kim Kampel, “Options for Disciplining the Use of Trade Remedies”, 71- 73.

²⁰³ Gary Clyde Hufbauer, Steve Charnovitz, and Jisun Kim, “*Global warming and the world trading system*”, 103.

Another example was “Greenprint” by Mattoo and Subramanian which calls for a new narrative which is based on the contribution of the developing and emerging economies, where also carrots and sticks related to international trade could be applied if needed along with other mechanisms. They suggested that “ trade actions should be pursued as part of an international agreement on climate change rather than left to future separate negotiations by the WTO”.²⁰⁴

These all together with the new discussions on disciplining the trade remedies on renewable energy cited above imply the ambiguity for the future direction of the trade measures regarding climate change. Therefore, countries should be careful while making their decisions to join Paris Agreement and formulate their relevant domestic policy designs.

3.6 Conclusion

Climate change has been attempted to be debated broadly from the aspect of trade and market access in this chapter. The chapter included the general discussion on global warming trouble and worldwide responses to it in an historical order at the outset. With this aim, early years in formation of international climate change system in other words UNFCCC and KP was highlighted. Besides, Post Kyoto negotiations and Paris Agreement were briefed. Moreover, it has framed the economics of climate change by pointing out unique relation of it with the countries’ policies on economy and energy. Finally, the chapter has focused on climate related trade measures which can improve or deteriorate the market access capacities and efforts of countries.

²⁰⁴ Aaditya Mattoo and Arvind Subramanian. *Greenprint: A New Approach to Cooperation on Climate Change*.

CHAPTER 4

MARKET ACCESS AND BUSINESS DEVELOPMENT FOR ENVIRONMENTAL GOODS

4.1 Introduction

Market access concept is one of the core elements of this thesis on which the argument and analysis have been built upon. Therefore, the market analysis concept is scrutinized historically and practically in this chapter. Since the most prevalent usage of the term is related to international trade; following a brief discussion on international trade theories; the chapter begins with the analysis of market access concept as a part of international trade system. With this regard, firstly, the evolution of the international trade system on a historical basis is outlined. Thereafter, the market access issue is presented from business perspective by discussing its relation with business development on a micro scale. Finally, the concept is addressed from an environmental perspective by highlighting the relation between the climate change and market access issue.

4.2 International Trade Theories

International trade has been focused in economics discussions particularly after the geographical discoveries and appearance of new trade routes. The theories dealing with international trade can be basically divided into two: “classical country- based theories” and “modern firm- based theories” from a business perspective. For the sake of this research, running an eye over country based theories might be useful

to enrich the scope of the discussions involved. Prominent country based theories are listed as mercantilism, absolute advantage, comparative advantage and Heckscher- Ohlin theories.²⁰⁵

Actually mercantilism could be taken as the realist approach in trade theories while the others are from the liberal traditions. Mercantilism, known also as protectionism or nationalist perspective, can be considered among the early theories of international trade. The main idea of mercantilism is that “economic activities are and should be subordinate to the goal of state building and the interests of the state”.²⁰⁶ As a philosophy prevalent between the 16th and 18th centuries, it advocated increasing exports in return for precious metals and avoiding from imports; in other words, it defended a positive foreign trade balance.²⁰⁷

On the other hand, liberal theory in economics is dedicated “to free markets and minimal state intervention”.²⁰⁸ Moreover, at least over the long term, it assumes that a market economy displays a strong tendency toward equilibrium and stability.²⁰⁹

²⁰⁵ Ricky W. Griffin and Michael Pustay, *International Business, Global Edition*. (Harlow, United Kingdom: Pearson Education Limited, 2014) 176- 191.

²⁰⁶ Robert Gilpin and Jean M. Gilpin. *The political economy of international relations*. (Princeton, N.J.: Princeton University Press, 1987), 31.

²⁰⁷ “Mercantilism”, *The New Palgrave Dictionary of Economics*, ed. Steven N. Durlauf and Lawrence E. Blume, 2nd edition 2008. https://link.springer.com/content/pdf/10.1057%2F978-1-349-95121-5_838-2.pdf (Accessed on July 30, 2019).

²⁰⁸ Robert Gilpin and Jean M. Gilpin. *The political economy of international relations*, 27.

²⁰⁹ Robert Gilpin and Jean M. Gilpin. *The political economy of international relations*, 29.

As a matter of fact, the origins of liberal international trade theories within economics literature goes back to Adam Smith's "Wealth of Nations" and David Ricardo's "Principles of Economics"; both of which constituted the roots of liberal trade for nations to become better off with absolute advantages and comparative advantages successively²¹⁰

According to Smith; the division of labor led to a reduction in labor costs, which warranted efficient competition among countries. In his account, motivations for sustaining a continuous trade surplus thanks to absolute advantage could be postponed by resting on the automatic adjustment of the price mechanism.²¹¹

Ricardo on the other hand, expanded the discussion by introducing the comparative advantages to ensure reciprocally profitable trade among nations by justifying complete specialization in the particular commodity with a comparative advantage with regard to labor hours used per unit of output.²¹²

Furthermore, Heckscher-Ohlin, endorsed by Samuelson, championed the production efficiency and utilization of factors of production at full capacity for the grounds of free trade.²¹³ In other words, this theory retains that countries export

²¹⁰ Adam Smith, Andrew S. Skinner, and R. H. Campbell. *An Inquiry into the Nature and Causes of the Wealth of Nations*. (Oxford: Clarendon Press, 1979) and David Ricard, *On the Principles of Political Economy and Taxation*. (Cambridge: at the University Press for the Royal Economic Society, 1966).

²¹¹ Adam Smith, Andrew S. Skinner, and R. H. Campbell. *An Inquiry into the Nature and Causes of the Wealth of Nations*.

²¹² David Ricardo, *On the Principles of Political Economy and Taxation*

²¹³ Mia Mikic, "Heckscher- Ohlin- Samuelson Model" in *International Trade*, (Palgrave Macmillan 1998) 52- 130.

goods which they most efficiently produce as a result of their factor endowments and comparative costs.

In addition to above mentioned trade theories of “classical country- based theories”, there are a number of “modern firm- based theories” such as “Product Life Cycle Theory”, “Country Similarity Theory”, “New Trade Theory” and “Porter’s Theory of National Competitive Advantage”.²¹⁴ As a result, there is an extremely rich literature dealing with international trade mostly emanating from the international economics literature.

4.3 Market Access as an International Trade Concept

The evolution of international trade system stemmed from the needs of countries for selling their goods and services at more favorable conditions on the global scale. The relative competitive advantages helped the nations concentrate on the production and trade of products which those nations yield more competently. In that regard, the efforts of nations to enhance their capabilities to export international markets are evaluated in the context of market access.

Market access does not have a uniform definition. Though the term is not limited to be used in relation to international trade, the common usage is for non-domestic context. While generally defined as “the ability of a company or country to sell goods and services across borders”²¹⁵ or “the freedom to enter a market and sell

²¹⁴ Ricky W Griffin and Michael Pustay. *International Business, Global Edition*, 176- 194.

²¹⁵ Market Access, *Investopedia* <https://www.investopedia.com/terms/m/market-access.asp> (Accessed on September 15, 2019).

goods or services”²¹⁶; WTO officially defines the market access as “the conditions, tariff and non-tariff measures, agreed by members for the entry of specific goods into their markets.”²¹⁷ The most common usage of market access is said to be related to international trade. As a matter of fact, its usage as a concept was no earlier than the second half of the 20th century in a parallel fashion to growing international trade as a result of institutional developments on a global basis.

4.3.1 The Evolution of International Trade System

The global economic system of today has been flourished from the aspiration for an enduring peace and security. The worldwide rules that underlie the multilateral economic system were a pure reaction to the World War II and a desire for it to never recur.²¹⁸ To put it another way, the very much institutionalized multilateral trade system of today did not come about at one night. It has been a gradual formation beginning from World War II days. With this aim, the earliest efforts for a global liberal trade system came from American and English leaders of that time eventuated with formation of Atlantic Charter.²¹⁹ It might be thought as the ancestries of multilateral international economic rule-making, comprising Bretton

²¹⁶ Market Access, *Financial Times Lexicon*, <http://lexicon.ft.com/Term?term=market-access> (Accessed on November 4, 2018).

²¹⁷WTO, “Market Access For Goods”, https://www.wto.org/english/tratop_e/markacc_e/markacc_e.htm (Accessed November 3, 2018).

²¹⁸ WTO, “History of Trade” https://www.wto.org/english/thewto_e/history_e/tradewardarkhour41_e.htm (Accessed on September 15, 2019).

²¹⁹ WTO, “History of Trade”.

Woods's institutions, including the "General Agreement on Tariffs and Trade (GATT)" of 1947.²²⁰

In spite of intentions to generate a third Bretton Woods Institution- for commanding worldwide economic collaboration's the commerce aspect; the expanded negotiation text going beyond international trade disturbed many Parties' stake holders such as business groups and negotiations failed to conclude such an international organization.²²¹

Besides, while talks for conclusion of ITO continued in December 1945 when World War II had just finished, 15 countries initiated negotiations to diminish and bind tariffs. Hence, the talks ended with some trade rules for custom tax reductions.²²²

Actually, as a result of the failure of formation of ITO, the survival of it was in the area of international trade²²³ and with compromise on tariff concessions, the GATT was adopted and signed in 1947 by 23 Parties.²²⁴ On this account, the GATT provided the rules from 1948 to 1994 for world trade and enabled the uppermost

²²⁰ WTO, "History of Trade".

²²¹ William Diebold, "The End of the ITO", *Essays in Finance October 1952*, No. 1.6 (Princeton University International Finance Section) https://www.princeton.edu/~ies/IES_Essays/E16.pdf (accessed on November 30, 2018).

²²² WTO, "Understanding the WTO- the GATT Years" https://www.wto.org/english/thewto_e/whatis_e/tif_e/fact4_e.htm (accessed on September 30, 2018)

²²³ William Diebold, "The End of the ITO", 27.

²²⁴ WTO, "Press Brief Fiftieth Anniversary Of The Multilateral Trading System", https://www.wto.org/english/thewto_e/minist_e/min96_e/chrono.htm (Accessed on September 15, 2015)

growth ratios in international trade. Although it looked like entrenched during nearly half a century, GATT was only a temporary treaty.²²⁵

Henceforth, “market access” notion was firstly addressed by GATT on a global and institutional basis thanks to the multilateral talks on tariff concessions even though not marked as a concept officially. The efforts to escalate the international trade continued during the period of 1948- 1994 in the form of negotiation rounds for further liberalization of international trade.²²⁶

The GATT negotiation rounds presented in Table-3 focused on further decreasing tariffs initially.²²⁷ Later, when Kennedy Round gave a birth to an Anti-Dumping Agreement; Tokyo Round was the earliest foremost effort for addressing market entry barriers which are different than tariffs like quotas. Besides, it induced a material reduction on tariffs for the leading developed countries worldwide, which in turn reduced the tariff of industrial goods on average below 5 % rates and involved a component of “harmonization”, which means that the higher the tariff, the more the cut, correspondingly.²²⁸ The Uruguay Round taking place in the

²²⁵ WTO, “History of Multilateral Trading System” https://www.wto.org/english/thewto_e/history_e/history_e.htm (accessed on September 30, 2018)

²²⁶ World Trade Organization, “The GATT years: from Havana to Marrakesh”, https://www.wto.org/english/thewto_e/whatis_e/tif_e/fact4_e.htm (accessed on November 12, 2018)

²²⁷ World Trade Organization, “The GATT years: from Havana to Marrakesh”.

²²⁸ WTO, “History of Multilateral Trading System”.

period of 1986- 1994, was the final and all-encompassing in entire negotiation rounds which headed to the formation WTO package.²²⁹

Table 3: GATT Trade Rounds

Title	Time Period	Coverage
Geneva	Started and Ended: 1947	“Tariffs”
Annecy	Started and Ended: 1949	“Tariffs”
Torquay	Started and Ended: 1951	“Tariffs”
Geneva	Started and Ended: 1956	“Tariffs”
Dillon Round	Started: 1960 Ended: 1961	“Tariffs”
Kennedy Round	Started: 1964 Ended: 1967	“Tariffs and anti-dumping measures”
Tokyo Round	Started: 1973 Ended: 1979	“Tariffs, non-tariff measures, framework agreements”
Uruguay Round	Started: 1986- Ended: 1994	“Tariffs, non-tariff measures, rules, services, intellectual property, dispute settlement, textiles, agriculture, creation of WTO, etc”

Source: World Trade Organization, “ The GATT years: from Havana to Marrakesh”, https://www.wto.org/english/thewto_e/whatis_e/tif_e/fact4_e.htm (accessed on November 12, 2018)

The increased popularity with the fresh Parties’ arrival through the Uruguay Round validated the significance of multilateral system of trade for development, reform in economy and trade.²³⁰

²²⁹ World Trade Organization, “The GATT years: from Havana to Marrakesh”.

²³⁰ WTO, Understanding the WTO- the GATT Years” .

However, because of reduced tariffs to very low levels with GATT countries looked for new bilateral arrangements for increasing their market shares and adopted subsidies regarding trade in agricultural. All those together weakened reliability of GATT and efficiency. Various attempts to regulate market access within very competitive sectors like textile and clothing sometimes led to exceptional structures like Multifiber Agreement within GATT.²³¹

These developments and increased sophistication of trade intensified the efforts for constructing a multilateral trade system which resulted in the Uruguay Round and its outcome the WTO. Despite the fact that GATT established a durable multilateral trade system which got more liberalized thanks to trade negotiations rounds, the system needed an in-depth renovation by the 1980s, which ultimately led to the formation of the WTO with the Uruguay Round. Indeed, WTO formed in 1995, was the foremost development for international trade since Second World War was terminated.²³²

Indicated objectives of WTO stay those of its precursors: non-discriminatory treatment in international trade; the reduction and/or elimination of barriers to trade, the settlement of disputes in a pacific way.²³³

The GATT principally focused on goods trade; while the WTO package also included service trade and intellectual property rights in addition to new methods

²³¹ WTO, Understanding the WTO: The Agreements- Textiles: Back in the Mainstream” https://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm5_e.htm (Accessed on September 15, 2019)

²³² World Trade Organization, “The GATT years: from Havana to Marrakesh”

²³³ Rorden Wilkinson, “The WTO” in *Multilateralism and the World Trade Organization*, (London: Routledge, 2000), 56.

for the dispute settlement. The WTO not only focused on the expanding of the range of trade coverage but also it broadened the dynamics of international trade law. Also regulations on investments with trade perspective and intellectual property rights moved the conventional parameters of trade into ‘trade related’ areas which are vital to the production process.²³⁴ The WTO is almost universal at present. Having 76 members at the time of establishment²³⁵, it has attracted many countries in time with the gains from non-discrimination principle it promises. The WTO currently has 164 members, representing over 98% of international trade.²³⁶

4.3.2 The Achievements of International Trade System

Robustness of WTO/GATT international trade system has come from its basic principles. WTO assured non- discrimination in point of market access by virtue of Most-Favored Nation-Treatment Principles explained in Article 1 of GATT which entails that

with respect to customs duties and charges of any kind imposed on or in connection with importation or exportation or imposed on the international transfer of payments for imports or exports, ... any advantage, favour, privilege or immunity granted by any contracting party to any product originating in or destined for any other country

²³⁴ Rorden Wilkinson, “The WTO” in *Multilateralism and the World Trade Organisation*, 57.

²³⁵ WTO, “Overview of developments in International Trade and the Trading System”, 1995 PRESS RELEASES, https://www.wto.org/english/news_e/pres95_e/ov11.htm (Accessed on September 15, 2019).

²³⁶ WTO, “Membership” https://www.wto.org/english/res_e/booksp_e/anrep_e/anrep17_chap3_e.pdf (Accessed on September 16, 2019).

shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other contracting parties.²³⁷

Accordingly, this wording achieved and highlighted two striking principles of international trade system simultaneously.²³⁸ To put it in simpler terms, MFN means “countries cannot normally discriminate between their trading partners.” When those award any country a exceptional favor like reduced tariffs they should ensure “the same for all other WTO members”.²³⁹ Whereas NT requires “imported and locally-produced goods should be treated equally”.²⁴⁰ In other words it prevents Members from discriminating among imported goods from other Members.

One of the distinguishing contributions of multilateral trade system was the liberalization of markets with decreasing tariffs as discussed above. Commitments of tariffs are set forth in schedules of concessions by each member. The schedules characterize commitments of bound rates, which are the tariff rates Members do not to apply above.²⁴¹ On the other hand, non-tariff measures are tackled with under

²³⁷ WTO, “General Agreement on Tariffs and Trade: Text of the General Agreement”. 1986, https://www.wto.org/english/docs_e/legal_e/gatt47_e.pdf (Accessed on December 3, 2018), 2.

²³⁸ These principles might be derogated only if some conditions are met, which are called as exceptions. For detailed discussions on exceptions please refer to Article 20 (general exceptions), Article 21 (security exceptions), Article 24 (exceptions for regional trade agreements), Article 11 (exceptions for balance of payments) and Article 25 (waivers) of GATT.

²³⁹ WTO, “Understanding the WTO - principles of the trading system” https://www.wto.org/english/thewto_e/whatis_e/tif_e/fact2_e.htm#nondiscrimination (Accessed on 3 December 2018).

²⁴⁰ WTO, “Understanding the WTO - principles of the trading system”.

²⁴¹ WTO, “Market Access For Goods”.

specific WTO agreements. As told before, WTO Members strive to persistently advance market access through the regular WTO mechanisms and negotiation rounds.

On the basis of non-discrimination principle WTO rulebook continuously enlarges thanks to the negotiation rounds continued after the conclusion of WTO. With this aim, The Doha Round started in 2001 to attain key reforms within the international trade structure with the help of less market barriers and reviewed trade rules.²⁴² Since the compromise on all items of Doha agenda has not been achieved, the Round still continues.

Multilateral trade system has improved global welfare with greater efficiency and institutional quality under the non-discriminative setting of GATT/WTO.²⁴³ Also there are some researches illustrating the trade expansion thanks to the GATT/

²⁴² WTO, "Doha Round", https://www.wto.org/english/tratop_e/dda_e/dda_e.htm (Accessed on September 16, 2019).

²⁴³ For a comprehensive discussion on positive welfare effects of WTO/GATT please refer to Bagwell, Kyle and Robert W. Staiger. "An economic theory of GATT." *American Economic Review* 89, no. 1, (1999): 215–248; Bagwell, Kyle and Robert W. Staiger, *The Economics of the World Trading System*, (Cambridge MA: MIT Press, 2002); Horn, Henrik, and Petros C Mavroidis. "Economic and Legal Aspects of the Most-Favored-Nation Clause". *European Journal of Political Economy* 17, no. 2, (2001): 233-279; Francois, Joseph F., and Will Martin, "Commercial Policy, Bindings and Market Access", *European Economic Review* 48, No. 3, (2004): 665–679; Subramanian, Arvind and Shang-Jin Wei, "The WTO Promotes Trade, Strongly But Unevenly". *Journal of International Economics* 72, No. 1, (2007): 151–175; Drábek, Zdenek and Marc Bacchetta, "Tracing The Effects of WTO Accession On Policy-Making In Sovereign States: Preliminary Lessons From The Recent Experience Of Transition Countries" *The World Economy* 27, No. 7, (2004): 1083– 1125.

WTO²⁴⁴ and the increased share for emerging economies within international trade and economy.²⁴⁵

WTO has not only multilateral processes for trade liberalization but also plurilateral ones. The plurilateral agreements have a narrower group of signatories. The word “plurilateral” can be described as implying the coming together of three or more Parties for contributing the legislative procedures and elimination of tariffs. Indeed it can be distinguished between two types of plurilateral trade agreements as country based and issue based trade agreements.²⁴⁶

Regional trade regulations such as free trade agreements can be taken as country based whereas the public procurement together with trade agreements regulating civil air craft can be considered as issue based plurilateral trade agreements. Currently there are two issue based plurilateral WTO Agreements annexed to the WTO: The Agreement on Civil Aircraft and The Agreement on Government Procurement.²⁴⁷

²⁴⁴ Judith L. Goldstein, Douglas Rivers and Michael Tomz, “Institutions in International Relations Understanding the Effects of the GATT and the WTO on World Trade”, *International Organization* 61, (2007): 37-67.

²⁴⁵ WTO, “The WTO at Twenty Challenges and Achievements”, https://www.wto.org/english/res_e/booksp_e/wto_at_twenty_e.pdf, (accessed on May 4, 2017), 9.

²⁴⁶ Michitaka Nakatomi, “Exploring Future Application of Plurilateral Trade Rules: Lessons from the ITA and the ACTA”, *RIETI Policy Discussion Paper Series 12-P-009*, (May 2012): 4- 5 <https://www.rieti.go.jp/jp/publications/pdp/12p009.pdf>, (Accessed on 12 December 2018).

²⁴⁷ WTO, “Plurilaterals: of Minority Interest https://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm10_e.htm, (Accessed on December 12, 2018)

Alternatively, plurilateral agreements can be divided into two types: an exclusive and an open variant. Whereas the exclusive agreements are in force among merely the signatories, the open alternatives are applied on a MFN base.²⁴⁸ There is a benchmark of critical mass for entry into force of open variant plurilateral agreements to deter the free riders. For instance, regarding the trade in goods, the Information Technology Agreement was settled in late 90s with the acceptance of 29 participants constitutes an important development. Since then, the number of participants has risen to 82, making around 97 % of total trade in information technology products.²⁴⁹ Its product coverage has been enlarged in 2015 with the addition of more than 200 products for additional tariff reductions as a result of talks starting in 2012.²⁵⁰

On the other hand, in addition to eliminating tariff barriers, GATT/WTO system has dealt with elimination of as “bureaucratic or legal issues that could involve hindrances to trade” in other words non-tariff trade barriers such as licensing of imports.²⁵¹

²⁴⁸ Rudolf Adlung and Hamid Mamdouh, “Plurilateral Trade Agreements: An Escape Route for the WTO?”. *Journal of World Trade* 52, no. 1 (2018): 85–112.

²⁴⁹ WTO, “Information Technology Agreement” https://www.wto.org/english/tratop_e/inftec_e/inftec_e.htm, (Accessed September 17, 2019).

²⁵⁰ Rudolf Adlung and Hamid Mamdouh, “Plurilateral Trade Agreements, 96.

²⁵¹ WTO, “Non-tariff barriers: red tape, etc.” https://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm9_e.htm (Accessed on December 12, 2018)

One of the cutting-edge evolutions of WTO has come out from Trade Facilitation Agreement concluded in 2013.²⁵² Trade facilitation is about examining the control mechanisms and procedures regarding the movement of goods across borders and practices to cut related cost liabilities and increase efficiency at the same time maintaining appropriate regulatory targets. Indeed, Agreement on Trade Facilitation, being a unique worldwide trade agreement in last 20 years – held promise to reduce average global trade costs by an average of 14.5 %.²⁵³ Moreover, it was the first settlement finalized at the WTO by all of its Members which came into force on 22 February 2017 with the two- thirds acceptance from its 164 Members.²⁵⁴

Agreement on Trade Facilitation comprises rules for accelerating the travel, marketing and custom authorizations of products and comprising transit trade.²⁵⁵ It further comprises provisions for capacity building and technical assistance in that field and is aimed to increase transparency, enhance promises to take part in global value chains, and diminish the room for corruption.²⁵⁶

²⁵² Kym Anderson, "Contributions of The GATT/ WTO to Global Economic Welfare: Empirical Evidence Contributions of The GATT/ WTO to Global Economic Welfare". *Journal of Economic Surveys* 30, no. 1, (2016), 82.

²⁵³ WTO, *The WTO at Twenty Challenges and Achievements*, 49.

²⁵⁴ WTO, "Trade Facilitation", https://www.wto.org/english/tratop_e/tradfa_e/tradfa_e.htm (Accessed on May 5, 2018).

²⁵⁵ WTO, *Doha Round*.

²⁵⁶ WTO, "Trade Facilitation Agreement" <https://www.tfafacility.org/trade-facilitation-agreement-facility>, (Accessed on September 16, 2019)

WTO constitutes a significant basis for transparency of country's trade policies. More than 90 % of members have reported to the WTO about their national legislation and supervision processes including import licensing.²⁵⁷

As a last point regarding the WTO package, trade remedies are really crucial for the market access conditions of countries. Those measures are indeed so diverse work on the basis of “trade policy tools that allow governments to take remedial action against imports which are causing material injury to a domestic industry”, which cover various type of trade policy measures.²⁵⁸ These remedies actually are generated as a response to various contexts producing material injury to domestic industries.

Indeed, trade measures are among the most widespread policy responses in the WTO system applied by numerous major countries to block imports. With that regard, the Anti-dumping Agreement; Agreement about the implementation rules of specific articles and provisions of GATT 1994, and various Agreements about Trade Policy Instruments all deal with those trade remedies within the WTO/GATT system.²⁵⁹

To sum up, multilateral trade system of GATT/WTO has been the solid basis of market access issues on a global scale as a platform for countries negotiating for

²⁵⁷ WTO, The WTO at Twenty Challenges and Achievements, 41.

²⁵⁸ Australian Government Department of Foreign Affairs and Trade, “Trade Remedies”, <https://dfat.gov.au/trade/organisations/wto/Pages/trade-remedies.aspx> (Accessed on December 13, 2018).

²⁵⁹ WTO, “WTO Official Documents and Legal Texts”, https://www.wto.org/english/docs_e/legal_e/legal_e.htm (Accessed on December 13, 2018).

improved conditions for market access for both tariff reductions and elimination of non-tariff barriers.

4.4 Market Access as a Market and Business Development Concept

The discussions of market access up to now have been in the form of a macro standpoint where the terms of entrance for the exports of one country to the designated country's territory has been the focus of the discussions.

Alternatively, market access in the form of a micro standpoint, for instance from aspect of one firm, involves more than concerns of eliminating the tariff and non-tariff barriers of WTO perspective. It necessitates market development and business development activities which go beyond simply dealing with the barriers. Political, economic and legislative factors are decisive on the market access conditions and prospects of both countries and individual companies. Nonetheless, at the firm level, there are more variables for market access. Not only tariffs and non-tariff barriers as external factors affect the market prospects of firms but also competitiveness concerns derived from cost efficiency, design and innovation capacity and marketing strategy as internal factors matter.

Furthermore, the market access of firms is often interchangeably used with the term of market entry. However, market entry is a broader concept than market access since it might recall licensing, joint ventures, mergers and acquisitions together with Greenfield investments.²⁶⁰ Therefore, it has close linkages with Intellectual Property Rights, international finance and international law, too. So, when the term

²⁶⁰ Portal Euromonitor, "How to Perfect your Market Entry Strategy" <https://blog.euromonitor.com/perfect-market-entry-strategy/> (Accessed on 4 November 2018)

“market access” from a micro point of view is used, it is often referred to market entry dynamics which include market and business development activities.

Besides, it is very common that business enterprises try to affect the policies of their host countries to seek for more competitive settings for themselves. Actually these companies and industry associations put "strategic" efforts which produce results affecting international trade.²⁶¹ These efforts necessitate wide networks to deliver the messages of these business groups. Indeed, networks are discussed to be one the significant determinants of international market development activities of individual firms.²⁶² The discussions regarding networks depict the markets as a structure of relationships among numerous actors comprising buyers, competitors, suppliers, and incentive organizations. Therefore, firms can enter into international markets by the help of prevailing relationships which offer contacts and assist to develop new positions and partnerships in new markets.²⁶³

As a matter of fact, the very basic premise of corporate marketing is about the demands. How the needs become wants and finally demands are quite important for marketing strategists. In this regard, the very first of five stage buying decision process, namely “problem/need recognition” is extremely significant since the buying practice begins when the buyer identifies a problem/ need prompted by

²⁶¹ For a very detailed discussion of examples regarding how these enterprises have affected the international trade policies please refer to International Trade Center work available at <http://www.tradeforum.org/Business-Advocacy-Setting-Strategies-that-Influence-Trade-Policy/>

²⁶² Nicole E. Coviello and Hugh J. Bunro, “Growing the entrepreneurial firm Networking for international market development”, *European Journal of Marketing* 29, No. 7, (1995): 49-61.

²⁶³ Nicole E. Coviello and Hugh J. Bunro, “Growing the entrepreneurial firm”, 50.

stimuli.²⁶⁴ Therefore, marketers have to recognize or if possible create the conditions that stimulate problems/ needs. Thus, in order to fulfill their marketing strategies, companies start with recognizing the problem or need.

Just as the companies do, countries as a part of their market / business development strategies stimulate the demand in their domestic countries or international markets. To put it more concrete terms, before improving market access conditions, countries might follow some policies to build or develop the market itself by stipulating the demand towards the products and services they offer. They might achieve this by defending any kind of international regulations which will bring about commercial opportunities for their businesses. In consequence, this treatment of countries could be evaluated as a kind of business development approach since it is a creative process which involves establishing innovative business models and somehow much before than sales management. This effort coincidences with the popular definition of business development as “the creation of long-term value for an organization from customers, markets, and relationships.”²⁶⁵

Therefore, from a larger perspective, if a nation desires to increase the welfare or in other words the value for its business entities, it might undertake activities to trigger demand for the goods and services it has relative competitive advantage. In this manner, pursuit of a country of better grounds for its exports might be considered as identical to a business development activity of a company. From this point of view, preliminary stages like negotiating within GATT/WTO for lowering

²⁶⁴ Philip Kotler and Kevin Lane Keller, *Marketing Management*, (Prentice Hall, 2012), 167

²⁶⁵ Scott Pollack, “What Exactly is Business Development”, *Forbes* 21 March 2012, <https://www.forbes.com/sites/scottpollack/2012/03/21/what-exactly-is-business-development/#2213398f7fdb> (Accessed on September 15, 2019)

tariff barriers and elimination of non-tariff barriers could be located at the market development and more premature steps of business development activities of a country. For example, Information Technology Agreement, explained in previous parts, enabled better market access conditions for the exporters of information technology products, which made it a valuable market and business development tool for the exporters of these products.

4.5 Market Access from Trade Perspective of Environmental Goods

After briefing the market access and market entry concepts in general; the following discussions illustrate the trade prospects of environmental goods by utilizing market and business development tools and market access conditions. Market entry conditions for environmental goods are much harder than those of ordinary ones, that is why these group of products might need more market and business development tools.

4.5.1 Market Development for Environmental Goods

The environmental goods can be defined generally with respect to their purpose such as inhibiting, reducing and eliminating pollution and other forms of environmental degradation, protecting and preserving the natural resources and preservation against depletion.²⁶⁶ From a list approach, there is not an universal approval about goods with environmental usage. That was partly because of the difficulty for defining them precisely in Harmonized System, where 6 digit

²⁶⁶ Eurostat, “Environmental Goods And Services Sector” <https://ec.europa.eu/eurostat/web/environment/environmental-goods-and-services-sector> (Accessed on December 19, 2018)

harmonized subcategory customs codes might cover products with environmental and non-environmental end-uses in the same classification.²⁶⁷

Despite the stated difficulties several efforts were put for defining the list of goods/services from an environmental aspect. The prominent of these efforts are “The Asia Pacific Economic Community (APEC) Early Voluntary Sector Liberalization Initiative”, “The OECD list of Environmental Goods”, “The World Bank’s 43 Climate-friendly goods list”, “The International Centre for Trade and Sustainable Development climate friendly goods list” and finally “the APEC List of Environmental Goods”.²⁶⁸ On the other hand, on a general basis, the commonalities in the submitted Lists by WTO members prior to Doha Round with regards to environmental goods include: air pollution control, renewable energy, waste management, remediation, etc., in other words, the list covers all kind of environmental technologies applicable to review and measurement and mitigation of all kind of ecological risks.²⁶⁹

²⁶⁷ Mahesh Sugathan, “Lists of Environmental Goods: An Overview”, *International Center for Trade and Sustainable Development*, Information Note December 2013 https://www.ictsd.org/sites/default/files/downloads/2013/12/info_note_list-of-environmental-goods_sugathan.pdf (Accessed on December 19, 2018).

²⁶⁸ Mahesh Sugathan, “Lists of Environmental Goods: An Overview”, 2- 5.

²⁶⁹ WTO, “WTO Committee on Trade and Environment in Special Session, Report by the Chairman, Ambassador Manuel A. J. Teehankee, to the Trade Negotiations Committee for the purpose of the TNC stocktaking exercise”, TN/TE/19, 22 March 2010, https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S009-P.aspx?language=E&CatalogueIdList=225481,133663,123439,75645,104969,77194,67559,52575,47133,50892&CurrentCatalogueIdIndex=4&FullTextHash=&HasEnglishRecord=True&HasFrenchRecord=True&HasSpanishRecord=True (Accessed on December 19, 2018).

In conformity of with the diversity of environmental goods, the global markets for those have been expanding rapidly. The overall market is predicted to have extended to nearly 1 trillion US dollar as of 2011 and is estimated to nearly double by 2020.²⁷⁰

As a result, countries put enormous efforts to grasp more share from this enlarging market. With this regard, they pursue market development activities that provide them more favorable conditions within the current settings such as WTO *Environmental Goods and Services Agreement (EGA) Negotiations* platform and pursue business development activities to have more demand thanks to enlarged market size as a result of more innovative means.

Discussions of related to market access with respect to international trade system from a macro point of view together with market and business development from a micro aspect are so far valid for environmental goods, too. Nevertheless, utilizing multilateral platforms as business development tools for environmental goods are somehow multifaceted.

As a discussion of efforts targeting environmental goods trade directly so far, the attempts to conclude an Environmental Goods Agreement (EGA) within the WTO framework has been one of the best examples. Preliminarily, having been accepted within Doha Agenda in 2001, the mandate about liberating the product groups and tariff lines sensing environmental benefit was only limited to decreases and completely eliminating all barriers including tariff and non-tariff regarding goods

²⁷⁰ Jürgen Blazejczak, Frauke Braun and Dietman Edler, "Global Demand for Environmental Goods and Services on the Rise: Good Growth Opportunities for German Suppliers," *German Institute for Economic Research: Weekly Report* 5, no. 20. (Sept. 3 2009) http://www.diw.de/documents/publikationen/73/diw_01.c.334079.de/diw_wr_2009-20.pdf (Accessed on December 19, 2018).

and services being environmentally friendly.²⁷¹ Subsequently, the “Committee on Trade and Environment Special Session “was constituted for improving the talks for that mandate. Thereafter, the Committee undertook several discussion sessions and admitted submissions, whereby WTO Secretariat compiled a list of environmental goods composed of 480 products in 2005.²⁷²

The long standing discussion rounds led to the introduction of plurilateral negotiations for the formation of the Environmental Goods Agreement (EGA) in July 2014. With the EGA, negotiating countries aimed to stimulate trade in some key environmental goods for achieving environmental preservation targets, like producing energy from renewables, lessening pollution and other side effects of industrial processes and enhancing energy production ways via some technologies so as to contribute efficiency with 18 participants representing 46 WTO members.²⁷³ The countries negotiating EGA were mostly developed countries except for China, Taipei, Hong Kong and Turkey²⁷⁴

²⁷¹ WTO, “Doha WTO Ministerial 2001: Ministerial Declaration”, WT/MIN(01)/DEC/1, 20 December 2001, Paragraph 31 (iii), https://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm (Accessed on December 23, 2018).

²⁷² WTO, “Synthesis of Submissions On Environmental Goods”, *Committee on Trade and Environment Special Session*, TN/TE/W/63, 17 November 2005, https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S009-DP.aspx?language=E&CatalogueIdList=78474,50662,61291,48084,64432&CurrentCatalogueIdIndex=1&FullTextHash=&HasEnglishRecord=True&HasFrenchRecord=True&HasSpanishRecord=True (Accessed on December 23, 2018).

²⁷³ WTO, “Environmental Goods Agreement (EGA)” https://www.wto.org/english/tratop_e/envir_e/ega_e.htm (Accessed on December 17, 2018).

²⁷⁴ WTO, “Environmental Goods Agreement (EGA)”.

The improvement in environmental trade is envisaged to be as a result of the elimination of the tariffs of those environmental goods and services, for which applied tariffs are between 3-11 % on average.²⁷⁵ This might create a material movement in the trade of those goods and services.

On the other hand, in harmony with MFN rule, all WTO members would benefit from improved conditions in other words lowered tariff rates of participating countries provided that the Parties to these negotiations constitute the majority of worldwide trade in those goods.²⁷⁶

The most recent EGA negotiations round was held in December 2016 but discussions for abolishing tariffs for environmental goods ended without agreement making the next steps uncertain for some time.²⁷⁷ So currently, an era of silence is in effect for the future of EGA.

The EGA negotiations encapsulated two categories of environmental goods: traditional environmental goods aiming to address a recognized and well defined environmental problem and hence environmentally preferable products and services having certain environmental benefits which brought about a number of

²⁷⁵ International Trade Center, "Trade in Environmental Goods and Services: Opportunities and Challenges." *International Trade Centre Technical Paper*, Geneva, 2014, <http://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/AssetPDF/EGS%20Ecosystems%20Brief%20040914%20-%20low%20res.pdf> (Accessed on December 19, 2018).

²⁷⁶ WTO, "Environmental Goods Agreement (EGA)" .

²⁷⁷ ICSTD, "Ministerial Talks to Clinch Environmental Goods Agreement Hit Stumbling Block", 8 December 2016, <https://www.ictsd.org/bridges-news/bridges/news/ministerial-talks-to-clinch-environmental-goods-agreement-hit-stumbling> (Accessed on December 23, 2018).

challenges like classifying dual-use goods.²⁷⁸ Developments at UN platform regarding the climate change problem like a globally accepted and implemented climate agreement might accelerate the speed of EGA negotiations as well.

4.5.2 Business Development at Global Scale for Environmental Goods

As well as negotiating for more favorable market access terms for environmental goods directly from the aspect of international trade as discussed above, countries might follow rather indirect paths. In this regard, they might activate the conditions for increasing demand for the goods and services they offer, which could be associated to business development activities of firms.

To put this into a more detailed discussion from the aspect of global warming; energy productivity and renewable energy technologies could be focused. Among all environmental goods lists, technologies creating benefits and improvements for these should be highlighted as most traded products.²⁷⁹ These technologies help mitigation of emissions and thereby reach climate objectives. Hence, the countries having competitive advantage in production and trade of low carbon technologies or less carbon intensive industrial production might negotiate more favorable tariff rates for environmental goods and technologies directly as market development efforts. Or else they might advocate a more ambitious global climate change regime where countries should take tight mitigation actions, whereby the demand for environmental goods and technologies rise indirectly but materially.

²⁷⁸ "Trade In Environmental Goods: A Perspective", *Export- Import Bank of India*, Working Paper No. 69, December 2017, 10 <https://www.eximbankindia.in/Assets/Dynamic/PDF/Publication-Resources/ResearchPapers/87file.pdf> (Accessed on December 23, 2018)

²⁷⁹ "Trade In Environmental Goods: A Perspective", *Export- Import Bank of India*, 24.

Investing in “environmental technologies” can be regarded as a competitive strength and an instrument for competitive advantage.²⁸⁰ As a result, the countries that are competitive at renewable and energy efficiency technologies can try to ensure global frameworks for sustained demand for these goods and services such as a binding climate change agreement where countries are obliged to mitigate their GHGs emissions go after utilizing more renewable energy and less energy intensive solutions such as electrical vehicles, public transportation etc. Therefore, lobbying about a global binding climate change agreement would bring about increased demand for a set of countries who are competitive at climate friendly technologies such as renewables, electrical vehicles etc.

In short, market and business development efforts pursued by countries regarding climate friendly technologies all together improve market access conditions of countries.

4.5.3 Market Access in the shade of Climate Change Policies

Basically, any factor affecting the competitiveness goods and/or services is influential for market access conditions of that country. Therefore, market development and business development efforts might end up with better market access conditions for countries. Regarding the climate change discussions, the policies induced by climate change targets, particularly those for mitigation efforts, influence the competitiveness of a country by altering its market access conditions. These efforts might change the price offered to the seller either directly with the changes on related tariffs or indirectly by affecting the cost of the product with the changes in production methods of manufacturer as a result of imposed policies of

²⁸⁰ Paul Shrivastava, “Environmental technologies and competitive advantage.” *Strategic Management Journal* 16, S1 (1995): 183–200.

the government. Sometimes, simply no policy option of one country means comparative disadvantage for other countries who obey climate mitigation policies. This argument has been asserted by some scholars like Stiglitz who thinks that in the long run, the efficient distribution of resources is guaranteed when the inflicting country stands the financial liability due to ecological costs within the context of “polluter pays principle” and no carbon pricing policy is in a way domestic subsidy.²⁸¹ However, the international trade law has not recognized this as in this way yet.²⁸² Therefore, countries may choose to apply their own unilateral measures for compensating their comparative disadvantage arising from free rider states without an international carbon market.

The most prevalent discussion among these unilateral measures of climate change mitigation policies are border carbon tax adjustments. These (BCAs) measures which object for regulating the playing field can be successful at reducing real income losses for countries in a coalition at the expense of for those in non-coalition.²⁸³ BCAs are of three kinds usually: border taxes, mandatory emissions permit purchase for importers and embedded carbon standards.²⁸⁴

²⁸¹ Joseph Stiglitz, “A New Agenda for Global Warming”. *The Economists’ Voice* 3, No. 7, (Berkeley Electronic Press, 2006).

²⁸² Carolyn Fischer and Alan K. Fox. "Comparing Policies to Combat Emissions Leakage: Border Carbon Adjustments Versus Rebates". *Journal of Environmental Economics and Management*. 64, no. 2 (2012): 200.

²⁸³ Mustafa H. Babiker and Thomas F. Rutherford, “The Economic Effects of Border Measures in Subglobal Climate Agreements”, *Energy Journal* 26, No.4 (2005): 99-126.

²⁸⁴ Dieter Helm, Cameron Hepburn and Giovanni Ruta, “Trade, Climate Change, And The Political Game Theory of Border Carbon Adjustments”, 370-372.

There are several studies on quantifying the effects of alternative approaches to BCAs. According to Mattoo et al., without implementing any border tax adjustment; energy intensive manufacturing imports in high income countries increase (1.3 %) including EU (3.1 %) and US (3.5 %) while the production decrease in high income countries EU (- 1.9 %) and US (- 4.4 %) simultaneously with export shrinks - 6.4 %, - 5.2 %, - 11.6% respectively. On the other hand, depending on the configuration of the BCAs, for example with imposition of adjustment the exports and imports, energy intensive manufacturing production and exports might even increase in high income countries.²⁸⁵

Additionally, a BCA resulted from the carbon coverage of merchandise imports would imply over 20 % tariff from Asian producers such as China and India which might decrease manufacturing exports around 16- 21 %.²⁸⁶ As it is seen, in varying models, the impact of these adjustments in developed and developing world might be very different depending on the special conditions of the countries.

Therefore, countries' choices on practical design considerations like "how to calculate embodied emissions of foreign products" and "how to define and enforce reliable rules of origin"²⁸⁷ matter for the overall impact on market access capabilities of countries.

²⁸⁵ Mattoo et al. "Trade effects of alternative carbon border-tax schemes", 596.

²⁸⁶ Mattoo, Aaditya, and Arvind Subramanian. *Greenprint*, 105.

²⁸⁷ Carolyn Fischer and Alan K. Fox. "Comparing Policies to Combat Emissions Leakage: Border Carbon Adjustments Versus Rebates".

4.6 Conclusion

Market access concept as one of the fundamental analysis dynamics of this thesis is scrutinized historically and practically in this chapter. Owing to the fact that the most prevalent usage of the term is related to international trade; the chapter commences with the analysis of market access concept as a part of international trade system. On this account, initially, the evolution of the international trade system on a historical basis is outlined. Following that, the market access issue is presented from business perspective by assuring its relation with business development concept on a micro scale. Finally, the concept is addressed from the trade in environmental goods perspective by highlighting the close relation between the climate change and business development issues. With that regard, any policy like BCAs altering the tariffs might have an impact on the market access capabilities of countries.

CHAPTER 5

UNITED STATES

5.1 Introduction

This chapter sheds a light on the United States' Climate change policies. With this aim, at the outset of the chapter, the energy- climate change outlook and policy settings for the country being both international and domestic are examined compactly. Following this review, the domestic and international drivers of US climate change policy are analyzed. In the last part of the chapter, how the international climate change policies for the country have been set is discussed by making use of these domestic and international policy drivers.

5.2 The US Energy and Climate Outlook

The US is one of the great powers of the world with its giant role in global economy and politics. According to WTO, as of 2017, it was recorded among the biggest exporters and importers for goods and services all around the world.²⁸⁸ Naturally, its giant economic activity makes it the world's second largest emitter of GHGs,

²⁸⁸ WTO, "US Trade Profile", http://stat.wto.org/CountryProfiles/US_e.htm, (Accessed on March 29, 2018).

constituting nearly 14.36 percent of worldwide emissions.²⁸⁹ This is due to its outstanding role in terms of energy production and consumption.

As it seen in the key indicators presented in Table-4, the US has a very high level of energy production and consumption as a result of its enormous economic activity. In the same fashion, accompanying high emissions make the US crucial for the solution of the climate change problem with its critical role in international efforts to tackle with it.²⁹⁰

Table 4: Key US Indicators, 2016

Population (millions)	323	TPES /Population (toe/per capita)	7
GDP (billion 2010 USD)	16,920	TPES/ GDP (toe/ thousand 2010 dollar)	0.13
Gross Domestic Product, PPP	16,920	TPES/ GDP PPP (toe/ thousand 2010 dollar)	0.13
Energy Production	1,916	Electricity Consumption/ Population (Mwh/ Capita)	13
Net Imports	265	CO2/TPES (t CO2/ toe)	2
Total Primary Energy Supply	2,167	CO2/ Population (t CO2/ capita)	15
Consumption of Electricity	4,148	CO2/GDP (kg CO2/ 2010 USD)	0.29
Emissions of CO2 (Mt of CO2)	4,833	CO2/(GDP PPP) (kg CO2/2010 USD)	0.29

IEA, US: Indicators for 2016, <http://www.iea.org/statistics/>

²⁸⁹ Johannes Friedrich, Mengpin Ge, and Andrew Pickens, "This Interactive Chart Explains World's Top 10 Emitters, and How They've Changed".

²⁹⁰ IEA, US Indicators for 2016, <http://www.iea.org/statistics/>, (Accessed July 4, 2018).

If we examine the US GHGs emissions path in detail, as illustrated in Figure-1-, we see that emissions recorded a peak and thereafter a decline tendency started despite some fluctuations on yearly basis.²⁹¹

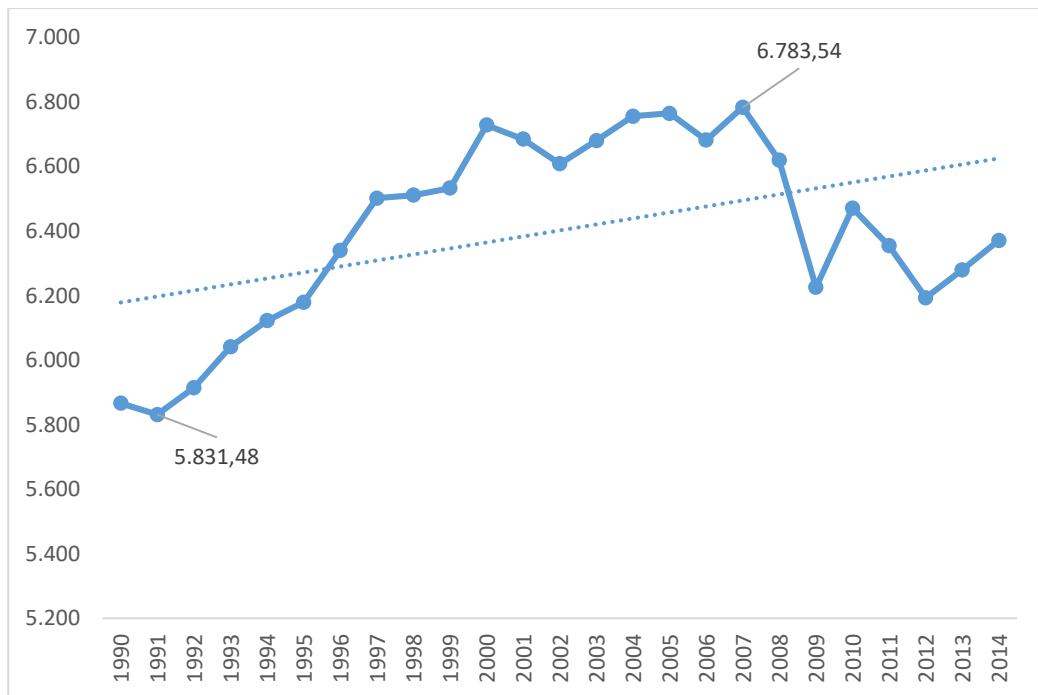


Figure 1: US Total GHG Emissions Excluding LULUCF

Drawn based on data retrieved from CAIT Climate Data Explorer. 2017. Washington, DC: World Resources Institute. <http://cait.wri.org>

If the composition of the US emissions is scrutinized, it is seen from Table 5 that they have been originated from mostly energy, where agriculture and industrial processes follow.

²⁹¹ Based on data retrieved from CAIT Climate Data Explorer Database, (Washington, DC: World Resources Institute, 2017), <http://cait.wri.org>, (Accessed June 4, 2017).

Moreover, on a subsector basis, US energy emissions are resulted from electricity production and transportation, details of which are presented in Table 6.²⁹²

Table 5: Emissions by Sector – US

Emissions by Sector- US, MtCO2e (2014)					
Energy	Industrial Processes	Agriculture	Waste	Land-Use Change and Forestry	Bunker Fuels
5,572.69	283.75	351.48	163.18	-52.08	113.36

Retrieved from CAIT Climate Data Explorer. 2017. Washington, DC: World Resources Institute. <http://cait.wri.org>

Table 6: Emissions by Subsector Energy- US

Emissions by Subsector Energy- US, MtCO2e (2014)				
Electricity/ Heat	Manufacturing/ Construction	Transportation (MtCO2e)	Other Fuel Combustion	Fugitive Emissions
2380.56	448.03	1728.75	673.11	342.23

Retrieved from CAIT Climate Data Explorer. 2017. Washington, DC: World Resources Institute.: <http://cait.wri.org>

Similarly, World Resource Institute (WRI), based on its own calculations, highlights that these targets are attainable but it necessitates ambition across several sectors of the economy²⁹³ Furthermore, WRI detects four areas included in the

²⁹² Based on data retrieved from CAIT Climate Data Explorer Database, (Washington, DC: World Resources Institute, 2017), <http://cait.wri.org>, (Accessed June 4, 2017).

