KADİR HAS UNIVERSITY
SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF ENGINEERING AND NATURAL SCIENCES

THE ROLE OF CLIMATE CHANGE IN THE ENERGY POLICIES OF THE EUROPEAN UNION

VİLDAN DEMİRKIRAN

MASTER OF ARTS THESIS

İstanbul, April, 2022

THE ROLE OF CLIMATE CHANGE IN THE ENERGY POLICIES OF THE EUROPEAN UNION

VİLDAN DEMİRKIRAN
ADVISOR: PROF. DR. VOLKAN Ş. EDİGER
CO- ADVISOR: PROF. DR. MELTEM Ş. UCAL

A thesis submitted to
the School of Graduate Studies of Kadir Has University
in partial fulfilment of the requirements for the degree of
Master of Arts in Energy and Sustainable Development.

İstanbul, April, 2022

APPROVAL

This thesis titled THE ROLE OF CLIMATE CHANGE IN THE ENERGY POLICIES OF THE EUROPEAN UNION submitted by the VİLDAN DEMİRKIRAN, in partial fulfillment of the requirements for the degree of Master of Arts in Energy and Sustainable Development is approved by

Prof. Dr. Volkan Ş. EDİGER (Advisor) ...……..
Kadir Has University

Prof. Dr. Meltem Ş. UCAL (Co-Advisor) ……
Kadir Has University

(Assoc. Prof. Gökhan Kirkil) ……
Kadir Has University

(Assoc. Prof., İstemi Berk) ……
Dokuz Eylül University

I confirm that the signatures above belong to the aforementioned faculty members.

_____

(Title, Name and Surname)
Director of the School of Graduate Studies
Date of Approval: Day/Month/Year

DECLARATION ON RESEARCH ETHICS AND PUBLISHING METHODS

I, VİLDAN DEMİRKIRAN; hereby declare

- that this Master of Arts that I have submitted is entirely my own work and I have cited and referenced all material and results that are not my own in accordance with the rules;
- that this Master of Arts does not contain any material from any research submitted or accepted to obtain a degree or diploma at another educational institution;
- and that I commit and undertake to follow the "Kadir Has University Academic Codes of Conduct" prepared in accordance with the "Higher Education Council Codes of Conduct".

In addition, I acknowledge that any claim of irregularity that may arise in relation to this work will result in a disciplinary action in accordance with the university legislation.

VİLDAN DEMİRKIRAN

_____

DATE AND SIGNATURE

To My Dearest Family...

ACKNOWLEDGEMENT

Firstly, I would like to express my gratitude to my supervisor Prof. Dr. Volkan Ş. Ediger for providing an opportunity to study in the master program with a scholarship and for his great guidance and patience. I would also like to thank my co-supervisor, Prof. Dr. Meltem Ş. Ucal for her support and advice. Without the suggestions and comments of my supervisors, this thesis would not have been completed.

My sincere appreciation also goes to my parents, sister and brother who have always supported me in my whole life. They always believed in me. Without their support, I could not finish this thesis and my master's program.

I would like to thank my friends who motivate me when I need it.

I also thank Hazal Mengi Dinçer for always being helpful.

THE ROLE OF CLIMATE CHANGE IN THE ENERGY POLICIES OF THE EUROPEAN UNION

ABSTRACT

One of the key factors for economic development and increasing the welfare level of the people is energy. Developed and developing countries depend on fossil fuel resources to meet their energy demand. The need for fossil energy sources, unevenly distributed throughout the world, is increasing daily. However, the rapid depletion of reserves and their short life span threaten countries in terms of energy supply. One of these countries is the European Union, which is a supranational organization. The Union, which ranks first in energy imports, meets more than half of its energy needs from fossil resources. In the past, the problems experienced in energy supply due to international oil crises and political instability in the countries on which it is dependent on energy forced the Union to produce a new energy policy. In the 1990s, the issue of climate change, which emerged as a result of the excessive use of fossil fuels, came to the fore, and the goal of reducing carbon emissions, which reached dangerous levels, to pre-Industrial Revolution rates brought a new dimension to the energy policies of the European Union. In order to ensure energy supply security, reduce dependence on fossil fuels, and produce sustainable and environmentally friendly energy, the EU develops new policies. Aiming to be a climate-neutral continent by 2050, the Union plans to obtain most of its energy needs from renewable sources and low-carbon technologies. In this study, the change in energy policies since the establishment of the EU, the role of climate change in policy making, how far the EU is in carbon emission reduction targets, the role of the EU in global climate leadership and future plans will be discussed.