²⁹³ Thomas Damassa, Mengpin Ge, And Taryn Fransen, "The U.S. Greenhouse Gas Reduction Targets", *World Resource Institute*, December 2014 https://www.wri.org/sites/default/files/WRI14_Fact_Sheet_US_GHG_singles.pdf (Accessed on June 19, 2018)

President’s Climate Action Plan with great potential for mitigation; namely, energy efficiency, power plants, methane and hydrofluorocarbons.²⁹⁴

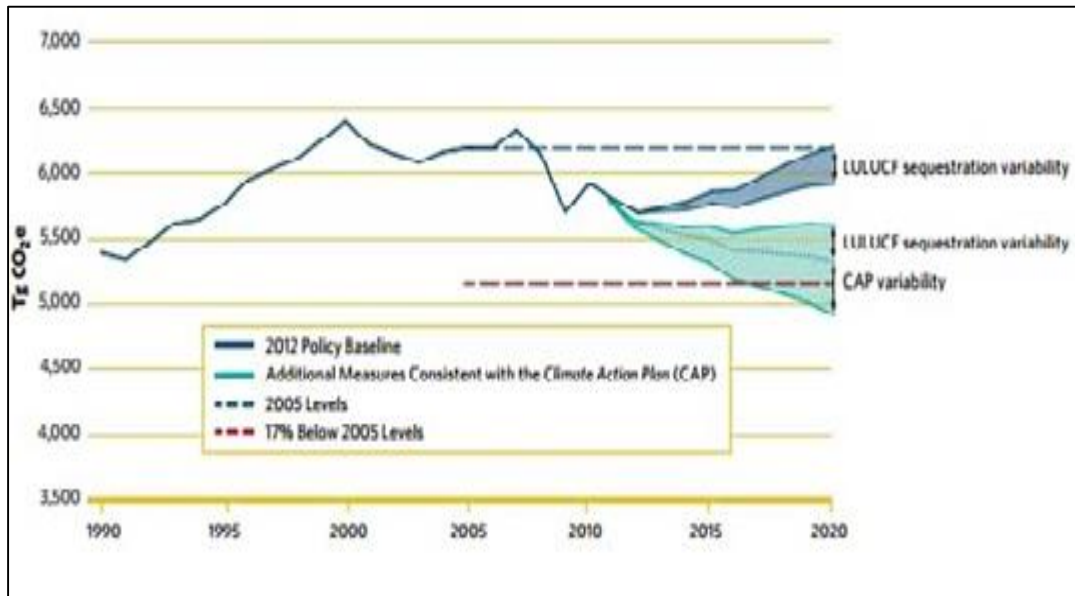


Figure 2: US Emission Projections

Source: UNFCCC, “US 2014 Climate Action Report”
[https://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/2014_u.s._climate_action_report\[1\]rev.pdf](https://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/2014_u.s._climate_action_report[1]rev.pdf), 17.

Actually, in order to assess the mitigation outlook and potential of country, energy outlook should be carefully assessed since the main source of US emissions is the energy in the country. As it is seen from Table 7 below, the US energy production rests on mainly fossil fuels.²⁹⁵ While natural gas, followed by crude oil and coal, have the largest shares in energy production; renewable energy sources have a limited share. However, this fact is not strange since renewables are getting popular

²⁹⁴Thomas Damassa, Mengpin Ge, And Taryn Fransen, “The U.S. Greenhouse Gas Reduction Targets”

²⁹⁵ IEA, “US Energy Balances for 2016”, <http://www.iea.org/statistics/> (Accessed on November 15, 2018)

rapidly and renewable power capacity is expected to increase by 50 % in 2019-2024 over the world, which will probably reflect itself in US energy profiles too.²⁹⁶

Table 7: Energy Outlook- US

Energy Production, 2017 (in thousand tonnes of oil equivalent (ktoe) on a net caloric value basis)		Share
Coal	348,464	18.2%
Crude Oil	560,147	29.2%
Natural Gas	627,317	32.7%
Nuclear	218,848	11.4%
Hydro	23,187	1.2%
Geothermal, Solar etc.	35,618	1.8%
Biofuels and Waste	102,107	5.5%
Total	1.915.688	100%

IEA, US: Balances for 2016 available at <http://www.iea.org/statistics/>

Having a limited share in energy mix currently, the share of renewables in energy mix will experience a minor increase based on business as usual scenarios of IRENA.²⁹⁷

Besides the significance of renewable energy sources in mitigation, the Carbon Capture and Storage (CCS) are quite important in the sense that they “can capture up to 90% of the carbon dioxide (CO₂) emissions produced from the use of fossil fuels in electricity generation and industrial processes, preventing the carbon

²⁹⁶ IEA, “Renewables- Market analysis and forecast from 2019 to 2024”, <https://www.iea.org/renewables2019/> (Accessed on November 15, 2019).

²⁹⁷ IRENA, “Executive Summary: Renewable Energy Prospects United States of America”, January 2015, https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2015/Jan/IRENA_REmap_USA_summary_2015.pdf?la=en&hash=EB538B5534AEDE4694E5C4067926AE7FA060E876 (Accessed on November 27, 2019)

dioxide from entering the atmosphere.”²⁹⁸ In spite of their functionality in terms of mitigation, CCS technologies are still expensive as compared to renewable energy technologies.²⁹⁹ Despite their expensiveness, the US has focused on CCS technologies extensively due to its energy production structure based on fossil fuels.

As seen in Table 8, which drawn on the data retrieved from CCS Institute Database, there are currently 11 (eleven) large scale CCS Projects in the US. 9 (nine) of these large scale projects are in operation and 2 (two) of them are in advanced development stage. On the other hand, as presented in Table 8, there are 25 (twenty-five) lesser scale CCS Projects in the US, which are assumed as pilot or demonstration.³⁰⁰

As a result of these carbon capturing and storage efforts, in other words as a result of those such costly but effective attempts of the US in terms of mitigation, it can reduce GHGs emissions even without changing its energy production and consumption patterns radically but still enjoy the mitigation results. This might be taken as an influential factor for future American climate change policy making practices.

²⁹⁸ Carbon Capture and Storage Association, “What is CCS?”, <http://www.ccsassociation.org/what-is-ccs/> (Accessed on May 19, 2018).

²⁹⁹ Jeffrey Rissman and Robbie Orvis, “Carbon Capture And Storage: An Expensive Option For Reducing U.S. CO2 Emissions”, *Forbes*, 3 May 2017 <https://www.forbes.com/sites/energyinnovation/2017/05/03/carbon-capture-and-storage-an-expensive-option-for-reducing-u-s-co2-emissions/#5cd4c4426482>, (Accessed on May 19, 2018)

³⁰⁰ Global CCS Institute, “Pilot and Demonstration, The Global CCS Institute Projects Database available at <https://www.globalccsinstitute.com/projects/pilot-and-demonstration-projects> (Accessed on October 23, 2017).

Table 8: CCS Projects in the US

Facility name	State / district	CO₂ capture capacity (Mtpa)	Operation date	Industry
Terrell Natural Gas Processing Plant	Texas	0.4-0.5	1972	Natural gas processing
Enid Fertilizer	Oklahoma	0,7	1982	Fertiliser production
Shute Creek Gas Processing Plant	Wyoming	7,0	1986	Natural gas processing
Century Plant	Texas	8,4	2010	Natural gas processing
Air Products Steam Methane Reformer	Texas	1,0	2013	Hydrogen production
Coffeyville Gasification Plant	Kansas	1,0	2013	Fertiliser production
Lost Cabin Gas Plant	Wyoming	0,9	2013	Natural gas processing
Petra Nova Carbon Capture	Texas	1,4	2017	Power generation
Illinois Industrial Carbon Capture and Storage	Illinois	1,0	2017	Ethanol production
Lake Charles Methanol	Louisiana	4,2	2022 (Institute estimate)	Chemical production
Texas Clean Energy Project	Texas	1.5-2.0	2022 (Institute estimate)	Chemical production

Retrieved from The Global CCS Institute Database on 23 October 2017 from <https://www.globalccsinstitute.com/projects/large-scale-ccs-projects>.

5.3 Domestic Climate Change Policy

Although among the largest emitters, the US has never had a full package national climate change strategy at federal level. Indeed it was a “patchwork of initiatives” on various levels with changing ambition.³⁰¹ Ups and downs have been experienced in terms of developing and implementing climate change related policies at the federal level in the US. On the other hand, those policies at the state and municipal level diverge substantially from the federal policies of inaction.³⁰² There are climate pioneers in the US, for instance California’s efforts are comparable to even some countries.³⁰³

The main actors in climate policy making at the state level in the US are the President and the Congress, which is composed of the House of Representatives and the Senate. The President operates by releasing executive orders and through rulemaking.³⁰⁴ However legal obligations to administrate the society in a broader perspective necessitate legislation from the Congress. On the other hand, states and

³⁰¹ Tina Ohliger, “U.S. Climate Change Policy in Depth Analysis for the ENVI Committee”, DG for International Policies, March 2015, 6, [https://www.europarl.europa.eu/RegData/etudes/STUD/2015/536321/IPOL_IDA\(2015\)536321_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2015/536321/IPOL_IDA(2015)536321_EN.pdf) (Accessed May 2, 2017)

³⁰² Henrik Selin and Stacy D. VanDeveer, “Political Science and Prediction: What’s Next for U.S. Climate Change Policy?”, *Review of Policy Research* 24, No.1, (2007): 2.

³⁰³ Brad Plumer, “Just How Far Can California Possibly Go on Climate?”, *New York Times*, July 26, 2017, <https://www.nytimes.com/2017/07/26/climate/california-climate-policy-cap-trade.html>, (Accessed November 15, 2019)

³⁰⁴ Tina Ohliger, “U.S. Climate Change Policy In Depth Analysis for the ENVI Committee.”

cities are the primary climate change policy making bodies at subnational level, whose leading policy actors are Governors and Mayors.³⁰⁵

As a matter of fact, due to the federal structure of the US, the climate change policies of the US is considered as bottom-up and decentralized where policy makers at subnational state level set various targets to mitigate the GHGs emissions. In other words, local, regional and state governments pursue specific climate change action plans and set policy targets. Hence they endorse state level regulations on GHGs emissions with various standards on fuel, appliance efficiency and renewable electricity portfolio.³⁰⁶ This shows how subnational authorities in each state have also been involved in climate change policy making. As a very influential actor in climate change policy design both state and federal levels, various lobby and pressure groups takes attention.³⁰⁷ As underlined before, the US climate change policies diverge from federal to state and state to municipal level in terms their motivation and ambition. Although there is not a federal level ambitious climate change policy in the country currently; there have been a set of attempts to launch one. Although there was an attempt to form a federal strategy- Climate Action Plan- in Obama's turn, it has been abolished with Trump's arrival into the Office.³⁰⁸

³⁰⁵ UNFCCC, "US 2014 Climate Action Report" in [https://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/2014_u.s._climate_action_report\[1\]rev.pdf](https://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/2014_u.s._climate_action_report[1]rev.pdf), 131 (Accessed June 4, 2018)

³⁰⁶ Nicholas Lutsey and Daniel Sperling. "America's bottom-up climate change mitigation policy".

³⁰⁷ Ewan Palmer, "U.S Lobby Groups 'Dominate' List of Most Effective Climate Change Action Blockers: 'These Trade Groups Continue to Frustrate Progress'", Newsweek, 25 September 2019, <https://www.newsweek.com/climate-action-lobby-groups-greta-thunberg-1461292>, (Accessed October 18, 2019)

³⁰⁸ Whitehouse Executive Orders, "Presidential Executive Order on Promoting Energy Independence and Economic Growth", 28 March 2017

To begin with the legal framework, based on the laws giving United States Environmental Protection Agency (EPA) the authority with the aim of protecting human health and environment and 1970 federal law Clean Air Act warranting EPA to foster and obligate regulations for protecting human health against airborne hazardous contaminants³⁰⁹; the President can exert some regulations on climate change. After joining to UNFCCC, as a corner stone in the US climate policy history, one of the early steps was the addition of renewable energy tax credits into the Energy Policy Act in 1992. Upon the Senate's decision for not entering into any international framework which excludes developing country commitments for emission reductions and have a possibility to harm US economy; George Bush declared that the US would not join to KP.³¹⁰

On the other hand, during 2003- 2007; bipartisan efforts for reducing emissions gained momentum. In addition to the bills of Senate; President George W. Bush outlined Global Climate Change Initiative in 2002, which aims to reduce emission intensity of the country gradually and Climate Change Science Program and Climate Change Technology Program.³¹¹ With the Barack Obama administration starting in 2009, American climate change policy trajectory shifted drastically by adopting a constructive attitude towards the solution of global climate change problem.³¹² In spite of the fact that the House of Representatives passed the

<https://www.whitehouse.gov/presidential-actions/presidential-executive-order-promoting-energy-independence-economic-growth/>, (Accessed on November 15, 2019).

³⁰⁹ EPA, Summary of Clean Air Act.

³¹⁰ Center for Energy and Climate Solutions, "Congress Climate History".

³¹¹ Henrik Selin and Stacy D. VanDeveer, "Political Science and Prediction", 3.

³¹² Henrik Selin and Stacy D. VanDeveer, "US climate change politics and policymaking". *Wiley Interdisciplinary Reviews: Climate Change* 2, No. 1 (2011): 121.

American Clean Energy and Security Act of 2009, US Congress never adopted laws limiting GHGs emissions of the country.³¹³ In this stalemate, by underlining the previous attempts in his first turn on struggling with climate change and the economic costs of climate change to the American economy, President Obama, put forward his Climate Action Plan in 2013 in his second term to overcome the Congressional inaction. In his Action Plan, there were three pillars: “Cut carbon pollution in America”, “Prepare the United States for the Impacts of Climate Change” and “Lead International Efforts to Combat Global Climate Change and Prepare for its Impacts”.³¹⁴ It brought about some set of measures on energy efficiency, methane, and hydrofluorocarbons as well as carbon standards for power plants.³¹⁵ Moreover, not only mitigation related policies but also adaptation policies to the impacts of climate change and international policy orientation were captured in the action plan.³¹⁶ However, with the Trumps’ arrival into the office US climate policy has entered a rollback stage. Climate Action Plan, Climate Action Plan to Reduce Methane Emissions and many other policies regarding energy and climate were rescinded.³¹⁷ Moreover, the US has not submitted its seventh national communication, which is mandatory for Annex I Countries.³¹⁸

³¹³ Center for Energy and Climate Solutions, “Congress Climate History”.

³¹⁴ President’s Climate Action Plan, *Executive Office of the President*, June 2013 <https://obamawhitehouse.archives.gov/sites/default/files/image/president27sclimateactionplan.pdf> (Accessed on October 11, 2017).

³¹⁵ President’s Climate Action Plan.

³¹⁶ Tina OHLIGER, U. S. Climate Change Policy in Depth Analysis for the ENVI Committee, 6.

³¹⁷ Whitehouse Executive Orders, “Presidential Executive Order on Promoting Energy Independence and Economic Growth”.

³¹⁸ UNFCCC, Seventh National Communications- Annex I, <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/national->

Table 9: US State Level Climate Policies

CLIMATE ACTION	Coverage	
GHG Emission Targets	20 States+ DC	Maine, New Hampshire, Vermont, Massachusetts, Connecticut, New York, Rhode Island, New Jersey, Maryland, Michigan, Illinois, Minnesota, Colorado, New Mexico, Arizona, California, Oregon, Washington, Florida, Hawaii
Standards for Electricity GHG Emissions		
Emission Performance Standards	4 States	Washington, Oregon, Montana, Illinois
Utility Sector Cap and Trade	8 States	Delaware, Maryland, Connecticut, Massachusetts, New Hampshire, Vermont, Maine, Rhode Island
Emission Standard and Cap and Trade	2 States	New York, California
Climate Action Plans	34 States + DC	
Regional Initiatives	6	Regional GHG Initiative, Western Climate Initiative, Midwest Greenhouse Gas Reduction Accord, North America 2050, Pacific Coast Collaborative, Transportation and Climate Initiative
GHG Reporting And Registries		
The Climate Registry	22 States+ DC	Michigan, Ohio, Pennsylvania, Virginia, Kentucky, Illinois, Missouri, Tennessee, Kansas, Oklahoma, Colorado, Wyoming, Idaho, Kansas, Nevada, Utah, Arizona, Oklahoma, Alabama, South Carolina, Minnesota, Hawaii.
Climate Registry and Mandatory Reporting	18 States	Washington, Oregon, California, New Mexico, Iowa, Wisconsin, New York, North Carolina, Maryland, New Jersey, Delaware, Connecticut, New York, Massachusetts, New Hampshire, Vermont, Maine, Florida
Ind. Voluntary Registries	2 States	Texas, West Virginia
State Climate Adaptation		
Adaptation Plan Completed	15 States	Washington, Oregon, California, Florida, Wisconsin, Virginia, Maryland, Pennsylvania, Connecticut, New York, Massachusetts, New Hampshire, Maine, Vermont, Alaska
Adaptation Plan in Progress	5 States	Minnesota, Delaware, New Jersey, Rhode Island, Hawaii
Adaptation Plan Recommended in the Climate Action Plan	7 States+ DC	North Carolina, South Carolina, Michigan, Iowa, Colorado, Arizona
US State Carbon Pricing Policies	3	California Cap and Trade, Regional Greenhouse Gas Initiative, Washington Clean Air Rule

Based on Center for Climate and Energy Solutions, “State Climate Policy Maps”, <https://www.c2es.org/>.

[communications-and-biennial-reports-annex-i-parties/seventh-national-communications-annex-i](https://www.c2es.org/communications-and-biennial-reports-annex-i-parties/seventh-national-communications-annex-i) (Accessed September 20, 2019).

As well as federal level attempts to develop national climate change policies, there are a multitude of state level subnational climate change policies in the U.S. addressing directly climate change and addressing energy sectors with implications on climate change policies. Center for Climate and Energy Solutions scrutinized the climate change policies of the US at the state and local levels as well as federal practices. As disclosed in Table 9, there are very comprehensive climate change measures in various regions and states as compared to inadequacy of the climate change policies at the federal level.³¹⁹

Although there is a gap or unsustainability in terms of state level climate change action plans in US, as it is indicated above (Table 9), majority of the States have adopted some kind of climate action plans along with some regional initiatives.³²⁰

These policies vary from mitigation actions-such as GHG reporting and registries, emission targets and carbon pricing mechanisms- to adaptation plans. Most of these policies are demand- pull completing the supply push research and development policies of national administration.³²¹ In terms of regional initiatives, Regional Greenhouse Gas Initiative (RGGI) is one of the earliest and important steps with its mandatory cap and trade system including nine North-eastern States; namely

³¹⁹ For a comprehensive evaluation please refer to Center for Climate and Energy Solutions, "State Climate Policy Maps", <https://www.c2es.org/>, (accessed on May 17, 2018).

³²⁰ Center for Climate and Energy Solutions, "State Climate Policy Maps", <https://www.c2es.org/>, (accessed on May 17, 2018).

³²¹ Thomas L. Brewer, *The United States in a warming world: the political economy of government, business, and public responses to climate change*, (Cambridge University Press: 2015), 126.

Connecticut, Maine, Delaware, Maryland, New Hampshire, Massachusetts, New York, Vermont and Rhode Island.³²²

Among the States of the US, California is the most prominent state with a set of steps taken to deal with climate change particularly related to emission standards by building its policies upon State Global Warming Solutions Act of 2006³²³ On the other hand, Texas despite its high level of emissions and opposition to national level climate policy setting; hosts the largest installed wind power capacity in the US.³²⁴

Historically, these state level programs have contributed significantly to the emissions in three aspects: transportation, power plants and buildings. It is estimated that state level contributions bring about 5- 15 % emission reductions by 2035.³²⁵

In short, it is obvious that the US has a climate mitigation policy infrastructure sprayed on a large array despite lack of a grand strategy. This equips the US with a capacity and potential for mitigation of emissions.

³²² Thomas L. Brewer, *The United States in a warming world*.

³²³ Thomas L. Brewer, *The United States in a warming world: the political economy of government, business, and public responses to climate change*, (Cambridge University Press: 2015), 127 for a more detailed analysis please refer to Alexander E. Farrell and W. Michael Hanemann, "Field Notes on the Political Economy of California Climate Policy" in *Changing Climates in North American Politics*, ed. Henrik Selin and Stacy D. VanDeveer (Cambridge, MA: MIT Press, 2009)

³²⁴ Thomas L. Brewer, *The United States in a warming world*", 126

³²⁵ Bianco et al. WRI 2013 cited in Thomas L. Brewer, *The United States in a warming world: the political economy of government, business, and public responses to climate change*, Cambridge University Press: 2015, 132

5.4 International Climate Change Policy

The United States was one of the pioneers of global environmental movement at the late 1980s and early 1990s. In this fashion, it signed the UNFCCC in 1992 with other 166 countries and ratified in the same year. Moreover, the US signed Kyoto Protocol as one of the most insistent nations for the agreement in 1998 but it has not been a party to it by finalizing the ratification procedures.³²⁶

Nonetheless, with the inauguration of negotiations for post- Kyoto period, the US became an active participant once more to the negotiation sessions particularly during Copenhagen in 2009. Yet, negotiating countries failed to agree on a post Kyoto international climate change regime in Copenhagen. The impasse in negotiations for concluding a post- Kyoto climate change regime was overwhelmed with the decision to continue to negotiations with an aim to conclude a new legal instrument by 2015 in 2011 in Durban. The US presented a constructive manner in post-Kyoto climate change negotiations. Especially after its reapproachment with China and EU to compromise on a new climate regime beyond 2020³²⁷, PA was successfully adopted in 2015. Finally, the US signed and ratified PA in 2016.³²⁸

With respect to PA it announced its nationally determined contribution as “to achieve an economy-wide target of reducing its greenhouse gas emissions by 26-

³²⁶ For further details please refer to UNFCCC from http://unfccc.int/tools_xml/country_US.html

³²⁷ U.S.-China Joint Announcement on Climate Change, <https://obamawhitehouse.archives.gov/the-press-office/2014/11/11/us-china-joint-announcement-climate-change> (Accessed on May 19, 2018)

³²⁸ UNFCCC, United States, <https://unfccc.int/node/61231> (Accessed May 19, 2018)

28 per cent below its 2005 level in 2025 and to make best efforts to reduce its emissions by 28%.³²⁹

Nonetheless, the US, among 176 ratifiers, announced initiation of withdrawal procedures from the Paris Agreement with the President Trumps' arrival.³³⁰ It also started official procedures of withdrawal with its notification to UNFCCC.³³¹ Nevertheless, the US cannot withdraw from the PA earlier than 2020 based upon uniform rules. Accordingly, the US submitted its formal notification of withdrawal to the United Nations on 4th November 2019 to complete the effective withdrawal within one year.³³² As a result, the US has not got a uniform and coherent international climate policy.

5.5 Drivers of the International Climate Change Policy

In this part, main drivers of US Climate Change Policy are disclosed with an aim to assess which factors are more decisive on the final policy configuration of the

³²⁹UNFCCC, "US INDC", <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20States%20of%20America%20First/U.S.A.%20First%20NDC%20Submission.pdf>, (Accessed June 19, 2018).

³³⁰ New York Times, "Trump Will Withdraw U.S. From Paris Climate Agreement", <https://www.nytimes.com/2017/06/01/climate/trump-paris-climate-agreement.html> (Accessed on June 19, 2018)

³³¹ US Department of State, "Communication Regarding Intent To Withdraw From Paris Agreement", 4 August 2017 <https://www.state.gov/r/pa/prs/ps/2017/08/273050.htm> (Accessed on May 19, 2018)

³³² UNFCCC, "Official Communication from the US on its Intention to Withdraw from the Paris Agreement", 7 August 2017, <https://unfccc.int/news/official-communication-from-the-us-on-its-intention-to-withdraw-from-the-paris-agreement> (Accessed on May 16, 2018)

country. In order to facilitate the analysis, the drivers are discussed in two main groups as domestic and international.

5.5.1 Domestic Drivers

Domestic drivers of climate policy of the country can be listed as *Vulnerability of the Country, Sufficiency of Domestic Climate Change Policy and Mitigation Potential, Legislative Structures, Attitudes of the Leaders/Politicians and Power of Industrial Lobby Groups and Civil Society.*

To begin with *Vulnerability of the Country*, United States, with its vast territory and long coasts, is highly vulnerable to the impacts of climate change by ranking as the 27th among the 181 countries most affected in the period 1998- 2017 according to Global Climate Change Risk Index.³³³ These impacts might be experienced in the form of flooding, intense hurricanes, water scarcity, energy and infrastructure stress, wildfires and risks for beach and winter tourism, public health, shipping and agriculture.³³⁴

Although ecosystems differ strikingly across the United States, they have many common characteristics and are all touched by climate change. For instance, detected and projected climate change impacts on regional basis enclosed in third

³³³ Global Climate Change Risk Index 2017 (GCCRI), released by German watch analyzes to what extent countries have been influenced by the impacts of extreme weather events such as heat waves, floods and storms etc.) For further details on GCCRI please refer to https://germanwatch.org/sites/germanwatch.org/files/Global%20Climate%20Risk%20Index%202019_2.pdf

³³⁴ US Department of State, "Vulnerability, Assessment, Climate Change Impacts, and Adaptation Measures" in US Climate Action Report 2014, <https://2009-2017.state.gov/documents/organization/218994.pdf> (Accessed on May 21, 2018)

National Climate Assessment Report point that in Northeast people are affected by more extreme precipitations, heat waves and coastal flooding by the reason of sea level rise; in Southeast and Caribbean, diminished water availability, intensified by population growth and land-use change, entail increased struggle for water also risks for extreme events surge whereas in Great Plains rising temperatures result in growing demand for energy and water besides influences on agricultural practices.

The costs of preventive actions for tackling with these impacts are quite high. For example, aggregate costs of responding to sea level rise and flooding incidents could be as high as \$325 billion by 2100 and total burden on insurance sector from flooding was envisaged to be \$1.2 trillion in 2012. The analysis show that implementation of an all-encompassing set of energy, climate, and transportation policies can intensely lower U.S. GHGs emissions at the same time help businesses for saving money. Actually the cost of inaction is 4-10 times greater than that of hazard preventive actions.³³⁵

As a result, it is seen that US is highly vulnerable to the adverse effects of climate change and this vulnerability signals that US should enforce national policies to deal with climate change problem and moreover it might support international cooperation efforts for tackling with climate change since national efforts are not sufficient to defeat the risks of global climate change problem.

With regard to *Sufficiency of Domestic Climate Change Policy and Mitigation Potential* in the US, the outlook so interesting. The sufficiency of climate change policy of the US can be judged with respect to two dimensions: sufficiency in terms

³³⁵U.S. Global Change Research Program. *Climate change impacts in the United States, highlights U.S. national climate assessment, 2014, 8.* http://s3.amazonaws.com/nca2014/low/NCA3_Highlights_LowRes.pdf?download=1, (Accessed on May 21, 2018)

of attaining domestic policy objectives and sufficiency in terms of contributing to global efforts to stabilize the global warming.

The US climate change policy has experienced fluctuations with the replacements in Whitehouse since 1990s. The most radical steps were taken during Obama administration where the first attempts towards a federal level climate change policy had been made. Therefore, as discussed in Part 5.3, with respect to sufficiency of domestic policy objectives, Obama's comprehensive climate action plan and accompanying measures were could be thought as sufficient. However, with Trumps' substantial and extremely adverse rollbacks in federal level, domestic climate change policy outlook has changed drastically. The most outstanding reversal has been about the Obama Administration's Climate Action Plan. It was rescinded with Trump's March 2017 Executive Order on "energy independence".³³⁶ As a result, currently, domestic climate policy outlook is far from being sufficient to pursue any climate objective.

Although there is not a consistent and ambitious climate change policy at the national level in the US; the multifaceted climate policy structure signals the presence of climate change policies in the country. As detailed in Part 5.3, despite being asymmetric and dispersed, nearly half of the states of the US do have some type of climate action varying from GHGs emission targets to standards for electricity GHG emissions, GHG reporting and registries, carbon pricing policies, climate action plans, regional initiatives, adaptation projects, together with pilot CCS projects indicates a readiness over the country to mitigate and adapt the climate change in the country.³³⁷ Thus, the presence of climate change policy

³³⁶ Whitehouse Executive Orders, "Presidential Executive Order on Promoting Energy Independence and Economic Growth"

³³⁷Please refer to Table 8 and discussions in 5.2.

infrastructure at least at the state level, makes US readier to comprise to an international climate change agreement which would result in undertaking similar practices.

Besides, the US climate change policy was rated as “Critically Insufficient” by Climate Action Tracker based on its intent to withdraw from Paris Agreement regarding it as a stark backwards step and a nullification of its accountability as the world’s second largest emitter.³³⁸ Still, the presence of various measures at state level together with announcement of 82 mayors for their adherence to Paris pledges and climate objectives indicate that the US can straight forwardly actualize climate objectives once the relevant political decisions are made at the federal level.³³⁹ In this regard, Aldy points out the existence of a new irreversible energy economy in the US, where a shift from emission intensive coal to natural gas has started to be experienced and cannot be halted with legislative actions like executive orders.³⁴⁰

Moreover, the sufficiency of climate change policy in any country is closely linked to the mitigation potential of it, since primarily the policy setting determines the emission reduction capability. In the US case, as disclosed in part 5.2 Energy and Climate Outlook, mitigation potential is really enormous if additional measures consistent with national action plan are taken. Although most of the measures at

³³⁸ Climate Action Tracker, “US”, <http://climateactiontracker.org/countries/usa.html> (Accessed on May 27, 2019)

³³⁹ Claire Zillman, “82 U.S. Mayors Pledge to Uphold the Paris Climate Agreement After Trump Abandons It”, *Fortune*, 2 June 2017, <http://fortune.com/2017/06/02/paris-agreement-trump-decision-mayors-cities/>, (Accessed on October 25, 2018).

³⁴⁰ Joseph E. Aldy, “Real world headwinds for Trump climate change policy”, *Bulletin of the Atomic Scientists* 73, No.6, (2017): 377.

federal level are not expected to be put into practice with Trump's undoing climate policies; the persistence of state level renewable energy portfolio standards, present and pilot CCS projects, and other mitigation measures imply a significant mitigation capacity for the country. Besides, the great shale gas potential of the US³⁴¹ makes it also one step closer for committing within an international climate change regime when the less emission intensive structure of gas as compared to oil.

Consequently, although the US climate policy seems insufficient in terms blueprints and orientation at national level, the existence of multiple initiatives at subnational level, significant investments in mitigation technologies and implementation of mitigation measures at subnational level indicates that there is a great mitigation potential in the US. Given the existing policies, measures and mitigation potential of the country, the US seems to have the capacity to compromise on an international climate change agreement and implement the requirements of such an agreement.

The *legislative structures* of the US is complicated in the sense that any kind of policy setting including climate change is both challenging and straightforward. Climate policies can be legislated both by President and the Congress without a clear division of labor. Passing a code from the Congress is onerous while the President can easily issue executive orders. As discussed in 5.3; as opposed to the practicality of presidential power in terms of issuing executive orders and rule making; some regulations should certainly be legalized by Congress where a reconciliation of differences between Senate and House bills required. This makes the legislative process by the Congress more difficult. For instance, in past, proposals for binding GHGs emission reductions confronted with stronger

³⁴¹ EIA, "Natural Gas Explained", <https://www.state.gov/on-the-u-s-withdrawal-from-the-paris-agreement/> (Accessed on November 18, 2019)

opposition in the Lower House (House of Representatives) than in the Upper House (Senate).³⁴² Because of this tedious path of policy setting, climate measures could not be undertaken in the US at the federal level for a long time.

Even the policy orientation is settled, implementation cannot be guaranteed in this legislative structure. To put it more explicitly, despite the fact the President wishes to join an international agreement and gets the required authorization from the Congress to negotiate and sign an international treaty; the necessary series of legislations to put the agreement into practice such as those of ratification and policy measures might not pass the Congress. To illustrate, during 1990s when the discussions to join an international climate agreement and mandatory GHGs controls were at peak; the Senate passed the Byrd-Hagel resolution, which opposes any international climate change agreement provided that it included significant involvement and commitments from developing countries. Indeed, the prescriptions of this bill hindered the US from ratifying the Kyoto Protocol for years.³⁴³

As a result, the legislative structure of the US makes it difficult to compromise on an international climate change agreement and to implement the requirements of it, given the diversity of interests among the Senate, the Congress and the President.

Given the complexity of legislative structure in the US; the easiness and fastness of Presidential legislation making in the US makes *the attitudes of the leaders/politicians* quite important in terms of setting climate policies.

³⁴² Carl Hulse, "Provisions to curb oil use fall out of energy bill." *New York Times*, (2005, July 26) cited in Henrik Selin and Stacy VanDeever, "Political Science and Prediction: What's Next for U.S. Climate Change Policy?"⁴.

³⁴³ Henrik Selin and Stacy VanDeever, Political Science and Prediction: What's Next for U.S. Climate Change Policy? 3.

Therefore, the US climate policy fluctuated dramatically with the leaders' attitudes towards climate change. Particularly during Obama administration climate change engagement of the US was at its top. He passed a set of material nationwide climate codes and tried to facilitate international climate change negotiations.³⁴⁴

Nevertheless, as a climate sceptic³⁴⁵, one of the earliest policies of Donald Trump was rolling back Obama's climate legislation as discussed in 5.3. Indeed, Trump has never openly recognized the U.S. scientists' consensus that climate change is real and chiefly induced by human beings.³⁴⁶ With this regard, Trump's climate policy objectives can be grouped into two: reversing policy progress of Obama administration, and taking out regulations that may hinder domestic energy development.³⁴⁷ He, not only revokes domestic climate policies but also reverses international policies so that the country does not face any commitment having domestic repercussions. Trump also initiated the withdrawal procedures of the US from the Paris Agreement.³⁴⁸ However, this is not only about his climate skepticism but also interplay of other factors. Among Trumps' concerns towards climate

³⁴⁴ Please refer to Part 5.3.

³⁴⁵ Please refer to CNN's analysis on Trumps' skepticism based on social media comments [Chris Cillizza](https://edition.cnn.com/2017/08/08/politics/trump-global-warming/index.html), "Donald Trump doesn't think much of climate change, in 20 quotes", <https://edition.cnn.com/2017/08/08/politics/trump-global-warming/index.html>; (Accessed on May 28, 2018)

³⁴⁶ Hai Bin Zhang et al., "The withdrawal of the U.S. from the Paris Agreement and its impact on global climate change governance", *Advances in Climate Change Research* (2017): 2.

³⁴⁷ Joseph E. Aldy, "Real world head winds for Trump climate change policy", 377

³⁴⁸ Valerie Volvovici, "U.S. Submits Formal Notice of Withdrawal from Paris Climate Pact", *Reuters*, August 5, 2017 <https://www.reuters.com/article/us-un-climate-usa-paris/u-s-submits-formal-notice-of-withdrawal-from-paris-climate-pact-idUSKBN1AK2FM> (Accessed on May 28, 2018)

change, most significant has been on the economic aspects of climate change.³⁴⁹

Trump's three points to substantiate his withdrawal decision from PA according to Zhang YX were as followed:

First, he believed that Paris Agreement is harmful to the U.S. and could damage the domestic economy, thus causing job losses. Second, he thought that the goals of the Paris Agreement would negligibly mitigate climate change... Third, he claimed that large developing countries, like China and India, made an unfair agreement against the U.S.³⁵⁰

Trump's appointment of Scott Pruitt, who was at the helm of undoing efforts of him on key climate change regulations, as the Head of Environmental Protection Agency reflected his persistence to disregard climate change in the future, too.³⁵¹

Based on Trump's discourse and early rollback policies on climate change one can conclude that the leader's attitude in the US is not supportive to make a decision stay in Paris Agreement and lead the necessary steps to implement it.

As for the *Power of Industrial Lobby Groups and Civil Society*, the US is one of the most characteristic countries with its very structured industrial pressure groups and highly developed civil society that is sensitive to environmental problems. Climate change problem has both proponents and opponents from various segments of the society in terms contribution of the US for the solution of the problem.

³⁴⁹ Hai Bin Zhang et al., "The withdrawal of the U.S. from the Paris Agreement", 2.

³⁵⁰ Hai Bin Zhang et al., "The withdrawal of the U.S. from the Paris Agreement", 2.

³⁵¹ Coral Davenport, "Senate Confirms Scott Pruitt as E.P.A. Head", *The New York Times*, February 17, 2017 <https://www.nytimes.com/2017/02/17/us/politics/scott-pruitt-environmental-protection-agency.html> (Accessed on May 28, 2018).

Lobby groups are very influential in terms of any kind policy making in the US. However, with respect to climate change policies there are a great number of lobby groups ranging over two opposite polars. The fossil fuel industry, which basically desires to blink the climate change fact, has a great power. The oil and gas producers including American Petroleum Institute, Exxon Mobil and Shell estimated to spend 115 million dollars in a year to oppose climate policy.³⁵² Additionally, two dozen groups that doubt on climate change or oppose environmental regulations are claimed to be funded by largest coalmining company of the US.³⁵³ Similarly another leading Industrial company is claimed to be funding 84 groups denying climate change since 1997.³⁵⁴

Particularly industry pressure groups with high emission intensity production are of the view that tackling with climate change in the US and undertaking relevant measures such as implementation of emission ceiling, carbon tax or mandatory standards deteriorate the competitiveness of them as compared to producers in the developing countries where such measures are not applied. These groups are so strong that in 1990s several US firms and trade associations opposed to compulsory GHGs emission reductions and financed a series of campaigns against Kyoto

³⁵² Casey Williams, "Oil Giants Spend \$115 Million A Year To Oppose Climate Policy", 4 November 2016, *Huffington Post*, https://www.huffingtonpost.com/entry/oil-companies-climate-policy_us_570bb841e4b0142232496d97 (Accessed on October 25, 2018).

³⁵³ Suzanne Goldenberg and Helena Bengston, "Biggest US coal company funded dozens of groups questioning climate change", 13 June 2016, *The Guardian* <https://www.theguardian.com/environment/2016/jun/13/peabody-energy-coal-mining-climate-change-denial-funding> (Accessed on October 27, 2018).

³⁵⁴ Gus Ruleas, "Koch Industries: Secretly Funding the Climate Denial Machine", *The Greenpeace* <https://www.greenpeace.org/usa/global-warming/climate-deniers/koch-industries/> (Accessed on October 26, 2018).

Protocol like that was undertaken by Competitive Enterprise Institute.³⁵⁵ So as to evade higher costs, policies should generate incentives for companies and persons to follow the cheapest mitigation alternatives over time.³⁵⁶

Whereas, in 2000s a growing number of firms began to advocate policies warranting mitigation of GHGs like the United States Climate Action Partnership.³⁵⁷ Some pressure groups like the US National Mining Association closely follow international climate change negotiations as well as their efforts against climate policies at home. National Mining Association filed a lawsuit to against blueprint of Clean Power Plan in 2016³⁵⁸ In addition to fossil fuel industry, emission intensive sectors have concerns over carbon leakage problem due to the measures to be taken in the country. EPA's analysis for carbon leakage in the US reveals that presuming developing countries do not undertake emission reduction commitments, carbon leakage of US was estimated at about 11% in 2030 and 8-9% in 2050.³⁵⁹ The Waxman-Markey bill, which was not approved by the Senate

³⁵⁵ Henrik Selin and Stacy D. VanDeveer. "US climate change politics and policy making". *Wiley Interdisciplinary Reviews: Climate Change* 2, No. 1 (2011): 121-127, 125.

³⁵⁶ Joseph E. Aldy and William A. Pizer, "Issues in Designing U.S. Climate Change Policy", *The Energy Journal* 30, No. 3 (2009): 179-209.

³⁵⁷ Henrik Selin and Stacy D. VanDeveer. 2011. "US climate change politics and policymaking". *Wiley Interdisciplinary Reviews: Climate Change*. 2 (1): 125.

³⁵⁸ Deutsche Welle, "Fossil fuel lobbies cripple UN climate talks, report says", 2 May 2017, <http://www.dw.com/en/fossil-fuel-lobbies-cripple-un-climate-talks-report-says/a-38664523> (Accessed on October 27, 2018)

³⁵⁹ U.S. Environmental Protection Agency, *EPA Analysis of Lieberman-Warner Climate Security Act of 2008: S. 2191 in the 110th Congress*, May 14, 2008), 84. https://archive.epa.gov/epa/sites/production/files/2016-07/documents/s2191_epa_analysis.pdf (Accessed on October 25, 2018)

and never passed into law, embraced some elements to respond carbon leakage concern.³⁶⁰ Even in Trump era, the suggestion of some Republicans' for a border carbon adjustment would strive for the sense that unfair competitive advantage to foreign producers whose carbon policies are loose.³⁶¹

On the other side, there a number of groups which deny the climate change and find it obsolete to take action against it. As a matter of fact, how these civil society groups' attitudes are shaped is often discussed. To illustrate, two dozen groups that doubt on climate change or oppose environmental regulations are claimed to be funded by largest coal mining company of the US.³⁶² Similarly another leading Industrial company is claimed to be funding 84 groups denying climate change since 1997.³⁶³ The distribution of lobby lists on congressional climate change legislation by industry reveals that manufacturing, electric power, oil gas and transportation lobbyists dominate lobbyists of environmental and health organizations.³⁶⁴ The dominance implies that the orientation away from international climate change regime can last for the coming period combined with the leader's present attitude against climate change.

³⁶⁰ For details please refer to Center for Energy and Climate Solutions, "Congress Climate History".

³⁶¹ Stefan Koester and Gilbert E. Metcalf, "Carbon Taxes and U.S. Manufacturing Competitiveness Concerns", *Econofact* 11 April 2017 <http://econofact.org/carbon-taxes-and-u-s-manufacturing-competitiveness-concerns> (Accessed on October 30, 2018)

³⁶² Suzanne Goldenberg and Helena Bengston, "Biggest US coal company funded dozens of groups questioning climate change".

³⁶³ Gus Ruleas, "Koch Industries: Secretly Funding the Climate Denial Machine" .

³⁶⁴ Thomas L. Brewer, "The United States in a Warming World: The Political Economy of Government", 73.

On the other hand, civil society is, too, very powerful in the US; particularly environmental sensitivity is not uncommon among many. Civil society pushes policy makers towards more ambitious climate policies. For instance, worldwide entities such as Climate Action Network, Greenpeace and World Resource Institute also have offices in the US.³⁶⁵ Additionally, there are a number of local climate NGOs in the US such as 350.org and Sierra Club.³⁶⁶ These groups urge US to take the necessary measures as one of the largest emitters of GHGs. They also desire US to be a part of international climate change agreements and see the withdrawal decision as a historical mistake.³⁶⁷ Besides, public opinion on environmental issues in the US varies in line with partisan polarization. Republicans and conservatives are less likely to state opinions coherent with the scientific consensus and disclose personal concerns about climate change than are Democrats and Liberals.³⁶⁸ As a result, civil society can be said to be supporting the US to be a part of an international climate deal.

All in all, although industrial pressure groups are against being part of an international climate change regime and following relevant mitigation actions; civil society desires to see the US as an active part of such a global deal.

³⁶⁵ For more detailed info for Climate Action Network refer to <http://www.climatenetwork.org/>, for Greenpeace refer to <https://www.greenpeace.org/international/> and for World Resource Institute refer to <https://www.wri.org/>

³⁶⁶ For more detailed information on 350.org please refer to <https://350.org> and for Sierra Club please refer to <https://www.sierraclub.org>.

³⁶⁷ Trey Pollard, "Sierra Club On Paris Agreement Withdrawal: A Historic Mistake", *Sierra Club*, 31 May 2017 <https://content.sierraclub.org/press-releases/2017/05/sierra-club-paris-agreement-withdrawal-historic-mistake> (Accessed on October 30, 2018).

³⁶⁸ M. McCright Aaron and Riley E. Dunlap, "The politicization of climate change and polarization in the American public's views of global warming, 2001-2010". *Sociological Quarterly* 52, No. 2, (2011): 155–194.

5.5.2 International Drivers

The primary international drivers of climate policy can be listed as *Foreign Policy Objectives*, *Climate Change* and *Foreign Trade Interplay*, and *Financial Returns* and *Outlays*. These are elaborated in detail below.

To begin with *Foreign Policy Objectives*, the recent US foreign policy can be said to seeking to be the great power of the world in all issue areas despite some decline in economic terms.³⁶⁹ Historically the US has become the leader in terms of shaping the global climate change politics. However, after the Copenhagen the rapprochement between the China and the EU threatened the US leadership in the global climate change politics.

Because of their ambition to be assertive, Obama participated to the EU and China. Actually Obama believes that the Paris Agreement reinforces the U.S. leadership in international affairs, while Trump is of the view that the agreement deteriorates the U.S. sovereignty.³⁷⁰ However, Trumps' attitude towards climate change might hamper the US decisiveness when the US is out of PA, since it might be deterred from participating to official negotiations for setting the implementation guidelines of the PA. In short, Trump's rollback policies fit with the US foreign policy objective of desire to be decisive in all policy areas.

With respect to *Climate Change and Foreign Trade Interplay: Opportunities and Challenges*, the US, having massive amounts of foreign trade, is among the leading exporters and importers of world. As of 2017, it is the largest importer and third

³⁶⁹ Chatham House, "US Foreign Policy, <https://www.chathamhouse.org/research/topics/us-foreign-policy#> (Accessed June 6, 2018)

³⁷⁰ Hai Bin Zhang et al., "The withdrawal of the U.S. from the Paris Agreement", 2.

largest exporter of goods and, the second largest exporter and importer of services in the world.³⁷¹ Although foreign trade and climate change seem isolated, they have a very stringent relationship by virtue of emission intensive goods such as fossil fuels, steel and iron, chemicals, glass, ceramics, cement, and pulp and paper. Besides, products that contribute mitigation efforts thereby reinforce low carbon economy have increasing importance in foreign trade.

If the structure of US foreign trade is analyzed, it is seen in Table 10 and 11 that the US is both a major exporter of high carbon emitting products and environmentally friendly low carbon technologies.³⁷² To begin with fossil fuel trade, the US is currently an importer of fossil fuels.³⁷³ With a 14.9 % share and 394 million tones volume it is the largest importer of crude oil while it is the largest exporter of oil products with 19.5 % share and 221 million tones.³⁷⁴ Moreover, it is a net importer of natural gas with a share of 11 % and 80.7 million cubic meter volume.³⁷⁵ As for

³⁷¹ WTO, "US Trade Profile".

³⁷² The tables are prepared by utilizing the data retrieved from ITC Trademap data base according to the HS sector codes.

³⁷³ EIA, "The United States is expected to export more energy than it imports by 2020", January 2019, <https://www.eia.gov/todayinenergy/detail.php?id=38152> (Accessed on May 27, 2019)

³⁷⁴ Calculated based on "British Petroleum, *Statistical Review of World Energy 2018*", <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2018-full-report.pdf> (Accessed on May 27, 2019), 25.

³⁷⁵ Calculated based on "British Petroleum, *Statistical Review of World Energy 2018*", <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2018-full-report.pdf> (Accessed on May 27, 2019), 34.

the coal trade, the US is a net exporter.³⁷⁶ In fact, since the US consumes petroleum and natural gas more than it produces, it imports from suppliers to meet the demand.³⁷⁷ However, thanks to the American shale gas revolution, the US will be among the world's largest gas exporters according to IEA.³⁷⁸ Additionally, the US Energy Information Administration has announced that the US is expected to export more energy than it imports by 2020.³⁷⁹

All in all, although the US is not dependent on export revenues from fossil fuels currently, in the near future the export revenues of particularly energy including shell gas expected to be crucial for the US.³⁸⁰ This restrains the US from policies that could limit demand for fossil fuels such as an ambitious climate change agreement.

On the other hand, import and export figures for emission intensive products are provided in Table 10. Accordingly, the share of carbon intensive products in US exports and imports are almost the same being around 11-12 %. The largest export

³⁷⁶ IEA, Atlas of Energy, <http://energyatlas.iea.org> Accessed on June 3, 2016.

³⁷⁷ EIA, Energy Explained, <https://www.eia.gov/energyexplained/us-energy-facts/> (Accessed on June 3, 2018).

³⁷⁸ The *Guardian*, "US will become one of the world's top gas exporters by 2020" <https://www.theguardian.com/business/2017/jul/13/us-worlds-top-gas-exporter-2020-iea-russia-norway> (Accessed on 3 June 2018).

³⁷⁹ EIA, "The United States is expected to export more energy than it imports by 2020".

³⁸⁰ EIA, "The United States is expected to export more energy than it imports by 2020".

sector among high emitters is the petrochemicals which is followed by iron and steel as seen in Table 10.³⁸¹

As for the foreign trade figures in environmental goods, they constitute 3.6 % percent of the US total exports while they make about 11 % of world trade. This implies that because of their lower share in the US exports, these products are comparatively less important for US export revenues. Furthermore, the share of environmental goods exports in the US export basket is around 3.5- 4.0 % over the years (Table- 11), which presents that the US cannot be claimed to have an increasing competency and competitive advantage in the export of these products.³⁸²

Given the bottleneck in Environmental Goods Agreement negotiations under the WTO, the US is not expected to foresee an advantage from the trade of these environmental products in the near term.

Another important issue on foreign trade and climate change interplay derives from carbon leakage concerns and related competitiveness losses. As it is discussed in Chapter 3, carbon leakage concerns play an important role for any country while evaluating its stance towards a climate change agreement and thereby deciding and designing the accompanying measures to comply with it if decision is made for adoption of such treaty. On the other hand, in order for dealing with domestic carbon leakage problem there are a number solutions varying according to the measure in effect. To illustrate, as debated in Chapter 3, under a cap and trade system, most popular cure has been free allowances for the sectors that are at risk

³⁸¹ Based on calculations of data retrieved from ITC- Trademap database, <http://trademap.org>.

³⁸² Based on calculations of data retrieved from ITC- Trademap database, <http://trademap.org>.

of carbon leakage. Another solution, which has not been applied for a carbon tax or cap and trade system so far is BCAs. For discussion of potential US measures for mitigation, the carbon leakage risk is assumed to be decreased by BCAs in the US, too. For instance, while discussing to participate Kyoto and Post- Kyoto regime almost half of the twelve market based climate bills that were introduced in the 110th Congress involved some kind of border adjustments.³⁸³ Senator Kerry and Senator Graham proposal (in New York Times) while calling climate actions for mitigation at the same time urges actions for tackling with competitiveness challenges in the form of border tax adjustments on imports.³⁸⁴ They defend it as:

... There is no reason we should surrender our marketplace to countries that do not accept environmental standards. For this reason, we should consider a border tax on items produced in countries that avoid these standards. This is consistent with our obligations under the World Trade Organization...³⁸⁵

The bill sponsored by Representative Henry Waxman and Ed Merkey call for two provisions that could have trade impacts: first as the emission allowances for certain carbon intensive industries such as paper, iron and steel, chemicals etc.; and the second as the obligations for the importers in those sectors to buy emission allowances which would work as a border carbon adjustment.³⁸⁶ These measures basically point additional taxes on imports or obligations to buy permits from US

³⁸³ Jeffery Frankel and Joseph Aldy, "Addressing the Leakage/ Competitiveness Issue in Climate Change Policy Proposals" in *Climate Change, Trade, and Competitiveness: Is a Collision Inevitable?* Ed. Lael Brainard and Isaac Sorkin, (Brookings Trade Forum: 2008/2009), 72.

³⁸⁴ John Kerry and Lindsey Graham, "Yes We Can (Pass Climate Change Legislation)", New York Times, October 10, 2009 <http://www.nytimes.com/2009/10/11/opinion/11kerrygraham.html> (Accessed on March 20, 2018).

³⁸⁵ John Kerry and Lindsey Graham, "Yes We Can (Pass Climate Change Legislation)".

³⁸⁶ Aaditya Mattoo and Arvind Subramanian. *Greenprint*, 93.

market. However, since these bills failed to pass the Congress as a result of US denial of Kyoto Protocol; currently there is not a federal level carbon leakage prevention mechanism.

Even if the US does not decide to participate to international climate change treaty, it may still face some carbon leakage risk as long as some kind of mitigation measures are implemented in the country at state level. Thus, there might be some measures to respond the state wide carbon leakage problems.

There are some risks, too which American exports face as a result of measures taken against carbon leakage problem in US export markets. In this regard, American sectors that are predominantly energy intensive or emission intensive will be at risk in terms of competitiveness as compared to businesses in the same sectors functioning in nonregulated countries.³⁸⁷ The exports of these industries as well as their domestic production is at a risk of leakage. The US exports in emission intensive industries are around 1.5 trillion dollars as of 2016 as seen Table 10.³⁸⁸

Although the magnitude of risk changes with respect to the sector, still there is a great risk for American exports and thereby American economy if US chooses some kind of market based measure. In this regard thoughts of EU about countries not ratifying the PA could be subject to Border Carbon Adjustments may pose a risk for the US.³⁸⁹ In an analysis held by Mattoo et al., when the US undertakes

³⁸⁷ Jeffery Frankel and Joseph Aldy, "Addressing the Leakage/ Competitiveness Issue in Climate Change Policy Proposals", 71.

³⁸⁸ Based on calculations of data retrieved from ITC- Trademap database, <http://trademap.org>.

³⁸⁹ Climate Home News, "EU says no new trade deals with countries not in Paris Agreement", 02/02/2018, <http://www.climatechangenews.com/2018/02/02/eu-difficult-imagine-trade-deals-countries-not-paris-agreement/> (Accessed May 28, 2019)

some market based measures, production and exports of US are estimated to be affected adversely; according to their findings the manufacturing production falls -0,8 % to -2,5 % while the manufacturing exports either slightly increase by 0.7% or falls by -2.5 % under different scenarios.³⁹⁰ Although the federal level attempts to launch an emission trading scheme failed, California carbon market has been in effect since 2013³⁹¹. So as to prevent competitiveness losses, California plans to launch a border carbon adjustment mechanism for imported emissions.³⁹²

As a result, comparatively less favorable expectations for the US environmental goods exports and more favorable expectations for emission intensive products such as shell gas; and with the carbon leakage risks embedded in carbon regulations, the US may more reluctant to join an international agreement where countries might demand less of emission intensive products. However, as a non-participating country US can also face some BCAs for its own exports towards regulated countries. Nordhaus's so popular climate clubs model calls for penalties for non-participating countries.³⁹³ Additionally, since participation to climate regime might ensure access to global carbon market the scenario may be very realistic for the US.

³⁹⁰ Aaditya Mattoo and Arvind Subramanian. *Greenprint: A New Approach to Cooperation on Climate Change*. Washington, DC: Center for Global Development, 2013., 99.

³⁹¹ Center for Climate and Energy Solutions, "California Cap and Trade" from <https://www.c2es.org/content/california-cap-and-trade/> (accessed on April 24, 2019).

³⁹² Carbon Brief, "California's new law aims to tackle imported emissions" <https://www.carbonbrief.org/california-new-law-aims-tackle-imported-emissions> (Accessed on June 7, 2018).

³⁹³ William Nordhaus, "Climate Clubs: Overcoming Free-riding in International Climate Policy".

Table 10: Foreign Trade US- Carbon Intensive

US	2001		2005		2012		2015		2016	
	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import
Foreign Trade of High Emitter Sectors (In Billions)	47.0	186.2	73.5	387.6	215.1	540.4	172.2	309.5	158.1	260.9
Glass and Ceramics	4.8	8.6	5.0	11.6	5.1	12.1	5.7	14.3	5.6	14.1
Paper Industry	14.7	18.4	17.5	22.2	25.4	19.5	24.4	20.1	23.6	19.4
Iron and Steel	13.3	26.2	22.6	49.5	44.0	70.2	34.2	66.6	30.4	56.1
Petrochemical Industry	12.9	129.1	26.4	298.1	137.3	432.7	104.1	200.7	94.7	163.4
Cement Industry	1.3	3.8	2.0	6.3	3.3	5.9	3.9	7.8	3.9	7.8
Total Foreign Trade	731.0	1,180.1	904.3	1,732.3	1,544.9	2,334.7	1,501.8	2,313.4	1,453.2	2,249.7
Share of High Emitter Products (%)	6%	16%	8%	22%	14%	23%	11%	13%	11%	12%

Retrieved from ITC Trademap Database available at <http://www.trademap.org/>

Table 11: Foreign Trade-US in Environmental Goods

US Dollar billion	2005	2006	2007	2008	2009	2011	2012	2013	2014	2015	2016
US APEC List Exports	40.6	45.1	46.9	50.6	44.3	54.4	57.1	57.1	58.6	56.3	52.4
US APEC List Imports	28.0	32.4	38.1	42.9	34.3	48.3	51.5	47.2	51.4	54.4	56.6
US APEC List Foreign Trade Balance	12.6	12.7	8.8	7.7	10.0	6.1	5.6	9.9	7.3	1.9	-4.2
World APEC List Trade	279.4	326.2	375.3	439.8	372.7	505.4	497.3	494.1	503.6	477.6	474.4
US's Exports to World	904.3	1,037.0	1,162.5	1,299.9	1,056.7	1481.7	1544.9	1577.6	1619.7	1501.8	1453.2
APEC List Share in World Trade	14.5%	13.8%	12.5%	11.5%	11.9%	10.8%	11.5%	11.6%	11.6%	11.8%	11.1%
APEC List Share in US's Exports	4.5%	4.4%	4.0%	3.9%	4.2%	3.7%	3.7%	3.6%	3.6%	3.7%	3.6%

Retrieved from ITC Trademap Database available at <http://www.trademap.org/>

Finally, for *Financial Returns and Outlays* following points can be noted. Because of the fact that climate change finance brings about many advantages and disadvantages for countries, it is a significant driver of climate policy design. US has been one of the largest donors of international climate finance. In 2018, the US explained funds of 139.5 million dollars for Green Environmental Facility (GEF) and 31 million dollars for Montreal Protocol Multilateral funds, which do not have direct linkages of climate change. On the other hand, there have been certain cuts for climate finance with no funding for Green Climate Fund, IPCC and UNFCCC works.³⁹⁴ Nonetheless this has been questioned extensively whether it should continue to be financing the other largest emitters such as China.³⁹⁵ Moreover, the limited application of carbon markets which have been presented in Part 5.3 in the US on a regional basis with RGGI in Northeast of the US with the participation of 9 states is not sufficient for potential gains from international mechanisms.

In conclusion, financial prospects for the US from being a part of an international climate regime is much less than the outlays which will be brought by the commitments within such a regime.

5.6 Discussion

The international US climate change policy has many domestic and international drivers. When these drivers are mapped together with a view to discuss their

³⁹⁴ US Government Publishing Office, “Rules Committee Print 115–66 Text Of The House Amendment To The Senate Amendment To H.R. 1625” March 21, 2018 <https://www.gpo.gov/fdsys/pkg/CPRT-115HPRT29374/pdf/CPRT-115HPRT29374.pdf> (Accessed June 3, 2018).

³⁹⁵ Megan Darby, “US-China trade war spills into Green Climate Fund”, Euractiv, 23 October 2018, <https://www.euractiv.com/section/climate-environment/news/us-china-trade-war-spills-into-green-climate-fund/> (Accessed May 15, 2019).

relative roles on the final climate policy package, following points draw attention. At the outset, it should be noted that the question of what really drives the US climate change policy is rather difficult to answer. While the US climate policy and rhetoric seems to support fair and equitable burden sharing, actualization of this discourse in practice is modest.³⁹⁶ When one goes into the merits of the driving forces for US international climate policy, an intertwined setting is encountered. The domestic factors that drive US climate policy do not point a single route for policy orientation. While the vulnerability of the country and mitigation potential imply a supportive attitude for an international climate change treaty, in other words Paris Agreement; sufficiency of climate policy, the leaders' attitude, legislative structures signal for refrainment from it. As for the industrial pressure groups and attitude of civil society, it is difficult to talk about a single orientation.

If the details of domestic drivers are analyzed, as for the mitigation potential and sufficiency of domestic climate policy, a bifurcated structure arises. That is to say, the mitigation potential derived from existent several but dispersed climate change policies at subnational level throughout the country (including cap and trade systems, carbon capture and storage projects and energy efficiency and performance standards, which are outlined in part 5.5.1) points out a generous mitigation potential. However, this great potential is not enough to conclude that the US climate policy is sufficient. That is because the lack of national climate policy deters from ensuring synergy and the country fails to grasp how all these efforts affect the mitigation prospects of the country. For instance, Regional GHG Initiative (RGGI) estimates that state level contributions might generate 5- 15 % emission reductions by 2035.³⁹⁷ This capacity could be enhanced with the

³⁹⁶ Paul G. Harris, "Introduction", *Climate Change and American Foreign Policy*, (England: Palgrave Macmillan, 2016), 19.

³⁹⁷ Franz Litz et al., "Can the U.S. Get There from Here?", World Resource Institute, February 2013 cited in Thomas L. Brewer, *The United States in a warming world: the political economy of*

imposition of nation level policies. Moreover, as debated in Part 5.5.1 the legislative structure of the US makes it difficult to compromise on an international climate change agreement and to implement the requirements of it, given the diversity of interests among the Senate, the Congress and the President.

The incumbent President Trump's negative approach towards climate change moves the US away from being a part of solution to the global climate change problem. Besides the US case shows that driving forces interact among themselves. For example, Trump's grand policy of "Make Amerika Great Again" assumes that American jobs have been sacrificed to some East Asian countries.³⁹⁸ In order to rebuild the competitiveness and save jobs Trump has initiated a trade war against particularly China.³⁹⁹ Within the context of this move, additional custom duties have been levied on solar panel imports, which has been evaluated to make some future investment plans infeasible and cause abandoning many of them.⁴⁰⁰ This, in return, impairs mitigation capacity of the country by limiting the additions to renewable energy capacity of the country.

government, business, and public responses to climate change, (Cambridge University Press: 2015), 132.

³⁹⁸ Ralph Nader, "What Does Trump Mean By 'Make America Great Again'?", *Huffington post* 15 December 2017, https://www.huffingtonpost.com/entry/what-does-trump-mean-by-make-america-great-again_us_5a341e29e4b02bd1c8c6066b (Accessed on June 8, 2018)

³⁹⁹ Martin Wolf, "Donald Trump Declares Trade War on China", *Financial Times* 8 May 2018, <https://www.ft.com/content/dd2af6b0-4fc1-11e8-9471-a083af05aea7>, (Accessed on June 8, 2018).

⁴⁰⁰ Nicola Groom, "Billions in U.S. solar projects shelved after Trump panel tariff", *Reuters*, 7 June 2018, <https://www.reuters.com/article/us-trump-effect-solar-insight/billions-in-u-s-solar-projects-shelved-after-trump-panel-tariff-idUSKCN1J30CT>, (Accessed on June 8, 2018)

Additionally, historical conflicts between the US Congress and the Presidency conducted to deadlocks in US climate policy at the national level in terms of policy adaptation and implementation. As a consequence, legislative factors have become a burden for US climate policy making.

As for the influence of lobby groups, it is noted in Part 5.5.1 that pressure groups from fossil fuel and manufacturing industry are more influential. Besides, Trump's close ties with fossil fuel sector is among the reasons for Trump's undoing the US climate change policy.⁴⁰¹ However, increasing role of civil society and clean energy lobby groups make the direction of overall influence uncertain.

In these circumstances; neither the extreme vulnerability of the country against the adverse impacts of climate change, nor the civil society's supportive approach for taking part in the international climate regime and the mitigation potential of the country discussed in Part 5.5.1 have been sufficient enough for pushing the US for staying in the international climate change regime. That is because the long term nature of climate change problem, which means that the adverse impacts of the climate change problem will appear in a longer period of time as compared to very immediate consequences of compromise on economy of the country if the competitiveness structure puts the country at risk.

On the other side, international policy drivers have more uniformity for the US in terms of their signals for policy adoption. In addition to the so-called impacts of domestic factors on US international climate change policy; international factors affect climate policy making in the US. The grand US foreign policy objectives, climate change-foreign trade interplay and financial outlays drive the US to stay outside of an international climate deal since the challenges outperform the

⁴⁰¹ Hai Bin Zhang et al., "The withdrawal of the U.S. from the Paris Agreement".

opportunities from such an agreement as debated in part 5.5.2. In other words, since the US has an enormous export potential for carbon resources; the limitations for the usage of especially carbon intensive products such as coal; might hamper the foreign trade prospects of the country.

Additionally, competitiveness concerns are very influential in the formation of climate policies and related response measures. To put it in a different way, trade related risks like being exposed to border carbon taxes in exports due to being out of an international climate deal and risks resulting from relocation of emission intensive sectors to nonregulated countries, in other words carbon leakage problem; outweigh the opportunities of becoming a party to Paris Agreement. Besides, reflections of Trump's assertion for making US great again on foreign policy which has been discussed in Part 5.5.2 draw a framework in which the US desires to determine the terms of almost all international policy areas. In this regard, comprehending Paris Agreement as unfair and a threat for the US competitiveness, Trump insists on non-participation policies with the aim of presenting US dominance in international policy sphere by causing irresolution for international climate change regime. These imbalances among driving forces of climate policy reflect themselves in a turbulent climate policy where policy orientation has fluctuations. As its seen from the debates not only domestic factors drive American climate policy, but also international factors matter. As it is seen, very immediate prospect for losses related to international factors resulted from compromising to a binding climate change regime outweigh the gains that could be derived from it for the US. Besides, the nonpunitive structure of Paris Agreement prevails itself in a decreased awareness against trade measures such as

border carbon adjustments. Evaluating itself as a game setter, the US wants to renegotiate the conditions which it sees unfavorable for itself.⁴⁰²

As a consequence, the final attitude of the US with respect to Paris agreement has been determined as a result of the interaction of domestic and international factors. The interaction occurs as following: when negative attitudes of leaders and pressure of interest groups for a loose climate policy are combined with foreign trade competitiveness concerns; the US comes up with a loose international climate policy. To put in another way; there is a relation between these domestic and international factors at least in the short run. When the US is aiming power maximization and trying to ensure its survival as a foreign policy objective; domestic factors such as its leaders' attitudes, legislative structures, power of lobby and pressure groups in the country do have an impact on international factors like foreign trade policies thereby its climate policy making processes. In this regard by at staying outside of global climate change deal at least temporarily, the US utilizes its climate change policies as a market and business development tool to preserve competitiveness.

5.7 Conclusion

In this chapter, the US Climate Change Policy has been examined extensively. With an aim to analyze the drivers of international climate change policy of the country, energy and climate change outlook of the country has been presented primarily so that the drivers related to mitigation capacity and potential of the country is understood holistically.

⁴⁰² CNBC, "Trump: US is withdrawing from Paris climate agreement but wants to renegotiate", <https://www.cnbc.com/2017/06/01/trump-announces-paris-climate-agreement-decision.html> (Accessed on September 22, 2019)

Following this view, domestic and international policies of the country are investigated successively. Considering the domestic climate change policy, the domestic policy settings of the country regarding energy and climate change have been mapped in a detailed way.

Thereafter, the international climate policies of the US so far have been reviewed in an historical order. By using all these analyses as a base, the domestic and international climate change policy drivers of the country have been discussed comprehensively. The analyses have demonstrated that among the policy drivers; in addition to domestic factors, international factors such as foreign trade dynamics have an impact on climate policy making processes in the country. In addition, it is debated that domestic factors like attitudes of leaders and pressures of power groups might act as intervening variable in foreign policy setting in that case climate change policy design at least in the short run.

CHAPTER 6

EUROPEAN UNION

6.1 Introduction

This chapter talks over the European Union (EU)'s climate change policies. In this regard, in the first part of the chapter, the energy and climate change outlook together with the existing climate policies of the country are explored. After this review, the domestic and international drivers of EU climate change policy are analyzed. In the final part of the chapter, how the international climate change policies of the country have been ascertained is discussed by utilizing these domestic and international policy drivers.

6.2 EU Energy and Climate Outlook

EU is among the global powers with its massive role for world economy and thereby global politics. As of 2017, it is the second largest importer and second largest exporter of goods and; largest exporter and importer of the services in the world.⁴⁰³ Unsurprisingly, its enormous economic activity marks it as the world's third largest emitter of GHGs, making up 9.66 percent of global emissions.⁴⁰⁴ This

⁴⁰³ WTO, "EU Trade Profile", <http://stat.wto.org/CountryProfile/WSDBCountryPFView.aspx?Language=E&Country=E28> (Accessed March 29, 2018).

⁴⁰⁴ Johannes Friedrich, Mengpin Ge, and Andrew Pickens, "This Interactive Chart Explains World's Top 10 Emitters, and How They've Changed".

is a result of its primary role in terms of energy production and consumption. As it presented in the key indicators of EU in Table-12, the EU has an excessive amount of energy production and consumption due to its enormous economy. Similarly, its gigantic economic activity makes the EU decisive for the solution of the climate change problem with its key role in international efforts to cope with it.⁴⁰⁵

Table 12: Key EU Indicators, 2016

Population (millions)	511	TPES/Population (toe/per capita)	3
GDP (billion 2010 USD)	18,308	TPES/ GDP (toe/ thousand 2010 USD)	0.09
GDP PPP	18.136	TPES/ GDP PPP (toe/ thousand 2010 USD)	0.09
Energy Production	759	Electricity Consumption/ Population (Mwh/ Capita)	6
Net Imports	909	CO2/TPES (t CO2/ toe)	2
TPES	1,599	CO2/ Population (t CO2/ capita)	6
Electricity Consumption	3,071	CO2/GDP (kg CO2/ 2010 USD)	0.17
CO2 Emissions	3,192	CO2/GDP PPP (kg CO2/2010 USD)	0.18

IEA, EU-28: Indicators for 2016 available at <http://www.iea.org/statistics/>

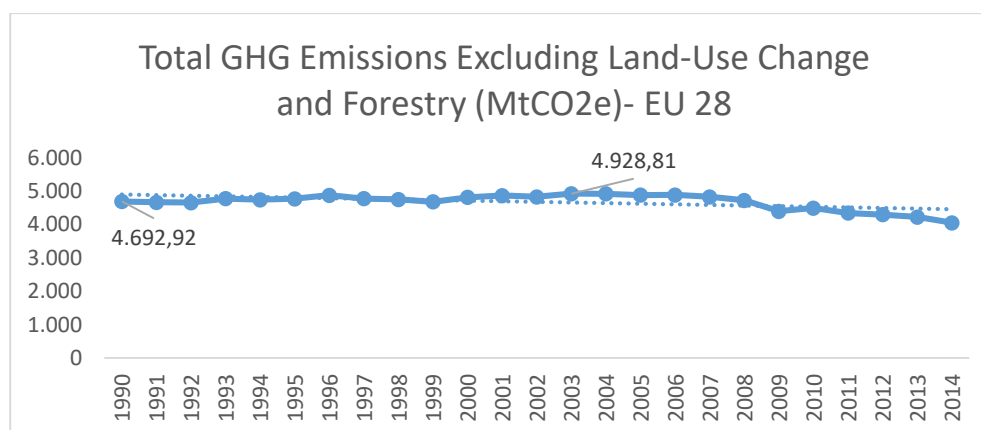


Figure 3: Key EU GHG Indicators

Drawn based on data retrieved from CAIT Climate Data Explorer. 2017. Washington, DC: World Resources Institute. Available online at: <http://cait.wri.org>

⁴⁰⁵ IEA, EU-28: Indicators for 2016 available at <http://www.iea.org/statistics/>.

If we examine in detail the course of EU's GHGs emissions, as illustrated in Figure-3, we observe that emissions recorded a peak in 2003 and thereafter a decline tendency started despite with some fluctuations on yearly basis.⁴⁰⁶ EU's emissions have been resulted from mostly energy, which is followed by agriculture and industrial processes as disclosed in Table 13.⁴⁰⁷

Table 13: Emissions by Sector- EU

Emissions by Sector- EU 28 (2014)					
Energy (MtCO ₂ e)	Industrial Processes (MtCO ₂ e)	Agriculture (MtCO ₂ e)	Waste (MtCO ₂ e)	Land-Use Change and Forestry (MtCO ₂)	Bunker Fuels (MtCO ₂)
3287.02	206.75	420.14	139.75	-428.84	265.26

Retrieved from CAIT Climate Data Explorer. 2017. Washington, DC: World Resources Institute. Available online at: <http://cait.wri.org>

Besides, on a subsector basis, EU energy emissions are mainly resulted from electricity production and transportation as presented in Table 14.⁴⁰⁸

Table 14: Emissions by Subsector- EU

Emissions by Subsector- EU 28 (2014)				
Electricity/ Heat (MtCO ₂)	Manufacturing/ Construction (MtCO ₂)	Transportation (MtCO ₂)	Other Fuel Combustion (MtCO ₂ e)	Fugitive Emissions (MtCO ₂ e)
1315.77	406.03	870.61	625.75	68.93

⁴⁰⁶ Based on data retrieved from CAIT Climate Data Explorer Database, (Washington, DC: World Resources Institute, 2017), <http://cait.wri.org>, (Accessed June 4, 2017).

⁴⁰⁷ Based on data retrieved from CAIT Climate Data Explorer Database.

⁴⁰⁸ Based on data retrieved from CAIT Climate Data Explorer Database.

Retrieved from CAIT Climate Data Explorer. 2017. Washington, DC: World Resources Institute. Available online at: <http://cait.wri.org>

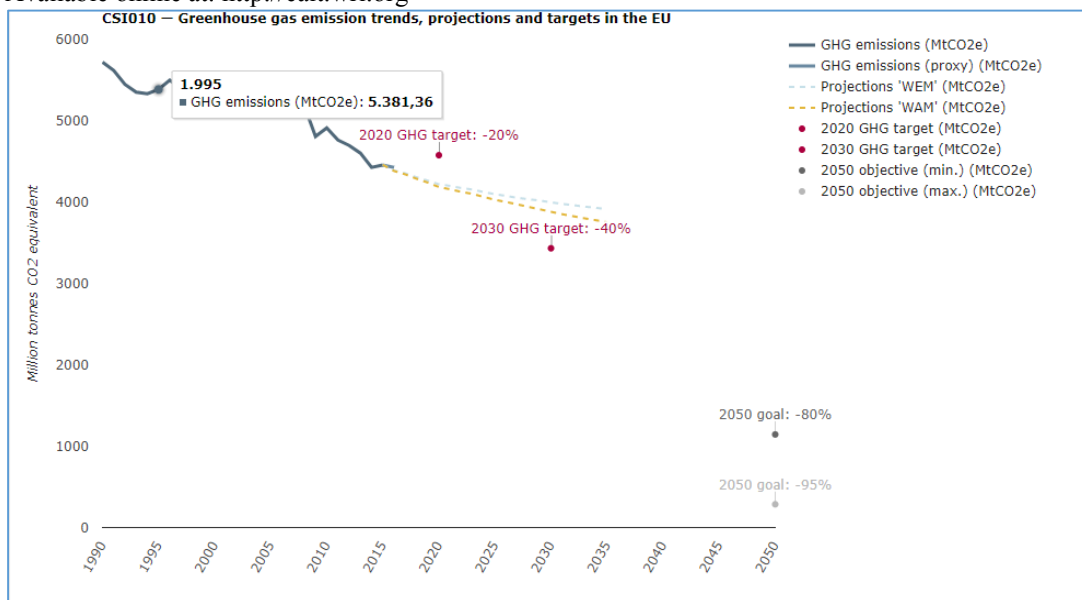


Figure 4: Total greenhouse gas emission trends and projections EU

European Environment Agency, “Total greenhouse gas emission trends and projections in Europe” <https://www.eea.europa.eu/data-and-maps/indicators/greenhouse-gas-emission-trends-6/assessment-1>

The decline tendency in EU GHG emissions is projected to last in the short and medium term according to European Environment Agency as provided in Figure 4. Nonetheless, while the target level for emission reduction for 2020 is above the projected emissions; 2030 emission projections are expected to surpass the 2030 targets. While emission level of EU is expected be between 3000- 4000 tonnes CO₂ equivalent; 2050 target is well below 2000 tonnes CO₂ equivalent.⁴⁰⁹

⁴⁰⁹ European Environment Agency, Total greenhouse gas emission trends and projections in Europe” <https://www.eea.europa.eu/data-and-maps/indicators/greenhouse-gas-emission-trends-6/assessment-1> (Accessed December 11, 2018).

As a matter of fact, in order to evaluate the mitigation outlook and potential of country, energy outlook should be cautiously assessed because the main cause of EU emissions is the energy. As it is realized from Table 15 below, EU energy production rests on mainly nuclear energy followed by hydrocarbon resources. Among fossil fuels, coal has the largest share which is followed by natural gas in energy production; renewable energy sources, particularly biofuels have a material share, too.⁴¹⁰

Table 15: Energy Outlook- EU

Energy Production, 2016 (in thousand tonnes of oil equivalent (ktoe) on a net caloric value basis)		Share
Coal	132,241	17%
Crude Oil	74,792	10%
Natural Gas	107,238	14%
Nuclear	218,891	29%
Hydro	30,105	4%
Geothermal, Solar etc.	46,185	6%
Biofuels, Waste etc.	149,033	20%
Total	759,385	100%

IEA, EU- 28: Balances for 2016 available at <http://www.iea.org/statistics/>

However, this fact is not strange since renewables are getting popular rapidly and renewable power capacity is expected to increase by 50 % in 2019- 2024 over the world, which will probably reflect itself in the European energy profiles too.⁴¹¹

IRENA estimates that the renewable share in its energy mix could double in EU by 2030.⁴¹² The importance of renewable energy for energy production is anticipated

⁴¹⁰ IEA, EU- 28: Balances for 2016, <http://www.iea.org/statistics/>, (accessed on June 3, 2017).

⁴¹¹ IEA, "Renewables- Market analysis and forecast from 2019 to 2024".

⁴¹² IRENA, *Renewable Energy Prospects for the European Union*. (Abu Dhabi: IRENA, 2018), <http://www.irena.org/>

to increase in the coming period. Actually, renewable energy investment in the EU presently predicted to be more than 50 USD billion and it is expected to reach 73 USD billion per year by 2030.⁴¹³

6.3 Domestic Climate Change Policy

In EU, all policies are developed and implemented at Union and national (member state) levels. In this regard, the main climate policy actors of the EU are the European Commission (particularly The Directorate-General for Climate Action-the DG Clima), European Parliament and Member States. Moreover, the Non-Governmental Organizations (NGOs) are widely involved in policy development stages at the EU. Indeed, embracing new legislation in Europe requires co-decision procedure, whereby both Council of Ministers and European Parliament jointly alter, approve or discard legislation offered by the Commission.⁴¹⁴

Climate change is one of the two horizontal priority objectives of European 7th Environment Action Programme.⁴¹⁵ So as to meet these objectives, a set of policies, which are presented below, have been developed and implemented at the EU.

[/media/Files/IRENA/Agency/Publication/2018/Feb/IRENA_REmap_EU_2018.](#) (Accessed November 15, 2019).

⁴¹³ IRENA, *Renewable Energy Prospects for the European Union*, 8.

⁴¹⁴ UNFCCC, "Sixth National Communication And First Biennial Report From The European Union Under The Un Framework Convention On Climate Change", 2014, https://unfccc.int/sites/default/files/resource/eu_nc6.pdf (Accessed November 15, 2019).

⁴¹⁵ European Commission, "Environment Action Programme to 2020" <http://ec.europa.eu/environment/action-programme/> (accessed August 5, 2018).

Climate change has come to be a chief agenda item and often debated by the European Council –composed of EU heads of state or government besides being an international policy issue in EU.⁴¹⁶ The EU, as a climate policy leader, has pushed some policy Union wide blueprints namely *2020 Climate and Energy Package*, *2030 Climate and Energy Framework* and *2050 Low-Carbon Economy* starting from 2007 and updated them in time for coming decades with increased ambition.⁴¹⁷

These blueprints have been followed by some sets of proposals for executing relevant legislation by the European Commission. These climate measures would also entail a foremost shift in competence and emphasis from the member states to the Union level.⁴¹⁸

The 2020 Climate and Energy Package is comprised of a cluster of binding legislation is included in to make sure that EU attains its climate and energy targets for 2020. It mainly has three targets as cutting GHGs emissions by 20 percent; having 20 percent share of renewables in its energy production and 20 percent enhancement in energy efficiency, which were agreed by EU leaders in 2007 and reflected in the legislation in 2009.⁴¹⁹ In order to achieve these targets EU takes several actions among which the most prominent ones are embraced in ETS;

⁴¹⁶ Sebastian Oberthür and Claire Roche Kelly, "EU Leadership in International Climate Policy: Achievements and Challenges", *The International Spectator* 43, No. 3 (2008): 35.

⁴¹⁷ European Commission, "Strategies & Targets", https://ec.europa.eu/clima/policies/strategies_en, (Accessed April 14, 2019)

⁴¹⁸ Sebastian Oberthür and Claire Roche Kelly, "EU Leadership in International Climate Policy, 42.

⁴¹⁹ European Commission, "2020 Climate and Energy Package." Climate Action - European Commission. February 16, 2017. https://ec.europa.eu/clima/policies/strategies/2020_en (Accessed October 25, 2017).

national emission reduction targets, national renewable energy targets, supports for innovation and financing and measures for energy efficiency. EU ETS is the primary tool for cutting GHGs emissions from power, industry and aviation sector by covering approximately 45 percent of EU's GHGs emissions. The reduction target for emissions covered in ETS was 21 percent as compared to 2005 level.⁴²⁰

On the other hand for the emissions excluded from the ETS (around 55 percent of all GHGs emissions) such as housing, agriculture, waste and transport EU members undertook binding national targets for cutting these emissions until 2020 under the Effort Sharing Decision by differentiating among targets according to national wealth as ranging from a 20 percent reduction for the richest members to a maximum 20 percent increase for the least developed members.⁴²¹

Additionally, EU countries undertook binding national targets for increasing the share of renewable energy in its total energy consumption to 20 percent as compared to the 2010 level of 9.8 percent by 2020 with the Renewable Energy Directive. Similar to the cut in emissions; renewable energy targets vary from country to country depending on the national circumstances. Moreover, a 10 percent share of renewables in transport sector is envisaged. Besides, NER 30 programme and Horizon 2020 provides the necessary finance for renewable energy technologies and research and innovation.⁴²²

⁴²⁰ European Commission, "2020 Climate and Energy Package".

⁴²¹ European Commission, "Effort Sharing Decision." Climate Action - European Commission. February 16, 2017, https://ec.europa.eu/clima/policies/effort_en (Accessed October 25, 2017)

⁴²² European Commission, "2020 Climate and Energy Package".

As a means on mitigating GHGs emissions, Energy Efficiency Plan and Directive proposed measures for energy efficiency so as to 20 percent energy savings target by 2020.⁴²³

The 2030 climate and energy framework, adopted by EU leaders in October 2014, is actually an improved and updated version of 2020 Climate and Energy Package by setting three key targets for the year 2030 as at least 40 percent cuts in GHGs emissions from 1990 levels, having a share of 27 percent in renewables in energy consumption and 27 percent improvement in energy efficiency. The Framework presents a 43 percent cut in EU ETS sectors and a 30 percent cut in non ETS sectors with some reforms by 2030 as compared to 2005 so as to achieve GHGs emission cut offs. It also announces a binding target at EU level to lift the share of renewables to at least 27 percent in EU energy consumption by 2030. On the other hand, based on the Energy Efficiency Directive the European Council favored an energy efficiency target of 27 percent by 2030. A new governance system to achieve these targets coherently and efficiently is inevitable.⁴²⁴

By building upon the 2020 Climate and Energy Package and 2030 Climate and Energy Framework; EU develops *2050 Low Carbon Economy Roadmap*. Indeed, by means of 2050 Framework; the European Commission browses cost-efficient approaches to enable the European economy less energy-consuming and hereby more climate-friendly. The roadmap proposes that the EU should reduce its GHGs emissions by 80 percent as compared to 1990 levels by 2050 by reiterating the targets of emission cuts by 40 percent by 2030 and 60 percent by 2040 where

⁴²³ European Commission, "Energy Efficiency - Energy - European Commission." Energy. October 23, 2017, <https://ec.europa.eu/energy/en/topics/energy-efficiency> (Accessed October 25, 2017).

⁴²⁴ European Commission, "2030 Climate & Energy Framework".

contribution of all sectors including power, residential and tertiary, industry, transport are needed by highlighting that low carbon transition is both feasible and affordable.⁴²⁵

In order to achieve 2050 targets, EU has developed roadmaps or identified the route of action in each GHG sector. For example, 2050 Roadmap for Energy searches the ways for the transition of the energy system in a way to be compatible with this GHGs reductions target while enhancing competitiveness and energy supply security. Moreover, it is anticipated that electricity will take place the fossil fuels in heating and transportation, where the electricity is planned to be produced from renewables like solar, wind, water and biomass as well as other low carbon sources fossil fuel power stations improved with CCS technologies or nuclear power stations. With regard to buildings, almost no emissions is expected in 2050 thanks to the drastic improvements in energy performance through passive housing, refurbishing old buildings for improving energy efficiency and substituting renewables and electricity for heating. As for industrial mitigation, it is expected that energy intensive sectors could reduce their emissions more than 80 percent by 2050 since the cleaner and more energy efficient technologies will be utilized. Besides, thanks to CCS Technologies, some sectors in a position to have difficulties for cutting their emissions such as steel and cement are expected to have more drastic emission cuts by 2050. In order to achieve the transition to low carbon society, the EU is expected to be in need of investing an extra €270 billion over the coming 40 years. Moreover, in order to prevent at least to limit the damages of the climate change; the EU has implemented a set of adaptation policies domestically

⁴²⁵ European Commission, “2050 Low Carbon Economy”, Climate Action - European Commission. https://ec.europa.eu/clima/policies/strategies/2050_en (Accessed August 5, 2018).

such as incorporating adaptation to Common Agricultural Policy and financial incentives within LIFE Program.⁴²⁶

As a consequence, the EU has prepared a set of medium and long term strategies for energy and climate policies which have been reinforced by accompanying measures on both Union and national base. All these equip the EU with an enhanced capacity for mitigation actions in the future as well.

6.4 International Climate Change Policy

The EU has exerted a path breaking role in the up growth of international climate change politics since the 1990s.⁴²⁷ Actually, climate change is one of the issue areas where the EU tries to exert its global leadership.⁴²⁸ Moreover, if the EU had not followed such an ambitious climate policy, it would be impossible to mention about such a settled international climate change regime today.

⁴²⁶ UNFCCC, “7th National Communication & 3rd Biennial Report from the European Union under the UN Framework Convention on Climate Change”, 2014.

https://unfccc.int/sites/default/files/resource/459381_European%20Union-NC7-BR3-1-NC7%20BR3%20combined%20version.pdf (Accessed November 15, 2019)

⁴²⁷ Jacob Werksman, Jürgen Lefevere and Artur Runge-Metzger, “The EU and International Climate Change Policy” in *EU Climate Policy Explained* ed. Jos Delbeke and Peter Vis, (European Union, 2016), 94

⁴²⁸ For more about the discussions for EU as a “leader” in international environmental politics, please refer to Miranda A. Schreurs and Yves Tiberghien, “Multi-Level Reinforcement: Explaining European Union Leadership in Climate Change Mitigation”, *Global Environmental Politics* 7:4, November (2007): 19- 46, Tora Skodvin and Steinar Andresen, “Leadership Revisited”, *Global Environmental Politics* 6, No. 3, (2006): 13-27), Jon Hovi, Tora Skodvin and Steinar Andresen, “The Persistence of the Kyoto Protocol: Why Other Annex I Countries Move on Without the United States”, *Global Environmental Politics* 3, No. 4, 2003:1-23, and Joyeeta Gupta and Michael Grubb. *Climate Change and European Leadership*. (Dordrecht: Springer Netherlands, 2010)

The EU signed the basis of international climate change regime –UNFCCC- in 1992 and ratified it in 1993.⁴²⁹ Whereas the UNFCCC aimed to stabilize GHGs emissions; Kyoto Protocol, concluded in 1997, was the first international effort resulted in country specific commitments to mitigate GHGs. EU was involved in hard negotiations before conclusion of Kyoto Protocol where it had advocated more stringent emission reduction targets. The EU signed Kyoto Protocol in 1998 and ratified it in 2002. It has been one of countries who reflected its commitments with regard to Kyoto Protocol to its domestic policies as debated in the previous-Part 6.3

Likewise, during post-Kyoto negotiations the EU maintained its ambition for climate leadership. Even after the disappointment of Copenhagen Climate Change Conference which failed to conclude Post Kyoto climate regime, the EU put great effort to bring together the Parties on a common ground to continue for negotiations for a post Kyoto climate change regime. For that manner, it was one of the forerunners of Paris Agreement negotiations by signing and ratifying Paris Protocol in 2016.⁴³⁰

In this regard EU disclosed its NDC within the Paris Agreement Framework as “a binding target of an at least 40% domestic reduction in greenhouse gases emissions by 2030 compared to 1990”.⁴³¹

⁴²⁹ UNFCCC, “EU”, http://unfccc.int/tools_xml/country_EU.html . (Accessed June 4, 2017).

⁴³⁰ UN Treaty Collection, “Chapter XXVII ENVIRONMENT 7.d Paris Agreement” https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=en, (Accessed December 12, 2018).

⁴³¹ UNFCCC, “Submission By Latvia And The European Commission On Behalf Of The European Union And Its Member States”, 6 March 2015 <https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Latvia/1/LV-03-06-EU%20INDC.pdf> , (Accessed on November 28, 2019).

The EU's attitude towards global warming problem is fairly constructive. The EU is principally in favor of international climate change agreements that are ambitious, inclusive, fair, and robust.⁴³² Moreover, it will probably to sustain its previous leadership role after the withdrawal of the US within the UNFCCC framework to keep the regime alive.

6.5 Drivers of EU Climate Change Policy

In this part, key drivers of EU Climate Change Policy are unveiled with an aim to assess which factors are more decisive on the final policy configuration of the country. In order to facilitate the analysis, the drivers are discussed in two main groups as domestic and international.

6.5.1 Domestic Drivers of European Climate Change Policy

Domestic drivers of climate policy of the country can be noted down as *Vulnerability of the Country, Sufficiency of Domestic Climate Change Policy and Mitigation Potential, Legislative Structures, Attitudes of the Leaders/Politicians and Power of Industrial Lobby Groups and Civil Society.*

To begin with the *Vulnerability of the Country*, climate change has begun to affect Europe seriously with increasing average temperatures and more recurrent extreme

⁴³² Jacob Werksman, Jürgen Lefevere and Artur Runge-Metzger, "The EU and International Climate Change Policy", 94.

weather incidents. According to Climate change, impacts and vulnerability in Europe 2012; these reflect themselves with impacts on *coasts and European seas* such as rising sea levels across most of Europe's coasts, increases in sea surface temperatures and ocean acidification; impacts on *freshwaters systems* such as increases in flood events and the frequency and intensity of droughts, decreases in river flows in eastern and southern Europe and increases in other regions, impacts on *terrestrial biodiversity and ecosystems* such as earlier or later incidence of spring/fall seasonal events and lengthening of breeding seasons, impacts on *agriculture* such as northward enlargement of areas appropriate for numerous crops; earlier harvest dates in cereals; falls in yields of some crops in mostly in southern and central Europe and increases in yields of others in northern Europe as a result of extreme weather events and more demand for irrigation water in southern Europe, impacts on *forests and forestry* such as reductions in forest growth as a result of storms, diseases and pests in central and western areas of Europe and increases in the incidence of forest fires in the Mediterranean region between 1980- 2000 impacts on *energy* such as increased demand for cooling in southern Europe but reduced demand for heating in northern Europe, impacts on *human health*.⁴³³

Moreover, the costs of impacts of climate change is projected to increase but differing across the various regions of the Europe, where damage costs is expected to be decreased materially with mitigation and adaptation actions.⁴³⁴ Furthermore, as stated by the European Environment Agency the entire economic losses induced

⁴³³ European Environment Agency, "Climate change, impacts and vulnerability in Europe 2012", No:12/2012 https://ec.europa.eu/clima/policies/adaptation/how_en#tab-0-1 (Accessed on July 6, 2018)

⁴³⁴ European Environment Agency, "Climate change, impacts and vulnerability in Europe 2012".

by climate change in Europe were nearly 400 billion Euro over the period 1980-2013. Besides, the average damage to the economy fluctuated between 7.6 billion Euros per year in the 1980s and 13.7 billion Euros in the 2000s.⁴³⁵

On one hand the EU is vulnerable to the adverse impacts of climate change, on the other hand, it might enjoy the opportunities that climate change might bring about such as larger market shares and access to finance for some businesses that would help people to adapt to climate change impacts.⁴³⁶

As for the *Sufficiency of Domestic Climate Change Policy and Mitigation Potential* the EU presents a distinctive stance. The EU, who is often thought to have a leading role in terms of pushing global climate politics has a comprehensive climate adaptation and mitigation strategy. Being evaluated as “Compatible” with 1.5 and 2 Degrees Celsius targets by independent scientists⁴³⁷, European climate policies are rated as “medium” by Climate Change Performance Index (CCPI) 2018,⁴³⁸ which plots the climate policies of countries with respect to their climate policy map, energy use, emissions and renewable energy performances and assigns them some scores. According to CCPI 2018 EU 28 is ranked as 21th among 60 countries

⁴³⁵ Europæiske Miljøagentur. *Climate change, impacts and vulnerability in Europe 2016: an indicator-based report*. (European Environment Agency, 2017, 19. <https://www.eea.europa.eu/publications/climate-change-impacts-and-vulnerability-2016> (Accessed on 25 October 2018).

⁴³⁶ European Commission, “Climate Action-Sectors Affected”, (Accessed on June 6, 2018) https://ec.europa.eu/clima/policies/adaptation/how/sectors_en.

⁴³⁷ “EU”, Climate Action Tracker, 30 April 2018 <https://climateactiontracker.org/countries/eu/>, (Accessed on July 6, 2018)

⁴³⁸ Jan Burck et al, *The climate change performance index Results 2018*. <https://germanwatch.org/sites/germanwatch.org/files/publication/20503.pdf> (Accessed on October 4, 2018).

where most of the individual EU countries are on the highest ranks of list even the worst performing EU country Hungary is ranked as 44th.⁴³⁹

The EU effectively decoupled its emissions from its economic growth; while its GDP increased by 45% emissions decreased by 19% as compared to 1990. Its pledges for the first commitment period of Kyoto Protocol were attained even surpassed with a reduction 18%; additionally, for the second commitment period of Kyoto Protocol till 2021 and over-achievement is expected.⁴⁴⁰

Besides, comprehensive and concise energy and climate packages for 2020, 2030 and 2050 at supranational level together illustrate the ambition of EU in terms of reducing the GHGs emissions in medium and long terms. The progress towards 2020 climate targets, namely 23% reduction in emissions from 1990 levels⁴⁴¹, demonstrates the sufficiency of EU climate policy so far. EU's midterm targets of emission reduction by 40% from 1990 levels by 2030 and long term targets of emission reduction 80% from 1990 levels by 2050 as indicated in the Part 6.3 above presents mitigation potential of the EU in the coming period clearly. As a matter of fact, the EU is regarded to have a leadership position on international climate change policies⁴⁴² where it committed unilateral emission reductions even before the international compromise. By designating "a linear emission reduction in of 2.2% per year beyond 2020" and with the ever strengthening structure of EU ETS

⁴³⁹ Jan Burck et al, *The climate change performance index Results 2018*.

⁴⁴⁰ Jos Delbeke and Peter Vis, "EU's climate leadership in a rapidly changing world" in *EU Climate Policy Explained* ed. Jos Delbeke and Peter Vis, (European Union, 2016), 17.

⁴⁴¹ European Commission, "Progress Made in Cutting Emissions." February 16, 2017. https://ec.europa.eu/clima/policies/strategies/progress_en. (Accessed July 15, 2018).

⁴⁴² Sebastian Oberthür and Claire Roche Kelly. "EU Leadership in International Climate Policy".

in each phase, the EU has the sufficient capacity for mitigation for the coming period.⁴⁴³

Another signal for more ambitious EU climate policies for the coming period is its energy security concerns. Anxiety about rising energy prices and escalated energy security agenda reinforce influential EU climate policies.⁴⁴⁴ The mitigation potential is enhanced with the domestic investments on climate action. According to the results, programmes concentrated on mitigation actions correspond to 59 % of the EU climate action expenditures while those focusing on adaptation forms 41%.⁴⁴⁵ In a closer look, it is seen that estimated climate related expenditure for 2014- 2020 is 201 billion Euro, 118 of which is expected to be climate mitigation related expenditure.⁴⁴⁶ This implies that the EU has invested more than half of its in climate budget for future action, in other words for enhancing its mitigation capacity in order to achieve to be at ease for any future compromise for an international climate change regime. Furthermore, the agriculture sector embraces an untouched capacity for climate mitigation action.⁴⁴⁷

⁴⁴³ European Commission, *ETS Handbook*, 13, https://ec.europa.eu/clima/sites/clima/files/docs/ets_handbook_en.pdf (Accessed on July 15, 2018)

⁴⁴⁴ Sebastian Oberthür and Claire Roche Kelly. "EU Leadership in International Climate Policy", 48.

⁴⁴⁵ Beata Grzebieluch, Anna Dembek, and Nicolas Meier. *The EU spending on fight against climate change: in-depth analysis*. 2018, 16, [http://www.europarl.europa.eu/RegData/etudes/IDAN/2018/603830/IPOL_IDA\(2018\)603830_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/IDAN/2018/603830/IPOL_IDA(2018)603830_EN.pdf) (accessed on October 25, 2018)

⁴⁴⁶ Beata Grzebieluch, Anna Dembek, and Nicolas Meier. *The EU spending on fight against climate change: in-depth analysis*. 17.

⁴⁴⁷ Beata Grzebieluch, Anna Dembek, and Nicolas Meier. *The EU spending on fight against climate change: in-depth analysis*. 21.

In short, its tailor made response strategies at national level to enhance its mitigation capacity, presents EU's readiness to the adverse impacts of climate change.

For the *Legislative Structures* the outlook is a bit complicated. Due to the unique structure of EU as a supranational entity, the union wide policies are undertaken both at Union and Member States level. Depending on the issue area, the level of policy making changes. With regard to environmental matters, the Single European Act of 1987 became the first legal foundation for the common environment policy of the EU.⁴⁴⁸ In this respect, all issue areas of environment policy including climate change, air and water pollution, and waste management are regulated with respect to common environment policy. As a result, the EU's political and legal capability to circulate domestic climate change legislation and to take an active role in international climate politics stems from the fact that its member states have centered sovereignty in environmental policy making.⁴⁴⁹ Moreover, adoption of the environmental legislations on the ground of qualified majority voting of Member States since 1987 resulted in growth of a widespread set of new environmental legislation and assisted an even policy response to climate change in EU jurisdiction.⁴⁵⁰

⁴⁴⁸ European Union, "Single European Act", *Official Journal of the European Communities*, No L 169/2 29.6.87 <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:11986U/TXT&from=EN> (Accessed on November 23, 2019).

⁴⁴⁹ Chad Damro, Ian Hardie and Donald MacKenzie, "The EU and Climate Change Policy: Law, Politics and Prominence at Different Levels", *Journal of Contemporary European Research* 4, No. 3, (2008): 179-192.

⁴⁵⁰ Jos Delbeke and Peter Vis, "EU's climate leadership in a rapidly changing world", 11.

In addition, the EU has a standard legislative process known as “codecision” or “Ordinary Legislative Procedure”, where the Commission proposes new legislation and the Council of EU and EU Parliament adopt it.⁴⁵¹ Before proposing a new legislation the Commission undertakes impact analysis of it with respect to economic, social and environmental consequences it might draw.⁴⁵² This procedure makes legislations having positive environmental impacts easier to be accepted like most of the legislation on climate change problem.

On the other hand the climate change policies of EU are exposed to numerous pressures that originate from the domestic politics of its each member state and the international politics of non-member states with whom it negotiates.⁴⁵³ Despite diverging national interests for climate change problem, the EU has achieved to operationalize a well-structured climate change legislation base. In this regard, a central element of the EU climate policy has been putting a price on GHGs emissions in the form of a cap-and-trade system, namely the EU ETS thereby resting on market forces to contribute to the committed emission reductions since 2005.⁴⁵⁴ This mechanism operating in 31 countries covers currently around 45% of total EU emissions and more than 11,000 energy intensive facilities and airlines operating between these countries.⁴⁵⁵ Moreover, the Effort Sharing Decision, differentiating the burden among Members based on their national

⁴⁵¹European Union, “How Decisions Are Made”, https://europa.eu/european-union/eu-law/decision-making/procedures_en (Accessed on October 1, 2018).

⁴⁵² European Union, “How Decisions Are Made”.

⁴⁵³ Chad Damro, Ian Hardie and Donald MacKenzie, “The EU and Climate Change Policy”.

⁴⁵⁴ Damien Meadows, Yvon Slingenberg and Peter Zapfel, “EU ETS: Pricing carbon to drive cost-effective reductions across Europe” in *EU Climate Policy Explained* ed. Jos Delbeke and Peter Vis, (European Union, 2016), 26.

⁴⁵⁵ Damien Meadows, Yvon Slingenberg and Peter Zapfel, “EU ETS: Pricing carbon”.

circumstances, ensured equity among the Members of the EU which diverge in terms of their readiness and capacity for emission reduction and paved the way for consensus on EU climate change policy.

To sum up, in spite of its multi-tiered configuration where decision making and implementation is fragmented; the legislative structures of the EU seem quite favorable for passing climate change legislations.

As for the, *Attitudes of the Leaders/Politicians*; the supranational structure of the EU matters as well. at the outset, it should be noted that the approaches of the EU countries towards climate change is somehow diverse, so is their impact on the EU climate policies. The underlying motive for the EU countries towards climate policies is linked to their diverging competencies. Within this scope, the EU can be divided in two parts in terms of their orientation for climate policies based on their energy endowment and competitive advantages on low carbon technologies. The first part is the western and northern states which have comparatively low endowments of fossil fuels and many are reasonably large net energy importers. Moreover, these countries usually have comparative advantages in energy-efficient products and services, nuclear and renewable energy generation technologies and their energy intensive sectors do not make up a large amount of their economic output. In contrast with the first part, the second part of countries in other words eastern and southern member states have larger endowments of carbon resources such as coal, with enormous fossil fuel production industries and energy- intensive manufacturing. As a result, it has generally been northern and western member states that premeditate assertive climate policies, whereas eastern member states

have often advocated weaker policies, being anxious about economic and social impacts on their carbon intensive sectors.⁴⁵⁶

Therefore, whereas the first group seeks more ambitious climate policies the second group tends to formulate its policies to enjoy its carbon resources. However, a balance throughout the EU can be said to be achieved. There are policies to balance these two groups such as transfer of funds to the second group so that they can be more competitive on low carbon technologies in time. To illustrate, the Modernization Fund agreed to recompense eastern member states with the proceeds generated under the ETS and to help them improve their energy infrastructure and make these countries more energy efficient.⁴⁵⁷ The first group of these countries has been more influential on climate policies of the EU so far. As for the attitudes of leaders, while some leaders are more salient, some are more influential on EU climate policy design. The German Chancellor Angela Merkel seems to be the most influential leader among EU leaders for climate policies. As a matter of fact, Chancellor of Germany, Angela Merkel is known as “climate chancellor” as a result of her longstanding international engagement for curbing emissions beginning from her days as being Minister of Environment.⁴⁵⁸ She tried to influence not only EU policies but also G8 and G20 agenda on climate change.⁴⁵⁹

⁴⁵⁶ Alina Averchenkova et al, “Climate policy in China, the European Union and the United States: main drivers and prospects for the future”, *ESRC Centre for Climate Change Economics and Policy and Grantham Research Institute on Climate Change and the Environment*, December 2016, 40.

⁴⁵⁷ European Commission, “Technical workshops on EU ETS funding mechanisms for modernizing energy sector, including Modernisation Fund”, 08 October 2018, https://ec.europa.eu/clima/events/technical-workshops-eu-ets-funding-mechanisms-modernising-energy-sector-including_en (Accessed May 11, 2019).