Keywords: EU energy policies, climate change

AB ENERJİ POLİTİKALARINDA İKLİM DEĞİŞİKLİĞİNİN ROLÜ

ÖZET

Ekonomik kalkınma ve halkın refah seviyesinin artmasının yegâne unsurlarından birisi enerjidir. Gelişmiş ve gelişmekte olan ülkeler, enerji ihtiyacını karşılamak için fosil yakıtlara bağımlıdır. Dünya genelinde dengesiz dağılan fosil enerji kaynaklarına duyulan ihtiyaç her geçen gün artmaktadır. Fakat rezervlerin hızla tükenmesi ve ömürlerinin kısa süreli olması ülkeleri enerji arzı konusunda tehdit etmektedir. Bunların başında ulus üstü bir oluşum olan Avrupa Birliği gelmektedir. Enerji ithalatında ilk sıralarda yer alan Birlik, enerji ihtiyacının yarısından fazlasını fosil kaynaklardan karşılamaktadır. Geçmişte, uluslararası petrol krizleri ve enerjide bağımlı olduğu ülkelerdeki siyasi istikrarsızlık sebebiyle enerji arzında yaşadığı sorunlar, Birliği yeni enerji politikası üretmeye mecbur bırakmıştır. 90'lı yıllarda, fosil yakıtların aşırı kullanımı neticesinde ortaya çıkan iklim değişikliği konusunun gündeme gelmesi, tehlikeli boyutlara ulaşan karbon emisyonunun Sanayi Devri öncesi oranlarına çekilmesi hedefi, Avrupa Birliği enerji politikalarına yeni bir boyut kazandırmıştır. Enerji arz güvenliğini sağlamak, fosil yakıtlara olan bağımlılığını azaltmak, sürdürülebilirlik ve çevre dostu enerji üretmek adına, AB yeni politikalar geliştirmektedir. 2050 yılına kadar iklim-nötr kıta olmayı hedefleyen Birlik, enerji ihtiyacının büyük kısmını yenilenebilir kaynaklardan ve düşük karbonlu teknolojilerden elde etmeyi planlamaktadır. Bu çalışmada; AB'nin kuruluşundan bugüne enerji politikalarındaki değişim, iklim değişikliğinin politika yapımındaki rolü, AB'nin karbon emisyonu azaltım hedeflerinde ne kadar başarılı olduğu, Küresel iklim liderliğinde AB'nin rolü ve gelecek planları ele alınacaktır.

Anahtar kelimeler: AB enerji politikaları, iklim değişikliği

TABLE OF CONTENTS

LIST of TABLES

LIST OF FIGURES

LIST of ABBREVIATIONS

BP:	British Petroleum
CO2:	Carbon Dioxide
EAP:	Environmental Action Programme
EC:	European Community
ECCP:	European Climate Change Programme
ECSC:	European Coal and Steel Community
ECT:	The Energy Charter Treaty
EEC:	European Economic Community
EEC:	European Energy Charter
EU:	European Union
EURATOM:	European Atomic Energy Community
GHG:	Greenhouse Gas
IEA:	International Energy Agency
IPCC:	Intergovernmental Panel on Climate Change
kWh	Kilowatt-hour
LNG:	Liquefied Natural Gas
OECD	Organisation for Economic Co-operation and Development
OPEC:	Organization of Petroleum Exporting Countries
PCA:	Partnership and Cooperation Agreement
RE:	Renewable Energy
RES:	Renewable Energy Sources
Tcf:	Trillion Cubic Feet
UN:	United Nations
UNFCCC:	United Nations Framework Convention on Climate Change
USA:	The United States of America
USSR:	Union of Soviet Socialist Republics
WW I	World War One

1. INTRODUCTION

Energy has always been important to humanity (UNDP, 2000). It is the main driver of societies' wealth and quality of life and makes life easier (Bauen, 2006; Dursun, 2011). Energy is also indispensable for economic development because it is used as a basic input in almost all economic activities. For more than a century, cheap and abundant fossil fuels that are oil, coal and natural gas have fueled the industrialization of many countries and contributed to the ever-increasing living standards of its inhabitants (Dursun, 2011; Bauen, 2006).

With globalization, the increasing energy needs in parallel with the intensification of production and commercial activities increases the countries' dependence on energy and causes them to face external deficits. Primary energy resources, which have a significant share in basic energy inputs, have a significant share in the imports of many countries. Instability and sudden increases in the prices of primary energy inputs create imbalances in the balance of payments of most countries. For this reason, countries are turning to renewable energy sources in order to reduce energy dependence and increase energy diversity (Bayraç and Çıldır, 2017).

Looking at the global energy outlook, primary energy use fell 4.5% in 2020, the most significant drop since 1945. Natural gas and coal also saw significant declines, though energy use was mainly driven by oil, contributing about three-quarters of the net decline. Wind, solar and hydropower have flourished despite declining global energy demand. By country, the United States, India and Russia contributed the most significant reductions in energy consumption. China recorded the largest increase (2.1%) in 2020, one of the few countries where energy demand has increased (BP, 2021).

Energy is a vital issue for the European Union as well as the rest of the world. EU countries do not have enough energy resources to meet their needs and it is still debated whether the path taken in the energy field is sufficient to meet that need (Dursun, 2011; Chalvatzis and Ioannidis, 2017). In the EU, approximately 90% of its oil needs and 70%

of natural gas are met by imports. Russia is the main energy importer for the Union. Today, around 40% of natural gas imports come from Russia with difficult relations with the EU. Dependence on Russian energy imports weakens the EU's position over it. Other oil suppliers for the EU are the Middle East, North Africa and other regions mostly politically unstable (Chalvatzis and Ioannidis, 2017). For this reason, the EU needs alternative energy resources to reduce its energy-import dependency and increase energy diversity (Bayraç and Çildir, 2017).