⁴⁵⁸ Ellen Thalman and Jullian Wettengel, “The Story of Climate Chancellor”, *Clean Energy Wire*, 14 March 2018 <https://www.cleanenergywire.org/factsheets/making-climate-chancellor-angela-merkel> (Accessed on October 3, 2018)

As a result, we might conclude that European Leadership seems to have a more favorable attitude towards being a part of a rigid climate change regime.

The analysis of *Power of Industrial Lobby Groups and Civil Society* displays striking outcomes. Majority of Europeans perceive climate change as the second most serious problem the world facing.⁴⁶⁰ Moreover, they apparently think that companies, inhabitants, national governments and the EU are not performing enough to combat climate change.⁴⁶¹ Democracy culture of EU ensures the maximum possible participation of civil society to decision making processes. Within this scope, the European Commission launches public consultations when it proposes to foster a new policy or to make a revision on the existing one at the EU level in an attempt to hear remarks of all stakeholders including civil society which is also valid for climate change policy.⁴⁶² The existence of 28 environmental NGOs endowed by the EU, 2 of which principally focus on global warming

⁴⁵⁹ For more details please refer to “Merkel to put climate change at centre of G20 talks after Trump's Paris pullout”, *The Guardian*, 29 June 2017, <https://www.theguardian.com/world/2017/jun/29/merkel-vows-to-put-climate-change-at-centre-of-g20-talks> (Accessed June 3, 2019) and “Merkel Calls for EU Climate Change Strategy”, Deutsche Well, 4 November 2016, <https://www.dw.com/en/merkel-calls-for-eu-climate-change-strategy/a-2225121> (Accessed January 5, 2018)

⁴⁶⁰ European Commission, “Special Eurobarometer 300: Europeans’ attitudes towards climate change”, 6, http://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs_300_full_en.pdf, (Accessed on July 12, 2018)

⁴⁶¹ European Commission, “Special Eurobarometer 300: Europeans’ attitudes towards climate change” 80.

⁴⁶² European Economic and Social Committee, “EU civil society contribution to discussion on and implementation of the climate change policy (at international and the EU levels)”, https://www.eesc.europa.eu/sites/default/files/resources/docs/eu-dag-information_climate-change-and-civil-society.pdf (Accessed on July 12, 2018)

problem,⁴⁶³ is influential on the final configuration of EU stakeholders' position. Actually, the EU stakeholders desire a strong role for the EU in the international climate change negotiations and have convoked the EU bodies to collaborate other parties to size an expressive agreement in Paris.⁴⁶⁴ On the other hand, the energy intensive industry lobbies like Business Europe are enthusiastically involving in dialogues with politicians on countless climate policy issues, making use of arguments about competitiveness and the threat of carbon leakage. Moreover these lobby groups have an influence on EU climate targets.⁴⁶⁵ All in all, the EU civil society and industry pressure groups can be concluded to be favoring an ambitious climate policy provided that they are guarded against the potential risks.

6.5.2 International Drivers of European Climate Policy

The primary international drivers of climate policy can be listed as *Foreign Policy Objectives*, *Climate Change* and *Foreign Trade Interplay*, and *Financial Returns* and *Outlays*. These are elaborated in detail below.

To begin with *Foreign Policy Objectives*, the EU is consistent extensively. The Common Foreign and Security Policy of the EU was founded by the Treaty of

⁴⁶³ European Commission, "List of organisations having received Community funding for environmental purposes", http://ec.europa.eu/environment/archives/funding/ngo/2003/list03_en.htm (Accessed on July 12, 2018)

⁴⁶⁴ European Commission, "List of organisations having received Community funding for environmental purposes".

⁴⁶⁵ "EU ETS reform deal: Strong on ambition, less so on protection", Business Europe Press Release, 9 November 2017 <https://www.businesseurope.eu/publications/eu-ets-reform-deal-strong-ambition-less-so-protection> (Accessed on October 6, 2018).

Maastricht, which entered into force in 1993, and was strengthened by following settlements such as the Amsterdam Treaty, the Nice Treaty and the Lisbon Treaty.⁴⁶⁶ The primary objectives of European foreign policy are preserving peace and strengthening international security, promoting international cooperation, developing and consolidating democracy, the rule of human and respect for human rights and fundamental freedom.⁴⁶⁷

As it is seen the EU's foreign policy envisages multilateralism. Besides, the foreign policy of EU is multifaceted in other words it originates not only from Common Foreign and Security Policy and Common Security and Defense Policy but also from a broader array of areas.⁴⁶⁸ For instance, the EU stays totally committed to multilateralism and desires global environmental problems to be addressed at UN level.⁴⁶⁹ Likewise, particularly through the UN and its related bodies, it pursues an activist and protagonist policy for global environmental governance.⁴⁷⁰ The decisions of EU are evidently influenced by transnational factors and the desire for appreciation by third parties.⁴⁷¹ However, EU's multilateralism in global environmental politics does not mean that it ignores material interests. After its

⁴⁶⁶ "What Is EU Foreign Policy ?", *European Union External Action*, <http://eupolcoppes.eu/en/content/what-eu-foreign-policy> (Accessed on September 30, 2018).

⁴⁶⁷ "Foreign & Security Policy", *European Union*, https://europa.eu/european-union/topics/foreign-security-policy_en (Accessed on September 30, 2018) .

⁴⁶⁸ Stephan Keukeleire and Tom Delreux, *The Foreign Policy of the European Union*, (Basingstoke: Routledge Macmillan, 2nd edition, 2014).

⁴⁶⁹ Jos Delbeke and Peter Vis, "EU's climate leadership in a rapidly changing world", 9.

⁴⁷⁰ John Vogler, "The European Contribution to Global Environmental Governance".

⁴⁷¹ Chad Damro, Ian Hardie and Donald MacKenzie, "The EU and Climate Change Policy", 185.

disappointment for Copenhagen climate change negotiations it made some fine-tuning for its policy design. Its realistic turn to being a mediator as a part of its new bridge building strategy by approaching developing countries rather than pursuing a pure climate leadership in Durban climate change negotiations helped reaching a consensus for the second commitment period of Kyoto Protocol.⁴⁷²

One of the significant foreign policy drivers of the EU has been the energy security. However it was only after the 2005- 2006 gas conflict between Russia and Ukraine, energy security has become the focus of a broader debate in the EU.⁴⁷³ With its increasing importance by the time, the EU Energy Union strategy was introduced in 2015. For making energy more secure, affordable and sustainable; the EU reinforces five dimensions: (1) energy security, solidarity and trust, (2) A fully-integrated internal energy market, (3) energy efficiency contributing to moderation of demand, (4) decarbonizing the economy, (5) research, innovation and competitiveness.⁴⁷⁴ The energy union is not only an integrated energy security strategy but also an enabler for achieving EU climate targets with its emphasis on energy efficiency and decarbonization. The progressed achieved towards energy union in the meantime comforts EU for climate policy making as well. Still, some member states resist to the liberalization of the internal energy market and building an effective common energy policy.⁴⁷⁵

⁴⁷² Karin Bäckstrand and Ole Elgström, "The EU's role in climate change negotiations: from leader to 'leaditor' ", *Journal of European Public Policy* 20, No. 10, (2013): 1369-1386.

⁴⁷³ Frank Umbach, "Global Energy Security and the Implications for the EU", *Energy Policy* 38. No. 3, (2010): 1230, 1229–1240.

⁴⁷⁴ European Commission, "Building Energy Union", <https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/building-energy-union> (Accessed on October 14, 2018).

⁴⁷⁵ John Vogler, "Changing conceptions of climate and energy security in Europe", *Environmental Politics* 22, No. 4, (2013): 627-645.

In short, since EU foreign policy is built on multilateralism, EU supports environmental regimes. Besides, strategic interests -such as economic opportunities and threats- reflect themselves on diplomatic position of the EU. Therefore, pursuing a robust climate change regime would well serve to foreign policy targets of the EU.

To continue with *Climate Change and Foreign Trade Interplay (Opportunities and Challenges)*, the EU portrays a rigid outlook. The EU with its giant international trade volume, is among the leading exporters and importers of world. As of 2017, it is the second largest importer and exporter of merchandise and, the largest exporter and importer of services in the world.⁴⁷⁶

Common trade policy has been the pioneer of common foreign policy of the EU so far. The low carbon technologies among the most promising ones for EU foreign trade prospects in a parallel fashion to their increasing importance in world trade. The global trade in environmental goods is predicted to be around 2-3 trillion US dollars by 2020.⁴⁷⁷ These products involve renewable energy technologies including solar panels, wind turbines and energy-efficient products, besides air pollution, waste and water management technologies.

The EU has a comparative advantage at production of most of the low carbon technologies and a global pioneer of low carbon technologies enjoying a great

⁴⁷⁶ WTO, "EU Trade Profile".

⁴⁷⁷ UNEP, "Environment and Trade Hub", <https://www.unenvironment.org/explore-topics/green-economy/what-we-do/environment-and-trade-hub> (Accessed November 10, 2019)

amount of proceeds from the trade of them. It planned to spend 20.76 % of climate allocations on competitiveness for growth and jobs over the period 2014- 2020.⁴⁷⁸

Indeed, as presented in Table 17, the share of environmental goods and technologies in EU's exports has amounted to 3 % in the last decade.⁴⁷⁹ For wind, heating, clean coal and gas, the EU exports surpass the imports whereas for solar photovoltaic (PV) the EU trade balance is negative.⁴⁸⁰ Particularly among wind turbine manufacturers the EU companies are outstanding. For example, half of the 10 leading wind turbine manufacturers; namely, Vestas, Siemens Gamesa, Enercon, Nordex Group, Senvion are located in EU member states.⁴⁸¹

Furthermore, the EU has achieved to diversify its markets for low carbon energy technologies since early 2000s. The diversifying markets for EU's low carbon energy technologies since 2000s such as China, and India⁴⁸² makes EU more eager to be a part of a universal and inclusive climate agreement. For example, it is

⁴⁷⁸ Beata Grzebieluch, Anna Dembek, and Nicolas Meier. *The EU spending on fight against climate change: in-depth analysis*, 15.

⁴⁷⁹ The table is prepared by utilizing the data retrieved from ITC Trademap data base according to the HS sector codes.

⁴⁸⁰ Francesco Pasimeni, "EU Energy Technology Trade", *European Union*, 2017, https://setis.ec.europa.eu/sites/default/files/reports/eu_energy_technology_trade.pdf (Accessed on October 15, 2018)

⁴⁸¹ For more details please refer to Wind Power Monthly "Top ten turbine makers of 2017", 2 October 2017, <https://www.windpowermonthly.com/article/1445638/top-ten-turbine-makers-2017> (Accessed May 18, 2018)

⁴⁸² Francesco Pasimeni, "EU Energy Technology Trade".

estimated that EU will benefit from wind energy with increased exports and increased energy security.⁴⁸³

Besides, the EU has outstanding companies which offer environmental goods and services. The jobs in “the green” fragment in the EU increased from 3 to 4.2 million full-time equivalents between 2002- 2011; the employment surged by 20% even in the recession years in 2007- 2011.⁴⁸⁴ In order to prolong its leadership and achieve its energy and climate targets declared within 2020 Energy Package, 2030 Energy Framework and 2050 Low Carbon Economy Roadmap; the EU has invested in low carbon technologies within the context of various policies. For instance, the Sustainable Industry Low Carbon grant programs for the development, demonstration and dissemination of low-carbon technologies and financial incentives for low-carbon technologies within Horizon 2020, the NER programme and the European Structural and Investment Funds are utilized in that regard.⁴⁸⁵

The prospects for increased gains from the trade of low carbon technologies in the coming decades, thanks to the EU’s endless efforts for further development of these

⁴⁸³ European Wind Energy Technology Platform, “Wind Energy: A Vision For Europe in 2030”, September 2006, http://www.windplatform.eu/fileadmin/ewetp_docs/Structure/061003Vision_final.pdf (Accessed on May 11, 2019)

⁴⁸⁴ European Commission, “The Environmental Goods Agreement (EGA): Liberalizing trade in environmental goods and services”, 2016, <http://trade.ec.europa.eu/doclib/press/index.cfm?id=1116>, (Accessed September 5, 2018).

⁴⁸⁵ European Commission, “Towards a climate-neutral economy”, https://ec.europa.eu/growth/industry/sustainability/low-carbon-economy_en, (Accessed July 5, 2019).

technologies, push the EU for seeking more liberalized terms of trade for them. In this context, the leadership of the EU for concluding a plurilateral agreement for liberalization of environmental goods was remarkable.⁴⁸⁶ After 18 rounds of negotiations, the conclusion are forwarded to Ministerial level but ultimate talks for EGA ended without agreement on December 2016 leaving the following steps unclear.⁴⁸⁷ Moreover, EU attaches great importance to promising low carbon technologies and therefore works on creation of an Innovation Fund. The proposal to review the EU ETS embraces the formation of a new Innovation Fund to accelerate the demonstration projects in low-carbon innovation in energy-intensive industries, carbon capture and storage and renewable energy.⁴⁸⁸ All these projects and incentives of EU for low carbon technologies enhance the future trade perspective of these products and services helping EU sustain its competitiveness for the exports of them.

Regarding the trade in fossil fuels, the EU is to large extent an importer of fossil fuels.⁴⁸⁹ With a 20.8 % share and 516 million tones volume it is the largest importer

⁴⁸⁶ WTO, “Environmental Goods Agreement (EGA)”.

⁴⁸⁷ “Ministerial Talks to Clinch Environmental Goods Agreement Hit Stumbling Block”, *International Centre for Trade and Sustainable Development*, 8 December 2016 <https://www.ictsd.org/bridges-news/bridges/news/ministerial-talks-to-clinch-environmental-goods-agreement-hit-stumbling> (Accessed on October 7, 2018).

⁴⁸⁸ European Commission, “Public consultation on the establishment of the EU Innovation Fund”, , 15 January 2018, https://ec.europa.eu/environment/efe/themes/climate-action/experts-put-forward-ideas-eu-low-carbon-innovation-fund_en (Accessed on October 7, 2018).

⁴⁸⁹ European Commission, “Eurostat Statistics Explained, EU imports of energy products - recent developments”, https://ec.europa.eu/eurostat/statistics-explained/index.php/EU_imports_of_energy_products_-_recent_developments#Overview (Accessed on May 27, 2019).

of crude oil.⁴⁹⁰ Moreover, it is the fourth largest importer of natural gas with a share of 51 % and 380.2 million cubic meter volume.⁴⁹¹ On the other hand, in terms of coal trade, the EU is a net importer.⁴⁹² In order to increase its energy security by decreasing its dependence on imports from outside suppliers, the EU has aimed to undertake some measures within the context of Energy Union as revealed above. Therefore, utilization of renewable energy technologies might limit EU's energy imports and by this means improve its energy security in the long run.

As it is discussed in Chapter 3, carbon leakage concerns play an important role for any country while evaluating its stance towards a climate change agreement and thereby deciding and designing the accompanying measures to comply with it if decision is made for adoption of such treaty. With this regard, for encouraging the Parties staying outside of the climate change regime to participate and thereby for preventing carbon leakage, the EU leaders hinted that countries not ratifying the PA could be subject to BCAs.⁴⁹³ The European Commission had similar ideas.⁴⁹⁴

⁴⁹⁰ Calculated based on British Petroleum, *Statistical Review of World Energy 2018*, 23-25 <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2018-full-report.pdf> (Accessed on May 27, 2019).

⁴⁹¹ Calculated based on British Petroleum, *Statistical Review of World Energy 2018*, 34 https://www.bp.com/content/dam/bp-country/de_ch/PDF/bp-statistical-review-of-world-energy-2017-full-report.pdf, (Accessed on May 27, 2019).

⁴⁹² IEA, Atlas of Energy.

⁴⁹³ Elysee, "Initiative pou l'Europe: Discours d'Emmanuel Macron pour une Europe souveraine, unie, démocratique", 28 September 2017, <http://www.elysee.fr/declarations/article/initiative-pour-l-europe-discours-d-emmanuel-macron-pour-une-europe-souveraine-unie-democratique> . (Accessed May 28, 2019)

⁴⁹⁴ Climate Home News, "EU says no new trade deals with countries not in Paris Agreement", 02/02/2018, <http://www.climatechangenews.com/2018/02/02/eu-difficult-imagine-trade-deals-countries-not-paris-agreement/> (Accessed May 28, 2019)

This policy is consistent with its export structure regarding emission intensive products. As disclosed in Table 16, the share of emission intensive products in EU's total exports is continuously falling⁴⁹⁵, which means that EU itself decreasing its risk of damage from any BCAs it might face. Consequently, the EU appreciates climate policies and their repercussions on foreign trade as more of an opportunity area and aims to utilize its competitive advantages in low carbon technologies as a leverage for its foreign trade objectives.

Regarding *Financial Returns and Outlays*, being a developed country; the striking points are summarized as follows. The EU is listed among Annex I countries to the Convention which takes mitigation actions and Annex II countries which have responsibilities for providing finance and technological support for the Non-Annex I least developed and developing countries of the Convention. Due to these conventional requirements; the EU has an enormous amount of financial outflow. For instance, EU and its member states contribution to the climate finance amounted to 21.8 billion Euro.⁴⁹⁶ As a result, despite continuing to funding domestic climate action, the EU boosts climate finance to least developed countries adapting to and mitigating climate change. Particularly for 2014- 2020 period, EU plans to spend at least 20 % of its budget on climate action, on an annual average 2 billion Euro of which will be granted to developing countries doubling the amount for funding international action in 2012- 2013.⁴⁹⁷

⁴⁹⁵ The table is prepared by utilizing the data retrieved from ITC Trademap data base according to the HS sector codes.

⁴⁹⁶ European Council, "Climate finance: EU and member states' contributions up to €21.7 billion in 2018", 8 November 2019

⁴⁹⁷ European Commission, "International Climate Finance", https://ec.europa.eu/clima/policies/international/finance_en (Accessed October 22, 2018)

Table 16: Foreign Trade EU- Carbon Intensive

EU	2001		2005		2012		2015		2016	
	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import
Foreign Trade of High Emitter Sectors (In billions)	283.5	381.3	564.8	800.6	942.6	1437.3	676.6	919.7	626.0	805.7
Glass and Ceramics	28.1	21.5	41.7	33.4	47.2	38.9	45.1	38.5	46.8	40.4
Paper Industry	62.0	58.0	90.3	81.2	107.6	92.6	95.1	83.9	95.3	82.7
Iron and Steel	98.3	89.0	209.2	188.8	293.1	251.8	235.9	215.8	224.5	209.3
Petrochemical Industry	85.6	205.7	208.4	485.3	474.8	1038.3	281.3	566.0	239.4	457.2
Cement Industry	9.6	7.1	15.2	11.9	19.9	15.7	19.3	15.5	20.0	16.2
Total Foreign Trade	3,987.3	2,444.6	3,987.3	4,078.2	5,799.1	5,832.5	5,374.4	5,217.1	5,356.7	5,218.6
Share of High Emitter Products (%)	7%	16%	14%	20%	16%	25%	13%	18%	12%	15%

Retrieved from Trademap Database available at <http://www.trademap.org/>

Table 17: EU Foreign Trade in Environmental Goods

US Dollar Billion	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EU APEC List Exports	102.1	120.5	144.3	171.2	142.7	157.2	180.4	172.8	171.4	176.7	156.4	158.2
EU APEC List Imports	76.4	91.3	108.9	135.6	111.3	137.2	151.4	127.6	116.5	120.9	112.5	111.4
EU APEC List Foreign Trade Balance	25.7	29.1	35.5	35.5	31.4	20.1	29.0	45.2	54.9	55.8	43.9	46.8
World APEC List Trade	279.4	326.2	375.3	439.8	372.7	450.9	505.4	497.3	494.1	503.6	477.6	474.4
EU's Exports to World	3,987.3	4,530.3	5,269.2	5,846.7	4,514.4	5,078.9	5,936.2	5,799.1	6,106.9	6,136.3	5,374.4	5,356.7
APEC List Share in World Trade	36,5%	36,9%	38,5%	38,9%	38,3%	34,9%	35,7%	34,8%	34,7%	35,1%	32,7%	33,4%
APEC List Share in EU's Exports	2,6%	2,7%	2,7%	2,9%	3,2%	3,1%	3,0%	3,0%	2,8%	2,9%	2,9%	3,0%

Retrieved from Trademap Database available at <http://www.trademap.org/>

Although these financial aids look like financial outlays for the EU, they help EU for development of new markets for its low carbon technologies because of the fact that the developing countries usually utilize those technologies for transforming to a low carbon path. Furthermore, the EU absorbs money from international markets for example, the EU issues the 37 % of worldwide green bonds.⁴⁹⁸ The EU ETS which has entered into its third phase⁴⁹⁹ might facilitate international proceeds when international mechanisms for carbon pricing introduced globally. As it is, the EU has pioneered the negotiations for cooperative mechanisms under the Article 6 Negotiations of PA, which lays the foundations for international linkages for domestic carbon markets.⁵⁰⁰ Therefore, having both financial outlays in the form of transfers to developing and least developed countries and financial gains from the emission trading the EU's position seems complicated. However, since the financial proceeds indeed contribute to the market development efforts of the EU in return; the financial benefits in the long run overwhelm the outlays.

6.6 Discussion

The international EU climate change policy has many domestic and international drivers. When these drivers are mapped together with a view to discuss their relative roles on final climate policy package following points draw attention.

⁴⁹⁸ "The Green Bond Market in Europe 2018", Europe State of the Market Climate Bonds Initiative, https://www.climatebonds.net/files/reports/the_green_bond_market_in_europe.pdf (Accessed October 22, 2018)

⁴⁹⁹ European Commission, "EU Emission Trading System (ETS)", https://ec.europa.eu/clima/policies/ets_en (Accessed on May 11, 2019)

⁵⁰⁰ Earth Negotiations Bulletin, "Summary of the Katowice Climate Change Conference: 2-15 December 2018", 17, <http://enb.iisd.org/download/pdf/enb12747e.pdf> , (Accessed on May 11, 2019)

When one goes into the merits of the driving forces for international climate policy of European Union, an intertwined setting has been come across. The domestic factors that drive EU climate policy indicate a convergence for the route of climate change policy. To exemplify, EU being relatively vulnerable to the adverse impacts of climate change supports a rigid climate change regime where the adaptation concerns is an indispensable part of the final package. Moreover, as highlighted in the discussion on vulnerability in part 6.5.1, there are many opportunities for European businesses with regards to adaptation projects. When the adaptation projects are considered globally, most vulnerable countries which will be supported with climate funds seem to have a great potential for European firms.

If one looks at the climate policy making at EU level, it might be concluded that the EU policy-making is under the influence of multiple pressures from domestic and international levels, which potentially obscures scientific efforts to enlighten the roots of initiatives and consequences in EU climate change policy.⁵⁰¹ Nevertheless, the climate policy is a part of EU Common Environment Policy. In spite of some differences of opinion in terms of the attitudes of individual countries towards international climate policy, the EU as a supranational entity backs an ambitious global climate policy. So, the legislative structures equip the EU with a capacity to exert leadership role in climate policy making. Accordingly, climate change problem comprehensively addressed in policy papers and strategies of the EU including energy policies. In this regard, accomplishing the renewable energy and energy efficiency goals of the climate and energy 2020 package discussed in domestic policy part of this chapter can also improve EU's energy security by decreasing the import dependency of energy. These goals simultaneously help for attainment of European Energy Union goals. Moreover, energy 2020 package can

⁵⁰¹Chad Damro, Ian Hardie and Donald MacKenzie, "The EU and Climate Change Policy", 179.

help generating jobs, advancing green growth and making Europe more competitive.⁵⁰² Moreover, the goals of 2030 Climate and Energy Framework and 2050 Low Carbon Economy policies texted in Part 6.3 aim to enhance the progress towards low-carbon economy with their renewable energy, energy efficiency and emission reduction targets. Currently, all EU member states have relevant capacities to deploy more renewables which are cost-effective.⁵⁰³ In addition, the EU's average yearly expenditure on mitigation has continuously increased⁵⁰⁴, which implies more mitigation capacity for the coming period. Actually, the EU can be concluded to have a sufficient climate policy with a high mitigation capacity as discussed in 6.5.1. Consequently, highly sufficient climate change policy of the EU and its large mitigation potential has some implications for international trade perspectives of it. These energy and climate packages not only target mitigation but also points out competitiveness perspectives for the EU companies as disclosed in Part 6.3. Therefore, besides contributing to mitigation efforts the EU climate policies are expected to make the EU more competitive in terms of climate technologies and carbon trade aspects. As for the attitudes of leaders and lobby groups; the EU can be thought as having a very favorable environment for a more ambitious international climate policy, which are pushed by strong civil society in other words non-governmental organizations as reflected in the discussions in part 6.3. While there are some businesses hoping to benefit from climate change industry, some industrial groups from heavy industry are afraid of carbon leakage problem. However, the legal basis is solid for preserving

⁵⁰² European Commission, "2020 Climate and Energy Package".

⁵⁰³ IRENA, *Renewable Energy Prospects for the European Union*.

⁵⁰⁴ Rob Williams et al, *Energy and the MFF: study*, 2018, 27, [http://www.europarl.europa.eu/RegData/etudes/STUD/2018/614223/IPOL_STU\(2018\)614223_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2018/614223/IPOL_STU(2018)614223_EN.pdf), (Accessed April 3, 2019)

the interests of the businesses in heavy industry with the application of border carbon adjustments.⁵⁰⁵

As to the international factors driving EU climate policy we might again speak about uniformity in terms of advocating a binding international climate change regime. Since EU foreign policy is built on multilateralism, EU supports global environmental regimes. Besides, strategic interests -such as economic opportunities and threats- reflect themselves on diplomatic position of the EU. Therefore, pursuing a robust climate change regime would well serve to foreign policy targets of the EU. In addition, expectations for international proceeds from foreign trade and carbon markets strengthen this quest. As a matter of fact, the foreign trade has been one of the most crucial items driving EU climate policy. Foreign trade in fossil fuels and environmental goods and services has driven the EU climate policy to a material extent implicitly. As debated in part 6.5.2, energy security has implications for foreign trade of fossil fuels in the EU. Since the EU is the largest importer of energy sources globally, it does not desire to face any interruption in its energy supply in an unplanned manner. It might only match the voices for utilization of less fossil fuels by disseminating this transition to a smooth path as well as securing itself in terms of its suppliers and infrastructural matters. Indeed, as debated, these energy supply security concerns led to formation of EU Energy Union.⁵⁰⁶

⁵⁰⁵ European Commission, "Directive 2003/87/EC of The European Parliament And Of The Council of 13 October 2003", <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003L0087&from=EN> (Accessed on May 11, 2019)

⁵⁰⁶ Miranda A. Schreurs, "The Paris Climate Agreement and the Three Largest Emitters: China, the United States, and the European Union", *Politics and Governance* 4. No. 3, (2016), 220.

On the other hand, the EU is among the world leaders of renewable energy technology and energy efficiency.⁵⁰⁷ Besides, it is among the few states investing in Carbon Capture and Storage Technologies⁵⁰⁸ which provide a great mitigation capacity. Thus, the competitive advantage of the EU in mitigation technologies induces it to utilize the international institutions as a business development tool for those technologies. Hence, the EU has strongly supported the negotiations for a plurilateral agreement targeting more liberalized terms for environmental goods including renewable energy and energy efficiency technologies.⁵⁰⁹ That is also because, a more ambitious climate change regime means more mitigation efforts globally, which will derive the demand for low carbon technologies. Furthermore, the EU is highly sensitive against the carbon leakage threat and has the legal basis for taking relevant response measures⁵¹⁰ such as BCAs and therefore advocates for a more conservative approach for the limitation of implementation of response measures. Therefore, carbon leakage concerns push EU to follow a more careful attitude towards international climate regime where it can preserve itself as well as sustaining its commercial benefits. Another point makes EU eager to a well-established and binding climate change regime is that the EU companies might benefit from the climate funds that will be allocated to developing countries by

⁵⁰⁷ European Commission, “World Leader in Renewables, Energy Efficiency First” https://ec.europa.eu/commission/sites/beta-political/files/world-leader-renewables-energy-efficiency-first_en.pdf (Accessed on May 11, 2019)

⁵⁰⁸ Carbon Capture and Storage Association, “CCS Projects”, <http://www.ccsassociation.org/new-about-ccs/ccs-projects/> (Accessed on May 11, 2019)

⁵⁰⁹ European Commission, “Environmental Goods Agreement: Promoting EU environmental objectives through trade”, 22 January 2018, <http://trade.ec.europa.eu/doclib/press/index.cfm?id=1438>, (Accessed June 6, 2018).

⁵¹⁰ European Commission, “Directive 2003/87/EC of The European Parliament And Of The Council of 13 October 2003”.

providing these countries its mitigation and adaptation technologies as a solution partner. This approach once more reflects how EU can utilize the climate regime as a business development tool.

Likewise, EU's negotiation policy for pursuing international carbon pricing under the implementation of Article 6 of Paris Agreement, which lays the foundation for international mechanisms, shows EU's prospects from ETS when it is integrated with international mechanism. Indeed, the European Commission explains its possible advantages from internationally linked carbon markets as follows:

As the world's largest carbon market, the EU ETS is currently the biggest source of demand for international credits, making it the main driver of the international carbon market and the main provider of clean energy investment in developing countries and economies in transition.⁵¹¹

To sum up, EU climate policy is driven by international factors in addition to domestic factors where both indicate the same direction. The impact of international factors is due to the potential trade gains from low carbon technologies, the improvement in energy supply security, the potential gains from international carbon pricing mechanisms and enhancement in attaining its foreign policy of multilateralism with the help of an ambitious climate change regime. This is indeed in harmony with many scholars' arguments like Vogler's assertion for "that environmental policy cannot stand on its own but is indissolubly connected to trade and development issues" and his emphasis for "greater coherence among trade, agriculture, development and environmental policy".⁵¹² Moreover, it is seen that there is an interplay among domestic and international factors driving climate policy, where domestic factors such as sufficiency of

⁵¹¹ European Commission, "Use of International Credits", https://ec.europa.eu/clima/policies/ets/credits_en (Accessed on May 11, 2019).

⁵¹² John Vogler. "The European Contribution to Global Environmental Governance". 849.

climate change policy and mitigation capacity as well as leaders' attitudes and interest groups' and lobby activities matter in the short run by influencing foreign policy and foreign trade dynamics. The interplay between domestic and international factors reflect the market and business development concerns of the EU originating from its expected gains from exports of low carbon technologies and internationally linked carbon markets.

6.7 Conclusion

In this chapter the European Climate Change Policy has been examined extensively. With an aim to analyze the drivers of international climate change policy of the country, energy and climate change outlook of the country has been presented primarily so that the drivers related to mitigation capacity and potential of the country is understood holistically. Following this view, domestic and international policies of the country are investigated successively. Considering the domestic climate change policy, the domestic policy settings of the country regarding energy and climate change have been mapped in a detailed way. Thereafter, the international climate policies of the EU so far have been reviewed in an historical order.

By using all these analyses as a base, the domestic and international climate change policy drivers of the country have been discussed comprehensively. The analyses have demonstrated that among the policy drivers; the international drivers more specifically the concerns regarding foreign trade structure of the country have been influential as well as domestic drivers. Moreover, the EU has utilized its climate change policy as a business development tool so far for its low emission technologies successfully by developing a global demand for those within the

framework of Kyoto Protocol. Sure it desires to sustain these policies within the Paris Agreement era.

CHAPTER 7

CHINA

7.1 Introduction

This chapter talks over the China's climate change policies. In this regard, in the first part of the chapter, the energy and climate change outlook together with the existing climate policies of the country are explored. After this review, the domestic and international drivers of Chinese climate change policy are analyzed. In the final part of the chapter, how the international climate change policies of the country have been ascertained is discussed by utilizing these domestic and international policy drivers.

7.2 Chinese Energy and Climate Outlook

China is one of the global powers with its giant role in world economy and accordingly global politics. As of 2017, it is the third largest importer and largest exporter of goods and; third largest exporter and importer of the services in the world.⁵¹³ Unsurprisingly, its enormous economic activity marks it as the world's third largest emitter of GHGs, making up 26.83 percent of global emissions.⁵¹⁴

⁵¹³ WTO, "China Trade Profile", <http://stat.wto.org/CountryProfile/WSDBCountryPFView.aspx?Country=CN> (Accessed on 29 March 2018).

⁵¹⁴ Johannes Friedrich, Mengpin Ge, and Andrew Pickens, "This Interactive Chart Explains World's Top 10 Emitters, and How They've Changed".

This is a result of its primary role in terms of energy production and consumption. As it presented in the key indicators of China in Table-18, China has an excessive amount of energy production and consumption due to its giant economy.⁵¹⁵ Actually, it is the world's largest energy consumer, constituting 20% of global energy usage; besides by 2030, its energy usage is anticipated to surge by 60%.⁵¹⁶ This magnitude of energy consumption makes China decisive for the solution of the climate change problem with its key role in international efforts to cope with it.

Table 18: Key Chinese Indicators, 2016

Population (millions)	1379	TPES/Population (toe/per capita)	2
GDP (billion 2010 USD)	9,505	TPES/ GDP (toe/ thousand 2010 USD)	0.31
GDP PPP	19,450	TPES/ GDP PPP (toe/ thousand 2010 USD)	0.15
Energy Production	2,360	Electricity Consumption/ Population (Mwh/ Capita)	4
Net Imports	559	CO2/TPES (t CO2/ toe)	3
TPES	2,958	CO2/ Population (t CO2/ capita)	7
Electricity Consumption	5,899	CO2/GDP (kg CO2/ 2010 USD)	0.95
CO2 Emissions	9,057	CO2/GDP PPP (kg CO2/2010 USD)	0.47

IEA, Chinese: Indicators for 2016 available at <http://www.iea.org/statistics/>

⁵¹⁵ IEA, Chinese: Indicators for 2016, <http://www.iea.org/statistics/>, (Accessed on June 20, 2017)

⁵¹⁶ IRENA, *Renewable Energy Prospects: China, REmap 2030 analysis*, (IRENA: Abu Dhabi, 2014)www.irena.org/remap

If we examine in detail the course of China’s GHGs emissions, as illustrated in Figure 5, we observe that emissions are continuously rising even slightly more than the tendency in increase.⁵¹⁷

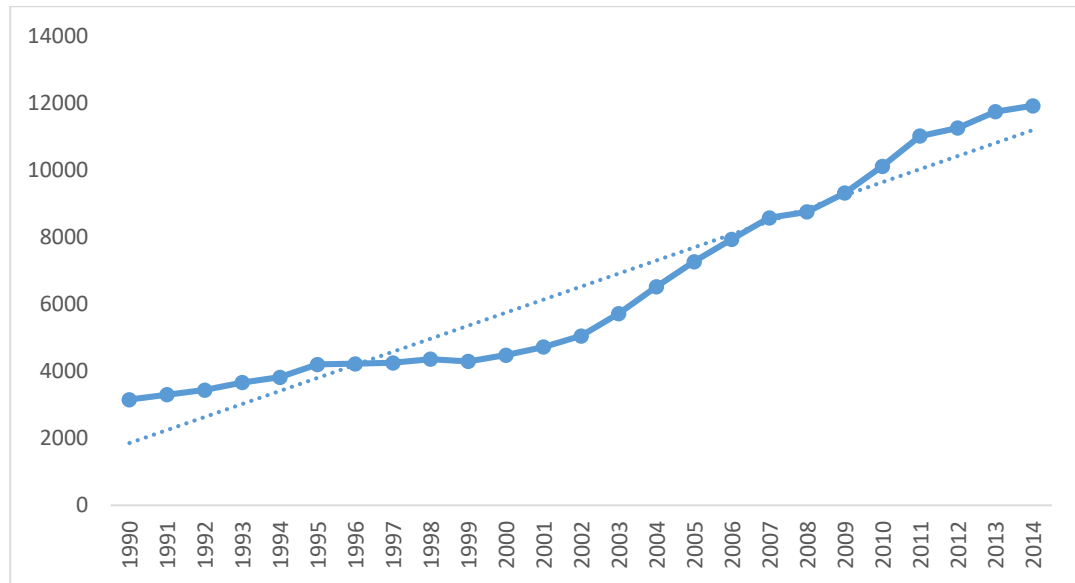


Figure 5: Key Chinese GHG Indicators

Drawn based on data retrieved from CAIT Climate Data Explorer. 2017. Washington, DC: World Resources Institute. Available online at: <http://cait.wri.org>

China’s emissions have been resulted from mostly energy, which is followed by agriculture and industrial processes as disclosed in Table 19.⁵¹⁸ This structure in emissions is a typical outlook for a developing country.

⁵¹⁷ Based on data retrieved from CAIT Climate Data Explorer Database, (Washington, DC: World Resources Institute, 2017), <http://cait.wri.org>, (Accessed June 4, 2017)

⁵¹⁸ Based on data retrieved from CAIT Climate Data Explorer Database, (Washington, DC: World Resources Institute, 2017), <http://cait.wri.org>, (Accessed June 4, 2017)

Table 19: Emissions by Sector- China

Emissions by Sector- China (2014)					
Energy (MtCO₂e)	Industrial Processes (MtCO₂e)	Agriculture (MtCO₂e)	Waste (MtCO₂e)	Land-Use Change and Forestry (MtCO₂)	Bunker Fuels (MtCO₂)
9543.82	1460.8	707.64	199.45	-311.08	44.61

Retrieved from CAIT Climate Data Explorer. 2017. Washington, DC: World Resources Institute. Available online at: <http://cait.wri.org>

Besides, on a subsector basis, Chinese energy emissions are mainly resulted from electricity production and transportation as presented in Table 20.⁵¹⁹

Table 20: Emissions by Subsector- China

Emissions by Subsector- China (2014)				
Electricity/ Heat (MtCO₂)	Manufacturing/ Construction (MtCO₂)	Transportation (MtCO₂)	Other Fuel Combustion (MtCO₂e)	Fugitive Emissions (MtCO₂e)
4728.21	2881.95	781.36	812.13	320.16

Retrieved from CAIT Climate Data Explorer. 2017. Washington, DC: World Resources Institute. Available online at: <http://cait.wri.org>

The increase tendency in Chinese GHG emissions is projected to last in the short and medium term according to WRI as provided in Table- 21. Nonetheless, despite the fact that the level for emission peak is not disclosed officially; emission level of China is expected to reach 15,000 tonnes CO₂ equivalent in 2040 as seen in

⁵¹⁹ Based on data retrieved from CAIT Climate Data Explorer Database, (Washington, DC: World Resources Institute, 2017), <http://cait.wri.org>, (Accessed June 4, 2017)

Table-21.⁵²⁰ Actually, according to various studies, and the period of 2030- 2040 is commonly predicted as the time for attaining the carbon emission peak.⁵²¹ This is consistent with the China’s nationally determined contribution for Paris Agreement which pledges a peak for emissions around 2030⁵²²; in spite of some views asserting that it has entered an age of steady decline and will achieve the emission peak around 2025.⁵²³

Table 21: Total Greenhouse Gas Emission Trends and Projections- China

Emission Projections- China			
Source	Scenario	Year	Fossil Fuel CO2 Emissions (MtCO2)
EIA	Reference Case	2020	11532,11
EIA	Reference Case	2025	12950,96
EIA	Reference Case	2030	14027,93
EIA	Reference Case	2035	14770,67
EIA	Reference Case	2040	14911,41

WRI, CAIT 2.0. 2015. CAIT Projections Beta. Washington, DC: World Resources Institute. Available at: <http://cait2.wri.org/projections>

⁵²⁰ WRI, CAIT 2.0. 2015. CAIT Projections Beta. Washington, DC: World Resources Institute, <http://cait2.wri.org/projections> (Accessed May 5, 2019)

⁵²¹ Feng Dong, Yihei Hua and Bolin Yu, "Peak Carbon Emissions in China: Status, Key Factors and Countermeasures-A Literature Review". *Sustainability* 10, no. 2895 (2018), 5.

⁵²² UNFCCC, "China's Intended Nationally Determined Contribution", 30 June 2015 <https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/China/1/China's%20INDC%20-%20on%2030%20June%202015.pdf> (Accessed on February 12, 2019).

⁵²³ Ye Qi et. al, "China's Peaking Emissions and the Future of Climate Policy", *China's Energy in Transition Series*, (Brookings- Tsinghua Center for Public Policy) <https://www.brookings.edu/wp-content/uploads/2018/09/Chinas-Peaking-Emissions-and-the-Future-of-Global-Climate-Policy.pdf> (Accessed May 20, 2019)

As a matter of fact, in order to evaluate the mitigation outlook and potential of country, energy outlook should be cautiously assessed because the main cause of Chinese emissions is the energy.

As it is realized from Table 22 below, Chinese energy production rests on mainly coal, crude oil and natural gas as hydrocarbon resources. Among fossil fuels, coal has the largest share which is followed by crude oil in energy production; renewable energy sources and biofuels together have approximately the same share as crude oil and more than natural gas.⁵²⁴

Table 22: Chinese Energy Outlook

Energy Production, 2016 (in thousand tonnes of oil equivalent (ktoe) on a net caloric value basis)		Share
Coal	1,718,904	73%
Crude Oil	199,892	8%
Natural Gas	114,538	5%
Nuclear	55,574	2%
Hydro	99,963	4%
Geothermal, Solar etc.	58,613	3%
Biofuels and Waste	113,004	5%
Total	2,360,487	100%

IEA, China: Balances for 2016 available at <http://www.iea.org/statistics/>

However, this fact is not strange since renewables are getting popular rapidly and renewable power capacity is expected to increase by 50 % in 2019- 2024 over the world, which will probably reflect itself in Chinese energy profiles too.⁵²⁵

⁵²⁴ IEA, China: Balances for 2016, <http://www.iea.org/statistics/>

⁵²⁵ IEA, "Renewables- Market analysis and forecast from 2019 to 2024"

There are mounting concerns for energy security where more than half of its crude oil and nearly 30% of China's natural gas supply are imported as of 2014. Moreover, with the rising concerns for human health as a result of air pollution due to heavy usage of coal in China; a drastic shift in energy policy has been experienced towards utilization of more of renewable energy. As a result, China currently has the world's largest installed capacity of hydroelectric and wind power, enormous capacity of solar and biogas installations. Moreover, total installed renewable energy capacity, being 1203 GW in 2012, is expected to be 2602 GW in 2030. Actually, it is currently a global renewable energy leader. It installed new renewable energy capacity more than Europe and Asia Pacific region.⁵²⁶

The main motive for shift to the renewable technologies is the increasing cost-competitiveness of China in these technologies as well as other benefits such as decreased air pollution and improved energy security. One of the game changer technologies in climate change mitigation is carbon capture and storage technologies as disclosed in previous parts. These technologies are quite important in the sense that they “can capture up to 90% of the CO₂ emissions produced from the use of fossil fuels in electricity generation and industrial processes, preventing the carbon dioxide from entering the atmosphere.”⁵²⁷ Therefore, they will play a greater role in combating climate change problem in future globally. Currently, there are a few countries working on development and implementation of these technologies including China. To exemplify as presented in Table 23, which was prepared based on Global CCS Institute data, there are 8 (eight) large scale CCS

⁵²⁶ IRENA, *Renewable Energy Prospects: China, REmap 2030 analysis*.

⁵²⁷ Carbon Capture and Storage Association, “What is CCS?”.

Projects in China currently. With regard to the composition of these 8 (eight) projects; 1 (one) of which is under construction, 1 (one) of which is in advanced development and 6 (six) of which are in early development stages. On the other hand, there are eleven (11) lesser scale CCS Projects in China, which are assumed as pilot or demonstration are presented.⁵²⁸

Table 23: CCS Projects in China

Facility name	State / district	CO ₂ capture capacity (Mtpa)	Operation date	Industry
Yanchang Integrated Carbon Capture and Storage Demonstration	Shaanxi Province	0,41	2018-19	Chemical Production
Sinopec Qilu Petrochemical CCS	Shandong Province	0,5	2021	Chemical Production
Sinopec Eastern China CCS	Jiangsu Province	0,5	2020-2021	Fertiliser production
Sinopec Shengli Power Plant CCS	Shandong Province	1,0	2020's	Power generation
China Resources Power (Haifeng) Integrated Carbon Capture and Sequestration Demonstration	Guangdong Province	1,0	2020's	Power generation
HuanengGreenGen IGCC Project (Phase 3)	Tianjin	2,0	2020's	Power generation
Shanxi International Energy Group CCUS	Shanxi Province	2,0	2020's	Power generation
Shenhua Ningxia CTL	Ningxia Hui Autonomous Region	2,0	2020's	Coal-to-liquids (CTL)

Retrieved from The Global CCS Institute Database on 23 October 2017 from <https://www.globalccsinstitute.com/projects/large-scale-ccs-projects>.

⁵²⁸ Global CCS Institute, "Pilot and Demonstration".

7.3 Domestic Climate Change Policy

Chinese authorities have recently taken climate change problem serious and addressed it extensively by executing various policies and performing material actions to control GHG emissions within the context of green growth concept.⁵²⁹ The notion of top down policy making as in other areas was apparent in climate change policy development, too. Climate change was regarded as a foreign policy issue and not perceived as a priority at the beginning.⁵³⁰ In the period between 1992- 2006, policies scattered around environmental pollution prevention and energy saving.⁵³¹

However, with the growing global interest towards the issue and ever increasing emissions of the country; its close relation with the developmental agenda of the country became evident. Accordingly, the climate change policy making mechanisms and climate change policies have evolved in time. The analysis of responses of China to climate change are presented on the basis of *climate change policy actors* and relevant policies as disclosed below.

Climate Change Policy Actors are unique to the structure of China. The top decision making organ regarding climate change as well as other all political issues is the State Council in China. Under the State Council, the National Development

⁵²⁹ NDRC, "China's Policies and Actions for Addressing Climate Change," October 2016. [http://cdm.ccchina.gov.cn/archiver/cdmcn/UpFile/Files/ccer/China's%20Policies%20and%20Actions%20on%20Climate%20Change%20\(2016\).pdf](http://cdm.ccchina.gov.cn/archiver/cdmcn/UpFile/Files/ccer/China's%20Policies%20and%20Actions%20on%20Climate%20Change%20(2016).pdf) (Accessed on September 5, 2017)

⁵³⁰Gørild Heggelund, "China's Climate Change Policy: Domestic and International Developments", *Asian Perspective* 31, No. 2 (2007): 156.

⁵³¹Fabianna Barbi, Leila da Costa Ferreira and Sujian Guo, "Climate change challenges and China's response: mitigation and governance". *Journal of Chinese Governance* 1, No. 2 (2016): 327.

and Reform Commission (NDRC) has been in charge for climate change policy development and execution with split of duties among appropriate ministries in accordance with sectors and provincial organizations since 1998 as well as designing economic and energy policies.⁵³² There is a Department of Climate Change under the NDRC to carry out daily work on climate change.⁵³³

Moreover, an interministerial coordination committee named as National Leading Committee on Climate Change (NLCCC) was launched in 2007 based on former National Climate Change Coordination Committee to encourage cooperation on climate change policy making and implementation among various ministers and organizations which is chaired by Prime Minister and supplemented by climate change office under NDRC.⁵³⁴ The key ministries and institutions involved in the committee are Ministry of Foreign Affairs (MFA), NDRC, Ministry of Science and Technology, Ministry of Industry and Information Technology, China Meteorological Administration, Chinese Academy of Sciences, Ministry of Environmental Protection, Ministry of Finance, Ministry of Water Resources, Ministry of Agriculture, Ministry of Land and Resource, Ministry of Housing and Urban-Rural Development, Ministry of Transport, Ministry of Commerce, Ministry of Health, State Forestry Administration, State Oceanographic Administration and General Administration of Civil Aviation of China, National Energy Bureau and National Bureau of Statistics.⁵³⁵

⁵³² NDRC, named as State Development Planning Commission till 2003, formulates social and economic development policies in China. For more detailed information on duties of the NDRC please refer to <http://en.ndrc.gov.cn/mfndrc/> and on the history of NDRC please refer to http://www.chinadaily.com.cn/business/2006-11/16/content_734828.htm.

⁵³³ Fabianna Barbi, Leila da Costa Ferreira and Sujian Guo, "Climate change challenges and China's response: mitigation and governance", 332.

⁵³⁴ For more detailed information on Chinese Climate Change policy making practices please refer to "Domestic Actions", *China Climate Change Info-Net*, <http://en.ccchina.gov.cn/list.aspx?clmId=96> (accessed on September 5, 2017).

⁵³⁵ "Domestic Actions", *China Climate Change Info-Net*.

Currently, the Committee is engaged in climate policy development and international climate change negotiations. Although the sole authority in terms of designing climate change policy is the central government; in terms of the implementation of climate change policies sub-national and local governments also play important role. Besides to governmental actors involved in climate policy making, there is a very limited civil society participation to climate change policy making. Climate Change Action Network and activism of some scientists and researchers are the prominent civil society participation to climate change policy development.⁵³⁶

There have been a wide set of *Climate Change Plans and Strategies* in China. Climate change policies have been planned according to China's Five Year Plans (FYPs) and National Climate Change Program. The challenge of matching economic growth with environmental objectives for a country like China with constraints such as large population in need of huge amount of natural resources and energy supply security challenges has been a priority for Chinese policy makers since 1980s.

Chinese countrywide guiding policies- FYPs- have been implemented since 1953 to orient the economy towards top policy goals and deliver them through the government agencies.⁵³⁷ They embrace a wide range of targets in various segments

⁵³⁶ Fabianna Barbi, Leila da Costa Ferreira and Sujian Guo, "Climate change challenges and China's response: mitigation and governance", 331- 332.

⁵³⁷ Moreno Bertoldi, Annika Eriksgård, Melander and Peter Weiss, "Can Economic Transitions Be Planned? China and the 13th Five-Year Plan", *Economic Brief 01*, 7 September 2016, https://ec.europa.eu/info/sites/info/files/file_import/eb017_en_2.pdf (Accessed on September 6, 2017), 1-2.

of economy. Up to today 12 FYPs have been prepared and implemented. For the period 2016- 2020, 13th FYP has been put into practice.⁵³⁸

Since economic implications of climate change policies are of vital importance; climate change targets have been incorporated into recent FYPs together with other sustainability tasks such as water, air pollution, urbanization and transportation. China has had an increasing ambition in prioritizing the environment since 11th FYP, which has first time mentioned about climate change.⁵³⁹ It had a target of reduction of energy intensity by 20 percent till 2010.⁵⁴⁰ While 11th FYP has only targets regarding energy intensity of the economy; successive 12th and 13th FYPs have wider and deeper space for climate change policies. Under the 13th FYP, China provided a blueprint based on five key themes (namely innovation, coordinated development, green growth, openness, and inclusive growth) for future development.⁵⁴¹ It includes 13 binding and 12 non-binding total of 25 targets, where 10 out of 13 binding targets are related to the environment.⁵⁴²

⁵³⁸ China Daily, "Focus on 2016- 2020 China's 13th Five Year Plan", <http://www.chinadaily.com.cn/china/13thfiveyearplan/index.html>, (Accessed April 3, 2018).

⁵³⁹ Stephen Tsang, and Ans Kolk, "The Evolution of Chinese Policies and Governance Structures on Environment, Energy and Climate Change.", *Environmental Policy and Governance* 20, (2010): 180-196.

⁵⁴⁰ NDRC, "The 11th Five-Year Plan: Targets, Paths And Policy Orientation" *News Release*, 23 June 2017 http://en.ndrc.gov.cn/newsrelease/200603/t20060323_63813.html. (Accessed on September 7, 2017)

⁵⁴¹ Katherine Koleski, "The 13th Five-Year Plan", *US-China Security Review Commission Staff Research Report*, 14 February 2017, <https://www.uscc.gov/sites/default/files/Research/The%2013th%20Five-Year%20Plan.pdf>, (Accessed on September 6, 2017), 3.

⁵⁴² Calculated based on Katherine Koleski, "The 13th Five-Year Plan".

The annual economic growth target is 6.5 % on average over the years 2016-2020.⁵⁴³ Moreover, the Plan envisages an increasing contribution from services and more efficient and innovative manufacturing industries, which typically have lower air pollutant and GHGs emissions for attaining that growth rate. Actually this paradigm shift in the roots of economic growth has been reflected under the specific targets regarding climate change since energy and carbon emission intensity reduction supports China's overall aim of transforming from heavy industries to lower energy intensive service sectors. By this aim, 13th FYP raises the binding targets of reducing carbon intensity of the economy by 18 % and reduce energy intensity by 15 % over the period 2016-2020.⁵⁴⁴ With these targets, it is estimated that China will lower its carbon intensity 48% from 2005 levels by 2020.⁵⁴⁵ Additionally, China for the first time in its national plans introduces an energy cap for all types of energy asserting that its energy use will not be more than 5 billion tons of standard coal equivalent over the period of 2016-2020.⁵⁴⁶ So as to meet those targets, 13th FYP noted the usage of clean energy target as 15 % remarking an increase as compared to 12 % target of 12th FYP.⁵⁴⁷ Furthermore, the 13th Renewable Energy Development FYP (2016- 2020) targeted to have an

⁵⁴³ Katherine Koleski, "The 13th Five-Year Plan", 5.

⁵⁴⁴ Katherine Koleski, "The 13th Five-Year Plan", 17.

⁵⁴⁵ Geoffrey Henderson, Ranping Son and Paul Joffe, "5 Questions: What Does China's New Five-Year Plan Mean for Climate Action?", *World Resource Institute*, 18 March 2016 <http://www.wri.org/blog/2016/03/5-questions-what-does-chinas-new-five-year-plan-mean-climate-action>, (Accessed on August 10, 2017)

⁵⁴⁶ Geoffrey Henderson, Ranping Son and Paul Joffe, "5 Questions: What Does China's New Five-Year Plan Mean for Climate Action?".

⁵⁴⁷ Katherine Koleski, "The 13th Five-Year Plan", 17.

installed renewable power capacity to 680 GW and an installed wind capacity to 210 GW by 2020 with an aim to rise the share of non-fossil energy in energy consumption 20% by 2030.⁵⁴⁸ With these figures, in order to materialize the stated targets in Renewable Energy, Chinese authorities developed and implemented various support mechanisms.⁵⁴⁹

Moreover, RMB 2.5 trillion (373.1 billion US dollars) budget for total investment by 2020 (RMB 500 billion (74.6 billion US dollars) for hydropower, RMB 1 trillion (149.3 billion US dollars) for solar and RMB 700 billion (104.5 billion US dollars) for wind) was announced within 13th Five Year Renewable Energy Development Plan.⁵⁵⁰

Furthermore, 13th FYP reiterates the key industries announced in Made in China 2025 as New Energy Vehicles, Next Generation IT, Biotechnology, New Materials, Aerospace, Ocean Engineering and high tech ships, railways, robotics, power equipment, agricultural machinery⁵⁵¹, most of which might embark low carbon economic activities.

In harmony with the successive FYPs several strategies and programs have been launched by Chinese authorities. Particularly in the period after 2007, specific

⁵⁴⁸ "CHINA: 13th Five Year Plan for Renewable Energy Development", AsiaPacificEnergy, 1 June 2018, accessed on 3 March 2019 from <https://policy.asiapacificenergy.org/node/2837>.

⁵⁴⁹ For a complete list of renewable energy support policies please refer to Jialu Liu and Don Goldstein, "Understanding China's renewable energy technology exports". *Energy Policy*, 52, (2013): 417–428.

⁵⁵⁰ Kathreine Koleski, *The 13th Five-Year Plan*, 17.

⁵⁵¹ Katherine Koleski, *The 13th Five-Year Plan*, 10.

political structures related to climate change and strategies gathered momentum.⁵⁵² In the course of 12th FYP, Work Plan for Controlling GHG Emissions During 12th FYP Period, National Plan on Climate Change 2014- 2020 and National Strategy for Climate Adaptation were issued details of which are presented below.

National Climate Change Program (NCCP), the first Chinese initiative against climate change, was announced on June 2007 by National Development and Reform Commission (NDRC).⁵⁵³ The Program envisaged a reduction by 20 percent in energy intensity, reaching a 10 percent ratio of renewables in energy supply and forest coverage of 20 percent by 2010.⁵⁵⁴ The reconfigured NCCP for the period 2014- 2020 also put forward guidelines, principles, objectives, policies and measures to address climate change as well as outlining the impacts and challenges of climate change on China.⁵⁵⁵ Moreover it highlighted China's position on key climate change issues and needs for international cooperation.

The targets incorporated into the plan are cutting carbon intensity (carbon emissions per unit of GDP) by 40-45 percent from 2005 levels by 2020, increasing the share of non-fossil fuels in energy consumption to 15 percent, increasing share

⁵⁵² Fabianna Barbi, Leila da Costa Ferreira and Sujian Guo, "Climate change challenges and China's response: mitigation and governance", 329.

⁵⁵³ NDRC, "China's National Climate Change Program", June 2007 from <http://en.ndrc.gov.cn/newsrelease/200706/P020070604561191006823.pdf> (Accessed on September 7, 2017).

⁵⁵⁴ Fabianna Barbi, Leila da Costa Ferreira and Sujian Guo, "Climate change challenges and China's response: mitigation and governance", 330.

⁵⁵⁵ NDRC, "China's Policies and Actions for Addressing Climate Change".

of forests by 40 million hectares and increasing the proportion of stock volume 1.3 billion cubic meters as compared to 2005.⁵⁵⁶

On the other hand, policy guiding white papers, China's Policies and Actions for Addressing Climate Change, have been prepared since 2008.⁵⁵⁷ Main actions planned and implemented were about mitigating the climate change, adapting to climate change, low carbon pilots and demonstration, strategic planning and institutional construction, capacity building, broad participation and actively promoting international negotiations, strengthening international exchanges and cooperation.⁵⁵⁸

Furthermore, Energy Development Strategy Action Plan had a set of measures and targets promoting energy efficiency in energy production and consumption.⁵⁵⁹ In order to attain the goals of National Climate Change Program and Energy Development Strategy Action Plan; legislative issues were embarked in Renewable Energy Act and Energy Conservation Law.⁵⁶⁰

⁵⁵⁶ UNFCCC, "China's Intended Nationally Determined Contribution"

⁵⁵⁷ NDRC, "China's Policies and Actions for Addressing Climate Change"

⁵⁵⁸ NDRC, "China's Policies and Actions for Addressing Climate Change"

⁵⁵⁹ UNFCCC, "China's Intended Nationally Determined Contribution"

⁵⁶⁰ Michal Nachmany et al, "The 2015 Global Climate Change Legislation in 99 Countries Summary for Policy Makers", Grantham Research Institute accessed on 7 September 2017 from http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/Global_climate_legislation_study_20151.pdf.

These concrete measures and steps to a low carbon economy pushed Chinese authorities to take actions for formulating a carbon market. In this regard, Project of Partnership for Market Readiness funded by the World Bank for supporting “to develop a nation-wide emissions trading system”.⁵⁶¹ With this Project, China launched a pilot carbon trading system in five provinces and two cities: Beijing, Tianjin, Shanghai, Chongqing, Hubei, Guangdong, and Shenzhen, making up 28% of its economy between 2013- 2014.⁵⁶² Furthermore, a voluntary emission trading system was established in 2008 in China. Also, voluntary carbon standard. “Panda Standard”, was issued in 2009.⁵⁶³

In short, China has developed and implemented lots of national and subnational climate action plans along with its climate targets.

7.4 International Climate Change Policy

China signed the basis of international climate change regime –UNFCCC- in 1992 and ratified it in 1993.⁵⁶⁴ Whereas the UNFCCC aimed to stabilize GHGs emissions; KP, concluded in 1997, was the first international effort resulted in country specific commitments to mitigate GHGs. China was involved in hard

⁵⁶¹ Partnership For Market Readiness, “China”, <https://www.thepmr.org/country/china-0> . (Accessed June 3, 2017).

⁵⁶² Partnership for Market Readiness, “China”.

⁵⁶³ Partnership for Market Readiness, “China”.

⁵⁶⁴ UNFCCC, “China”, http://unfccc.int/tools_xml/country_CN.html, (Accessed September 15, 2018)

negotiations before conclusion of KP where it had advocated more stringent emission reduction targets. China signed Kyoto Protocol in 1998 and ratified it in 2002. Likewise, during post-Kyoto negotiations China played an active role. After, Copenhagen Climate Change Conference which failed to conclude Post Kyoto climate regime, China intended to fill the gap with the developing and developed world. With this aim, China called on developing countries to bring forward plans reflecting their willingness at least to curb their growing emissions.⁵⁶⁵

Indeed, this shift in China's negotiation position was somehow from its adherence more on CBDR rather than strictly insisting on only historical responsibilities of nations for the climate change problem. Particularly, China- US joint announcement on their commitment for reaching an ambitious 2015 agreement accelerated the post Kyoto climate change negotiations.⁵⁶⁶ With this motivation, it was one of the forerunners of Paris Agreement negotiations by signing and ratifying Paris Protocol in 2016.⁵⁶⁷

In its detailed INDC submission to UNFCCC, China initially stressed the work done so far for tackling with climate change by highlighting the above-mentioned plans and strategies.⁵⁶⁸ On the basis of its national circumstances and development

⁵⁶⁵ "Climate talks: China calls on developing countries to 'step up'", *The Guardian*, 3 November 2011, <https://www.theguardian.com/environment/2011/nov/03/climate-talks-china-developing-countries> (Accessed on 18 February 2019)

⁵⁶⁶ "U.S.-China Joint Announcement on Climate Change", *The White House*.

⁵⁶⁷ UN Treaty Collection, "Chapter XXVII ENVIRONMENT 7.d Paris Agreement" .

⁵⁶⁸ When a Country or Supranational Entity becomes a Party to the PA, INDCs automatically become their NDCs. As of the date China disclosed its contribution it had been called as INDC since it had not been a Part yet.

strategy, China has announced its INDC by 2030 as achieving a peak of carbon emissions around 2030 with best efforts if possible earlier, reducing carbon intensity of its economy by 60% - 65% from the 2005 level and increasing the ratio of non-fossil fuels in primary energy consumption to about 20%; and rising the forest stock volume by nearly 4.5 billion cubic meters on the 2005 level.⁵⁶⁹

Regarding the trade related negotiation topic response measures under the UNFCCC bodies and PA negotiation organs; China has preserved its position for these measures should not be arbitrary and prohibitive for international trade.⁵⁷⁰ In short, it can be concluded that China's engagement in international climate change negotiations has progressed from a peripheral to central role progressively.⁵⁷¹

7.5 Drivers of Chinese Climate Change Policy

In this part, key drivers of Chinese Climate Change Policy are unveiled with an aim to assess which factors are more decisive on the final policy configuration of the country. In order to facilitate the analysis, the drivers are discussed in two main groups as domestic and international details of which are provided below parts.

⁵⁶⁹ "China's INDC- on 30 June 2015" accessed on 18 February 2019 from <https://www4.unfccc.int/sites/submissions/INDC/Submission%20Pages/submissions.aspx>

⁵⁷⁰ Authors 'own experiences during UNFCCC negotiations on response measures between 2012-2018 when she served as a climate negotiator in Turkish delegation.

⁵⁷¹ Zhongxiang Zhang, "Climate mitigation policy in China", *Climate Policy* 15, No.1, 15 SUP 1, (2015), S6

7.5.1 Domestic Drivers of Climate Change Policy

As the domestic drivers of climate policy of the country *Vulnerability of the Country, Sufficiency of Domestic Climate Change Policy and Mitigation Potential, Legislative Structures, Attitudes of the Leaders/Politicians and Power of Industrial Lobby Groups and Civil Society* are analyzed extensively below.

To begin with, *Vulnerability of the Country*, as a very large developing country, China is significantly vulnerable the impacts of climate change by ranking as the 37th among the 181 countries most affected in the period 1998- 2017 according to Global Climate Change Risk Index.⁵⁷²

Apparently, adverse influences of climate change are expected in agriculture, urban transport and infrastructure, power grids and other energy facilities. Nearly more than 70% of natural disasters in the country are linked with extreme weather conditions and climate events.⁵⁷³ Moreover, the total water resources are estimated to be reduced by 5%, where food security risk will rise and security matters for ecosystems, food, water and energy will be further tangled.⁵⁷⁴

China is ranked as the 64th riskiest country globally in the Notre Dame Global Adaptation Initiative Vulnerability rankings, which is measured by “a country’s

⁵⁷² Global Climate Change Risk Index 2017 (GCCRI)

⁵⁷³ National Forestry and Grassland Administration, “China Vulnerable to Climate China”, 1 February 2018, http://english.forestry.gov.cn/index.php?option=com_content&view=article&id=964:china-vulnerable-to-climate-change&catid=16&Itemid=159 (Accessed on February 18, 2018)

⁵⁷⁴ National Forestry and Grassland Administration, “China Vulnerable to Climate China”.

exposure, sensitivity and ability to adapt to the negative impact of climate change”⁵⁷⁵

To this hand, China might be thought as facing moderate vulnerability as compared to some other major developing countries. Still, its past troubles with air pollution makes vulnerability as an immediate factor for Chinese decision makers.⁵⁷⁶

As for the *Sufficiency of Domestic Climate Change Policy and Mitigation*; Chinese climate policies are evaluated as “highly insufficient” in terms of climate actions by independent scientists⁵⁷⁷ and as “low” by Climate Change Performance Index (CCPI) 2018,⁵⁷⁸ which plots the climate policies of countries with respect to their climate policy map, energy use, emissions and renewable energy performances and assigns them some scores. According to CCPI 2018, China is ranked as 41th among 60 countries.⁵⁷⁹

⁵⁷⁵ University of Notre Dame, *Rankings*, <https://gain.nd.edu/our-work/country-index/rankings/> (Accessed on June 20, 2017)

⁵⁷⁶ South China Morning Post, “Air pollution is killing 1 million people and costing Chinese economy 267 billion yuan a year, research from CUHK shows”, October 2018, <https://www.scmp.com/news/china/science/article/2166542/air-pollution-killing-1-million-people-and-costing-chinese>, (Accessed December 2, 2018)

⁵⁷⁷ Climate Action Tracker, “China”, 30 November 2018 <https://climateactiontracker.org/countries/china/> (Accessed on February 19, 2019).

⁵⁷⁸ Jan Burck et al, *The climate change performance index Results 2018*.

⁵⁷⁹ Jan Burck et al, *The climate change performance index Results 2018*.

Moreover, in Notre Dame Global Adaptation Initiative Readiness Index, China is ranked as 68th and in terms of ND GAIN Index assessing Vulnerability and Readiness together it is ranked as 59th.⁵⁸⁰

Though its cooperative position does not make China a climate leader currently, its precious efforts towards green growth goals bringing about investments in low carbon technologies such as renewable energy and installation of them in extensive amounts strengthen Chinese mitigation capacity. the Chinese domestic climate targets also affirmed in Chinese NDC already visualize that China will reach its GHGs emissions peak in 2030. Indeed, carbon emissions of the country are expected to peak before 2030, based upon lessened emissions growth from the manufacturing such as steel and cement industries and energy sector.⁵⁸¹ Moreover, the IEA work underlining that 385 gigawatts (GW) of existing coal fired power capacity basically suitable for CCS retrofit presents great mitigation opportunity for China.⁵⁸²

Besides to the nationwide mitigation and adaptation strategies which include mitigation, energy efficiency targets as well as initiatives towards emission trading policies discussed in 7.3, the Low Carbon City Initiative introduced mandatory GHGs targets for Chinese cities to reduce their emissions by 17% till 2015.⁵⁸³ This

⁵⁸⁰ University of Notre Dame, *Rankings*.

⁵⁸¹ Fergus Green and Nicholas Stern, *China's 'New Normal': structural change, better growth, and peak emissions (Policy Brief)* London: Grantham Research Institute: (2015), 4 http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/06/China_new_normal_web1.pdf (Accessed on March 10, 2019)

⁵⁸² IEA, "The potential for carbon capture and storage in China," 17 January 2017, <https://www.iea.org/news/the-potential-for-carbon-capture-and-storage-in-china> (Accessed May 5, 2019)

⁵⁸³ Can Wang, Jie Lin, Wencia Cai and ZhongXiang Zhang, "Policies and Practices of Low Carbon City Development in China". *Energy & Environment* 24, No. 7-8, (2013), 1348.

Initiative strengthens China's position in terms of taking climate commitments beyond 2020.

Indeed, China is gradually engaging market forces to alter its energy policy so as to transform into green economy with its so called name: low-carbon economy. Even it is claimed to be pursuing the most dynamic green policy in the world with its targeted growth rate for low carbon industries more than 20 percent in the period 2011- 2015 thanks to the ambitious tax and financial incentives making renewable energy industry as the new basis of growth of Chinese economy.⁵⁸⁴

All in all, Chinese climate policy can be taken as sufficient when its pace and targets are taken into consideration and the mitigation is potential is enormous when the national targets and current state of investments in renewables and CCS technologies are considered.

Legislative structures basically the tools that provide convenience or obstacles for climate policy making in a country. Therefore, as a highly centralized country, China's legislative system is under the direction of authorities despite a degree of decentralization.⁵⁸⁵ Indeed, its highly centralized structure with a unique political system where the Communist Party of China (CPC) enjoys great power with respect to administrative, legal and economic issues is both a curse and gift for Chinese climate policy development and implementation.

⁵⁸⁴ Zhongxiang Zhang, "Climate mitigation policy in China", S2.

⁵⁸⁵ "The Legislative System of China", *China Information Center*, <https://www.china.org.cn/english/features/legislative/75857.htm> (Accessed on February 21, 2019)

In Chinese system; CPC has been the single ruling organ since 1949 and stands at the center of the national political power structure; with its main institutions: “Standing Committee of the Politburo” and “The Political Bureau of Politburo”, “The Part Central Committee”, and “Party National Congress”.⁵⁸⁶ In CPC, the highest decision making body is the Politburo Standing Committee and the Politburo. Politburo is not involved in day to day decision making.⁵⁸⁷ In terms of state organs, the highest organ of state power is the National People’s Congress the powers of which are exercised by its Standing Committee and the State Council.⁵⁸⁸ As a matter of fact, the CPC and the State functioned as a single body up until late 1970s, when the CPC attempted to separate CPC and state functions by approving Ministers and the State Council.⁵⁸⁹ While dominant CPC figures existing in State bodies in a parallel fashion set policies at all levels and undertake major decisions, the State organs implement and perform policies.⁵⁹⁰

⁵⁸⁶ Susan Lawrence and Michael F. Martin. *Understanding China's Political System*. (Washington, D.C.: Congressional Research Service, 2012), 21.

⁵⁸⁷ Susan Lawrence and Michael F. Martin. *Understanding China's Political System*.

⁵⁸⁸ Craig Hart et al, “Mapping China's Policy Formation Process” 2014 <http://www.chinacarbon.info/wp-content/uploads/2014/11/CCF-Climate-Map-Public-Final-2014-11-30.pdf> (Accessed on February 21, 2019).

⁵⁸⁹ Zhou Guanghui, “Towards Good Government: Thirty Years of Administrative Reforms in China,” in *The Reform of Governance*, ed. Yu Keping (Leiden, The Netherlands and Beijing, China: Koninklijke Brill NV and Social Sciences Academic Press, 2010), 137-180 cited in Susan Lawrence and Michael F. Martin. *Understanding China's Political System*. (Washington, D.C.: Congressional Research Service, 2012), 28.

⁵⁹⁰ Lawrence, Susan, and Michael F. Martin. *Understanding China's Political System*, 28.

As to the legislative mechanisms for climate change policy, climate policy development is high centralized, too. Moreover, China has not yet formally established the framework legislation for climate change, it has medium to long term plans like National Climate Change Program and National Plan for Climate Change in addition to Five Year Plans covering climate goals. The NDRC has a crucial role in terms of climate policy development and coordination also local governments are responsible for undertaking policies to match their assigned targets.⁵⁹¹

On the other hand, among vulnerabilities we might underline the problem of air pollution driving Chinese policies for climate change.⁵⁹²

Therefore, in short the system works as follows: after the highest level of CPC in other words Standing Committee of Politburo draws the route of climate policy, the other state organs put them into practice uniformly. This makes the process work rapidly but at the same time inherits some risk of disruptions in case of any reluctance from the side of these high level administrators. When the current constructive attitude of China towards climate change problem is considered the legislative structures of centrally managed economy can be evaluated as supporting factors for further compromise on the international climate package for China.

As for the *Attitudes of Leaders/ Politicians*; as told before, the political structure of China is sui generis. In such a system where the highest level of CPC is extremely influential on any kind of state policy; is unavoidable that perceptions

⁵⁹¹ Averchenkova et al., "Climate policy in China, the European Union and the United States: main drivers and prospects for the future – in depth country analyses", 24- 25.

⁵⁹² South China Morning Post, "Air pollution is killing 1 million people".

and views of high level officials of CPC will be affecting the climate policy of China.

This kind of governance structures might give a rise “authoritarian environmentalism” whose merits are its capability to show a fast centralized reaction to serious environmental risks, and to activate state and public actors.⁵⁹³ The example of authoritarian environmentalism has been experienced in China. As a result of changes in its development perspective and treating the transition to a green economy as a cure and opportunity, China prioritized environment and climate change.⁵⁹⁴ The prevailing ideology of the CPC is ‘socialism with Chinese characteristics’ links the spirit of Marxism with an emphasis on developing the economy and reducing poverty⁵⁹⁵.

China’s new generation political leaders reinterpreted CPC philosophy and reformulated strategies by aligning economic and environmental goals. As a matter of fact, the environmental discourse of Chinese leadership signals the importance of domestic considerations for Chinese national climate contributions.⁵⁹⁶

⁵⁹³ Bruce Gelley, “Authoritarian environmentalism and China’s response to climate Change”, *Environmental Politics* 21, No. 2, (March 2012), 300.

⁵⁹⁴ “China’s green economy could create enormous business opportunities”, *China Daily*, 10 July 2015, http://www.chinadaily.com.cn/business/2015-10/07/content_22120821.htm (Accessed on February 22, 2019)

⁵⁹⁵ Averchenkova et al., “Climate policy in China, the European Union and the United States: main drivers and prospects for the future – in depth country analyses”.

⁵⁹⁶ Fergus Green and Nicholas Stern, *China’s ‘New Normal’: structural change, better growth, and peak emissions (Policy Brief)*, 7.

In spite of Trump's evasion, Chinese President Xi Jinping reaffirmed his commitment to efforts to tackle with climate change by underlining his idea of "new modernization" at 19th Party Congress by stressing that "the modernization that we pursue is one characterized by harmonious co-existence between man and nature."⁵⁹⁷ However, Chinese Ministry Xie Zhenhua during UN Climate Change Negotiations in December 2018 explained that developing countries were not pleased about the current status and they wanted to see that developed countries honored their commitments.⁵⁹⁸

Therefore, it can be concluded that although Chinese leaders favor an environmentalist stand and disclose the role of green economy in their modernization goals; conditionality, searching for the adherence of developed countries to climate commitments endures.

Regarding *Power of Industrial Lobby Groups & Civil Society*; Chinese people is aware of climate change according to the results of survey held by China4C. The results indicate that "the Chinese public's feelings are in line with the warming trend in the past 66 years in China, accruing to the historical temperature archives recorded by China Meteorological Administration from 1951 to 2016."⁵⁹⁹ However

⁵⁹⁷ "19th Party Congress: Xi Jinping affirms China's commitment on green development", *Straitstimes*, 18 October 2017, <https://www.straitstimes.com/asia/east-asia/19th-party-congress-xi-jinping-says-china-must-cooperate-with-other-nations-on> (Accessed August 15, 2018)

⁵⁹⁸ Fiona Harvey and Ben Doherty, "China demands developed countries 'pay their debts' on climate change", *The Guardian*, 13 December 2018, <https://www.theguardian.com/science/2018/dec/13/china-demands-developed-countries-pay-their-debts-on-climate-change> (Accessed March 14, 2019).

⁵⁹⁹ UNFCCC, "China4C's 2017 National Public Opinion Survey Report Climate Change in the Chinese Mind Released at COP23", Press Release, accessed on 26 February 2019 from <https://unfccc.int/sites/default/files/resource/Press%20Release%20-%20202.pdf>.

awareness is not sufficient for climate change policy development as long as it is not recognized by decision makers. Indeed, in China, civil society stimulus and the dynamics of interest groups work in a different way than democratic states. Policy formulation in China is influenced by the interests of elites from both inside and outside of the CPC. In spite of its highly centralized decision making structure, the climate policy development is still in close relation with many factors like various interest groups, economic elites, and experts.⁶⁰⁰ Nonetheless, the effect of interest groups which are not integrated to the state system with official channels have very limited influence on the decision making process.⁶⁰¹

Still it is argued that the role NGOs in China's climate change governance has four main characteristics: government partnership with constrained political place, organization improvement with insufficient professional capability, solid international monetary dependence but with mounting domestic support, and public support with little social recognition.⁶⁰²

It should be noted that one of the principal driving forces for Chinese climate policy, still indirectly, has been the public opinion on air pollution. As for Scientific elites' influence through conveying their views in traditional and social media,

⁶⁰⁰ Lisa Williams, "China's climate change policies: Actors and drivers" (Sydney: Lowy Institute for International Policy: 2014).

⁶⁰¹ Averchenkova et al., "Climate policy in China, the European Union and the United States: main drivers and prospects for the future – in depth country analyses". 29.

⁶⁰² Lei Liu, Pu Wang, and Tong Wu. *The role of nongovernmental organizations in China's climate change governance*. *Wiley Interdisciplinary Reviews: Climate Change* 8, No. 6, (2017), 1.

lobbying with public officials and joining to campaigns organized by research institutes on related issues.⁶⁰³

As for the role of lobby groups in China; the most prominent actors can be noted as the State Owned Enterprises. Particularly centrally owned State Owned Enterprises sustain a substantial influence in many government decisions including climate change.⁶⁰⁴ That is because majority of China's emitters are SOEs; moreover, the energy sector is virtually entirely controlled by those."⁶⁰⁵

If we have a closer look to China's SOEs we might express that China has roughly 150,000 SOEs constituting 30-40 % of GDP and 20 % of total employment.⁶⁰⁶ Nearly one third of these SOEs are owned by Central Government and the remaining by local governments in all sectors ranging from heavy industries to tourism.⁶⁰⁷ Most of the executives of them are recruited from the former members of the central governments to enable these SOEs with the required lobby power with the state organs.⁶⁰⁸

⁶⁰³ Averchenkova et al., "Climate policy in China, the European Union and the United States: main drivers and prospects for the future – in depth country analyses", 29- 32.

⁶⁰⁴ Lisa Williams, "China's Climate Change Policies: Actors and Drivers", 12.

⁶⁰⁵ Henrik Bergsager and Anna Korppoo, "China's State-Owned Enterprises as Climate Policy Actors: The Power and Steel Sectors", *Nordic Council of Ministers*, 2013, 49.

⁶⁰⁶ The US Department of Commerce, *China Country Commercial Guide*, 25 July 2017 <https://www.export.gov/article?id=China-State-Owned-Enterprises> (Accessed on February 27, 2019).

⁶⁰⁷ The US Department of Commerce, *China Country Commercial Guide*.

⁶⁰⁸ Lisa Williams, "China's Climate Change Policies: Actors and Drivers", 13.

When the breakdown of SOEs by owned central government is focused; most relevant industries for GHGs emissions are listed as follows: 10,463 of total 51,341 centrally owned enterprises are in manufacturing sector with a value of 3.7 trillion RMB out of 181.8 trillion RMB million; 4308 of total 51,341 centrally owned enterprises are in electricity and gas sector with a value of 11.3 trillion RMB out of 181.8 trillion RMB million and 3865 of total 51,341 centrally owned enterprises are in transportation sector with a value of 12 trillion RMB out of 181.8 trillion RMB million.⁶⁰⁹ With these figures these industries make up nearly 36% of all SOEs owned by central government in number although a less proportion in terms of value.⁶¹⁰ Therefore, the visions, motives and goals of these SOEs might be extremely influential when their close relations and organic ties with CCP and central government are taken into account.

In sum, despite the highly centralized structure of government in China where the CCP plays a very decisive role; the opinion and lobby groups together with civil society might echo their priorities on the final policy outcomes as long as they have close relations with these governmental actors. Given the centrality state owned enterprises, the green growth policies of China might push those towards a more supportive attitude regarding the international climate policies.

⁶⁰⁹ OECD, *The Size and Sectoral Distribution of State-Owned Enterprises*, (Paris: OECD Publishing, 2017), 42.

⁶¹⁰ Calculated based on OECD, *The Size and Sectoral Distribution of State-Owned Enterprises*.

7.5.2 International Drivers of Climate Change Policy

The primary international drivers of climate policy can be listed as *Foreign Policy Objectives*, *Climate Change* and *Foreign Trade Interplay* and *Financial Returns* and *Outlays*. These are elaborated in detail below.

As to the *Foreign Policy Objectives*, Chinese foreign policy is mostly fed by domestic dynamics. The priorities of Chinese foreign policy recently have been “fostering economic development”, “reassurance”, “countering constraints”, “diversifying access to natural resources”, and “reducing Taiwan’s international space.”⁶¹¹ Among those priorities, economic development and access to natural resources are in close relation with energy and thereby climate change policies. While CCP’s legacy is to assure a “robust growth” and “balanced development”, China’s understanding of this principal goal has altered in time in conformity with China’s views on its national security and interests.⁶¹² In this regard, taken into account environmental degradation and pollution China faces Chinese foreign policy now entails adherence to sustainable development rather than only focusing on records for GDP growth. The emphasis on sustainable development as the new economic development strategy of China gradually improves emission outlook of the country as we saw in part 7.2. Additionally, in parallel with its energy security objectives, Chinese foreign policy focuses more on diversifying its access to natural resources. Due to the fact that China rests on imports its energy supply⁶¹³; enhancing the role of renewables in energy policy is one of the recent priorities of

⁶¹¹ Evan S. Medeiros, "China's Foreign Policy Objectives." In *China's International Behavior: Activism, Opportunism, and Diversification*, 45-60. (Pittsburgh, PA: RAND Corporation, 2009), 45.

⁶¹² Evan S. Medeiros, "China's Foreign Policy Objectives", 51.

⁶¹³ Guy C.K. Leung, "China's energy security: Perception and reality", *Energy Policy* 39, No.3, (2011): 1330-1337.

Chinese authorities.⁶¹⁴ This tendency to renewable energy has also due to its contributions for mitigation of GHGs of China.⁶¹⁵

In sum, the foreign policy objectives of China are in line with the mitigation activities; which gives a leverage for pursuing a drastic climate change policy.

For *Climate Change and Foreign Trade Interplay (Opportunities and Challenges)*, China presents a unique stance. The reforms and liberalization in Chinese trade policy beginning from 1978 has enabled its striking economic development. Many empirical works founded that exports, foreign direct investments and economic development seem to be mutually reinforcing with the liberal policies in China.⁶¹⁶ The foreign trade and climate policies interact in two ways in China: from the trade of environmental goods and services; and the trade of emission intensive products including fossil fuels.

With respect to the foreign trade in emission intensive products, China is a net importer of fossil fuels by far. Regarding the trade in fossil fuels, China is to large

⁶¹⁴ Kevin Lo, "A critical review of China's rapidly developing renewable energy and energy efficiency policies", *Renewable and Sustainable Energy Reviews* 29, (2014), 509.

⁶¹⁵Gørild Heggelund, "China's Climate Change Policy: Domestic and International Developments", 162.

⁶¹⁶ For comprehensive quantitative analysis please refer to Xiaohui Liu, Peter Burrige & P. J. N. Sinclair, "Relationships between economic growth, foreign direct investment and trade: evidence from China", *Applied Economics* 34, No. 11, (2002): 1433-1440; Shujie Yao, "On economic growth, FDI and exports in China", *Applied Economics* 38, No. 3, (2006): 339-351; and Xialoan Fu and Balasubramanyam, V. N. "Exports, Foreign Direct Investment and Employment: The Case of China", *The World Economy* 28, No.4, (2005): 607-625.

extent an importer of fossil fuels.⁶¹⁷ With a 15.2% share and 211 million tones volume it is the second largest importer of crude oil.⁶¹⁸ On the other hand China is the largest importer of coal with 123.9 Mtoe net imports while it is a net importer of natural gas.⁶¹⁹ This will lead to utilization of more of domestic resources and cut the energy imports at the same time.

With regard to the foreign trade in emission intensive products other than fossil fuels; it can be concluded from Table- 24 that China has a net importer in high emitter sectors mostly due to the high import volume of petrochemicals.⁶²⁰ On the other hand, its most important export sector among high emitters is the iron and steel. Though the ratio of high emitting sectors in Chinese exports is almost same as 8% as from 2000 to 2016; the share of imports in those high emitting sectors has dropped to 8% from 16 % in the same period. The most important change in the period has been the ever increasing capacity of Chinese iron and steel industry which transformed China to a net exporter from a net importer position for these products.

As for environmental goods; the low carbon technologies including solar technologies like PV cells among the most promising products for Chinese foreign trade similar to their increasing significance in world trade. The global trade in

⁶¹⁷ EIA, "China is now the world's largest net importer of petroleum and other liquid fuels", 24 March 2014, <https://www.eia.gov/todayinenergy/detail.php?id=15531>, (Accessed May 4, 2019)

⁶¹⁸ Calculated based on British Petroleum, *Statistical Review of World Energy 2018*.

⁶¹⁹ IEA, Atlas of Energy, <http://energyatlas.iea.org> Accessed on June 3, 2016.

⁶²⁰ The table is prepared by utilizing the data retrieved from ITC Trademap data base according to the HS sector codes.

environmental goods is predicted to be around 2-3 trillion US dollars by 2020.⁶²¹ These products involve renewable energy technologies including solar panels, wind turbines and energy-efficient products, besides air pollution, waste and water management technologies.

For development of the renewable energy in China, the Medium and Long-Term Development Plan for Renewable Energy and Renewable Energy Law were extremely significant.⁶²² The renewable energy targets aimed with these policies such as raising the non- fossil fuel resources' share to 15% by 2020⁶²³ are internalized by many Chinese institutions. China's strategy towards utilization of renewable energy more is leading substantial economic returns as well.

Furthermore, the Ministry of Science and Technology and other governmental institutions financed researches in order to assist the Chinese wind turbine manufacturers for the development of new products and technologies as well as commercialization of them. Thanks to these supportive policies, China has aroused as a worldwide leader in wind turbine development by hosting many firms that produce wind power equipment. As of 2015, Chinese manufacturers are fabricating ultramodern megawatt class wind turbines. Moreover China's improvement in wind power equipment can be seen from the following figures: the 51 of 120 types of wind turbines available in market (42.5% of the market) were self-reliantly

⁶²¹ UNEP, "Environment and Trade Hub", <https://www.unenvironment.org/explore-topics/green-economy/what-we-do/environment-and-trade-hub> (Accessed December 12, 2018)

⁶²² Zhongying Wang, Haiyan Qin, & Joanna J. Lewis, "China's wind power industry: Policy support, technological achievements, and emerging challenges", *Energy Policy* 51, (2012):82.

⁶²³ IRENA, *Renewable Energy Prospects: China, REmap 2030 analysis*, 29.

advanced by domestic Chinese enterprises besides 25 types of those (20.8% of market) were jointly advanced with foreign firms.⁶²⁴

As a result, China has a comparative advantage at production of most of the low carbon technologies.⁶²⁵ In the study of Srivastav et. al it has been assessed as competitive particularly in efficient lighting, low- carbon buildings, solar thermal energy and hydroelectric power.⁶²⁶

These technologies have an ever mounting importance for Chinese exports. Indeed, as presented Table- 25; while in 2005 Chinese exports in environmental goods was 18.3 billion USD; as of 2016 it surged to 79.7 billion USD.⁶²⁷ At the same time, the share of environmental goods and technologies in China's exports has amounted to 4.8 percent in the last decade. For the export of renewable energy technologies China has long been a global leader.⁶²⁸ China makes up two-thirds of global solar PV module production with creation of employment for around 2.6

⁶²⁴Zhongying Wang, Haiyan Qin, & Joanna J. Lewis, "China's wind power industry", 82- 87.

⁶²⁵ Jing Cao and Felix Groba, "Chinese Renewable Energy Technology Exports: The Role of Policy, Innovation and Markets", *Discussion Papers 1263 DIW Berlin*, 2013 https://www.diw.de/documents/publikationen/73/diw_01.c.414422.de/dp1263.pdf (Accessed on March 3, 2019).

⁶²⁶ Sugandha Srivastav, Sam Fankhauser, and Alex Kazaglis, "Low Carbon Competitiveness in Asia", *Economies* 6, no 5, (2018): 11.

⁶²⁷ The table is prepared by utilizing the data retrieved from ITC Trademap data base according to the HS sector codes.

⁶²⁸ Jialu Liu and Don Goldstein, "Understanding China's renewable energy technology exports"

million people.⁶²⁹ The supportive policies for these technologies helped the increase the rate of exports meeting imports from around 33% in 2005 to nearly 93% in 2016.⁶³⁰ It will not be surprising for the export figures to surpass of the imports very soon.

The power of Chinese renewable industry shows itself when one looks at the leading manufacturers of wind turbines. Specifically, 3 the 10 leading wind turbine manufacturers namely; United Power, Goldwind and Envision Energy are originated from China.⁶³¹ China might be evaluated more of export oriented for solar energy as compared to wind since most of the production was oriented to the exports in early 2000s.⁶³² The increasing export orientation in wind industry was partly due to the fact that a surplus in wind energy manufacturing was experienced after slowing new investments in wind farming since 2010 as a political choice.⁶³³ So as to deal with this over capacity/ saturated market problems Chinese companies have been going abroad ever since.⁶³⁴

Moreover, the exports of emission intensive sectors are sensitive for any regulations targeting the carbon content in them. Therefore, China's position which

⁶²⁹ IRENA, *Renewable Energy Prospects: China, REmap 2030 analysis*, 66.

⁶³⁰ Calculated from the figures disclosed in Table- Foreign Trade in Environmental Goods.

⁶³¹ Wind Power Monthly "Top ten turbine makers of 2017".

⁶³² Jialu Liu and Don Goldstein, "Understanding China's renewable energy technology exports", 418

⁶³³ Wei Shen and Marcus Power "Africa and the export of China's clean energy revolution." *Third World Quarterly* 38, No. 3, (2016), 6

⁶³⁴ Wei Shen and Marcus Power "Africa and the export of China's clean energy revolution.", 6.

is in favor of an inclusive but non-punitive agreement during Paris Agreement negotiations have made sense.

As a result, the foreign trade structure of China has lots of implications for climate change policies. Indeed, a precise analysis of Chinese foreign trade shows that China can benefit heavily from an overarching climate change regulation. It is because being miserably dependent on fossil fuel imports, China improves its energy security conditions with more utilization of renewables. Moreover, the increasing volume of renewables in energy mix makes China more comfortable in terms of implementation of climate mitigation policies. When renewable energy industry of China grows, Chinese companies having been extremely experienced in foreign trade already diverted their interests to international markets, too.

With respect to the *Financial Returns and Outlays*, as a result of ever increasing role of China in the development of renewable energy technologies it is not surprising to see Chinese government promoting these products internationally with diplomacy and developing financial means. To this end, the Chinese government launched the South-to-South Cooperation in Climate Change.⁶³⁵

Although seems as financial outlay at first sight, China's attempts to provide financial support to developing countries will help creating future demand in the area as returns to the country.

⁶³⁵ UN Press Release, "China and the United Nations Have Committed to Supporting South-South Climate Cooperation", 15 November 2017, <https://www.un.org/sustainabledevelopment/wp-content/uploads/2017/12/Press-Release-20171115-final.pdf> (Accessed on November 30, 2017).

Table 24: Foreign Trade China Carbon Intensive

China	2001		2005		2012		2015		2016	
	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import
Foreign Trade of High Emitter Sectors (In Billions)	22.3	38.8	68.0	109.9	177.9	377.5	211.3	257.7	184.0	233.4
Glass and Ceramics	3.1	1.6	9.5	2.8	31.6	7.9	41.8	7.3	33.5	7.6
Paper Industry	1.5	6.4	4.0	10.6	13.8	21.8	18.9	22.1	17.7	21.2
Iron and Steel	8.2	13.0	34.1	31.9	93.3	33.3	109.7	28.2	95.1	26.5
Petrochemical Industry	8.4	17.5	17.6	64.1	31.0	313.1	27.9	198.6	26.9	176.5
Cement Industry	1.1	0.3	2.8	0.5	8.1	1.3	13.0	1.5	10.7	1.6
Total Foreign Trade	266,1	243,6	762,0	660,0	2,048,8	1,818,2	2273,5	1,679,6	2,097,6	1,587,9
Share of High Emitter Products (%)	8%	16%	9%	17%	9%	21%	9%	15%	9%	9%

Retrieved from Trademap Database available at <http://www.trademap.org/>

Table 25: Foreign Trade China in Environmental Goods

US Dollar Billion	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
China APEC List Exports	18.3	23.8	36.9	52.9	48.9	74.8	86.7	84.2	85.3	87.3	87.8	79.7
China APEC List Imports	55.9	64.4	73.5	81.2	68.2	92.7	100.2	102.4	104.0	101.1	93.6	85.4
China APEC List Foreign Trade Balance	-37.6	-40.6	-36.6	-28.3	-19.3	-17.9	-13.5	-18.2	-18.7	-13.8	-5.8	-5.7
World APEC List Trade	279.4	326.2	375.3	439.8	372.7	450.9	505.4	497.3	494.1	503.6	477.6	474.4
China's Exports to World	762.0	968.9	1,220.1	1,430.7	1,201.6	1,577.8	1,898.4	2,048.8	2,209.0	2,342.3	2,273.5	2,097.6
APEC List Share in World Trade	6.5%	7.3%	9.8%	12.0%	13.1%	16.6%	17.2%	16.9%	17.3%	17.3%	18.4%	16.8%
APEC List Share in China's Exports	2.4%	2.5%	3.0%	3.7%	4.1%	4.7%	4.6%	4.1%	3.9%	3.7%	3.9%	3.8%

Retrieved from Trademap Database available at <http://www.trademap.org/>

For example, China pledged \$3.1 billion to the South-to-South Cooperation to form low-carbon parks, perform mitigation and adaptation tasks and run climate change training in developing countries, particularly including those enclosed in China's "One Belt, One Road" initiative, so as to promote Chinese investment in Central Asia and Southeast.⁶³⁶

As stated by the Centre for Development Research of China, the country would need annual green investment an amount of nearly two billion renminbi (315 billion US dollars) during the period of the 13th five-year plan (2016 to 2020) to combat its environmental problems.⁶³⁷ Because of the financial restraints of the public sector, it is anticipated that nearly 90% of all green investment should be financed by the private sector.⁶³⁸ Therefore, so as to activate resources from the private sector, the progress for a robust green financial system is extremely important.⁶³⁹

⁶³⁶ "Why is China suddenly leading the climate change effort? It's a business decision.", Washington Post, 23 June 2017, https://www.washingtonpost.com/news/monkey-cage/wp/2017/06/22/why-is-china-suddenly-leading-the-climate-change-effort-its-a-business-decision/?noredirect=on&utm_term=.ad224304fab6 (Accessed on July 30, 2018).

⁶³⁷ Alice Amorim, "International Sustainable and Climate Finance: Where are we and which is the role of China on this?", BPC Policy Brief. V. 8. N. 03 - February - March/2018. Rio de Janeiro. PUC. BRICS Policy Center, 12, www.bricspolicycenter.org/download/6164 (Accessed on March 5, 2019).

⁶³⁸ Climate Report 2017, Konrad Adenauer Stiftung, https://www.kas.de/c/document_library/get_file?uuid=2cb28f08-a513-8989-dbc6-28853d39aebd&groupId=252038 (Accessed on March 5, 2019)

⁶³⁹ Climate Report 2017.

In short, standing alone an international climate change regime is crucial for reinforcing climate finance mechanisms when China's potential returns are considered.

7.6 Discussion

The Chinese international climate change policy has many domestic and international drivers. When these drivers are mapped together with a view to discuss their relative roles on final climate policy package following points draw attention.

Climate change problem is an object at issue on international sphere widely with its impacts on food production, rising sea levels and accompanying risk of catastrophic flooding. So, the most outstanding issue for a country is expected to be the "vulnerability" for making a decision on the next steps for policy formation on climate change. Form this regard, it can be noted that based on the expected adverse impacts of climate change; China is a vulnerable country to the climate change with the risks of natural disasters, water losses, air pollution and food security as discussed in Part 7.5.1.

Nonetheless, the destructive impacts of the climate change problem are not expected to appear very soon as compared to its impacts on economies which are very immediate. In other words, cost of inaction is not very immediate to experience contrary to the cost of action today. Therefore, the vulnerability is not the leading factor forming the climate policy of China as it is for many other countries. Additionally, when the vulnerability of China is considered on a global scale, it is seen that the country is not at immediate risk rather as compared to small

island countries.⁶⁴⁰ However, improving human health through cleaner air as a result of mitigated emission, in other words taking measures against vulnerability of its people air pollution is among the drivers of climate policy as discussed in part 7.5.1.

On the other, economic development is the fundamental priority of China, which have several repercussions on almost any policy area including energy and climate policies of the country. Particularly, successive FYPs since the 11th; have several targets and measures for energy and climate change recalling utilization of non-fossil fuel resources so as to decrease energy intensity of the economy. For attaining these goals, as described in a very detailed way in the previous parts 7.3 and 7.5.1, ever increasing investments have been realized within the scope of renewable energy and special importance has been given to CCS technologies particularly for mitigation of emissions of coal burning facilities. The national climate policies encompass not only targets but also some means of implementation. As a result, when all the objectives and measures embedded in these policies taken into account; Chinese climate policies can be rated as sufficient. That is confirmed with the anticipation of hitting the target for peaking the emissions will be earlier than 2040 as presented in Part 7.3.

Regarding the potential for mitigation all the scientific calculations and emissions projections embedded in the 7.2 and 7.5.1 of this chapter illustrate that China has a great potential for mitigation with the implementation of precise energy policies. Indeed Chinese potential for mitigation is apparent when its emission of “more

⁶⁴⁰ University of Notre Dame, *Rankings*.

than twice as much CO₂ for every dollar of Gross Domestic Product than the U.S., and at least three times more than the European Union” is considered.⁶⁴¹

Besides, legislative structures are crucial for determining the pace and coherence in climate policy as in any policy area. Due to the unique administrative structure of China resting on completely central decision making; Chinese legislative structures could be also taken as highly centralized for climate policy making where NDRC as a high level body responsible for policy making and implementation. Therefore, the legislative structures can be treated as favorable in terms of fast adoption and implementation of climate policies in China without losing time.

The role of various groups such as industrial pressure groups and civil society might be very critical in policy making for some states. However, in countries like China where the central authority has endless power, the development of civil society is very limited. So, their role in climate policy making is almost negligible. In spite of the decisive role of central government in policy making; the lobby groups might echo their priorities on the final policy outcomes to some degree as long as they have close relations with these governmental actors. Particularly State Owned Enterprises can be evaluated as the most influential interest group, most of which are in power sector. Given the centrality of power sector among these enterprises, the green growth policies of China might push those towards a more supportive attitude regarding the international climate policies based on incremental gains enjoyed.

⁶⁴¹ Fred Pearce, “ With China in the Lead, New Obstacles to Climate Progress Are Emerging”, *Yale Environment* 360, 24 May 2018 <https://e360.yale.edu/features/with-china-in-the-lead-new-obstacles-to-climate-progress-emerge> (Accessed on May 20, 2015)

As it is seen, domestic drivers of climate policy have created a proper base for international climate policy making; similarly, they are not preventive for further taking further steps. To continue with the international drivers, a thorough complementary analysis should be undertaken for speculating on the orientation of international climate policy.

To begin with the foreign policy objectives of China, the grand policy objective of economic development has brought forth changing orientations to Chinese environmental policy in time. With the rise of environmental concerns and speculations on various measures to prevent environmental degradation together with other post-colonial anxieties of Global South crystallized the divide between North and South in 1980s. One of the competing interests of North- South debate was a “normative desire for greater equality among states in terms of economic and material well-being”.⁶⁴² This concern came to existence with the 1986 UN Declaration on the Right to Development where right to development defined as a human right “by virtue of which every human person and all peoples are entitled to participate in, contribute to, and enjoy economic, social, cultural and political development.”⁶⁴³

The idea of Right to Development was reflected in UNFCCC with the principles of CBDR and Historical Responsibilities. The thirty years’ history of UNFCCC and Kyoto period has given to Global South the exemption rights for emission reduction actions. At the beginning of the Kyoto Protocol, many suspected about

⁶⁴² Shangrila Joshi, “North–South relations: colonialism, empire and international order” in ed. Paul G. Harris, *Routledge Handbook of Global Environmental Politics*. (London: Routledge Taylor & Francis Group, 2014), 281.

⁶⁴³ Article 1 of “Declaration on Right to Development Adopted by General Assembly resolution 41/128 of 4 December 1986”, *OHRCH*, accessed on 21 May 2019 from <https://www.ohchr.org/EN/ProfessionalInterest/Pages/RightToDevelopment.aspx>

China's adherence to international climate change regime. They see any prospect for emission reduction is improbable due to its high demand for energy to sustain its development.⁶⁴⁴ However, no later than a decade, still having a substantial role in the climate change problem, China has been gradually vital part of the solution, which transformed it into a leader for global climate policy setting instead of an unwilling actor.⁶⁴⁵

As of today, China has adopted a more cooperative approach for compromising a global climate change regime since the economic development goal of the country today necessitates a green development path due to the heavy environmental degradation in the country. As a result, the primary goal of Chinese foreign policy today aligns with the environmental priorities and the measures taken up to now within this scope can be said to be in line with the mitigation activities of the country. This alignment in turn gives a leverage China for pursuing a comprehensive climate change policy.

Accordingly, the economic sensitivities induced by the policies for settling environmental problems have also many implications for foreign trade. Particularly for China, environmental concerns have many reflections in foreign trade dynamics.

As for the foreign trade; it should be noted that national economic and green growth policies, indicated in Part 7.3 and 7.5.1; also some implications for foreign trade dynamics of the country. These policies have helped to decrease imports of fossil

⁶⁴⁴ Gørild Heggelund, "China's Climate Change Policy: Domestic and International Developments".

⁶⁴⁵ Zhongxiang Zhang, "Climate mitigation policy in China."

fuels as well with the utilization of indigenous renewable energy more and more.⁶⁴⁶ Therefore, keeping energy security concerns in mind, in order to attain its sustainable development goals China has experienced a transformation in its energy policies where low carbon energy sources have been promoted deeply. It is estimated that thanks to the strong deployment and policy support, the costs for renewable last to decrease and solar PV becomes China's cheapest form of electricity generation.⁶⁴⁷ Indeed, IEA appraises that "Average solar PV projects in China become cheaper than both new and existing gas-fired power plants around 2020 and cheaper than new coal-fired capacity and onshore wind by 2030."⁶⁴⁸

At the same time, vastly formed renewable energy technologies industry's export potential has been continuously increasing by aligning with the increasing demand for those globally. Thus, from a business development perspective, ensuring a sustainable demand for those technologies not only in China but also in any part of the world will benefit Chinese economy. As stressed previously, China has been investing in renewable energy technologies more than any country recently. Actually, this immense renewable energy installed capacity has been only possible with the help of the investments in renewable energy technologies by Chinese authorities, which now disseminate the expertise all over the world.

With the potential export gains of low carbon technologies, which is induced by domestic policies; pursuing international climate change policies calling for more

⁶⁴⁶ John Mathews and Xin Huang, "China's green energy revolution has saved the country from catastrophic dependence on fossil fuel imports", Energypost, 21 March 2018 <https://energypost.eu/chinas-green-energy-revolution-has-saved-the-country-from-catastrophic-dependence-on-fossil-fuel-imports/> (Accessed on May 21, 2019).

⁶⁴⁷ IEA, World Energy Outlook 2017- China.

⁶⁴⁸ IEA, World Energy Outlook 2017- China.

mitigation efforts globally will probably make Chinese exports better off. This is because China and some other leading countries staying competitive in green technologies is of great importance⁶⁴⁹

This anticipated improvement in Chinese exports is expected not only from renewable energy technologies but also other low carbon technologies such as the lately targeted industries such as new electric vehicles, railways and new materials as highlighted in previous discussions. These focused industries might contribute to the export figures of China particularly after 2025. Indeed, China is expected to constitute one-third of the world's new wind power and solar PV installments and more than 40% of worldwide investment in electric vehicles (EVs) by 2040⁶⁵⁰, which will be possible to a large extent with utilization of its own manufacturing capabilities.

Therefore, inducing demand for new segments as well as renewable energy technologies will serve to export potential of China in the near future. Demand towards low carbon technologies globally could be most effectively induced under the Paris Agreement, whose dynamic review of NDCs might bring about more mitigation efforts and thereby more need for technologies contributing to the mitigation efforts.

On the other hand, China strictly objects any kind of trade related response measures under the negotiations both UNFCCC and PA by aligning with other developing countries. This alignment is due the fact that these developing countries are thought and expected to be hosting the low emitting industries as a result of

⁶⁴⁹ Miranda A. Schreurs, "The Paris Climate Agreement and the Three Largest Emitters", 11.

⁶⁵⁰ IEA, *World Energy Outlook 2017 Executive Summary*, 4 <https://www.iea.org/weo/china/> (accessed on 21 May 2019)

relocation impacts as a result of carbon leakage problem of Countries with solid mitigation measures such as emission caps.

The current status of response measures discussions under the PA, where a non-punitive architecture is adopted currently makes China and other developing countries feel better off as being far away from the threat of Border Carbon Adjustments at least under the UNFCCC provided that they completed the ratification procedures.⁶⁵¹

Furthermore, the increased tensions and current trade war between China and US pushes China for behaving more constructive within other international platforms such as the climate change regime so as to abstain from any other trade sanctions like border carbon adjustments that might emerge from staying out of global consensus.

One more point is that a thorough analysis of climate policy drivers of China implies that most of the drivers might interact with one another. For instance, the foreign trade concerns might influence the other factors such as attitudes of leaders and politicians, power of industrial lobby groups, civil society and financial returns and outlays. As discussed above Chinese industrial lobby groups have close connections with the CCP and central governmental authorities. With the flourishing and consolidation of power of low carbon technologies' stakeholders;

⁶⁵¹ Based on authors 'own experiences during UNFCCC negotiations on response measures between 2012-2018 when she served as a climate negotiator in Turkish delegation and various G77 and China Submissions and Statements. For some striking examples please refer to UNFCCC, "Submission by the G77 and China on options to strengthen opportunities for cooperation and collaboration among Parties related to SBSTA agenda item 10(a) and SBI agenda item 15(a)", 11 June 2014. Accessed on December 1, 2019 https://unfccc.int/files/adaptation/application/pdf/dsubmission_g77_11_june_2014.pdf; G77, "Statement Made By Ambassador Nozipho Mxakato-Diseko On Behalf Of The Group of 77 and China At The Closing Plenary Of The 43rd Session Of The Subsidiary Body For Implementation (Sbi43). Paris, France, 4 December 2015", 2015, Accessed on December 1, 2019 from <http://www.g77.org/statement/getstatement.php?id=151204b>.

in order for these sectors increase their revenues export orientation will probably matter. So, the impact of lobby groups will be oriented by the foreign trade concerns of these actors in the near future despite some failed efforts of current high emission industry pressure groups.

Another example for the relation of various actors is about the foreign policy goals and foreign trade concerns. Chinese foreign policy calls for economic development predominantly where the special importance is paid to exports. Therefore, any activity enlarging export base of China will contribute to the development efforts of the country and thereby the foreign policy objectives of it.

As a result, although China has plenty of domestic reasons for greening its industries, including improving health and delivering greater efficiency⁶⁵²; the international drivers have driven the international climate change policy of the China basically. Indeed, a closer look on Chinese foreign trade structure shows that China can benefit heavily from an overarching climate change regulation. It is because being miserably dependent on fossil fuel imports, China improves its energy security conditions with more utilization of renewables. Moreover, the increasing volume of renewables in energy mix makes China more comfortable in terms of implementation of climate mitigation policies.

In conclusion, based on an in-depth analysis of policy drivers, it can be asserted that Chinese international climate change policy is driven also by international factors like foreign trade concerns in addition to domestic factors. While determining its stance towards to UNFCCC international climate change negotiations particularly for rule book of Paris Agreement; China undoubtedly keeps in mind its foreign trade potential principally. In addition, domestic factors

⁶⁵² Fred Pearce, “ With China in the Lead, New Obstacles to Climate Progress Are Emerging”.

and international factors are in close relation as follows: domestic factors like sufficiency of climate policy and mitigation capacity, legislative factors and vulnerability of the country in terms of human health influence the climate change policy making process by influencing foreign trade dynamics in the short run at least.

As a matter of fact, the commercial concerns regarding international trade matter for climate policy design because the transformation of China towards a low carbon economy has gradually proved to be bringing about some export opportunities for the country as well as mitigation benefits. This relation substantiates the dynamic between domestic and international factors in the process of climate change policy making. What is more, these benefits in terms of export potential can be enhanced as a result of flourishing of new strategic sectors which also reinforce and facilitate low carbon economy. Therefore, the interplay between domestic and international factors reflect the market and business development concerns of the EU originating from its increased competitiveness.

7.7 Conclusion

In this chapter the Chinese Climate Change Policy has been examined extensively with an aim to assess the main domestic and international drives of it. So as to analyze the primary drivers of international climate change policy of the country, energy and climate change outlook of the country has been presented so that the drivers related to mitigation capacity and potential of the country are understood holistically.

It has been observed that China was one of the largest energy consumers globally which make it one of the largest GHGs emitters. Moreover, in a parallel fashion to

its economic growth rates necessitating reliance on energy; the GHGs emissions of the country have been steadily increasing. Although it is still dependent on fossil fuel resources for its energy, the increasing renewable energy capacity of the country, in fact the largest capacity additions of the world, is expected to improve the mitigation outlook of the country which was reflected in policy blueprints.

Following this energy and climate view, domestic and international policies of the country are investigated successively. Considering the domestic climate change policy, the domestic policy settings of the country regarding energy and climate change have been mapped in a detailed way. It has been noted that China has taken climate change issue as very crucial and appointed the NDRC as the main authority for climate policy. Moreover, it has been seen that China has taken lots of steps regarding climate change mitigation and adaptation. Thereafter, the international climate policies of the China so far have been reviewed in an historical order. China has experienced a radical transformation regarding its climate policy. While it perceived the climate change problem as the “historical responsibility” of developed countries and rejected taking any mitigation action till the early 2000s, the principle of CBDR started to make sense for China since the late 2000s. Thus, China has accepted that every nation can actualize some policies for climate change with regard to its respective capabilities.

By using all these analyses as a base, the domestic and international climate change policy drivers of the country have been discussed comprehensively. The analyses have demonstrated that international drivers more specifically the concerns regarding foreign trade structure of the country have been also influential on the climate policy design of the country in addition to domestic factors. Moreover, China has started to use the international climate regime as a business development tool for its low emission industries and sure it will be better off with a guaranteed increased demand that might be driven by Paris Agreement.

CHAPTER 8

TURKEY

8.1 Introduction

This chapter talks over the Turkey's climate change policies. In this regard, in the first part of the chapter, the energy and climate change outlook together with the existing climate policies of the country are explored. After this review, the domestic and international drivers of Turkish climate change policy are analyzed. In the final part of the chapter, how the international climate change policies of the country have been ascertained is discussed by utilizing these domestic and international policy drivers.

8.2 Turkish Energy and Climate Outlook

Turkey is one of the rapidly growing developing countries of the world with its strategic role in global economy and politics. As of 2017, it is the 22th largest exporter and 15th largest importer of goods and, the 17th largest exporter and importer of services in the world.⁶⁵³ Naturally, its rapidly growing economic activity locates it among the world's largest twenty emitter of GHGs, constituting

⁶⁵³ WTO, "Turkey Trade Profile", <http://stat.wto.org/CountryProfile/WSDBCountryPFView.aspx?Language=E&Country=TR> (Accessed on March 17, 2019)

nearly 0.93 percent of worldwide emissions.⁶⁵⁴ This is due to its ever increasing role in terms of energy production and consumption. As it presented in the key indicators of Turkey in Table-26, Turkey has a large amount of energy production and consumption due to its growing economy. Turkey’s electricity demand has been growing fastest among other OECD members since it has been experiencing a ration of % 5.5 annual average growth rate.⁶⁵⁵ Actually, its installed power has been recorded to be passing 88 GW as of January 2019.⁶⁵⁶ Similarly, its enlarging economic activity makes Turkey critical for the solution of the climate change problem in an equitable manner with its key position as a developing country listed in Annex- I to the UNFCCC.

Table 26: Key Turkish Indicators, 2016

Population (millions)	78	TPES/Population (toe/per capita)	2
GDP (billion 2010 USD)	1,122	TPES/ GDP (toe/ thousand 2010 USD)	0.12
GDP PPP	1,836	TPES/ GDP PPP (toe/ thousand 2010 USD)	0.07
Energy Production (mtoe)	36	Electricity Consumption/ Population (Mwh/ Capita)	3
Net Imports (mtoe)	106	CO2/TPES (t CO2/ toe)	2
TPES (mtoe)	137	CO2/ Population (t CO2/ capita)	4
Electricity Consumption (TWh)	244	CO2/GDP (kg CO2/ 2010 USD)	0.3
CO2 Emissions	339	CO2/GDP PPP (kg CO2/2010 USD)	0.18

IEA, US: Indicators for 2016 available at <http://www.iea.org/statistics/>

⁶⁵⁴ Johannes Friedrich, Mengpin Ge, and Andrew Pickens, “This Interactive Chart Explains World’s Top 10 Emitters, and How They’ve Changed”.

⁶⁵⁵ Ministry of Foreign Affairs, “Türkiye’nin Enerji Profili Ve Stratejisi”, from http://www.mfa.gov.tr/turkiye_nin-enerji-stratejisi.tr.mfa, (Accessed on March 17, 2019)

⁶⁵⁶ Ministry of Foreign Affairs, “Türkiye’nin Enerji Profili Ve Stratejisi”

If we examine in detail the course of Turkey’s GHGs emissions, as illustrated in Figure 6, we observe that emissions are continuously rising.⁶⁵⁷

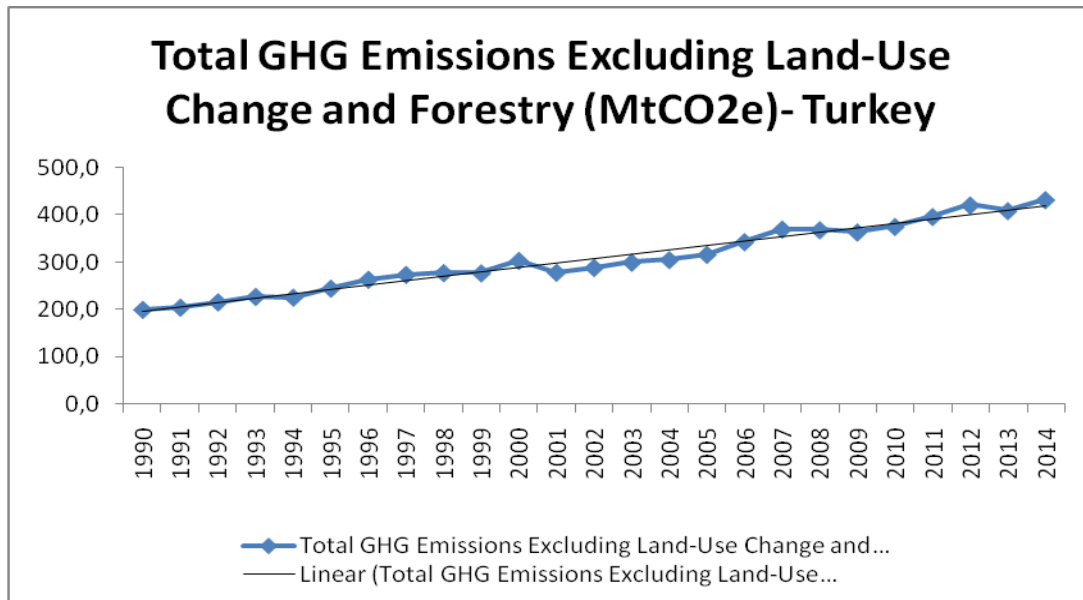


Figure 6: Turkey GHG Emissions

Drawn based on data retrieved from CAIT Climate Data Explorer. 2017. Washington, DC: World Resources Institute. Available online at: <http://cait.wri.org>

Turkey’s emissions have been resulted from mostly energy, which is followed by agriculture and industrial processes as disclosed in Table 27.⁶⁵⁸

⁶⁵⁷ Based on data retrieved from CAIT Climate Data Explorer Database, (Washington, DC: World Resources Institute, 2017), <http://cait.wri.org>, (Accessed June 4, 2017)

⁶⁵⁸ Based on data retrieved from CAIT Climate Data Explorer Database, (Washington, DC: World Resources Institute, 2017), <http://cait.wri.org>, (Accessed June 4, 2017)

Table 27: Emissions by Sector- Turkey

Emissions by Sector- Turkey (2014)					
Energy (MtCO ₂ e)	Industrial Processes (MtCO ₂ e)	Agriculture (MtCO ₂ e)	Waste (MtCO ₂ e)	Land-Use Change and Forestry (MtCO ₂)	Bunker Fuels (MtCO ₂)
314.76	38.24	43.19	35.29	64.86	11.01

Retrieved from CAIT Climate Data Explorer. 2018. Washington, DC: World Resources Institute. Available online at: <http://cait.wri.org>

Besides, on a subsector basis, Turkish energy emissions are mainly resulted from electricity production and other fuel combustion as presented in Table 28.⁶⁵⁹

Table 28: Emissions by Sector- Turkey

Emissions by Subsector- Turkey (2014)				
Electricity/ Heat (MtCO ₂)	Manufacturing/ Construction (MtCO ₂)	Transportation (MtCO ₂)	Other Fuel Combustion (MtCO ₂ e)	Fugitive Emissions (MtCO ₂ e)
143.39	44.89	60.91	62.07	3.5

Retrieved from CAIT Climate Data Explorer. 2018. Washington, DC: World Resources Institute. Available online at: <http://cait.wri.org>

The trajectory of emissions has lots of things to say regarding the mitigation capacity of the country. According to GHGs emission projections disclosed in its 7th national submission to UNFCCC as disclosed in Figure 7 below, Turkish emissions will continue to rise constantly in the projected period up to 2030.⁶⁶⁰

⁶⁵⁹ Based on data retrieved from CAIT Climate Data Explorer Database, (Washington, DC: World Resources Institute, 2017), <http://cait.wri.org>, (Accessed June 4, 2017)

⁶⁶⁰ UNFCCC, "Turkey's Seventh National Communication to the UNFCCC, 2018" https://unfccc.int/sites/default/files/resource/496715_Turkey-NC7-1-7th%20National%20Communication%20of%20Turkey.pdf, (Accessed on April 15, 2019 from), 121.

According to the projections with measures taken, the emissions are estimated to mitigate to 790 million ton CO₂e in 2025 and 929 million ton CO₂e in 2030 being 15% and 21% less as compared to Business As Usual Scenario successively.⁶⁶¹ In the disclosed projections, Turkey has not declared a peak year for its GHGs emissions yet.

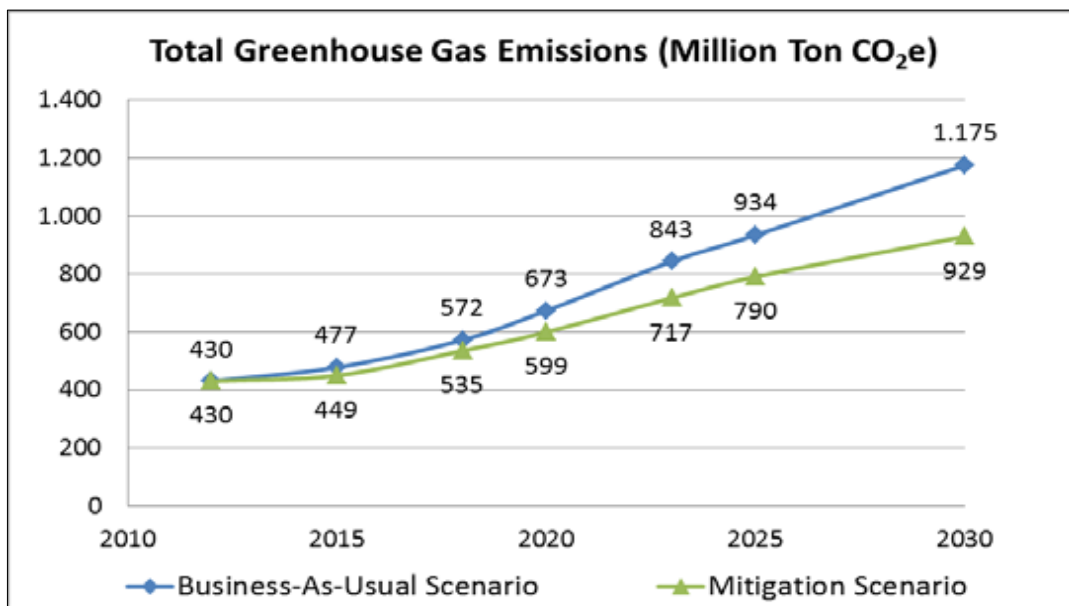


Figure 7: Key GHG Indicators

UNFCCC, Seventh National Submission of Turkey to the UNFCCC accessed from <https://unfccc.int> on 15 April 2019.

As a matter of fact, in order to evaluate the mitigation outlook and potential of country, energy outlook should be cautiously assessed because the main cause of Turkish emissions is the energy.

As it is realized from Table 29 below, Turkish energy production rests on mainly coal, geothermal and hydro resources. Therefore, the share of renewables in

⁶⁶¹ UNFCCC, “Turkey’s Seventh National Communication to the UNFCCC, 2018”.

Turkey’s energy production is satisfactory. ⁶⁶² Among fossil fuels, coal has the largest share which is followed by crude oil in energy production. However, this fact is not strange since renewables are getting popular rapidly and renewable power capacity is expected to increase by 50 % in 2019- 2024 over the world, which will probably reflect itself in Turkish energy profiles too.⁶⁶³

Table 29: Turkish Energy Outlook

Energy Production (in thousand tonnes of oil equivalent (ktoe) on a net caloric value basis)		Share
Coal	15,498	43%
Crude Oil	2,721	7.5%
Natural Gas	302	1 %
Nuclear	-	-
Hydro	5,781	16 %
Geothermal, Solar etc.	8,681	24%
Biofuels and Waste	3,119	8.5%
Total	36,102	100 %

IEA, Turkey: Balances for 2016 available at <http://www.iea.org/statistics/>

8.3 Domestic Climate Change Policies

Turkey attracts the attention of global climate community because of the fact that as a rapidly growing developing country it has been continuously increasing its GHGs emissions. Notwithstanding Turkey is a developing country; it has not enjoyed the concessions in a similar vein to other developing countries with regard to the international climate change regime. This asymmetry has always been the primary determinants of Turkish climate change politics.

⁶⁶² IEA, Turkey: Balances for 2016, <http://www.iea.org/statistics/>, (Accessed August 6, 2107)

⁶⁶³ IEA, “Renewables- Market analysis and forecast from 2019 to 2024”.

To begin with *Climate Change Policy Actors*, despite the existence of various public and private stakeholders influential on Turkish climate change policy; the main actor in Turkish Climate Change Policy is the Climate Change and Air Management Coordination Board. Its members from public sector are listed as: the Ministry of Environment and Urbanization (coordinating agency), the Ministry of Foreign Affairs, the Ministry of Energy and Natural Resources, the Ministry of Agriculture and Forestry, the Ministry of Finance, the Ministry of Trade, Ministry of European Union, the Ministry of Internal Affairs, The Ministry of Education, the Ministry of Health, the Ministry of Transport and Infrastructure, the Ministry of Industry and Technology, and members from private sector are: The Union of Chambers and Commodity Exchanges of Turkey, Turkish Industry and Business Association and Independent Industrialists' and Businessmen's Association.⁶⁶⁴

The Board mainly sets the general direction of the climate change politics thereby aligns the domestic and international climate change policies in the country. In terms of developing and implementing the relevant policies, the Ministries are the main actors. Typically, Ministry of Foreign Affairs, Ministry of Environment and Urbanization and Ministry of Energy and Natural Resources are the most influential actors on international climate policy of Turkey. Last but not least, for international climate policy making the President and Grand National Assembly are decisive.

Climate Change Plans and Strategies are continuously improving in Turkey. Turkish state policies has recognized climate change as a primary issue explicitly

⁶⁶⁴The members list available at <http://www.csb.gov.tr/projeler/iklim/index.php?Sayfa=sayfa&Tur=webmenu&Id=12433> accessed on 17 March 2019, is updated according to the revisions in Ministries as a result of transition to the new Government model and Presidential Organization.

beginning from 8th Five Year National Development Plan prepared for the period of 2000- 2006.⁶⁶⁵ Moreover, 9th and 10th Five Year National Development Plans and the national sustainable report “Claiming the Future” clearly emphasized Turkey’s green growth vision.⁶⁶⁶ Therefore, with the articulation of green growth term in grand development plan of the country, the green growth policies have been started to introduce in several policy areas in Turkey.

The priorities of energy policies of Turkey are the main determining factors for the climate change policy design of the country. In this regard, By-Law on Renewable Energy Resource Areas (YEKA) and Renewable Energy Sources Support Mechanism (YEKDEM) have considerably accelerated wind and solar power investments especially at the same time improves energy security by reducing import dependency Besides, energy efficiency in industry and buildings have been covered by several policy steps. Furthermore, as specified in numerous policy papers nuclear energy will improve supply security of energy together with contributions to the mitigation of GHGs.⁶⁶⁷

In a parallel fashion to its international developments regarding climate change; Turkey has taken corresponding steps domestically in its development plans. The domestic climate change policy is framed by National Climate Change Strategy, whereas it is supplemented by the National Climate Change Action Plan incorporating necessary steps to tackle with the global warming problem.

⁶⁶⁵ UNFCCC, “Turkey’s Seventh National Communication to the UNFCCC, 2018”, 74.

⁶⁶⁶ UNFCCC, “Turkey’s Seventh National Communication to the UNFCCC, 2018”, 74.

⁶⁶⁷ UNFCCC, “Turkey’s Seventh National Communication to the UNFCCC, 2018”, 21.

With the aim of contributing to the global efforts to tackle with the impacts of the climate change, Turkey developed its *National Climate Change Strategy (2010-2023)*. It encapsulates the objectives of the country in the short, middle and long term with respect to the climate change. The primary strategic goals expressed in the Strategy are reflecting the mitigation and adaptation policies which are consistent with the UNFCCC principle of “common but differentiated responsibilities” (CBDR) in the national development plans, contributing to global GHGs mitigation policies within the capacity of the country which means restricting the rate of growth of national GHGs without hindering its development program besides other instrumental goals.⁶⁶⁸

There are short, middle and long terms objectives for Greenhouse Gas Emission Control (energy, transportation, industry, waste, land use, agriculture and forestry), Adaptation to Climate Change, Technology Development And Transfer, Finance, Training, Capacity Development And Institutional Infrastructure And Monitoring And Evaluation.⁶⁶⁹

The short and middle term objectives do not indicate quantified targets instead they designate the policy orientation. For instance, most prominent short and middle term energy objectives are utilizing all domestic energy sources at maximum, fostering low and zero GHGs emission technologies, preemptively clean coal technologies, renewable energy and nuclear energy and supporting R&D activities

⁶⁶⁸ The Ministry of Environment and Urbanization, “Climate Change Strategy 2010- 2023”, [https://webdosya.csb.gov.tr/db/iklim/editordosya/iklim_degisikligi_stratejisi_EN\(2\).pdf](https://webdosya.csb.gov.tr/db/iklim/editordosya/iklim_degisikligi_stratejisi_EN(2).pdf) (Accessed March 28, 2017).

⁶⁶⁹ The Ministry of Environment and Urbanization, “Climate Change Strategy 2010- 2023”.

on clean technologies and energy resources. On the other hand, long term energy objectives call for more measurable actions such as reducing energy intensity in 2020 as compared to 2004 levels, increasing the share of renewable energy in total energy production to 30% by 2023, raising the wind electricity production capacity to 20,000 MW and geothermal electricity to 600 MW. Moreover, GHGs emissions from electricity production are planned to be reduced by 7% as compared to Reference Scenario by 2020.⁶⁷⁰ On the other hand, the set of objectives presented in land use, agriculture and forestry sector cover very detailed and structured actions. For instance, in the middle term 2.3 million hectares of land planned to be afforested and rehabilitated and 181.4 million tons of carbon estimated to be absorbed by forest areas up through 2020.⁶⁷¹

National Climate Change Action Plan (2011–2023) formulated so as to assure the implementation of the National Climate Change Strategy. It basically includes strategic goals and guidelines on GHGs emission controls and on climate change adaptation for 2011-2023 period.⁶⁷² The plan encapsulates 541 actions regarding agriculture, forestry, energy, transport, industry, waste, buildings, and adaptation to climate change.⁶⁷³

⁶⁷⁰The Ministry of Environment and Urbanization, “Climate Change Strategy 2010- 2023”.

⁶⁷¹ The Ministry of Environment and Urbanization, “Climate Change Strategy 2010- 2023”

⁶⁷² The Ministry of Environment and Urbanization, “Climate Change Strategy 2010- 2023” and The Ministry of Environment and Urbanization, “Climate Change Action Plan 2011-2033”
<https://www.csb.gov.tr/db/iklim/banner/banner591.pdf> (Accessed on January 12, 2018)

⁶⁷³ UNFCCC, Turkey’s Seventh National Communication to the UNFCCC, 2018, 15

On the other hand, *National Climate Change Adaptation Strategy and Action Plan (2011- 2020)* was of great importance for Turkey. The anticipated impacts of climate change, some of which having been already experienced, such as water scarcity, soil losses, erosion, modification of river/basin regimes, diminishing surface waters, floods, degradation of marine systems, forest fires, decreasing agricultural productivity urged Turkey for undertaking an Adaptation Strategy encompassing actions.⁶⁷⁴ The comprehensive national climate change adaptation strategy marked the extent of vulnerability of the country in various aspects in addition to outlining concrete steps for tackling with those impacts.

8.4 International Climate Change Policy

Turkey gingerly designed its international climate change policy in 1990s as a result of its inclusion in Annex I and Annex II Lists of UNFCCC with the other developed countries of OECD. Its continuous efforts to be reclassified under the UNFCC failed in late 1990s.⁶⁷⁵ Finally in Marrakesh Climate Change Conference in 2001, it achieved to be deleted from the Annex II List, which defines the Parties in a position to provide financial and technology supports for developing countries' climate efforts.⁶⁷⁶ With this decision Turkey was not only deleted from Annex II

⁶⁷⁴For further details please refer to The Ministry of Environment and Urbanization, "Turkey's National Climate Change Adaptation Strategy and Action Plan", 29 <http://www.dsi.gov.tr/docs/iklim-degisikligi/turkeys-national-climate-change-adaptation-strategy-and-action-plan.pdf?sfvrsn=2>, (Accessed on January 12, 2018)

⁶⁷⁵ Volkan Ş. Ediger, "Küresel İklim Değişikliğinin Uluslararası İlişkiler Boyutu ve Türkiye'nin Politikaları", *Mülkiye Dergisi* 32, Sayı 259, (2008), 147.

⁶⁷⁶ UNFCCC, "Report of The Conference of The Parties On Its Seventh Session, Held At Marrakesh From 29 October To 10 November 2001" (FCCC/CP/2001/13/Add.4), 21 January 2002, <https://unfccc.int/documents/2521> (Accessed on March 18, 2019)

List; but also Parties were invited to recognize the special circumstances of Turkey, which puts Turkey in a position different from other Annex I Parties to the Convention.⁶⁷⁷ After those exhaustive negotiation sessions and acceptance of its exclusion from Annex II List, Turkey made the decision of ratification of the UNFCCC- in 2004.⁶⁷⁸ This delay, and Turkey's efforts reflected its unique position in terms of its emissions. While Turkey has almost no historical responsibility with its very low cumulative GHGs emissions, it has been among the countries with fastest growing emissions.⁶⁷⁹

Whereas the UNFCCC aimed to stabilize GHGs emissions; Kyoto Protocol, concluded in 1997, was the first international effort resulted in country specific commitments to mitigate GHGs. Turkey ratified Kyoto Protocol in 2009 after it entered into practice in 2005.⁶⁸⁰ Since Turkey ratified Kyoto Protocol after its entry into practice, Turkey had not been listed among the Annex B countries taking quantified emission reductions, which enabled Turkey being an Annex I country without any pledge for Kyoto Period. In general, some scholars assess Turkey's

⁶⁷⁷ UNFCCC, "Proposal to amend Annexes I and II to remove the name of Turkey and to amend Annex I to add the name of Kazakhstan" <https://unfccc.int/process-and-meetings/the-convention/history-of-the-convention/proposal-to-amend-annexes-i-and-ii-to-remove-the-name-of-turkey-and-to-amend-annex-i-to-add-the-name> (Accessed on March 18, 2019)

⁶⁷⁸ UNFCCC, "Turkey", http://unfccc.int/tools_xml/country_TR.html, (Accessed March 17, 2019)

⁶⁷⁹ Volkan Ş. Ediger, "Küresel İklim Değişikliğinin Uluslararası İlişkiler Boyutu ve Türkiye'nin Politikaları", 147.

⁶⁸⁰ Ministry of Energy, Climate Change and International Negotiations, accessed on 18 March 2019 from <https://www.enerji.gov.tr/en-US/Pages/Climate-Change-and-International-Negotiations>

this notion of climate change policy as “the politics of special circumstances” for abstaining from mandatory pledges.⁶⁸¹

During post- Kyoto climate change negotiations, Turkey focused on its special circumstances and tried to operationalize this with various decisions so as to ensure its eligibility for finance and technology transfers as well as crystallizing its post-Kyoto posture. With this regard, during COP 16 at Cancun, COP 17 at Durban reaffirmed Turkey’s special circumstances whereas the decisions at COP 18 at Doha and COP 20 at Lima, urged Annex II countries to provide funding to Annex I countries including those with special circumstances like Turkey.⁶⁸²

Nonetheless, Turkey defended the distinction of developed and developing countries with regard to climate finance in Paris Framework.⁶⁸³ However, it has not assured its access to climate finance beyond 2020⁶⁸⁴ even it completes the ratification process.

⁶⁸¹ Turhan, Ethemcan, Semra Cerit Mazlum, Ümit Şahin, Alevgül H. Şorman, and A. Cem Gündoğan. 2016. "Beyond special circumstances: climate change policy in Turkey 1992-2015". *Wiley Interdisciplinary Reviews: Climate Change*. 7, no. 3: 448-460.

⁶⁸² The Ministry of Energy and Natural Resources, “Climate Change and International Negotiations”, <https://www.enerji.gov.tr/en-US/Pages/Climate-Change-and-International-Negotiations>

⁶⁸³ UNFCCC, “Modalities for Accounting Financial Resources Provided and Mobilized Through Public Interventions in Article 9, Paragraph 7, of the Paris Agreement”, https://www4.unfccc.int/sites/SubmissionsStaging/Documents/39_257_131177232379536691-Turkey%20submission.pdf (Accessed December 3, 2019)

⁶⁸⁴ UNFCCC, “Turkey High Level Statement COP24”, <https://unfccc.int/documents/186160> (Accessed December 1, 2019)

During Paris Climate Change negotiations Turkey defended that the current annex system does not reflect the present realities of the world since some of the largest emitters were among the Non- Annex I parties with no legal obligations.⁶⁸⁵

Therefore, the Paris Agreement language calling for each Party to put its effort in line with its capabilities called as INDC was consistent with the international climate policy of Turkey, which fundamentally asserts that Turkey has had no historical responsibility for the climate change problem and it will undertake relevant steps provided that all the countries undertake mitigation actions on the basis of CBDR.⁶⁸⁶

Turkey communicated its INDC on September 2015 with regard to Paris Agreement. Turkey's INDC which contained "up to 21 percent reduction in GHG emissions from the Business As Usual level by 2030" and its adherence to international climate finance for mitigation and adaptation actions.⁶⁸⁷ Indeed, this INDC means that Turkey's GHGs emissions will almost double by 2030.

Finally, Turkey's Proposal to amend the list of Parties included in Annex I to the Convention in COP 24 at Katowice with an aim to delete its name from Annex I

⁶⁸⁵ UNFCCC, "Submission by TURKEY on Work stream 1 of ADP", 29 August 2013, https://unfccc.int/files/documentation/submissions_from_parties/adp/application/pdf/adp_turkey_workstream_1_20130829.pdf, (Accessed November 12, 2018)

⁶⁸⁶ World Wildlife Fund, "Türkiye'nin İklim Politikası", https://www.wwf.org.tr/ne_yapiyoruz/iklim_degisikligi_ve_enerji/iklim_degisikligi/kuresel_iklim_degisikligi_ve_turkiye/turkiyenin_iklim_politikasi/ (Accessed on March 17, 2019)

⁶⁸⁷ UNFCCC, "Republic of Turkey Intended Nationally Determined Contribution", https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Turkey/1/The_INDC_of_TURKEY_v.15.19.30.pdf (Accessed March 19, 2019)

List thereby being a non- Annex I Party could hardly be included in the Provisional Agenda.⁶⁸⁸ Nevertheless, Turkey’s attempts to be listed with other developing countries failed at COP24, too. Because of this deadlock Turkey has not ratified the Paris Agreement, yet. Moreover, unless the asymmetry Turkey faces is not changed Turkey will probably not complete ratification process since it needs financial resources to cope with the adverse impacts of climate change problem in addition to mitigate it on an equitable basis with other developing countries.⁶⁸⁹

8.5 Drivers of Turkish Climate Change Policy

In this part, key drivers of Turkish Climate Change Policy are unveiled with an aim to assess which factors are more decisive on the final policy configuration of the country. In order to facilitate the analysis, the drivers are discussed in two main groups as domestic and international.

8.5.1 Domestic Drivers of Climate Change Policy

As the domestic drivers of climate policy of the country *Vulnerability of the Country, Sufficiency of Domestic Climate Change Policy and Mitigation Potential*,

⁶⁸⁸ UNFCCC, “Proposal from Turkey to amend the list of Parties included in Annex I to the Convention”, <https://unfccc.int/fr/node/184129>, (Accessed March 19, 2019)

⁶⁸⁹ “Her Koşulda İklim Değişikliği İle Mücadeleye Devam Edeceğiz”, *İklim Haber*, December 2018 <https://www.iklimhaber.org/mehmet-emin-birpinar-her-kosulda-iklim-degisikligi-ile-mucadeleye-devam-edecegiz/>, (Accessed on March 19, 2019)

Legislative Structures, Attitudes of the Leaders/Politicians and Power of Industrial Lobby Groups and Civil Society are analyzed extensively below.

To begin with *Vulnerability* of the country, Turkey as lying on Mediterranean basin is highly vulnerable to the impacts of climate map as the 72th among the 181 countries most affected from climate change in the period 1998- 2017 according to Global Climate Change Risk Index⁶⁹⁰. Additionally, Turkey is ranked as the 21th riskiest country globally in the Notre Dame Global Adaptation Initiative Vulnerability rankings, which is measured by “a country’s exposure, sensitivity and ability to adapt to the negative impact of climate change”⁶⁹¹

According to research results presented within United Nations Development Program Turkey report, 1.2 Celsius Degree annual temperature increases and 5% annual precipitation decreases by 2030 and 2 Celsius Degree and 10% respectively by year 2050 are estimated for Turkey.⁶⁹² Moreover, 20% decrease in surface water by 2030 is expected.⁶⁹³ Particularly for Gediz and Greater Menderes Basins this loss is anticipated to reach 50%, which will hamper agricultural, industrial and domestic water usages.⁶⁹⁴ Likewise, climatic forecasts within the context of UN

⁶⁹⁰ Global Climate Change Risk Index 2019 (GCCRI).

⁶⁹¹ University of Notre Dame, Rankings.

⁶⁹² UNDP Turkey, “İklim Değişikliği & Türkiye Etkiler, Sektörel Analizler, Sosyo-Ekonomik Boyutlar”, Nisan 2007, 6-7 https://www.tobb.org.tr/Documents/yayinlar/iklim_degisikligiveturkiye.pdf (Accessed on 17 March 2019).

⁶⁹³ UNDP Turkey, “İklim Değişikliği & Türkiye Etkiler, Sektörel Analizler, Sosyo-Ekonomik Boyutlar”

⁶⁹⁴ The Ministry of Environment and Urbanization, “Turkey’s National Climate Change Adaptation Strategy and Action Plan”, 16.

Projects produced similar results indicating visible temperature increases and a precipitation regime influential on climate-related natural disaster risks, economic sectors and settlements.⁶⁹⁵ Similarly, continuously increasing incidence of extreme weather events since 1990s illustrates how vulnerable the country is.⁶⁹⁶ In harmony with these, a comprehensive analysis of vulnerability of Turkey for climate change, the Seventh National Communication to the UNFCCC presents that there will be 3 Celsius Degree temperature increase in the country by 2040 besides remarkable increases in precipitations in most parts of the country. These changes is anticipated to have impacts on water scarcity, crop production, livestock production and fisheries as well as bringing extreme weather events and disasters.⁶⁹⁷

All in all, Turkey can be thought as vulnerable to the adverse impacts of climate change. However, its vulnerability has been discussed by a very narrow group of officers or politicians and it has been reflected in its climate policy discourse and priorities to a limited extent so far.

With regard to *Sufficiency of Domestic Climate Change Policy and Mitigation Potential* Turkey's outlook is summarized as follows. Similar to the evaluations of independent scientists as "critically insufficient" in terms of climate actions⁶⁹⁸,

⁶⁹⁵ UNDP Turkey, İklim Değişikliği & Türkiye Etkiler, Sektörel Analizler, Sosyo-Ekonomik Boyutlar, 6-7.

⁶⁹⁶ OECD, *Environmental Performance Reviews: Turkey Highlights 2019*, OECD Environmental Performance Reviews, from <http://www.oecd.org/environment/country-reviews/Highlights-Turkey-2019-ENGLISH-WEB.pdf> (accessed on April 8, 2019).

⁶⁹⁷ UNFCCC, Turkey's Seventh National Communication to the UNFCCC, 2018, 138- 143.

⁶⁹⁸ Climate Action Tracker, "Turkey", 30 November 2018 <https://climateactiontracker.org/countries/turkey/> (Accessed on April 4, 2019).

Turkish climate policies are rated as “very low” by Climate Change Performance Index (CCPI) 2018,⁶⁹⁹ which plots the climate policies of countries with respect to their climate policy map, energy use, emissions and renewable energy performances and assigns them some scores. According to CCPI 2018, Turkey is ranked as 47th among 60 countries.⁷⁰⁰

Moreover, in Notre Dame Global Adaptation Initiative Readiness Index, Turkey is ranked as 46th and in terms of ND GAIN Index assessing Vulnerability and Readiness together it is ranked as 61th.⁷⁰¹

In spite of the unfavorable evaluations of international community, Turkey has explained a material potential for its climate actions by pointing out its role in the reasons and cures for climate change problem. For instance, Turkey, as having the largest GHGs emission increase in the last decade among the OECD members, is anticipated to more than double its emissions in 2015- 2030; where emissions per capita still under OECD average.⁷⁰² Besides, Seventh National Submission of Turkey to the UNFCCC based on the projection models and relevant calculations discloses that the policies and measures to be implemented by the country will enable Turkey with a 15% mitigation capacity by 2025 and 21% by 2030.⁷⁰³

⁶⁹⁹ Jan Burck et al, *The climate change performance index Results 2018*.

⁷⁰⁰ Jan Burck et al, *The climate change performance index Results 2018*.

⁷⁰¹ University of Notre Dame, Rankings.

⁷⁰² OECD, *Environmental Performance Reviews: Turkey Highlights 2019*.

⁷⁰³ UNFCCC, Turkey's Seventh National Communication to the UNFCCC, 2018, 74.

Indeed, despite the fact that Turkey has no pledge for mitigation under UNFCCC under Kyoto Period, it has already taken some measures to promote low carbon technologies so as to mitigate emissions. Among those measures, one of the most accelerating one has been the feed-in-tariff system for renewable energy projects.⁷⁰⁴ Furthermore, National Climate Change Strategy including short term, mid-term and long term objectives and actions in the climate change action plan reflected according to these objectives make the climate policy sphere satisfactory. Particularly envisaged market mechanism for carbon is very crucial for Turkey's mitigation capacity. Besides, energy efficiency policies and relevant measures enclosed in National Climate Strategy discussed in 8.3 improves the mitigation capacity of the country. Particularly Measurement Reporting and Verification system put into effect in 2012, serves as a basis for developing further measures regarding GHGs.⁷⁰⁵

Moreover, the PMR Project discussed in part 8.3 constitutes a rich base for upcoming mitigation projects and serves a facilitator for Turkey to adopt more ambitious climate policies in the future.

Even the international rankings treat Turkish climate policy as insufficient by evaluating the ambition of it, Turkish climate policy can be thought as sufficient when its capability to attain energy and climate goals are considered. Specific

⁷⁰⁴ IEA, "Renewable Energy Law 2010, <https://www.iea.org/policiesandmeasures/pams/turkey/name-24961-en.php> (accessed on April 8, 2019)

⁷⁰⁵ The Ministry of Environment and Urbanization, "Legislation regarding GHGs Emissions", from <https://sera.csb.gov.tr/sera-gazi-emisyonlarina-iliskin-mevzuat-i-4643>. (Accessed on April 15, 2019)

works point out that Turkey's year 2023 renewable energy goals can be attained simply by putting into practice the accurate energy system planning.⁷⁰⁶

Therefore, Turkish climate change policies can be evaluated as nearly sufficient and the country has a material potential for mitigation when its energy policies are considered.

Legislative structures are basically tools that provide convenience or obstacles for climate policy making in a country. In this respect, Turkish legislative system allows climate policy making both in domestic and international domains smoothly. Indeed, Turkish legislative framework for climate policy making rooted to Environmental Law dated to 1982 and some other regulations within the scope of energy, transport, industry and agriculture to support climate policy making.⁷⁰⁷

Despite the fact that technical decisions with regard climate policies are orchestrated by Climate Change and Air Management Coordination Board; political decisions are taken by the relevant authorities depending on the substance of the matter based upon the assessments of Climate Change and Air Management Coordination Board. Following Turkey's transformation to Presidential system where the President is authorized with determining and executing all public policies; climate policy is expected to be navigated also by the Presidential organs such as Offices, Political Councils as well as Ministry of Environment.⁷⁰⁸ This

⁷⁰⁶ Cetin Önder İncekara, and Seyfettin Noyan Ogulata "Turkey's Energy Planning Considering Global Environmental Concerns". *Ecological Engineering* 102, (2017): 594

⁷⁰⁷ For a comprehensive list of all legislations that can be related to the climate change please refer to UNFCCC, Turkey's Seventh National Communication to the UNFCCC, 2018, 77- 83.

⁷⁰⁸ For a description of Turkey's New Government System please refer to A. Menaf Turan, "Türkiye'nin Yeni Yönetim Düzeni: Cumhurbaşkanlığı Hükümet Sistemi", *Social Sciences Research Journal* 7, No 3, (September 2018) 42-91.

transformation and unified leadership, might speed up the climate policy making processes in Turkey. On the other hand, regarding international climate change policy, per Article 87 of the Constitution, the approval and ratification of international treaties is under the duties and powers of the Grand National Assembly of Turkey.⁷⁰⁹

Therefore, it can be concluded that although the institutions, bodies and framework are well established for climate policy making, the international climate policy conclusion is a bit more onerous since the consent of Grand National Assembly of Turkey is required.

As for *Attitudes of the Leaders/Politicians*, in Turkey, the general attitude of leaders and politicians towards climate change can be noted down as neutral despite their changing discourses from time to time. The leading political figure, Turkish President R. Tayyip Erdoğan has not presented an apparent stance towards climate change. All the discourse revolves around the statements made during international meetings such as G20 summits, COP leaders's summits etc.⁷¹⁰ In these statements, the emphasis was on Turkey's search for a new climate regime on the basis of respective national capabilities.

⁷⁰⁹ The Grand National Assembly of Turkey, "Duties and Powers", <https://global.tbmm.gov.tr/index.php/EN/yd/icerik/13> (accessed on April 15, 2019)

⁷¹⁰For some of the statements of President Erdoğan please refer to <https://www.tccb.gov.tr/haberler/410/35967/cumhurbaskani-erdogan-kalkinma-ve-iklim-degisikligi-konulu-calisma-yemegine-katildi.html>; <https://www.yenisafak.com/video-galeri/haber/erdogan-iklim-degisikligi-zirvesinde-konustu-2068248>; <https://www.tccb.gov.tr/haberler/410/1369/iklim-degisikligi-ile-mucadelede-2020-sonrasi-donemde-yeni-bir-rejime-ihiyac-var>

Apart from Erdoğan and various Ministers of Environment holding the post in the last 5 years; the most influential figure can be noted as the chief negotiator for the climate change M. Emin Birpınar in terms of highlighting the contours of Turkish Climate Policy.⁷¹¹ In several statements during various meetings including climate negotiations and interviews; Birpınar reflected the Turkey's priority for being evaluated as a developing country for the purposes of UNFCCC and thereby sustaining its access to the climate finance after 2020.⁷¹² Besides, he emphasizes on the critical role in renewable energy for Turkey's climate policy and on promising opportunities of green technologies for Turkey's industrial production in the future.⁷¹³

In short, it can be concluded that Turkish leaders and politicians do not have a negative attitude towards climate change. While the high level politicians could be evaluated as neutral where the discourses are limited to the agenda; the more technical characters such as the climate envoy Birpınar has a multifaceted and assertive point of view for the issue.

To continue with *Power of Industrial Lobby Groups and Civil Society* Turkey reflects a unique outlook. Industrial production is of critical importance for Turkish economic output by constituting 20- 25% of GDP of the country.⁷¹⁴ As, the energy

⁷¹¹ M. Emin Birpınar who was Deputy Undersecretary for Ministry of Environment formerly holding the post of chief climate negotiator at the same time was appointed as the Deputy Minister of Environment keeping its chief climate change negotiator post as of 2018.

⁷¹² "Türkiye İklim Mücadelesinden Vazgeçecek mi?", İklim Haber, 10 December 2018, <https://www.iklimhaber.org/turkiye-iklim-mucadelesinden-vazgececek-mi/> (accessed on April 16, 2019)

⁷¹³ İsmail Özdemir, "Türkiye'nin önündeki en büyük fırsatlardan bir tanesi yeşil teknoloji", Anadolu Agency, <https://www.aa.com.tr/tr/turkiye/turkiyenin-onundeki-en-buyuk-firsatlardan-bir-tanesi-yesil-teknoloji/1307818> (Accessed on November 10, 2018)

⁷¹⁴ UNFCCC, Turkey's Seventh National Communication to the UNFCCC, 2018, 18

usage is crucial to the from 13.6 Mtoe to 33.3 Mtoe in 1990-2016 periods is striking.⁷¹⁵ In this regard, due to its significance for the economic output, the energy intensity of various industrial sectors can be decisive on their attitudes for climate policies of the country.

The most energy intensive sectors of Turkey are iron and steel, and cement constituting more than half of industrial energy usage. Additionally, largest part of the carbon emissions of Turkish industrial production is realized by cement and clinker production. However it should be underlined that as a result of modernization investments undertaken the emissions of cement facilities in Turkey are below the European averages. Moreover there are many internationally financed projects in the sector to decrease its emissions.⁷¹⁶

As a result, it might be concluded that although the Turkish industry is highly emission intensive, it puts lots of efforts to mitigate the emissions. However, the influence of Turkish Steel Producers' Association and Turkish Cement Manufacturers' Association are in terms of lobbying against climate measures will be decisive despite they did not raise any rigid objection yet.

Indeed, a very significant risk: "carbon leakage" shapes these industrial groups' attitudes regarding climate change particularly "in case of any carbon pricing mechanism applied. Carbon leakage is a matter of competitiveness as it is explained in Chapter 4. According to the calculations done under PMR Project, seven industrial sectors namely cement, ceramics, chemicals, glass, lime, metals,

⁷¹⁵ UNFCCC, Turkey's Seventh National Communication to the UNFCCC, 2018, 18

⁷¹⁶ Erinç Yeldan et. al, "Ekonomi Perspektifleri Gözünden İklim Değişikliği ile Mücadele Raporu", TÜSİAD, Aralık 2016, 46 -55 <https://tusiad.org/tr/basin-bultenleri/item/9507-tusiad-iklim-degisikligiyle-mucadeleyi-ozel-sektor-bakisiyla-ele-aliyor>. (Accessed on 16 April 2019)

paper and refineries are founded at high risk of carbon leakage in Turkey.⁷¹⁷ By considering these risks, the industrial pressure groups desire that sectoral and global competitiveness issues should be prioritized when designing Turkey's mitigation policy.⁷¹⁸

All in all, leading industrial associations try to reflect their views on the matter. For international climate change regime; three primary expectations of the industrial association Turkish Industry and Business Association (TUSIAD) are “a global wide strong consensus”, “fair conditions to guarantee level playing field” and “sufficient funding and technology transfer mechanisms”.⁷¹⁹

Actually, none of the industrial sectors have expressed their support or opposition for climate engagement for Turkey. Although their concerns for competitiveness are addressed⁷²⁰ and assessed under various mechanisms such as Partnership for Market Readiness (PMR) Project⁷²¹; they present neither a direct support nor an opposition for the country negotiation position.

⁷¹⁷ PMR Turkey, “Analytical Report 5: Assessment of Carbon Leakage Risk for Turkey under Carbon Pricing Policies”, May 2018, 18- 27 <http://pmrturkiye.org/tag/karbon-fiyatlandirma/> (Accessed on April 16, 2019)

⁷¹⁸ TUSIAD, “The Attitude Paper of TUSIAD on Dealing with Climate Change”, 11 October 2018 <https://tusiad.org/tr/basin-bultenleri/item/9991-tusiad-iklim-toplantilari-dusuk-karbonlu-kalkinma-surecinde-finansmanin-rolu-ile-basladi> (accessed on 1 August 2019).

⁷¹⁹ TUSIAD, The case of Turkish Industry on transition to low carbon economy: Opportunities and Challenges, COP 19 accessed on 16 April 2019 from <https://tusiad.org/tr/tum/item/8787-cop-19-bizme-iklim-degisikligi-ile-mucadele-ve-uyumda-yenilikcilik-yatirim-ve-finansmanin-rolu-paneli-tusiad-sunumu-dusuk-karbon-ekonomisine-geciste-turk-sanayisinin-durumu-firsatlar-ve-tehditler>

⁷²⁰ TUSIAD, “The Attitude Paper of TUSIAD on Dealing with Climate Change”

⁷²¹ PMR Turkey, Analytical Report 5: Assessment of Carbon Leakage Risk for Turkey under Carbon Pricing Policies”

Regarding the attitude of civil society, it can be concluded that there are several groups in Turkey who expect an increased ambition for climate policy making. For instance, the common declaration signed by 25 NGOs called for urgent and ambitious climate action during COP 24 in Poland.⁷²² These NGOs reflect their attitudes for concrete steps regarding climate change in various occasions. However, according to CIVICUS State of Civil Society Report 2017, the civil society is evaluated as "repressed" in Turkey⁷²³ so their influence on climate policy making is assumed not to be material in practice.

8.5.2 International Drivers of Climate Change Policy

The primary international drivers of climate policy can be listed as *Foreign Policy Objectives*, *Climate Change and Foreign Trade Interplay*, and *Financial Returns Outlays*. These are elaborated in detail below.

Foreign Policy Objectives and trajectory has been impressive on climate policy design almost in all countries. Turkish foreign policy shifting from “Kemalism” to neo-Ottomanism beginning with Turgut Ozal’s tenure entered into era of “strategic depth” with the Justice and Development Party’s ruling.⁷²⁴ Actually,

⁷²² CANEUROPE, “Civil Society Calls for Urgent and Ambitious Climate Action, <http://www.caneurope.org/docman/turkey/3463-ngo-statement-turkish-decision-makers-cop24/file> (Accessed on 1 August 2018)

⁷²³ CIVICUS, “State of Civil Society Report 2017”, <https://www.civicus.org/index.php/state-of-civil-society-report-2017#> (accessed on 3 August 2018)

⁷²⁴ Alexander Murinson, “The strategic depth doctrine of Turkish foreign policy”. *Middle Eastern Studies* 42, No. 6, (2006): 945–964.

Europeanization of Turkish Foreign Policy which had started long before survived to some extent under the strategic depth policy.⁷²⁵ The shift in foreign policy of the country has also become influential on climate politics of the country. Moreover, the increasing role of the trade in shaping foreign policy of Turkey is claimed.⁷²⁶ The impacts of foreign trade on climate policy is discussed in the next part in detail.

Therefore, two main orientations in Turkish foreign policy were influential in the development of climate policy: “strategic depth” vision in foreign policy and “gradual harmonization with the EU of all public policies”⁷²⁷ These two orientations required improving international image of the country, hereby resulted in a more constructive approach for global environmental problems.⁷²⁸ However, these orientations and approach do not mean taking all international regulations for granted. As a matter of fact, similar to its long assessment period for the decision to join to Kyoto Protocol; Turkey have been thoroughly analyzing the ratification of Paris Agreement.

Therefore, despite providing a favorable policy environment for passing international regulations in the field of environment; Turkish foreign policy does not guarantee an unquestioned acceptance of environmental treaties.

⁷²⁵ For the debates on Europeanization of Turkish Foreign Policy please refer to Mustafa Aydın and Sinem Açıkmış, “Europeanization through EU Conditionality: Understanding the New Era in Turkish Foreign Policy”, *Journal of Southeastern European and Black Sea Studies* 9, No.3, 2007.

⁷²⁶ Kemal Kirişçi, “The transformation of Turkish foreign policy: The rise of the trading state.” *New Perspectives on Turkey* 40, (2009), 52.

⁷²⁷ Gulçin Erdi Lelandais. "It's a question of prestige: Climate change as public policy in Turkey." *Turkish Review*, Feza, Green vs. Gray: Urbanizing Turkey, Vol. 5, No. 4, (2015) 5-6.

⁷²⁸Gulçin Erdi Lelandais. "It's a question of prestige: Climate change as public policy in Turkey."

Climate Change and Foreign Trade Interplay matters as an international driver for climate policy making. As a result of adoption of liberal policies since the 1980s, the Turkish economy has enjoyed a period of sizeable growth.⁷²⁹ In the new model policies for free market economy and exports were assigned a critical role. Accordingly, exports have started to constitute a crucial part of economic growth in the country.⁷³⁰ Turkish exports being nearly 3 million USD in 1980 reached to 168 billion USD as of 2018.⁷³¹ While the competitiveness and sophistication of Turkish exports and quality of export products improved by the time; exports are recognized as a key factor for Turkey to become a high income country by studies of international organizations, too.⁷³²

As for the relation of foreign trade and climate change, it should be noted at the beginning that these two interact in two ways: the trade of environmental goods and services and the trade of emission intensive products including fossil fuels as explained in Chapter 3 and 4. While high potential of trade in environmental goods make countries more eager to participate to international regimes which will induce the demand for those products and services; the threats arising from the potential measures taken over the emission intensive products within such regimes deter countries from supporting those regimes.

⁷²⁹ Investment Office, "Foreign Trade", <http://www.invest.gov.tr/en-US/investmentguide/investorguide/Pages/InternationalTrade.aspx> (accessed on April 18, 2019)

⁷³⁰ Cevat Bilgin and Sahbaz, Ahmet "*Türkiye'de Büyüme ve İhracat Arasındaki Nedensellik İlişkileri*", *Gaziantep Üniversitesi Sosyal Bilimler Dergisi* 8, No. 1 (2009): 177-198.

⁷³¹ Turkish Statistical Institute, "Foreign Trade Statistics," <http://www.turkstat.gov.tr/UstMenu.do?metod=temelist> (Accessed on April 18, 2019).

⁷³² For an example of such studies please refer to World Bank, *Turkey - Trading up to high income: country economic memorandum: Türkiye - Yüksek gelir statüsüne geçişte dış ticaretin rolü: ülke ekonomik raporu (Turkish)*, (Washington, DC: World Bank Group, 2014).

As to the Turkish case, Turkey is dependent on imports for energy, as a result of which there is a large gap in terms of trade in fossil fuels.⁷³³ In order to preserve its energy security Turkey tries to decrease its dependency on foreign fossil fuel imports. With this motivation, Turkey announced that it will be using more domestic resources such as coal and it started to construction of nuclear power station.⁷³⁴ However, the utilization of domestic fossil fuel resources is expected to decrease with the renewable energy investment policies and nuclear energy policies as disclosed in part 8.3.

With regard to the foreign trade in emission intensive products other than fossil fuels; it can be concluded from Table 30 that Turkey has a net importer in high emitter sectors mostly due to the high import volume of petrochemicals. On the other hand, its most important export sector among high emitters is the iron and steel. The ratio of high emitting sectors in Turkish exports decreased from 15% to 13% from 2000 to 2016; while that of imports has dropped from 29 % to 25% in the same period. Among the emission intensive products, Turkey is a net exporter of glass and ceramics and cement.⁷³⁵

As for environmental goods; the low carbon technologies including solar technologies like PV cells among the promising products for Turkish foreign trade

⁷³³ Mustafa Balat, "Security of energy supply in Turkey: Challenges and solutions", Energy Conversion and Management 51 (2010): 2000.

⁷³⁴ Enerji Bakanlığı, "Elektrik Enerjisi Piyasası ve Arz Güvenliği Strateji Belgesi", <https://www.enerji.gov.tr/File/?path=ROOT%2f1%2fDocuments%2fSayfalar%2fElektrik+Enerjisi+Piyasas%c4%b1+ve+Arz+G%c3%bcvenli%c4%9fi+Strateji+Belgesi.pdf> (Accessed on April 19, 2019).

⁷³⁵ The table is prepared by utilizing the data retrieved from ITC Trademap data base according to the HS sector codes.

similar to their increasing significance in world trade. The global trade in environmental goods is predicted to be around 2-3 trillion US dollars by 2020.⁷³⁶

These products involve renewable energy technologies including solar panels, wind turbines and energy-efficient products, besides air pollution, waste and water management technologies. Although Turkey is a net importer of environmental goods, the exports of those products more than doubled in the period of 2005- 2016 in total exports with a slight increase in their shares as seen from Table 31.⁷³⁷

When the increase in Turkish exports in emission intensive products and low carbon technologies are compared from 2005 to 2016, it is seen that Turkish low carbon products exports increased three times more as compared to exports of high emitting sectors.⁷³⁸

For development of the renewable energy in Turkey, Renewable Energy Law was exceptionally significant.⁷³⁹

⁷³⁶ UNEP, "Environment and Trade Hub".

⁷³⁷ The table is prepared by utilizing the data retrieved from ITC Trademap data base according to the HS sector codes.

⁷³⁸ The table is prepared by utilizing the data retrieved from ITC Trademap data base according to the HS sector codes.

⁷³⁹ Arseven Moroğlu, "Turkey Extends Certain Periods Specified Under Renewable Energy Legislation", Mondaq, 8 September 2019, <http://www.mondaq.com/turkey/x/841604/Renewables/Turkey+Extends+Certain+Periods+Specified+Under+Renewable+Energy+Legislation>, (Accessed December 1, 2019)

Table 30: Foreign Trade Turkey Carbon Intensive

Turkey	2001		2005		2012		2015		2016	
	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import
Foreign Trade of High Emitter Sectors (In Billions)	4.7	12.1	13.0	34.9	29.3	82.6	20.9	60.6	18.8	49.8
Glass and Ceramics	0.7	0.2	1.3	0.7	1.9	1.1	1.9	1.3	1.8	1.2
Paper Industry	0.3	0.8	0.6	2.0	1.0	3.4	1.2	3.4	1.4	3.4
Iron and Steel	3.0	2.6	7.7	10.6	17.4	17.4	12.0	17.5	11.2	17.5
Petrochemical Industry	0.4	8.3	2.6	21.3	7.7	60.1	4.5	37.8	3.2	27.2
Cement Industry	0.2	0.1	0.8	0.2	1.2	0.5	1.3	0.5	1.2	0.5
Total Foreign Trade	31.3	41.4	73.5	116.8	152.5	236.5	143.9	207.2	142.6	198.6
Share of High Emitter Products (%)	15%	29%	18%	30%	19%	35%	15%	29%	13%	25%

Retrieved from ITC Trademap Database available at <http://www.trademap.org/>

Table 31: Foreign Trade Turkey Environmental Goods

US Dollar Billion	2005	2006		2008	2009	2010	2011	2012	2013	2014	2015	2016
Turkey APEC List Exports	0.4	0.5		0.9	0.7	0.7	0.9	1.0	1.1	1.2	1.1	1.0
Turkey APEC List Imports	2.2	2.3	3.0	3.9	4.2	4.1	4.6	5.1	6.0	5.1	5.3	9.4
Turkey APEC List Foreign Trade Balance	-1.7	-1.8	-2.4	-3.0	-3.5	-3.4	-3.7	-4.2	-4.9	-3.9	-4.1	-8.4
World APEC List Trade	279.4	326.2	375.3	439.8	372.7	450.9	505.4	497.3	494.1	503.6	477.6	474.4
Turkey's Exports to World	73.5	85.5	107.3	132.0	102.1	113.9	134.9	152.5	151.8	157.6	143.9	142.6
APEC List Share in World Trade	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
APEC List Share in Turkey's Exports	0.6%	0.5%	0.6%	0.7%	0.7%	0.6%	0.7%	0.6%	0.7%	0.7%	0.8%	0.7%

Retrieved from ITC Trademap Database available at <http://www.trademap.org/>

Turkish energy targets such as increasing the share of renewable energy in total energy production to 30% by 2023, raising the wind electricity production capacity to 20,000 MW and geothermal electricity to 600 MW will bring about lots of opportunities for renewable energy technologies. In fact, there is a growing interest for new renewable energy investments in the country.⁷⁴⁰ Therefore, various support mechanisms for utilization of domestic sources are proposed.⁷⁴¹ With these incentive mechanisms, flourishing of low carbon technologies is anticipated which might also be directed to exports.

Turkish exports of emission intensive products nearly nineteen times larger than exports of environmental goods as seen from Tables 30 and 31⁷⁴². Therefore, the sustainability of emission intensive products is foremost priority for Turkish authorities.

With this regard, elimination of risks of additional duties for emission intensive goods is more crucial than new export opportunities of environmental goods. The most important threat for interrupting the carbon intensive exports of the country are border carbon adjustments, which might be launched by the main export destinations. For example, the EU, the main export destination of the country, explained that it will consider environmental safeguards if the Turkish customs

⁷⁴⁰ Anadolu Agency, "Türkiye'de Yenilenebilir Enerji Yatırımı için Yüksek İştah Var", 4 January 2019 <https://www.aa.com.tr/tr/ekonomi/turkiyede-yenilenebilir-enerji-yatirimi-icin-yuksek-istah-var/1355734> (Accessed on 19 April 2019)

⁷⁴¹ Official Gazette, "Yenilenebilir Enerji Kaynaklarından Elektrik Enerjisi Üreten Tesislerde Kullanılan Yerli Aksamın Desteklenmesi Hakkında Yönetmelik", No: 29752, 24 June 2016.

⁷⁴² The table is prepared by utilizing the data retrieved from ITC Trademap data base according to the HS sector codes.

agreement enhancement leads greater air pollution and emissions.⁷⁴³ Or EU's intention to suspend trade agreements if the counter party was found to be violating the sustainability chapter.⁷⁴⁴ This suspension clause can be easily interpreted for extension to the Paris Agreement ratification process, too.

Therefore, the foreign trade structure and dynamics of the country are expected to be pushing the country for a more constructive approach for compromising on the international climate change regime. Furthermore, the country might defeat the risks of being outside of the regime as well as enjoy arising export potential from environmental goods and technologies by joining to the Paris Agreement in the future.

Financial Proceeds and Outlay one of the most influential drivers for climate change policy making. As a developing country, Turkey needs significant resources to fulfill its environmental objectives, relevant policies and projects. With this aim, Turkey seeks for funding from international institutions.⁷⁴⁵ Internationally funded projects are not only at national scope, but also some local level projects have been funded by international funds. Participating to

⁷⁴³ European Commission, *Study of the EU-Turkey Bilateral Preferential Trade Framework, Including the Customs Union, and an Assessment of Its Possible Enhancement Final Report*, 26 October 2016

⁷⁴⁴ European Commission, "Non Paper of the Commission Services: Feedback and way forward on improving the implementation and enforcement of Trade and Sustainable Development chapters" in *EU Free Trade Agreements* http://trade.ec.europa.eu/doclib/docs/2018/february/tradoc_156618.pdf (Accessed on April 18, 2019)

⁷⁴⁵ Gulçin Erdi Lelandais. "It's a question of prestige: Climate change as public policy in Turkey". *Turkish Review, Feza, Green vs. Gray: Urbanizing Turkey* 5, No. 4, (2015):7

international regimes accelerated the access to these international funds. Indeed, most of those projects were initiated after Turkey's signature of the UNFCCC.⁷⁴⁶

However, Turkey cannot use regulatory carbon markets via CDMs and JIs under the Kyoto Protocol since it has not declared quantified emission reduction targets like other Annex I Countries did. As a result of this, Turkey has taken advantage of merely voluntary emission trading within some offsetting projects. The calculations display that emission reduction potential in the period between 2013-2020 from renewable energy, energy efficiency and solid waste management projects are 1,071 million tons of CO₂ equivalent with total proceeds from carbon certificates are expected to be in the array of 19,775– 33,386 million US Dollars.⁷⁴⁷

Therefore, the potential gains from emission trading in Paris Agreement Era is crucial. In the Paris Era, under certain conditions with linkages with EU ETS, Turkey might have welfare gains with 20% cap according to calculation of economists.⁷⁴⁸ Moreover, the current situation putting Turkey at a risk for sustaining climate finance in the PA period, which is discussed in detail in Part 8.4 might create a disruption in the flow of climate finance to Turkey.

⁷⁴⁶ For a detailed view of projects funded by international organizations regarding environment and climate change please refer to World Bank, "Projects in Turkey", http://projects.worldbank.org/search?lang=en&searchTerm=&countrycode_exact=TR (accessed June 5, 2017)

⁷⁴⁷ İzzet Ari, "Voluntary Emission Trading Potential of Turkey". *Energy Policy* 62, (2013), 910

⁷⁴⁸ Gökçe Akın Olçum and Erinç YELDAN, "Economic impact assessment of Turkey's post-Kyoto vision on emission trading", *Energy Policy*, Vol. 60, 2015, 764- 774.

Therefore, the international gains are expected to be much larger than outlays provided that Turkey ensures its status with regard to PA under the UNFCCC after the year 2020.

8.6 Discussion

Turkish international climate change policy has several domestic and international drivers. When these drivers are plotted together with a view to discuss their relative roles on final climate policy package following points take attention.

Climate change problem is an object at issue on international arena mostly with its impact on food production, rising sea levels and accompanying risk of catastrophic flooding. Hence, the most prominent issue for a country is anticipated to be the “vulnerability” for making a decision on the next steps for policy formation on climate change. Form that regard, it can be noted that based on the likely adverse impacts of climate change; Turkey is a vulnerable country to the climate change with the risks of natural disasters, water losses and food security as discussed in Part 8.5.1. From this point of view, Turkey is expected to compromise on the international climate change regime. However, since these risks are not apparent in very near future as compared to other economic and political risks embedded in the process, vulnerability is not a decisive force on the final package of policies in Turkey for the moment.

Turkey has been endowed with a comprehensive policy infrastructure⁷⁴⁹ including national strategies, accompanying action plans and solid targets for energy and climate since its participation to UNFCCC and Kyoto Protocol and to some extent

⁷⁴⁹ For a detailed analysis of these policies please refer to Part 8.3 and UNFCCC, Turkey’s Seventh National Communication to the UNFCCC, 2018, 88.

in order for aligning its policies with EU practices within the vision of its EU membership. Turkey's 2023 strategy sets sights on its energy policies as "to reduce the cost of energy production, create minimum effect on ecosystem and to use uninterrupted, environ-mentally friendly energy sources under the lights of UNFCCC and Kyoto protocol".⁷⁵⁰ All these policies and plans briefed in 8.3 end up Turkey with sufficient climate policies. As for the mitigation potential of the country, as it is reflected in the Intended Nationally Determined Contribution of the country there is a great room for mitigation provided that the right policies are adopted in the country. Therefore, Turkish domestic climate change policies can be thought as sufficient and when the relevant mitigation potential is considered; Turkey is anticipated to join a global climate change agreement where it has responsibilities on the basis of CBDR.

Legislative system of Turkey has been under a transformation where the President is empowered in terms of any kind of policy making including climate change. However, the constitutional rules pointing out the National Assembly as the competent platform for giving the consent for adoption of international regimes can be thought as a factor reducing the pace of policy making. Therefore, the impact of legislative system on climate policy adaption is blurred.

In terms of the lobby groups influential on climate policy, the emission intensive sectors' considerations for risks such as carbon leakage is prominent. Therefore, their attitude does not seem favorable although they have not disclosed an obvious stance towards the country's position on international climate change regulation. As for the role of civil society on international climate policy, it can be concluded that they do not have a strong and influential position in the country. Only trade bodies are represented in the decision making procedures, hence one might

⁷⁵⁰ Cetin Önder Incekara, and Seyfettin Noyan Ogulata, "Turkey's Energy Planning Considering Global Environmental Concerns", 589.

conclude that the role of civil society on policy making is almost negligible. Finally, as another interest group, the leaders' attitude on climate change problem can be regarded as neutral. This stance might be originated from their perception of the climate change issue as a low politics or peripheral issue.

The foreign policy of Turkey is not assertive about low politics issues such as environmental problems as compared to issues such as regional security on which it is quite rigorous. Therefore, as long as it has not any contradiction with Turkey's stance for an independent and strong economy; Turkey might support solution of environmental problems at the global scale. Still it is rather difficult to decide upon the orientation of Turkish foreign policy for the solution of environmental problems when they have the possibility of bringing any kind of burdens including economic ones for the country.

Taking into consideration the current account deficit of Turkish economy prolonged for so many years and the motivation for economic development, the direction of energy policy is surely very critical. In this regard, the main concern of Turkey in energy politics will be decreasing its import dependency by utilizing its domestic and renewable energy potential together with providing its energy supply security.⁷⁵¹

A new energy economy is appearing globally with the development of low carbon technologies rapidly, which create momentous production and employment opportunities for economies concentrating on these technologies. Moreover, a fine tuned industrial policy can ensure an increase in manufacturing output without

⁷⁵¹ UNFCCC, Turkey's Seventh National Communication to the UNFCCC, 2018, 87.

accelerating the growth in emissions.⁷⁵² Consequently, by resting on renewable energy resources more, Turkey can meet its enormous energy demand⁷⁵³ for keeping its economic growth goal. Additionally, it can have an opportunity for accelerating the development of low carbon technologies which might be directed to exports when their promising growth rate described in previous parts taken into account.

As seen in Part 8.5.2, the role of foreign trade in Turkish economic development is imperative. Turkish foreign trade is at a deficit due to enormous amount of energy and raw material imports. The dependency of imports for energy can be broken with the utilization of renewable energy source where Turkey has a great potential. Moreover, increases in manufacturing output of low carbon technologies is expected to present a potential of exports in the future. Additionally, the incremental decreases in the share of emission intensive products in Turkish exports together with the improvements in product and production methods ending up with less emission intensity reduce the risks Turkish exports face. However, being out of the PA might bring about some risks such as border carbon adjustments particularly for exports of emission intensive products of Turkey as discussed previously. Turkey tries to manage these risks and opportunities; so foreign trade is an important driver for Turkish climate policy.

Financial proceeds and gains matter to a great extent for Turkish climate policy. Regarding to access to climate finance; following points which have been already discussed in Part 8.5.2 should be highlighted. Turkey is in a developing country position. Therefore, Turkey wishes to be given the opportunity to benefit from both

⁷⁵² Sudi Apak and Erhan Atay, "Industrial Policy and Climate Change Management of Turkey as an EU candidate country", *Social and Behavioral Sciences* 75 (2013): 246 – 254.

⁷⁵³ UNFCCC, Turkey's Seventh National Communication to the UNFCCC, 2018, 87.

existing and emerging financing facilities and mechanisms available to developing countries for the purposes of emission reductions, capacity development, adaptation, technology transfer, and reduction of emissions increased as a result of deforestation and forest degradation. In other words, Turkey aims to support, and facilitate its emission reduction and adaptation efforts by benefiting from financing and technology transfer facilities available to countries with similar economic development levels as Turkey.⁷⁵⁴ Although, it has been guaranteed climate finance up to 2020; its eligibility beyond 2020 is ambiguous under the PA. However, Turkey's desire to reaffirm its eligibility under the UNFCCC platform is the basis of Turkish negotiation policy after 2015.

As a result, besides to the opportunities arising from trade of low carbon technologies and benefits in energy security with the utilization of renewable energy resources more extensively and abstaining from the threats such as border tax adjustments related to international trade; Turkey desires to sustain its access to climate finance and thereby it attempts to use the UNFCCC and PA platform as a business development platform for ensuring its objectives. That is why the suspicion about the access to climate finance within the current architecture of PA and risks due to competitiveness losses has led to delay in the ratification of PA for Turkey so far.

Therefore, international drivers are concluded to be influential on Turkish international climate policy specifically the stance of country towards PA in addition to the domestic drivers. Moreover, attitudes of interest groups as domestic factor and the trade and finance prospects of the country as international factor have driven the international climate policy making in the short run. Moreover, the interplay between domestic and international factors reflects the market and

⁷⁵⁴ UNFCCC, "Turkey High Level Statement COP24".

business development concerns of Turkey since it desires to sustain its access to climate finance and thereby it attempts to use the UNFCCC and PA platform as a business development tool.

8.7 Conclusion

In this chapter, the Turkish Climate Change Policy has been examined extensively. With an aim to analyze the drivers of international climate change policy of the country, energy and climate change outlook of the country has been presented primarily so that the drivers related to mitigation capacity and potential of the country is understood holistically. Following this view, domestic and international policies of the country are investigated successively. Considering the domestic climate change policy, the domestic policy settings of the country regarding energy and climate change have been mapped in a detailed way.

Thereafter, the international climate policies of Turkey so far have been reviewed in an historical order. By using all these analyses as a base, the domestic and international climate change policy drivers of the country have been discussed comprehensively. The analyses have demonstrated that currently as a non-participating country Turkey has a set of domestic and international policy drivers which also interact among themselves.

Based on the analyses held in the chapter it can be concluded that among the policy drivers; the international drivers more specifically the concerns regarding foreign trade structure of the country and expects for financial gains have been influential on the climate change policy making process in the country in addition the domestic factors such as sufficiency of climate policy and mitigation capacity of the country.

Indeed, Turkey exploited financial flows from climate funds as a result of utilizing the climate regime like a business development tool to ensure the sustainability of these flows so far. Similarly, Turkey is expected to prolong its policy with regard to the PA in the near future.

CHAPTER 9

CONCLUSION

This thesis analyzed the dynamics of international climate change politics of states with a view to explain the domestic and international drivers of those politics. Among all, this thesis particularly attempted to highlight the linkage between the international climate change politics and international competitiveness concerns of countries.

Based on the review of the existing literature presented above and research of this dissertation the main argument of the thesis will be as follows: Contrary to the views considering the primacy of domestic drivers for the design of international climate change policies; this thesis argues that international drivers particularly concerns for international competitiveness are also influential in climate change policy making process. Therefore, the thesis claims that neoclassical political realist approach could be used to explain the interaction between domestic and international drivers in shaping climate change policy making processes.

Furthermore, the analyses of various actors such as the US, the EU, China and Turkey imply that the countries and supranational entities can utilize international climate change policies as market access and business development instruments keeping their international trade concerns in mind.

A mixed approach including both qualitative and quantitative analyses has been applied in this research. The main research tool of this research has been documentary analysis as utilizing mostly primary sources and data obtained from

national and international institutions' reports, policy papers, strategies, blueprints, minutes of meetings, database etc. Moreover, discourse analysis; analyses of subsidiary data and results and findings of previous quantitative/qualitative work have been used. The fundamental limitation of this research has been the limited access to the reports and notes of political bodies where the policy decisions are evaluated and actions are decided accordingly.

International relations theories play a significant role by serving as lenses for scholars to make sense of their research questions and analyses. In this respect, the neoclassical realism has been thought to be the most appropriate theoretical approach for this research since it considers the international factors like functioning of systemic forces and unit level variables such as domestic factors simultaneously as inspirations on foreign policy of a state. To put in other words, as explained in a very detailed way in Chapter 2, neoclassical realism utilizes domestic factors like domestic political structures and actors in addition to international factors such as relative powers of states in the system, their search for survival and pursuit of national interests as the main determinants of international politics. This model perfectly fits with the climate change politics where the states try to maximize their economic powers by putting their efforts to sustain their development rates. On account of the fact that development efforts are closely linked to a state's energy policies; climate change politics being highly influential on energy policies through the mitigation actions directly and international trade indirectly have an influence on the relative powers of states in the international system. In addition, the adverse impacts of climate change could be a matter of survival for some states with the ever rising sea levels, increasing frequency and devastating consequences of catastrophic events. Another crucial point is that increasing popularity of domestically driven bottom up international climate policies, which are closely linked not only to domestic political and legislative

structures but also domestic leader's attitudes, is taken into consideration by neoclassical realist approach.

Transboundary environmental problems and their repercussions in international politics have been popularized since the end of last century. By serving as background for the discussions in the analyses chapters, Chapter 3 sheds a light on the climate change problem within the context of international relations. As briefed in the chapter; while environmental issues were being popularized in 1970s in international relations, it was nearly in late 1980s the climate change issue began to appear on the agenda. After intense negotiations, the UNFCCC was formed in 1992, which helped the climate change issue have an institutional platform to be discussed and solved. Kyoto Protocol under the UNFCCC brought about quantified emission reduction targets in two implementation periods, one of which was concluded as an obligation to gain time when the negotiations got stuck after the Copenhagen Climate Conference. Finally, a post Kyoto climate change regime was agreed upon in Paris in 2015 as a result of hard negotiations between the 2012 – 2015. The post Kyoto climate regime, called as Paris Agreement, was prepared with a bottom up approach totally different the manner of Kyoto Protocol. Besides having a dynamic structure with no termination date; Paris Agreement introduced nationally determined contributions where countries determined their own actions for mitigation and adaptation.

Moreover, Chapter 3 has discussed the economics of climate change and trade related aspects of climate change. With this regard, carbon trade issue as a flexibility mechanism introduced. Cap and trade systems are usually designed to meet the emission reduction obligations of countries. In addition to being a mechanism for mitigating emissions, these systems also provide financial flows to countries if internationally linked. Finally, the chapter introduced other trade related climate change measures such as border carbon adjustments, greenhouse

performance standards and other mechanisms. Particularly border carbon adjustments might play an important role in the climate and trade policies of countries in the future by constituting a market access barrier for emission intensive products.

As it seen, the debates about climate change and trade are multifaceted. As it is done Chapter 3, trade issues might be evaluated from an environmental perspective; or environmental politics and/or regimes might be investigated with a trade focus just like the linkage between the climate change and trade policies are detailed in Chapter 4 from the lenses of trade. With this motivation, Chapter 4 has stressed the market access concept as an international trade concept. With this regard, the evolution of international trade system and achievements of it are introduced. Moreover, the concepts market and business development are debated as well as their applications for environmental goods. At the end of the chapter how the market access issues might be affected in the shade of climate change policies are debated once more with focusing on competitiveness concerns and relevant policies such as border tax adjustments.

Mapping all these conceptual relations facilitated the discussions on climate policies of specific countries and supranational entities. In order to unravel the climate policies of those, comprehensive analyses have been carried out in Chapter 5, 6, 7 and 8 successively for the U.S., the E.U., China and Turkey. Indeed, since the first three of these nations and supranational entities constitute a great part of global emissions; accounting for climate policies of those have been extremely instrumental for making deductions about the research question.

The analyses of climate change policies have been handled in such a way that all the relevant background data, statistics and information have been scrutinized. With this regard, the energy and climate outlooks of countries and supranational

entities are concentrated in the first part of all these analyses chapters. Key economic and energy indicators, emission outlook including sectoral and subsectoral details, emission projections and overview of energy policies for the US, the EU, China and Turkey have been provided. This statistical outlook has enabled to assess the capacity and sufficiency of country's climate change policies particularly with regard to mitigation capacities.

Moreover, to be able to understand the dynamics of the international climate change policies of countries, domestic climate change policies have been discussed in a detailed way by including the primary actors of policy making, current climate and energy policy structures and targets. Following the analysis of domestic climate policies, the stances of countries or supranational entities with regard to international climate change regime have been examined.

After these policy analyses, domestic and international drivers of climate change policies have been focused. Among the domestic drivers, *Vulnerability of the Country, Sufficiency of Domestic Climate Change Policy and Mitigation Potential, Legislative Structures, Attitudes of the Leaders/Politicians* and *Power of Industrial Lobby Groups and Civil Society* have been analyzed extensively. Following the discussions on domestic drivers of the international climate changes of the countries; the international drivers have been evaluated. In this part, *Foreign Policy Objectives, Climate Change and Foreign Trade Interplay, and Financial Returns and Outlays* have been elaborated as the primary international policy drivers. Although changing from country to country in terms of their relative influence, it has been seen that these international drivers have been also influential in climate change policy making process in addition to domestic drivers.

The analysis of the US presents that climate change policy making process can be quite complicated. The energy and climate outlook of the country illustrates that

since the US is a country with high levels of energy production from fossil fuel resources which leads to huge amount of GHGs emissions. Therefore, it has started to invest CCS. Accordingly, although not striking, a decrease is estimated in the US emission projections for the coming period.

On the other hand, it is seen that domestic US climate policy has not been coherent at the national level, with ups and downs in terms of its climate policy eagerness; whereas it has several climate initiatives at state and regional level. Therefore, despite being lack of a grand strategy; the US can be evaluated as having an infrastructure for mitigation policies; which equipped the US with a capacity and potential for mitigating emissions.

In terms of international climate policy, the US has a volatile international climate policy stand when its attitude towards Kyoto- Post Kyoto and Paris- Post Paris climate change negotiations have been considered. Indeed, the US has not got a uniform and coherent international climate policy, which is open to the impacts of various domestic and international actors and even spheres outside of the climate policy.

When the domestic drivers are examined; it has been seen that US was highly *vulnerable* to the adverse effects of climate change. When *the sufficiency of US climate policy and mitigation capacity of the country* considered; the US seems to have an insufficient climate policy but an adequate mitigation the capacity. As another domestic driver of climate policy, the *legislative structure* of the US has made it difficult to compromise on an international climate change agreement and to implement the requirements of it, given the diversity of interests among the Senate, the Congress and the President. For the *leader's attitude*, based on Trump's discourse and early rollback policies on climate change one can conclude that the leader's attitude in the US is currently not supportive to make a decision to stay in

Paris Agreement framework and lead the necessary steps to implement it. As the last domestic driver, the outcome has been blurred since *the industrial pressure groups* in the US were against being part of an international climate change regime and following relevant mitigation actions; while *civil society* desired to see the US as an active part of such a global deal.

As for the international drivers of US climate policy, grand *foreign policy objective* of the US as being a great power over the world, has shaped the climate policy to some extent when one looked at its efforts to affect the future of climate change regime by declaring its withdrawal. Besides, concerns *foreign trade* affects the climate change policies of the US significantly. Although the US is not dependent on export revenues from fossil fuels currently, as explained in Chapter 5, in the near future the export revenues of particularly energy including shell gas expected to be crucial for the US. This has withheld the US from policies that could limit demand for fossil fuels such as an ambitious climate change agreement. Furthermore, with the share of environmental goods exports in the US export basket being almost stable and no material anticipation for increased competency and competitive advantage in the export of these products the US has been reluctant for further actions that would derive demand for these goods at the expense on emission intensive products. Nevertheless, as a non-participating country US also can face some BCAs for its own exports in emission intensive sectors towards regulated countries. Finally, the US has not anticipated a material *financial returns and outlays* from PA where it has been among the largest donor; even it might face with more financial outflows.

As a consequence, the final attitude of the US with respect to Paris agreement has been determined as a result of the interaction of domestic and international factors. The interaction occurs as following: when negative attitudes of leaders and pressure of interest groups for a loose climate policy are combined with foreign

trade competitiveness concerns; the US comes up with a loose international climate policy.

The analysis of the EU shows that climate change policy making process can be quite complicated. The energy and climate outlook of the EU presented its relative flexibility since its energy production rests on mainly nuclear energy followed by hydrocarbon resources, making it less emission intensive. Climate policy of the EU has been designed and executed by various actors at Union and state level as disclosed in Chapter 6. Moreover, since it had already experienced a peak in emissions it could put forward more ambitious mitigation targets for 2020, 2030 and 2050. In order to achieve these targets EU has taken several actions among which the most prominent one is Emission Trading System (ETS) based on national emission reduction targets as well as national renewable energy targets, support mechanisms for innovation and financing and measures for energy efficiency.

In terms of EU's international climate politics; at the beginning it should be noted that the attitude of it towards global warming problem has always been constructive. Having played a leadership role in Kyoto- Era, the EU is principally in favor of a robust but at the same time ambitious and inclusive climate change agreement. Besides, its current stance towards international climate change negotiations shows that it will probably sustain its previous leadership role after the withdrawal of the US within the UNFCCC framework to keep the regime alive.

When the domestic drivers are examined; it has been seen that EU was *vulnerable* to the adverse effects of climate change. In terms of *sufficiency of climate change policy and mitigation capacity* of the EU, it can easily be asserted that its tailor made response strategies at union level to equips it with sufficient energy and climate strategies which also enhance its mitigation capacity. These all together

presented sufficiency of its climate change policy and adequacy of its mitigation capacity. In terms of the *legislative structure* of the country, in spite of its multi-tiered configuration where decision making and implementation is a long way; the legislative structures of the EU seem quite encouraging for passing climate change legislations. Additionally, it might be concluded that European Leadership seems to have a more favorable attitude towards being a part of a rigid climate change regime while the EU *civil society and industry pressure* groups can be regarded as favoring an ambitious climate policy provided that they are guarded against the potential risks.

As for the international drivers of the climate policy of the EU; it was affirmed that its *foreign policy* based on multilateralism; has championed a leadership role in an international climate change agreement. Moreover, regarding *the foreign trade and climate change interplay*, as detailed in Chapter 6, EU attaches great importance to its promising low carbon technologies. Therefore, the competitiveness gains expected by the EU from those has led to a more supportive policy. In addition, in order to increase its energy security by decreasing its dependence on imports from outside suppliers, the EU aimed to undertake some measures within the context of Energy Union. As a result, the EU has appreciated climate policies and their repercussions on foreign trade as more of an opportunity area and aimed to utilize its competitive advantages in low carbon technologies as a leverage for its foreign trade objectives. As for the *financial returns and outlays*, having both financial outlays in the form of transfers to developing and least developed countries and financial gains from the emission trading, the EU's position seems complicated. However, since the financial proceeds indeed contribute to the market development efforts of the EU in return; the financial benefits in the long run overwhelm the outlays.

To sum up, what drives EU climate policy is international factors in addition to domestic drivers. As opposed to the US case, the interaction between domestic and international factors produce just opposite results for the EU. While domestic factors such as sufficiency of climate change policy and mitigation capacity, pressure of civil society and legislative factors are combined with foreign trade competitiveness concerns, the EU ends up with a stringent climate change policy. It is interesting because interaction of identical domestic and international factors has brought about a totally different picture, which shows at least the role of domestic factor in the short run on the climate policy making process.

As for the Chinese case, the energy and climate outlook of China has implied lots of points for climate policy design. As described in Chapter 7, China has an excessive amount of energy production and consumption due to its enormous economy, indeed it is largest energy consumer of the world. On the other hand, this magnitude of energy consumption makes China decisive for the solution of the climate change problem with its key role in international efforts to cope with it. Besides, Chinese energy production rests on mainly coal, crude oil and natural gas as hydrocarbon resources. Among fossil fuels, coal has the largest share which is followed by crude oil in energy production; renewable energy sources and biofuels together have approximately the same share as crude oil and more than natural gas. Actually, China has currently had the world's largest installed capacity of hydroelectric and wind power, enormous capacity of solar and biogas installations. The main motive for shift to the renewable technologies is the increasing cost-competitiveness of China in these technologies as well as other benefits such as decreased air pollution and improved energy security. Due to its energy production and consumption patterns, the increased tendency in Chinese GHG emissions is projected to last in the short and medium term. According to various studies, emissions will have peaked by 2030- 2040. The role of CCS technologies will be

also instrumental as well as renewables. As a matter of fact, China is one of the few countries working on development and implementation of these technologies. Existence of numerous actors regarding the climate policy making in China, which are specific to the command economy of the country, has not been a problem in terms of climate policy making. Additionally, China has developed and implemented lots of national and subnational climate action plans along with its climate targets and developmental goals.

Regarding international climate change policy, it can be concluded that China's engagement in international climate change negotiations has progressed from a peripheral to central role progressively.

In terms of domestic and international drivers of the Country China reflects the following results. With regard to *vulnerability*, China is highly vulnerable to the adverse impacts of climate change. As one other domestic driving force, *in terms of sufficiency of climate change policy and mitigation potential*; Chinese climate policy can be taken as sufficient when its pace and targets are taken into consideration and the mitigation is potential is enormous when the national targets and current state of investments in renewables and CCS technologies are considered. *Legislative factors* work somehow different for Chinese case. The centrally planned decision body makes the policy development process work rapidly but at the same time inherits some risk of disruptions in case of any reluctance from the side of these high level administrators. When the current constructive attitude of China towards climate change problem is considered the legislative structures of centrally managed economy can be evaluated as supportive factors for further compromise on the international climate package for China. As for *the attitudes of the leaders* on the other hand, Chinese leaders favor an environmentalist stand and disclose the role of green economy in their modernization goals; conditionality, searching for the adherence of developed

countries to climate commitments endures. As to the *civil society and interest groups*, despite the highly centralized structure of government in China where the China Communist Party plays a very decisive role; the opinion and lobby groups together with civil society might echo their priorities on the final policy outcomes as long as they have close relations with these governmental actors. Given the centrality of power sector among these enterprises, the green growth policies of China might push those towards a more supportive attitude regarding the international climate policies.

The international driving forces of climate change policies are so crucial for Chinese policy making. With this regard, Chinese *foreign policy objectives* is a very unique and consistent driving force for the country. Current green growth policies of China, fitting with supportive climate policies, help to achieve its economic development objective. *Foreign trade and climate change interplay*, is a crucial driving force for China. Indeed, a precise analysis of Chinese foreign trade shows that China can benefit heavily from an overarching climate change regulation. It is because being miserably dependent on fossil fuel imports, China improves its energy security conditions with more utilization of renewables. Moreover, due to its competency in low carbon technologies such as renewable energy, China can enjoy more exports when a more stringent climate regime pushes countries to relying more of these technologies. Indeed, China and EU can be concluded as the leading two actors with the expected gains from improved market access conditions due to a new climate change regime which will be formed by their business development efforts. Moreover, the exports of emission intensive sectors are sensitive for any regulations targeting the carbon content in them. Therefore, China's position which is in favor of an inclusive but non-punitive agreement during Paris Agreement negotiations have made sense.

On the other hand, when *financial returns and outlays* are considered, a standing alone international climate change regime is crucial for China to sustain its green growth policies as well as inducing demand in other developing countries demands towards Chinese low carbon technologies. Therefore, more of financial inflows are envisaged for China.

In conclusion, based on an in-depth analysis of policy drivers, it can be asserted that Chinese international climate change policy is driven by international factors besides the domestic drivers. Interestingly, the interaction of the domestic and international factors for China is somehow different. While vulnerability, mitigation capacity and legislative factors as domestic drivers are combined with competitiveness concerns and financial proceeds as international factors China ends up with a supportive climate change policy. Furthermore, EU has utilized international climate change regime as a tool of market and business development due to its expected gains from exports of low carbon technologies and internationally linked carbon markets.

As for Turkey, the energy and climate outlook of the country implies that since the main source of GHGs emissions are energy in Turkey, its continuous growth trend, requiring also more energy usage, might put Turkey at a more challenging position in terms mitigation capabilities. In parallel to this, Turkey has not announced its emission peak yet. On the other hand, there is an increase trend in utilization of renewable energy sources, which might facilitate the mitigation efforts of the country. There are various climate policy actors are in Turkey where Climate Change and Air Management Coordination Board is the main bureaucratic actor as opposed to the Presidency and the Grand Assembly as political actors. The climate change is reflected in domestic politics of Turkey for nearly twenty years within development plans, national plans and strategies specific to climate change.

In contrast, the international climate change policy of Turkey has been somehow extraordinary. Although it is a developing country, it was listed within the lists of developed countries: Annex I and Annex II. Despite the fact that it has had successive attempts to relocate itself within the UNFCCC annex system, it could achieve it partly by being taken out from Annex II determining the countries who support financial aids to developing world. Although its endless efforts have provided the country with the settings identical to those of developing countries in terms of access to climate finance till the end of Kyoto Period; the Paris Agreement does not guarantee the same terms and conditions for Turkey. Therefore, Turkey's efforts have focused on moving its rights due to its special circumstances beyond 2020.

When the domestic drivers of the country assessed, as for the *vulnerability*, Turkey is vulnerable to the adverse impacts of climate change. However, its vulnerability has been discussed by a very narrow group of officers or politicians and it has been reflected in its climate policy discourse and priorities to a limited extent so far. In terms of *legislative structures*, it can be concluded that although the relevant institutions, bodies and framework are well established for climate policy making, the international climate policy conclusion is a bit more onerous since the consent of Grand National Assembly of Turkey is required. With regard to *the attitudes of the leaders*, Turkish leaders and politicians do not have a negative attitude towards climate change. While the high level politicians could be evaluated as neutral where the discourses are limited to the agenda; the more technical characters such as the climate envoy Birpınar has a multifaceted and assertive point of view for the issue. As for the *civil society and interest groups*, while the influence of civil society on climate policy in Turkey is limited, the industrial pressure groups prioritize the matter of competitiveness on their politics.

In respect to the drivers of climate change policy, despite providing a favorable policy environment for passing international regulations in the field of environment; Turkish *foreign policy* does not guarantee an unquestioned acceptance of environmental treaties. In terms of *foreign trade and climate change interplay*, the outlook is decisive. On one hand, Turkey is a net importer of fossil fuels and a net exporter of emission intensive industries such as glass and ceramics and cement. On the other hand, it is a net importer of environmental goods and technologies in spite of continuously increasing exports of those products presenting a great potential for Turkey in the future. Indeed, there is a growing interest for new renewable energy investments in the country. Therefore, various support mechanisms for utilization of domestic sources are proposed. With these incentive mechanisms, flourishing of low carbon technologies is anticipated which can also be directed to exports. Still, Turkish exports of emission intensive products nearly nineteen times larger than exports of environmental goods. Therefore, the sustainability of emission intensive products is foremost priority for Turkish authorities. Similar to the US concerns for sustaining exports for emission intensive products; elimination of risks of additional duties for emission intensive goods is more crucial than new export opportunities of environmental goods. The most important threat for interrupting the carbon intensive exports of the country are border carbon adjustments which the main export destinations might launch. Additionally, due to its dependence on imports, energy security concerns of the country matter for country's climate policies to some extent. Therefore, the foreign trade structure and dynamics around it within the current set is expected to push the country for a more constructive approach for compromising on the international climate change regime for defeating the risks of being outside of the regime as well as enjoying arising potential from environmental goods and technologies. With regard to the *financial outlays and proceeds*, the international gains are expected to be much larger than outlays provided that Turkey ensures its status with regard

to PA under the UNFCCC after the year 2020. The quest for access to finance after 2020 has been the primary reason of its delay in ratification of PA.

As a result, besides to the opportunities arising from trade of low carbon technologies and benefits in energy security with the utilization of renewable energy resources more extensively and abstaining from the threats such as border tax adjustments related to international trade; Turkey desires to sustain its access to climate finance and thereby it attempts to use the UNFCCC and PA as a business development platform for ensuring its objectives. Therefore, international drivers are concluded to be also influential on Turkish international climate policy specifically the stance of country towards PA.

On a comparative basis, it can be concluded that domestic factors push EU and China towards comprising to new climate regime, in other words Paris Agreement whereas the impact of individual domestic factors like legislative factors, attitudes of leaders, and power of industry and pressure groups and civil society have very different dynamics bringing similar results. On the other hand, although current policies of the US and Turkey look like similar in terms output; the relation between domestic and international factors differ to some extent. While the legislative factors and attitudes of leaders interact with competitiveness concerns originated from foreign trade dynamics in the US; in Turkey, mitigation capacity and pressure from industrial lobby groups interact with competitiveness concerns flourished from foreign trade dynamics and financial prospects.

In short, while the domestic and international factors and the interaction among them push the EU and China to participate and advocate to Paris Agreement; they deter the US from participating to PA in the short run. For Turkey, though the direction of impact seems nebulous, it is expected to divert a more supportive path soon.

In conclusion, based on the analysis of various countries and supranational entities, it is observed that despite their changing architecture of interaction, both domestic and international factors are influential on international climate change policy making processes. Besides, the international factors particularly foreign trade with its roots in competitiveness concerns and financial prospects serving as market access and business development tool, matter for the climate change policy design by providing a linkage between various domestic and international factors.

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APPENDICES

A. CURRICULUM VITAE

PERSONAL INFORMATION

Surname, Name: Koşan, Ezgi
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EDUCATION

Degree	Institution	Year of Graduation
MA	METU Eurasian Studies	2014
BS	METU Business Administration	2004
High School	Balıkesir High School, Balıkesir	1999

WORK EXPERIENCE

Year	Place	Enrollment
2018- Present	ASELSAN	Business Development Engineer
2004-2018	Ministry of Trade	Foreign Trade Expert
2003 July	TEB	Intern

FOREIGN LANGUAGES

Advanced English

PUBLICATIONS

- Koşan Ezgi, “Rekabetçiliğin Yeni Adı: İklim Değişikliği” Anahtar Dergisi, TC Sanayi ve Ticaret Bakanlığı, Sayı: 329, Mayıs 2016.
- Koşan Ezgi, Russia’s Policies with Regard to UNFCCC: An Entirely Different path from the EU?, *Energy Diplomacy*, Year 1, Issue 2, Summer 2015

HOBBIES

Reading, Listening Turkish Classical Music, Travelling

B. TURKISH SUMMARY/ TÜRKÇE ÖZET

Çevre, özellikle 1972'de Stockholm'de düzenlenen Birleşmiş Milletler İnsan Çevre Konferansı'ndan (UNCHE) bu yana Uluslararası İlişkiler (IR) bilim insanları için göz alıcı bir konu olmuştur. Uluslararası politika bağlamında, iklim değişikliği, ozon azalması ve biyolojik çeşitlilik kaybından hava-toprak kirliliğine, çevresel bozulmaya ve ormansızlaşmaya kadar geniş bir dizi çevresel sorun, çoğunlukla çevre işbirliği ve çatışma, çevre güvenliği, uluslararası rejimler, uluslararası kurumlar, çevresel yönetim ve sürdürülebilir kalkınma konularına odaklanarak incelenmiştir.

Küresel çevre sorunları arasında iklim değişikliği, enerji politikaları ile nedensel olarak bağlantılı olmasının bir sonucu olarak ekonomik faaliyetler ile en yakın bağlara sahip olanlardan biridir. Gerçekten de, bir yandan iklim değişikliği ekonomik faaliyet tarafından tetiklenir; öte yandan, ekonomik faaliyeti etkiler. Sürdürülebilir kalkınma açısından bu iklim değişikliği sorununun ikiliği nedeniyle; İklim değişikliğindeki küresel uzlaşma, diğer bazı çevre sorunlarının uluslararası düzeyde çözülmesinin kolaylığına kıyasla zahmetli bir deneyim olmuştur.

Nitekim, enerji ve sanayi politikaları ile iklim değişikliği sorunu arasındaki yakın ilişki, iklim değişikliği sorununun, çoğunlukla enerji üretimi ve sanayi süreçlerinden kaynaklanan sera gazı emisyonlarının doğrudan bir sonucu olduğu varsayımından kaynaklanmaktadır.⁷⁵⁵ Bu ilişki, ülkelerin yerel ve uluslararası düzeyde kullandıkları azaltma politikalarına ve önlemlerine bağlı olarak ülkelerin ticari rekabetçiliği üzerinde bir etkisinin olmasının nedenini ortaya koymaktadır.

⁷⁵⁵ Daha detaylı bilgi için reports of Hükümetlerarası İklim Değişikliği Paneli (IPCC) raporları [https://www.ipcc.ch sitesinden incelenebilir.](https://www.ipcc.ch/sites/default/files/2014/06/ipcc_reports.pdf)

Bu nedenle, bu tez, iklim deęişikliği politikalarını yönlendiren yerli ve uluslararası faktörler arasındaki ilişkilerin dinamiklerini vurgulamak amacıyla ülkelerin uluslararası iklim deęişikliği politikalarının itici güçlerine odaklandı. Diğer politika alanlarında olduğu gibi, hem yerel hem de uluslararası iklim politikaları yerli aktörler tarafından tasarlanıp uygulanmasına rağmen, bu politikalar yalnızca yerel faktörler tarafından yönlendirilmez. Bu bağlamda, bu tezin temel araştırma sorusu, ülkelerin iklim deęişikliği politika oluşturma süreçleriyle ilgilidir.

Bu bağlamda, bu tez çok yaygın bir ikilemin nedenlerini araştırmaktadır: İklim deęişikliği politikalarının, bireysel ülkelerin günlük yaşamı üzerinde birçok acil etkisi olmasına rağmen, bu etkiler ülkelerin uluslararası iklim deęişikliği politikalarının tasarımını hesaba katmak için yeterli değildir. Başka bir şekilde söylemek gerekirse; bu tez, “iklim deęişikliği kırılganlığı ve politika hazırlığı gibi yerel faktörlerin neden ülkelerin iklim deęişikliği politikalarını açıklamak için yeterli olmadığı” sorusuna bir yanıt aramaktadır.

Bu kapsamda, ülkelerin iklim deęişikliği politikaları üzerinde etkili olan altta yatan faktörleri araştıran araştırmalar oldukça önemlidir. Ayrıca, geniş bir çalışma grubu, ülkelerin iklim deęişikliği politikalarının dinamikleri üzerine odaklanmaktadır. Örneğin, Bailer ve Weiler, uluslararası iklim deęişikliği politikalarının stratejik faktörlere kıyasla daha yapısal, ekonomik ve yerel faktörleri yansıttığını savunmaktadır. Buna göre, ülkenin kırılganlığı, demokratik statüsü ve gücü gibi yerel faktörlerin, uluslararası iklim deęişikliği politikalarının birbirleriyle bağlantılılığı gibi uluslararası faktörlerle karşılaştırıldığında bilhassa uluslararası müzakere pozisyonunun en iyi açıklaması arasında olduğunu iddia etmektedirler.⁷⁵⁶

⁷⁵⁶ Stefanie Bailer and Florian Weiler. "A political economy of positions in climate change negotiations", 43.

Fankhauser ve ark. ülkelerin yerel iklim değişikliği politikalarını yönlendiren ana yerel faktörleri gözden geçirmekte ve önceki mevzuatın miktarının ve kalitesinin, politik yönelimle karşılaştırıldığında nihai yolda önemli ölçüde belirleyici olduğunu tespit etmektedirler.⁷⁵⁷ Benzer şekilde, başka bir yerde Fankhauser et al. İklim politikalarında etkili başlıca uluslararası faktörleri değerlendirdi ve iklim değişikliği politikasının aynı mevzuatın başka bir yere geçişinden derinden etkilendiğine dayanarak uluslararası politika yayılmasının önemini işaret etti.⁷⁵⁸ Alternatif olarak Harrison, Kanada'nın ABD'ye benzer bir ekonomik duruş sergileyen ABD'ye kıyasla Kyoto Protokolü'nü (KP) onaylamaya istekli olmasının nedenlerini araştırmak için bir fikir, çıkar ve kurumlar analitik çerçevesi kullandı ve "kurumsal ortamın, normların maddi çıkarlara karşı kazandığı zafer için Kanada'daki elverişli iken ABD'de olmadığını" savundu.⁷⁵⁹ Benzer şekilde, Lachapelle ve Paterson, ulusal iklim değişikliği performansının modellerini gözden geçirdi ve ulusal iklim politikalarının itici güçleri olarak ülke düzeyinde iklim değişikliği yönetişiminin kurumsal biçimindeki eşitsizlik, fosil yakıt enerjisine dayanma derecesi, devletler arasındaki kapsamlı sistemik farklılıklar (kişi başına düşen gelirleri, nüfus yoğunluğu ve karbon yoğunluğu gibi) ve devletlerin ekonomik müdahale ritüellerindeki eşitsizlikleri belirledi.⁷⁶⁰ Öte yandan, Townshend ve ark. Ülkelerin uluslararası iklim değişikliği politikalarında

⁷⁵⁷ Sam Fankhauser, Caterina Gennaioli, and Murray Collins, "The political economy of passing climate change legislation: Evidence from a survey." 52.

⁷⁵⁸ Sam Fankhauser, Caterina Gennaioli, and Murray Collins, "Do international factors influence the passage of climate change legislation?" 318.

⁷⁵⁹ Kathryn Harrison. "The Road Not Taken: Climate Change Policy in Canada and the United States". *Global Environmental Politics* 7, no.4, 93.

⁷⁶⁰ Erick Lachapelle and Matthew Paterson, "Drivers of national climate policy." *Climate Policy* 13, no. 5 (2013): 547.

içeriden dışarıya doğru bir değişimin olabileceğini, başka bir deyişle, yerel faktörler uluslararası sonuçları etkileyebileceğini savundu.⁷⁶¹

Buna karşılık, Berneuer ve ark. çevresel antlaşmalardan yararlanarak devletlerin uluslararası sistemle olan bağlarının, gelir ve demokrasi gibi yerel faktörlerin aksine, küresel yönetim çabalarının dinamiklerini ne kadar etkilediğini incelemiş ve uluslararası faktörlerin devletlerin işbirlikçi davranışı üzerinde daha etkili olduğu, bu nedenle uluslararası politika çalışmasında iç ve uluslararası değişkenlerin etkilerinin ayrı tutularak incelenmemesi gerektiği sonucuna varmıştır.⁷⁶²

Steves ve Teytelboym, ülkelerin iklim değişikliği riskine karşı politika tepkilerini ölçmek için “İklim Yasaları, Kurumlar ve Ölçümler Endeksi” (CLIMI) geliştirdi. CLIMI, küresel sera gazı emisyonlarının % 90'ını oluşturan 95 ülkede kurum ve politikalardan oluşmakta olup CLIMI sayesinde, ülkelerin iklim değişikliğiyle mücadele politika uygulama seçimlerini zorlayan politik ve ekonomik faktörleri incelemişlerdir.⁷⁶³

Bulgularına göre, tek başına demokrasi seviyesi, iklim değişikliği politikasının benimsenmesinde ana etken değil iken halkın iklim değişikliğine ilişkin farkındalığı etkilidir. Dahası, ülkedeki yaygın bir karbon yoğun sanayinin varlığının iklim değişikliği politikasının benimsenmesini engellediği sonucuna

⁷⁶¹ Townshend et al, "Legislating Climate Change on a National Level." *Environment: Science and Policy for Sustainable Development* 53, no. 5 (2011): 5.

⁷⁶² Bernauer et al, "A Comparison of International and Domestic Sources of Global Governance Dynamics." 509.

⁷⁶³ Franklin Steves and Alexander Teytelboym. "Political Economy of Climate Change Policy." *SSRN Electronic Journal*, 2013

varmaktadırlar. Sonuç olarak, kamuoyunda iklim değişikliği hakkında farkındalığın olduğu ülkeler; demokratik kurumların varlığına bakmaksızın daha etkili iklim politikaları barındırmaktadırlar.

İklim değişikliği, ekonomik nedenler ve sonuçlarla ilgili bir sorun olduğu için, iklim değişikliği ekonomisi ile ilgili literatür değerlidir. Bu bağlamda, Stern'den, iklim değişikliğinin küresel ekonomiye verdiği zararın, ülkeler tarafından acil ve somut önlemler alınmadığı sürece, derece yüksek olacağını belirten değerli bir katkı geldi.⁷⁶⁴

Parry ve ark. ve Fischer ve ark. konuyu ekonomik bir sorun olarak ele aldı ve ekonometrik modelleri kullanarak ticaretin iklim değişikliğini veya iklim değişikliğinin ticareti nasıl etkilediğini araştırdı.⁷⁶⁵

Etki azaltma politikalarının ekonomisine gelince, tartışma aslında iklim değişikliğinin ekonomisinden kaynaklanmaktadır. İklim değişikliği sorunsalı iktisadi bir perspektiften bakılacak olursa en temel haliyle bir kaynak tahsisi sorunu olarak ele alınabilir. Yani, Mabey'in altını çizdiği gibi, temel olarak toplumun küresel ısınmanın olumsuz etkilerini hafifletmek için bugün veya gelecekte tüketimi azaltmak için ne kadar istekli olduğu arasındaki diğer bir deyişle

⁷⁶⁴ Nicholas Stern, *The Economics of Climate Change: The Stern Review*, (Cambridge: Cambridge University Press, 2007).

⁷⁶⁵ Parry et. al, "Effects of climate change on global food production under SRES emissions and socio-economic scenarios." *Global Environmental Change* 14.1 (2004): 53-67, Fischer et. al "Climate change and world food supply, demand and trade." *Global Environmental Change* 4, no. 1 (1994): 7-23.

sera “zarar gazı maliyeti” ile “azaltma maliyeti” arasında bir dengeleme söz konusu olacaktır.⁷⁶⁶

Buna ek olarak, iklim deęişiklięini ve uluslararası ticaret etkileşimini rekabetçilik açısından çerçevelemek için yapılmış birçok çalışma bulunmaktadır. Joseph E. Aldy ve William A. Pizer tarafından yapılan bir çalışmada, bu rekabet gücü etkisi modellenmiş ve nihayetinde “enerji yoğun imalat sanayilerinin üretimde azalma ve net ithalatta daha az yoğun sanayiye oranla artış olasılıęının daha fazla” olduęu savunulmuştur.⁷⁶⁷Bu bağlamda, böyle bir olguyla başa çıkmak için karbon kaçaęı konusunda kapsamı ve önlemleri deęerlendiren çok kapsamlı bir literatür ortaya çıkmıştır. Mabey, karbon kaçaęını teknik terimlerle “piyasa davranışı, kontrolsüz ülkelerden gelen kirlilięi artırarak bir bölgedeki emisyon azaltımının etkisini baltalayabilir” olarak tanımlamaktadır.⁷⁶⁸Alternatif olarak, Zhang ve Baranzini, karbon vergilerinin gelir ve rekabetçilik üzerindeki etkilerini tartışmış ve rekabet edebilirlik ve dağıtım etkilerinde yaşanan kayıpların genellikle önemli olmadığını ve sıklıkla belirtilenden daha az olduğunu iddia etmiştir.⁷⁶⁹ Yukarıda gerçekleştirilen tartışılanların dışında, uluslararası ve devlet düzeyinde yapılan analizlerde karbon

⁷⁶⁶ Mabey et al, “Optimal Climate Change Policy” in *Argument in The Greenhouse the International Economics of Controlling Global Warming*, ed. by Stephen Hall, Clare Smith and Sujata Gupta (London: Routledge, 1997), 175.

⁷⁶⁷ Joseph E. Aldy, and William A. Pizer, *The Competitiveness Impacts of Climate Change Mitigation Policies*. Cambridge, MA: National Bureau of Economic Research, 2011.

⁷⁶⁸ Mabey et al, “Optimal Climate Change Policy” in *Argument in The Greenhouse the International Economics of Controlling Global Warming*, ed. by Stephen Hall, Clare Smith and Sujata Gupta (London: Routledge, 1997), 369-370.

⁷⁶⁹ Zhongxiang Zhang and Andrea Baranzini, "What Do We Know About Carbon Taxes? An Inquiry into Their Impacts on Competitiveness and Distribution of Income." *Energy Policy* 32, no. 4 (2004): 507.

kaçağının ekonomik ve yasal yönleri; ülkelerin iklim değişikliği politikalarının nihai tasarımında rekabetçilik endişelerinin rolünü araştıran birkaç çalışma vardır.

Dolayısıyla bu tez, devletlerin uluslararası iklim değişikliği politikalarının dinamiklerini, bu politikaların yerli ve uluslararası itici güçlerini açıklamak amacıyla analiz etmektedir. Ayrıca bu tez, özellikle uluslararası iklim değişikliği politikası ile ülkelerin uluslararası rekabet edebilirlik endişeleri arasındaki bağlantıyı vurgulamaya çalışmaktadır. Yukarıda sunulan mevcut literatürün gözden geçirilmesine ve bu tezin araştırılmasına dayanarak, tezin temel argümanı şöyle olacaktır: İç itici güçlerin uluslararası iklim değişikliği politikalarının tasarımında önceliğini göz önünde bulunduran görüşlerin aksine; bu tez, uluslararası itici güçlerin özellikle uluslararası rekabet edebilirliğe ilişkin endişelerinin de iklim değişikliği politika oluşturma sürecinde etkili olduğunu savunmaktadır. Bu nedenle, tez, neoklasik politik realist yaklaşımın, iklim değişikliği politika oluşturma süreçlerini şekillendirmede iç ve uluslararası itici güçler arasındaki etkileşimi açıklamak için kullanılabileceğini iddia etmektedir.

Ayrıca, ABD, AB, Çin ve Türkiye gibi çeşitli aktörlerin analizleri, ülkelerin ve ulus-üstü kuruluşların uluslararası ticaret endişelerini göz önünde bulundurarak uluslararası iklim değişikliği politikalarını piyasaya erişim ve iş geliştirme araçları olarak kullanabileceklerini ima etmektedir.

Bu araştırmada hem kalitatif hem de kantitatif analizleri içeren karma bir yaklaşım uygulanmıştır. Bu araştırmanın ana araştırma aracı, çoğunlukla birincil kaynakları ve ulusal ve uluslararası kuruluşların raporlarından, politika raporlarından, stratejilerinden, planlarından, toplantı tutanaklarından, veri tabanından elde edilen verileri kullanarak belgesel analiz olmuştur. Üstelik söylem analizi; yardımcı veri analizleri ve sonuçları ile önceki nicel / niteliksel çalışmaların bulguları kullanılmıştır. Bu araştırmanın temel sınırlaması, politika kararlarının

değerlendirildiği ve eylemlerin buna göre karar verildiği siyasi kurumların raporlarına ve notlarına sınırlı erişim olmuştur.

Uluslararası ilişkiler teorileri, araştırmacıların araştırma sorularını ve analizlerini anlamalarını sağlamak için objektif olarak hizmet ederek önemli bir rol oynamaktadır. Bu bağlamda, neoklasik gerçekçiliğin, bu durum için aynı zamanda bir devletin dış politikasına ilham kaynağı olarak eşzamanlı olarak sistemik kuvvetlerin işleyişi gibi uluslararası faktörleri ve iç faktörler gibi birim düzeyindeki değişkenleri göz önünde bulundurduğu düşünülmektedir. Başka bir deyişle, Bölüm 2'de çok detaylı bir şekilde açıklandığı gibi, neoklasik gerçekçilik, sistemdeki devletlerin göreceli güçleri, hayatta kalma arayışı ve arayışları gibi uluslararası faktörlere ek olarak, yerli siyasi yapılar ve aktörler gibi yerel faktörleri kullanır. uluslararası politikanın temel belirleyicileri olarak ulusal çıkarlar. Bu model, devletlerin ekonomik güçlerini en üst düzeye çıkarmaya çalıştığı, kalkınma oranlarını sürdürme çabalarını koyarak iklim değişikliği politikalarına mükemmel bir şekilde uyar. Kalkınma çabalarının bir devletin enerji politikaları ile yakından bağlantılı olduğu gerçeğinden; İklim değişikliği politikalarının doğrudan azaltma eylemleriyle enerji politikaları üzerinde oldukça etkili olması ve uluslararası ticaretin dolaylı olarak uluslararası sistemdeki devletlerin göreceli güçleri üzerinde etkisi bulunmaktadır. Ek olarak, iklim değişikliğinin olumsuz etkileri, deniz seviyelerinin yükselmesi, felaketlerin artması ve yıkıcı olayların yıkıcı sonuçları ile birlikte bazı eyaletlerde hayatta kalma meselesi olabilir. Bir diğer önemli nokta, yalnızca iç politik ve yasama yapılarına değil, aynı zamanda iç liderin tutumlarına da bağlı olan yerel güdümlü tabandan uluslararası iklim politikalarının popülaritesinin artmasının neoklasik realist yaklaşımla dikkate alınmasıdır.

Sınır aşan çevre sorunları ve uluslararası politikadaki yansımaları, geçen yüzyılın sonundan beri popüler hale geldi. Bölüm 3, analizler bölümündeki tartışmaların arka planı olarak hizmet ederek, uluslararası ilişkiler bağlamında iklim değişikliği

sorununa ışık tutmaktadır. Bölümde özetlendiği gibi; çevre sorunları 1970'lerde uluslararası ilişkilerde popülerleşirken, 1980'lerin sonunda neredeyse iklim değişikliği sorunu gündeme gelmeye başladı. Sınır aşan çevre sorunları ve uluslararası politikadaki yansımaları, geçen yüzyılın sonundan beri popüler hale geldi. Bölüm 3, analizler bölümündeki tartışmaların arka planı olarak hizmet ederek, uluslararası ilişkiler bağlamında iklim değişikliği sorununa ışık tutmaktadır. Bölümde özetlendiği gibi; Çevre sorunları 1970'lerde uluslararası ilişkilerde popülerleşirken, 1980'lerin sonunda iklim değişikliği sorunu ve neden olduğu dışsallıklar sıklıkla gündeme gelmeye başladı. Hükümetlerarası İklim Değişikliği Panelinin kurulması ve yürütülen çalışmalarca ortaya konan bilimsel çalışmalar uluslararası mecrada sorunun aciliyetine ve önemine dair bir farkındalık yarattı. Bu kapsamda, 1992 yılında gerçekleştirilen Rio Zirvesi sonunda imzalanan Birleşmiş Milletler İklim Değişikliği Çerçeve Sözleşmesi (BMİDÇS) ile birlikte ülkeler ilk kez küresel düzeyde bir uzlaşuya ulaşarak sorunun varlığını kabul etmiş ve çözümü yönünde niyet beyan etmişlerdir. Sözleşmenin sayısallaştırılmış hedefler koymaması nedeniyle yürütülen yoğun müzakereler neticesinde 1997 yılında imzalanan Kyoto Protokolü ile gelişmiş ülkeler sayısallaştırılmış azaltım yükümlülükleri altına girmişlerdir. 2012 yılında sona erecek Kyoto Protokolü sonrası iklim rejimine yönelik müzakereler uzun bir süre devam etmiş ancak 2009 yılında gerçekleştirilen Kopenhag İklim Zirvesinde bir uzlaşa sağlanamamıştır. Ancak, tekrar canlanan uluslararası isteklilik ile birlikte 2012 - 2015 arasındaki yoğun müzakereler sonucunda önce 2012- 2020 arası için Kyoto Protokolü ikinci uygulama dönemi adı altında bir ara formül oluşturulmuş; 2015 yılında Paris'te Kyoto sonrası iklim değişikliği rejimi üzerinde anlaşmaya varılmıştır. Paris Anlaşması olarak adlandırılan Kyoto sonrası iklim değişikliği rejimi, Kyoto Protokolü'nden tamamen farklı bir aşağıdan yukarıya yaklaşımla hazırlanmıştır. Sona eriş tarihi olmaması ve dinamik bir yapıya sahip olmasının yanında; Paris Anlaşması, ülkelerin azaltma ve uyum için kendi eylemlerini belirlemelerine olanak tanıyan ulusal olarak belirlenmiş katkıları temel almıştır.

Diğer taraftan, Bölüm 3 kapsamında iklim değişikliğinin ekonomisini ve iklim değişikliğinin ticaretle ilgili yönleri de ele alınmıştır. Bu bağlamda, en önemli örnekler arasında bir esneklik mekanizması olarak benimsenen karbon ticareti yer almaktadır. Karbon sınırlama hedefiyle karbon azaltımını hedefleyen emisyon ticaret sistemleri serbest piyasa koşullarına göre çalışmaya dönük kurgulanmakla beraber zaman zaman fiyat dengelerinin sağlanması bağlamında yakından kontrol edilmektedir. Emisyonları azaltmak için bir mekanizma olmasının yanı sıra, bu sistemler aynı zamanda uluslararası bağlanırsa ülkelere finansal akış sağlar. Son olarak, bu bölümde sınır karbon düzeltmeleri, sera gazı performansı standartları ve ticaretle ilgili diğer mekanizmalar ve önlemleri tanıtılmıştır. Özellikle sınırda karbon vergisi ayarlamaları, emisyon yoğun ürünler için pazara giriş engeli oluşturarak gelecekteki ülkelerin iklim ve ticaret politikalarında önemli bir rol oynayabilecektir. Bu mekanizmaların uluslararası ticaret sistemi bağlamında da uygulanması yönünde engel bulunmamaktadır.

Görüldüğü gibi, iklim değişikliği ve ticaret hakkındaki tartışmalar çok yönlüdür. Bölüm 3'te olduğu gibi, ticaret sorunları çevresel açıdan değerlendirilebilir; ya da çevre politikaları ve / veya rejimleri, iklim değişikliği ile ticaret politikaları arasındaki bağlantının 4. ticaret bölümünde ticaret camlarının detaylarıyla açıklandığı gibi bir ticaret odağıyla incelenebilir. Bu çerçevede 4. Bölüm, pazar giriş kavramını uluslararası bir ticaret kavramı olarak vurgulamaktadır. Bu bağlamda, bölüm başında uluslararası ticaret sisteminin evrimi ve bugüne dek elde ettiği başarıları incelenmektedir. Ayrıca, pazar ve iş geliştirme kavramları ile çevresel mal ve hizmetler için uygulamaları tartışılmaktadır. Bölümün sonunda, iklim değişikliği politikalarının gölgesinde pazara giriş sorunlarının nasıl evrilebileceği, rekabet gücü endişeleri ve sınır vergisi düzenlemeleri gibi ilgili politikalara odaklanarak bir kez daha ele alınmaktadır. Tüm bu kavramsal ilişkilerin haritalandırılması, belirli ülkelerin ve ulus-üstü varlıkların iklim politikaları hakkındaki tartışmaları kolaylaştırmaktadır. Bu zeminler üzerinde

ülkelerim iklim deęişikliği politikalarını çözümlmek için ABD, AB., Çin ve Türkiye için sırasıyla 5., 6., 7. ve 8. Bölümlerde sırasıyla iç ve dış faktörlerin ele alındığı kapsamlı analizler yapılmıştır.

Aslında, bu ülkeler ve ulus-üstü varlıkların ilk üçü küresel emisyonların büyük bir bölümünü oluşturduğundan; bu aktörlerin analizinin, iklim politikalarını hesaba katan araştırma sorusu hakkında çıkarım yapmak için son derece etkili olduğu değerlendirilmektedir.

İklim deęişikliği politikalarının analizi, ilgili tüm arka plan verilerinin, istatistiklerin ve bilgilerin inceleneceği şekilde ele alınmıştır. Bu bağlamda, tüm bu analiz bölümlerinin birinci bölümünde ülkelerin ve ulus üstü varlıkların enerji ve iklim görünümüne yoğunlaşmıştır. Temel ekonomik ve enerji göstergeleri, sektörel ve alt sektörel detaylar dahil olmak üzere emisyon görünümü, emisyon projeksiyonları ve Amerika Birleşik Devletleri (ABD), Avrupa Birliği (AB), Çin ve Türkiye için enerji politikalarına genel bakış verilmiştir. Bu istatistiksel görünüm, ülkenin iklim deęişikliği politikalarının kapasitesini ve yeterliliğini, özellikle azaltma kapasitelerine ilişkin olarak değerlendirmeyi sağlamıştır.

Ayrıca, ülkelerin uluslararası iklim deęişikliği politikalarının dinamiklerini anlayabilmek için, yerli iklim deęişikliği politikaları, politika belirleme aktörleri, mevcut iklim ve enerji politikası yapıları ve hedefleri dahil edilerek detaylı bir şekilde tartışılmıştır. Yerel iklim politikalarının analizinin ardından, ülkelerin veya ulus-üstü kuruluşların uluslararası iklim deęişikliği rejimi ile ilgili tutumları incelenmiştir.

Bu politika analizlerinden sonra, iklim deęişikliği politikalarının iç ve uluslararası itici güçleri ele alınmıştır. İç itici güçler arasında, *Ülkenin Kırılganlığı, Yerli İklim Deęişikliği Politikalarının Yeterliliği ve Emisyon Azaltım Potansiyeli, Yasama*

Yapıları, Liderlerin / Politikacıların Tutumları ve Endüstriyel Lobi Grupları ile Sivil Toplumun Gücü analiz edildi. Ülkelerin uluslararası iklim değişikliğinin arkasındaki iç itici güçlerin hakkındaki tartışmaların ardından; uluslararası itici güçler değerlendirildi. Bu bölümde *Dış Politika Amaçları, İklim Değişikliği ve Dış Ticaret Etkileşimi ve Finansal Gelirler ve Giderler* birincil uluslararası politika itici güçleri olarak ele alınmıştır. Ülkeden ülkeye göreceli etkileri bakımından değişmekle birlikte, söz konusu uluslararası itici güçlerin de iç itici güçlerin yanı sıra iklim değişikliği politika oluşturma sürecinde etkili olduğu görülmüştür.

ABD'nin analizi, iklim değişikliği politikası oluşturma sürecinin oldukça karmaşık olabileceğini göstermektedir. Ülkenin enerji ve iklim görünümü, ABD'nin enerji üretiminin çoğu fosil yakıt kaynaklardan oluşturduğundan büyük miktarda sera gazı emisyonu ihtiva etmektedir. Bu nedenle, ülke karbon yakalama ve depolama teknolojilerine yatırım yapmaya başlamıştır. Buna göre, çarpıcı olmamakla birlikte, ABD emisyonlarında önümüzdeki dönem için bir düşüş olacağı tahmin edilmektedir.

Öte yandan, ABD'nin yerel iklim politikasının, ülke genelinde iklim politikası bağlamındaki iniş ve çıkışlarla uyumlu olmamakla birlikte, ülke ve bölgesel seviyede birçok iklim girişimi söz konusudur. Dolayısıyla, büyük bir stratejisi olmamasına rağmen; bu durum ABD'ye emisyonları azaltma kapasitesi ve potansiyeli sağlayan bir altyapı sağlamaktadır. Uluslararası iklim politikası açısından ABD'nin, Kyoto-Kyoto Sonrası ve Paris-Paris sonrası iklim değişikliği müzakerelerine yönelik tutumu göz önüne alındığında değişken bir uluslararası iklim politikasına sahip olduğu görülmektedir. Gerçekten de ABD, çeşitli yerli ve yabancı aktörlerin etkilerine açık, yekpare ve uyumlu bir uluslararası iklim politikasına sahip değildir.

Yerli itici güçler incelendiğinde; ABD'nin iklim değişikliğinin olumsuz etkilerine karşı oldukça savunmasız olduğu görülmüştür. ABD iklim politikasının yeterliliği ve ülkenin emisyon azaltma kapasitesine bakıldığında; ABD'nin yetersiz bir iklim politikası olduğu, ancak yeterli derecede azaltım kapasitesi olduğu görülmektedir. Bir diğer yerli iklim politikası belirleyicisi olarak ABD'nin yasama yapısı, Senato, Kongre ve Cumhurbaşkanı arasındaki çıkarların çeşitliliği göz önüne alındığında uluslararası bir iklim değişikliği anlaşması üzerinde uzlaşmayı ve şartlarını yerine getirmeyi zorlaştırmaktadır. Liderin tutumu bağlamında, Trump'ın mevcut söylemleri ve iklim değişikliği bağlamında geri sarma politikaları anlamında destekleyici bir tablo göstermemektedir. İç faktörlerin sonuncusu olarak, ABD'deki sanayi baskı grupları ve sivil toplum kurumları bağlamında etkinin yönü belirsizdir.

ABD iklim politikasının uluslararası itici güçlerine gelince, ABD'nin dünya üzerinde büyük bir güç olmaya yönelik büyük dış politika hedefi kapsamında, iklim değişikliği rejiminin geleceğini etkileme çabaları ve Paris Anlaşmasından geri çekilme açıklamaları tutarlılık arz etmektedir. Ayrıca, dış ticarete ilişkin endişeleri, ABD'nin iklim değişikliği politikalarını önemli ölçüde etkilemektedir. ABD şu anda fosil yakıtlardan elde edilen ihracat gelirlerine bağımlı olmasa da, Bölüm 5'te açıklandığı gibi, yakın gelecekte özellikle kaya gazı etkisiyle enerjinin ihracat gelirlerinin içinde önem arz edeceği değerlendirilmektedir. Bu durum, ABD'yi iddialı bir iklim değişikliği anlaşması gibi fosil yakıtlara olan talebi sınırlandırabilecek politikalardan alıkoymaktadır. Ayrıca, ABD ihracat sepetinde çevresel ürünler mal ihracat payının neredeyse sabit kalması, bu ürünlerin ihracatında yetkinlik ve rekabet avantajının artması için önemli bir beklenti bulunmaması, ABD'yi enerji yoğun ürünlerin payının aleyhine olacak bir talep hareketini tetiklemekten alıkoymaktadır. Bununla birlikte, Paris Anlaşmasının katılımcısı olmayan bir ülke olarak ABD, emisyon yoğunlaştırılmış sektörlerde kendi ihracatı için bazı sınır vergi uyarlamaları ile karşı karşıya kalabilecektir. Son

olarak ABD'nin, Paris Anlaşması kapsamında, iklim finansmanın en büyük bağışçılardan biri olması nedeniyle finansal kazanımlardan ziyade finansal çıkışlarla karşılaşması söz konusu olabilecektir. Tüm bunların bir sonucu olarak, ABD'nin Paris anlaşması konusundaki son tutumu, yerel ve uluslararası faktörlerin etkileşimi sonucu belirlenmektedir. Bu etkileşim şu şekilde gerçekleşmektedir: Liderlerin olumsuz tutumları ve gevşek iklim politikası için çıkar gruplarının baskısı dış ticaret rekabetçiliği endişeleriyle birleştiğinde; ABD gevşek bir uluslararası iklim politikasına yönelmiştir.

AB'nin analizi, iklim değişikliği politikası oluşturma sürecinin oldukça karmaşık olabileceğini göstermektedir. AB'nin enerji ve iklim görünümü enerji üretiminin esas olarak nükleer enerjiye dayanması sebebiyle sahip olduğu nispeten az enerji yoğunluğu nedeniyle bir esneklik getirmektedir. AB'nin iklim politikası, Bölüm 6'da açıklandığı gibi, Birlik ve eyalet düzeyindeki çeşitli aktörler tarafından tasarlanıp uygulanmaktadır. Ayrıca, zaten emisyonlarda zirveye ulaştığı için 2020, 2030 ve 2050 için daha iddialı azaltma hedefleri ortaya koyabildi. Bu hedeflere ulaşmak için AB, en öne çıkanının Emisyon Ticaret Sistemi (ETS) olduğu birçok eylemde bulundu. Ulusal emisyon azaltma hedeflerinin yanı sıra yenilenebilir enerji hedefleri, inovasyon ve finansman mekanizmalarını ile enerji verimliliği tedbirleri geniş ölçekte desteklemektedir.

AB'nin uluslararası iklim politikası açısından; başlangıçta, küresel ısınma sorununa karşı tutumunun her zaman yapıcı olduğuna dikkat edilmelidir. Kyoto döneminde liderlik rolünü üstlenen AB, esas olarak sağlam fakat aynı zamanda iddialı ve kapsayıcı bir iklim değişikliği anlaşmasından yanadır. Ayrıca, uluslararası iklim değişikliği müzakerelerine yönelik mevcut duruşu, rejimin hayatta kalması için ABD'nin BMİDÇS çerçevesinde çekilmesinin ardından önceki liderlik rolünü sürdüreceğini göstermektedir.

İklim politikasını şekillendiren iç faktörler incelendiğinde; AB'nin iklim değişikliğinin olumsuz etkilerine karşı savunmasız olduğu görülmüştür. İklim değişikliği politikasının yeterliliği ve AB'nin azaltma kapasitesine ilişkin olarak, onu azaltma kapasitesini de artıracak yeterli enerji ve iklim stratejileriyle donatmak için Birlik düzeyinde yanıtlayıcı stratejileri geliştirdiği kolayca kabul edilebilir. Hepsi birlikte değerlendirildiğinde, iklim değişikliği politikasının yeterliliğini ve azaltım kapasitesinin yeterliliğini savunulabilir.

Yasama yapısı nedeniyle karar alma ve uygulamaların çok uzun olmasına rağmen mevcut politikalar kapsamında AB'nin cesaretlendirici politikalarına neden olmaktadır. Ek olarak, Avrupalı Liderlerin katı bir iklim değişikliği rejiminin bir parçası olma yolunda daha olumlu bir tavır olduğu sonucuna varılabilirken, AB sivil toplumu ve sanayi baskısı grupları, kendilerine karşı korunma tedbirlerinin alınması koşuluyla iddialı bir iklim politikasını desteklemektedir.

AB'nin iklim politikasının uluslararası itici faktörlerine gelince; dış politikasının çok taraflılığa dayanması uluslararası iklim değişikliği anlaşmasında liderlik rolü üstlenmesi ile tutarlıdır. Ayrıca, dış ticaret ve iklim değişikliği etkileşimi ile ilgili olarak, Bölüm 6'da belirtildiği gibi, AB düşük karbon teknolojilerine büyük önem vermektedir. Bu nedenle, AB'nin bunlardan umduğu rekabetçilik kazanımları iklim değişikliği bağlamında daha destekleyici politikalara yol açmıştır. Ek olarak, AB dış tedarikçiden yapılan ithalata bağımlılığını azaltarak enerji güvenliğini artırmak için, Enerji Birliği bağlamında bazı önlemler almayı hedeflemiştir.

Sonuç olarak, AB iklim politikalarını ve bunların dış ticarete verdikleri tepkileri bir fırsat alanı olarak takdir etmiş ve düşük karbonlu teknolojilerdeki rekabet avantajlarını dış ticaret hedefleri için bir kaldıraç olarak kullanmayı amaçlamıştır. Finansal getiri ve harcamalara gelince, hem gelişmekte olan hem de en az gelişmiş ülkelere transfer şeklinde hem de maddi alım satımdan elde edilen finansal

kazançlar şeklinde, AB'nin konumu karmaşık görünmektedir. Ancak, finansal gelirler uzun vadede AB'nin pazar geliştirme çabalarına katkıda bulunduğundan; finansal faydalar, finansal çıkışların üstünde öngörülmektedir.

Özetle, AB iklim politikasını yönlendiren şey iç faktörlere ek olarak uluslararası faktörlerdir. ABD örneğine karşı, yerel ve uluslararası faktörler arasındaki etkileşim AB için tam tersi sonuçlar vermektedir. İklim değişikliği politikasının yeterliliği ve azaltım kapasitesi, sivil toplumun baskısı ve yasal faktörler gibi iç faktörler dış ticaret rekabetçiliği endişeleriyle birleştirilirken, AB için katı bir iklim değişikliği politikası ile sonuçlanmaktadır. İlginçtir, çünkü aynı iç ve uluslararası faktörlerin birbiriyle etkileşimi ABD tamamen farklı bir tablo ortaya çıkarmıştır; bu durum, en azından iklim faktörünün yapım sürecinde kısa vadede yerel faktörün rolünü göstermektedir.

Çin örneğine gelince, Çin'in enerji ve iklim görünümü iklim politikası tasarımı için birçok noktaya işaret etmektedir. Bölüm 7'de açıklandığı gibi, Çin, muazzam ekonomisi nedeniyle aşırı miktarda enerji üretimi ve tüketimine sahiptir, aslına bakılırsa dünyanın en büyük enerji tüketicisidir. Öte yandan, bu enerji tüketimi büyüklüğü, Çin ile başa çıkma çabalarındaki kilit rolü ile iklim değişikliği sorununun çözümü için belirleyici olmaktadır. Ayrıca, Çin'in enerji üretimi esas olarak kömür, ham petrol ve hidrokarbon kaynağı olarak doğal gaz üzerine kuruludur. Fosil yakıtlar arasında kömür, enerji üretiminde ham petrol ve onu takip eden en büyük paya sahip iken yenilenebilir enerji kaynakları ve biyoyakıtlar birlikte ham petrol ve doğal gaz ile yaklaşık olarak aynı paya sahiptir. Aslında Çin şu anda dünyanın en büyük kurulu hidroelektrik ve rüzgâr enerjisi kapasitesine, muazzam güneş ve biyogaz tesisatı kapasitesine sahiptir. Yenilenebilir teknolojilere geçişin ana nedeni, Çin'in bu teknolojilerde artan maliyet rekabetçiliğinin yanı sıra, hava kirliliğinin azalması ve enerji güvenliğinin artması gibi diğer yan faydalardır. Enerji üretimi ve tüketim şekilleri nedeniyle Çin sera

gazı emisyonlarındaki artış eğilimin kısa ve orta vadede süreceği öngörülmektedir. Çeşitli çalışmalara göre, emisyonların 2030- 2040 yılları arasında zirveye ulaşmış olacağı öngörülmektedir. Bu bağlamda karbon yakalama ve depolama teknolojilerinin rolü de yenilenebilirlerin yanı sıra araçsal olacaktır. Nitekim Çin, bu teknolojilerin geliştirilmesi ve uygulanması konusunda çalışan birkaç ülkeden biri konumundadır.

Ülkenin komuta ekonomisine özgü olan iklim politikası oluşturma konusunda sayısız aktörün varlığı, Çin'de iklim politikası yapımı açısından bir sorun teşkil etmemiştir. Ek olarak, Çin iklim hedefleri ve kalkınma hedefleriyle birlikte birçok ulusal ve ulusal iklim eylem planı geliştirmiş ve uygulamıştır.

Uluslararası iklim değişikliği politikası ile ilgili olarak, Çin'in uluslararası iklim değişikliği müzakerelerine katılımının aşamalı olarak dış bir rolden merkezi bir role ilerleyeceği sonucuna varılabilir.

İç ve uluslararası politika itici güçleri açısından Çin aşağıdaki sonuçları yansıtmaktadır. Kırılganlık konusunda Çin, iklim değişikliğinin olumsuz etkilerine karşı oldukça savunmasızdır. Bir diğer iç itici güç olarak, iklim değişikliği politikasının yeterliliği ve azaltma potansiyeli açısından; Çin iklim politikası, hızı ve hedefleri göz önüne alındığında yeterli olabiliyor iken; ulusal hedefler ve mevcut yenilenebilir enerji kaynakları ile karbon yakalama ve depolama teknolojilerindeki mevcut durum göz önüne alındığında çok büyük azaltım potansiyeli söz konusudur. Yasama faktörleri Çin örneğinde farklı bir şekilde farklı çalışmaktadır. Merkezi olarak planlanan karar organı, politika geliştirme sürecinin hızlı bir şekilde çalışmasını sağlar, ancak aynı zamanda, bu üst düzey yöneticilerin tarafında herhangi bir isteksizlik olması durumunda, bazı kesinti risklerini miras alır. Çin'in iklim değişikliği sorununa karşı mevcut yapıcı tutumu göz önüne alındığında, merkezi olarak yönetilen ekonominin yasal yapıları, Çin'in

uluslararası iklim paketinde daha fazla uzlaşma için destekleyici faktörler arasında değerlendirilebilir. Öte yandan, liderlerin tutumlarına gelince, Çinli liderler çevreci bir tavrı desteklemekte ve yeşil ekonominin modernleşme hedeflerindeki rolünü açıklamaktadır. Sivil toplum ve çıkar gruplarına gelince ise, Çin Komünist Partisi'nin çok belirleyici bir rol oynadığı Çin'de hükümetinin merkezi yapısına rağmen; sivil toplumla birlikte görüş ve lobi grupları, bu hükümet aktörleriyle yakın ilişkileri olduğu sürece, nihai politika sonuçları konusundaki önceliklerini ekleyebilmektedir. Buna göre, Çin'in yeşil büyüme politikaları, Çin'i uluslararası iklim politikaları konusunda daha destekleyici bir tutuma itmektedir.

İklim değişikliği politikalarının uluslararası itici güçleri, Çin politika yapımı için çok önemlidir. Bu bağlamda, Çin'in dış politika hedefleri, ülke için çok benzersiz ve tutarlı bir itici güçtür. Çin'in mevcut yeşil büyüme politikaları ekonomik kalkınma hedefine ulaşılmasına yardımcı olmaktadır. Dış ticaret ve iklim değişikliği etkileşimi, Çin için çok önemli bir itici güçtür. Nitekim, Çin dış ticaretinin analizi, Çin'in genel iklim değişikliği düzenlemesinden büyük ölçüde faydalanabileceğini göstermektedir. Fosil yakıt ithalatına bir şekilde bağımlı olması nedeniyle, daha fazla yenilenebilir enerji kullanımı ile enerji güvenliği koşullarını iyileştirmeyi hedeflemektedir. Dahası, yenilenebilir enerji gibi düşük karbonlu teknolojilerdeki yeterliliği nedeniyle, daha sıkı bir iklim rejimi, ülkeleri bu teknolojilerin daha fazlasını kullanmaya ittiğinde, Çin daha fazla ihracat yapabilecektir. Nitekim Çin ve AB, iş geliştirme çabaları ile oluşturulacak yeni bir iklim değişikliği rejimi nedeniyle, piyasaya erişim koşullarının iyileşmesiyle beklenen kazanımlarla önde gelen iki aktör olarak değerlendirilebilir. Ayrıca, emisyon yoğun sektörlerin ihracatı, içindeki karbon içeriğini hedefleyen düzenlemelere karşı hassastır. Bu nedenle, Çin'in Paris Anlaşması müzakereleri sırasında kapsayıcı, ancak cezai olmayan bir anlaşma lehine olan konumu anlam kazanmıştır.

Öte yandan, finansal getiriler ve harcamalar göz önüne alındığında, tek başına bir uluslararası iklim değişikliği rejimi, Çin'in yeşil büyüme politikalarını sürdürmesinin yanı sıra, diğer gelişmekte olan ülkelerdeki Çin düşük karbonlu teknolojilere yönelik talepleri artırması ve Çin'in ihracatı için olabilecek potansiyel artış bağlamında da önemlidir. Bu nedenle, söz konusu rejimin etkin işlemesiyle Çin için gerek kendi ülkesine yönelik gerekse başka ülkelerde ortaya çıkacak talebin karşılanması sonucunda daha fazla finansal giriş söz konusu olabilecektir.

Sonuç olarak, politika itici güçlerin derinlemesine bir analizine dayanarak, Çin'in uluslararası iklim değişikliği politikasının iç itici güçlerin yanı sıra uluslararası etkenler tarafından yönlendirildiği iddia edilebilir. İlginçtir ki, Çin için yerel ve uluslararası faktörlerin etkileşimi bir şekilde farklıdır. İklim kırılganlığı, azaltıcı kapasite ve yerli faktörler olarak yasal faktörler, rekabet gücü endişeleri finansal gelir beklentileri ile birleştiğinde Çin'in destekleyici savunması durumu ortaya çıkmaktadır.

Türkiye'ye gelince, ülkenin enerji ve iklim görünümü, Türkiye'deki sera gazı emisyonlarının ana kaynağı enerji olduğu için, daha fazla enerji kullanımı gerektiren sürekli büyüme eğiliminin, azaltma kabiliyeti açısından Türkiye'yi daha zorlu bir konuma getirebileceğini göstermektedir. Buna paralel olarak, Türkiye henüz emisyon zirvesini açıklamamıştır. Öte yandan, yenilenebilir enerji kaynaklarının kullanımında, ülkenin azaltma çabalarını kolaylaştırabilecek bir artış eğilimi söz konusudur. İklim değişikliği kavramı, kalkınma planları, ulusal planlar ve iklim değişikliğine özgü stratejiler içerisinde yaklaşık yirmi yıl boyunca Türkiye'nin iç politikasına yansımıştır.

Buna karşılık, Türkiye'nin uluslararası iklim değişikliği politikası enteresan gelişmelere sahne olmuştur. Türkiye, gelişmekte olan bir ülke olmasına rağmen, Sözleşme yükümlülükleri bağlamında gelişmiş ülkelerin yer aldığı Ek I ve Ek II

listelerinde yer almaktadır. Kendisini BMİDÇS geliřmekte olan ÷lkelere finansal yardımları destekleyen ÷lkeleri belirleyen Ek II'den çıkarılmasına yönelik başarılı giriřimleri söz konusu olmuřtur. Takip eden dönemdeki büyük çabaları ÷lkeye, Kyoto Dönemi sonuna kadar iklim finansmanına erişim açısından geliřmekte olan ÷lkelerinkilerle aynı şartları sağlasa da; Paris Anlaşması, Türkiye için aynı şart ve koşulları garanti etmemektedir. Bu nedenle, Türkiye'nin çabaları, özel koşulları nedeniyle haklarını 2020 yılının ötesine taşımaya odaklanmıştır.

Ülkenin iç politika iticileri değerlendirildiğinde, iklim kırılganlığı bağlamında, Türkiye iklim deęişiklięinin olumsuz etkilerine karşı savunmasızdır. Bununla birlikte, kırılganlığı çok dar bir bürokrat veya politikacı grubu tarafından tartışılmış ve iklim politikası söyleminde ve önceliklerinde sınırlı bir ölçüde yansıtılmıştır. Yasama yapıları bağlamında, kurumlar ve çerçevenin iklim politikası oluşturmak için elverişli olmasına rağmen, uluslararası iklim politikası sonucunun Türkiye Büyük Millet Meclisi'nin onayı gerektiğinden biraz daha zahmetli olduęu sonucuna varılabilir. Liderlerin tutumlarıyla ilgili olarak, Türk liderlerin ve politikacıların iklim deęişiklięine karşı olumsuz bir tutumu yoktur. Üst düzey politikacılar söylemlerin gündemle sınırlı olduęu yerlerde tarafsız olarak değerlendirilebilirken; iklim deęişiklięi baş müzakerecisi Mehmet Emin Birpınar gibi daha teknik karakterler, konuyla ilgili çok yönlü ve iddialı bir bakış açısına sahiptir. Sivil toplum ve çıkar gruplarına gelince, sivil toplumun Türkiye'deki iklim politikasına etkisi sınırlı olsa da, sınıai baskı grupları politikaları üzerine rekabet edebilirlik konusuna öncelik vermektedir.

İklim deęişiklięi politikasının itici güçleri ile ilgili olarak, çevre alanındaki uluslararası düzenlemeleri geçmek için uygun bir politika ortamı sağlamasına rağmen; Türk dış politikası, çevre anlaşmalarının tartışmasız kabul edileceğini garanti etmemektedir. Dış ticaret ve iklim deęişiklięi etkileşimi açısından görünüm ÷lkenin iklim deęişiklięi politikalarının teşkili bağlamında belirleyicidir. Türkiye

bir yandan, fosil yakıtların net ithalatçısı ve cam, seramik ve çimento gibi emisyon yoğun sektörlerin net ihracatçısıdır. Öte yandan, gelecekte Türkiye için büyük bir potansiyel sunan bu ürünlerin ihracatının sürekli artmasına rağmen, çevre malları ve teknolojilerinin net bir ithalatçısıdır. Gerçekten de, ülkedeki yeni yenilenebilir enerji yatırımlarına artan bir ilgi vardır. Bu nedenle, yerli kaynakların kullanımı için çeşitli destek mekanizmaları önerilmiştir. Bu teşvik mekanizmalarıyla, ihracata da yönlendirilebilecek düşük karbonlu teknolojilerin gelişmesi beklenmektedir. Yine de, Türkiye'nin emisyonu yoğun olan ürün ihracatı, çevresel mal ihracatından yaklaşık on dokuz kat daha büyüktür. Bu nedenle, emisyon yoğun ürünlerin sürdürülebilirliği, Türk makamları için her şeyden önce gelmektedir. ABD'nin emisyon yoğun ürün ihracatını sürdürme endişelerine benzer şekilde; Emisyon yoğun mallar için doğabilecek sınır vergisi düzenlemeleri gibi ek mali mükellefiyetlere ilişkin risklerinin ortadan kaldırılması, çevresel ürün ve hizmetlere ilişkin olabilecek ihracat fırsatlarından daha önemlidir. Ülkenin karbon yoğun ihracatını kesintiye uğratmak için en önemli tehdit, ana ihraç pazarlarınca uygulamaya başlanabilecek sınırdaki karbon vergisi ayarlamalarıdır. Ek olarak, ithalata bağımlılığı nedeniyle, ülkenin enerji güvenliği endişeleri, ülkenin iklim politikaları için ayrıca belli bir öneme sahiptir. Bu nedenle, mevcut dış ticaret yapısı ve dinamikleri, ülkeyi, iklim değişikliği rejimi dışında kalarak karşılaşılabilecek risklerini yenmenin yanı sıra, çevresel ürünlerde olabilecek ihracat potansiyelinden yararlanmaya yönelik gelecekte olabilecek hedefler de gözetildiğinde uluslararası iklim değişikliği rejimi kapsamında daha yapıcı bir yaklaşıma itecektir. Çevresel ürünler ve teknolojiler, finansal harcamalar ve gelir beklentileri ile ilgili uluslararası kazanımların, Türkiye'nin 2020 yılından sonra BMİDÇS kapsamında Gelişmekte olan ülke statüsünü sağlaması koşuluyla, daha yüksek olması beklenmektedir. 2020 yılından sonra finansmana erişim arayışı, Paris Anlaşması'nın onaylanmasındaki gecikmenin nedenidir.

Sonuç olarak, düşük karbonlu teknolojilerin ticareti ile ortaya çıkan fırsatların yanı sıra, yenilenebilir enerji kaynaklarının daha kapsamlı kullanılması ve enerji ticareti konusunda sağlanması beklenen avantajlar ile birlikte uluslararası ticaretle ilgili sınır vergi düzenlemeleri gibi tehditlerden uzak durulması; ayrıca iklim finansmanına erişimini sürdürme arzusu ile Türkiye'nin, BMİDÇS ve Paris Anlaşmasını hedeflerine ulaşmak için bir iş geliştirme platformu olarak kullanmaya çalıştığı görülmektedir. Bu nedenle, iç faktörlerin yanı sıra uluslararası itici güçler de, Türkiye'nin uluslararası iklim politikasında etkilidir.

Karşılaştırmalı olarak, yerel faktörlerin AB'yi ve Çin'i yeni iklim rejimi oluşturmaya yönelttiği, bir başka deyişle Paris Anlaşması'nın, yasama faktörleri, liderlerin tutumları ve sanayi ve baskı gruplarının gücü gibi bireysel yerel faktörlerin etkisinin olduğu sonucuna varılabilir. Öte yandan, ABD ve Türkiye'nin mevcut politikaları çıktı bakımından benzer gözükse de; iç ve uluslararası faktörler arasındaki ilişki bir dereceye kadar farklılık gösterir. Liderlerin tutumları ve yasal faktörler ABD'deki dış ticaret dinamikleri ile etkileşim içindedir. Türkiye'de ise iç faktörlerden azaltma kapasitesi ve endüstriyel lobi gruplarının baskısı, dış ticaret dinamikleri ve finansal beklentilerden kaynaklanan rekabetçilik endişeleri ile etkileşime girmektedir. Kısacası, iç ve dış faktörler ve bunlar arasındaki etkileşim AB ve Çin'i Paris Anlaşması'na katılmaya ve savunmaya iterken ABD'yi kısa vadede Paris Anlaşması'na katılmaktan caydırmaktadır. Türkiye için, etki yönü net görünmemekle birlikte, Türkiye'nin dış finansal fonlara erişimini garanti altına almak kaygısı ile yakında daha destekleyici bir politika düzlemine doğru kayması şaşırtıcı olmayacaktır.

Sonuç olarak, çeşitli ülkelerin ve ulus-üstü kuruluşların analizlerine dayanarak, değişen etkileşim mimarilerine rağmen, hem iç hem de uluslararası faktörlerin uluslararası iklim değişikliği politika oluşturma süreçlerinde etkili olduğu görülmektedir. Bunun yanında, rekabet gücü endişeleri konusundaki bağlantı

noktaları ile dıř ticareti etkileyen uluslararası faktörler ve pazara giriş ve iş geliştirme aracı olarak hizmet eden finansal akış beklentileri, çeşitli iç ve uluslararası faktörler arasında bir bağlantı sağlayarak uluslararası iklim deęişiklięi politika tasarımında önem taşımaktadır.

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