Looking at the historical development of the EU energy policy, the initiative of the countries of Western Europe to create a common market in the field of energy began with the European Coal and Steel Community (ECSC), which forms the basis of the EU. At this date, the Community met two-thirds of its total energy demand with coal, while the share of oil in this ratio was only 10%. (Yavuz, 2004). With the cooperation initiative of West Germany, France, Italy, the Netherlands, Belgium and Luxembourg, the first step had been taken in the energy field, mainly aimed at economic integration. These six founding countries, in order not to repeat the devastation arised from World War II in Europe, to ensure the economic development of member countries, and to control the war equipment and production of tools, signed the Paris Agreement in 1951, which created the ECSC, on the basis of the Schuman Plan, proposed in 1950. At the same time, they delegated their national powers in matters of coal and steel production to community bodies (Akdemir, 2012).

After the cooperation in the coal and steel field, during the Cold War, the USA and the Soviet Union began to use nuclear energy effectively. As a result of the rapid spread of nuclear power plants in the world since 1950, the interest of Western European countries in nuclear energy has increased. On the other hand, the Egypt-Israel War in 1956 and the intervention of England and France in the Suez Canal during the Cold War limited the access of European countries to Middle Eastern oil resources. This problem has caused Western European countries to turn to nuclear energy as an alternative energy source (Karluk, 2002). Thus, the European Atomic Energy Community (Euratom) was established in 1957 with the Treaty of Rome, which was signed by the six founding

countries in order to develop and use nuclear energy for peaceful purposes, to provide the necessary conditions for the establishment and development of the nuclear energy industry, and to raise the living standards of the member states (Akdemir, 2012). However, due to the fact that there was no significant increase in oil import prices until the 1970s and the oil started to be transported from the south of Africa to Europe by tankers, Euratom could not achieve as much success as ECSC (Karluk, 2002). In addition, the responsibility for oil, natural gas and electricity was given to the European Economic Community (EEC), which was also founded with the same agreement (Yorkan, 2009).

With the arrival of new members in the Community, energy demand increased and with the oil crises experienced in the 1970s, the Union felt the need to take new measures in its energy policy. ""The Council of Europe adopted the “New Energy Policy Strategy” program in 1974 and it embraced a policy which envisages reducing energy consumption, increasing the security of supply and protecting the environment (Yorkan, 2009). In the same year, the International Energy Agency (IEA) was established with the participation of oil-importing countries such as the United States and Canada, as well as EU countries, in order to reduce the risks caused by the oil crisis of 1973 and to take precautions against new energy crises that may arise in the future (IEA, 2016). The unstable environment in the Middle East led the European Community to determine a strategy for energy policy for the first time. Thus, in 1980, it determined the objectives to be achieved for the next 10 years. In accordance with these objectives, member countries were to reduce their consumption and imports of oil, save energy, and comply with the objectives of the Community's energy policy. Thanks to member states' efforts, there was a decrease in the external dependency rate between 1980-1990 and production exceeded imports. While this increase continued until 1995, imports again surpassed production in the 2000s (Yavuz, 2004).

In the 1980s, one of the issues that the Commission attached importance was the establishment of the “Single Market” and liberalization in the energy sector. In this context, it was understood that the existing markets that were fragmented between countries need to be integrated and the internal energy market became the focus of

increasing competition. The point that draws attention to these dates is that the environmental issue has become important. It has been understood that the existing energy system, from energy production to consumption, harms the environment and how the system can be improved to protect the environment has been discussed (Yorkan, 2009).

In this period, since natural gas causes less greenhouse gas emissions than oil and coal, in most of the member countries, where the upper consciousness on environmental protection has begun to settle, there had been a tendency towards this source. Thus, the EU has turned to the search for a supply country and has become increasingly dependent on natural gas import. As a result of this, the Soviet Union was especially preferred as one of the supplier countries since the 1980s and Western European countries became the biggest customers of the Soviet Union (Stern, 2018).

With the collapse of the Soviet Empire in 1991, the EU started to generate different strategies to ensure its own energy security. By bringing the Energy Charter Treaty to the agenda, it had specified some targets like raising the security supply, and the efficiency of production, transport and use of energy, and taking measures for environmental precaution. Together with the EU, 38 countries have become parties to this treaty, which entered into force in 1998. It has 56 signatories and contracting parties (International Energy Charter, 2019).

The most significant initiative of the European Commission, which is the main executive body of the EU, in EU energy policy has been the White Paper named "An Energy Policy for the European Union COM (682)1995" published in 1995. The Union prioritizes this document's issues are guaranteeing energy security, founding a competitive energy market, and protecting the environment. These three factors were also underlined in many green papers published in the following years (European Commission, 1995)

In the 2000s, the EU entered a period in which many strategy documents were published such as ALTENER I- and II, SAVE, COOPENER, SYNERGY, and CARNOT, ETAP,

SURE, and TACIS, to support its energy policy. In this period, with the participation of the Baltic countries with low energy production and the Central and Eastern European countries to the EU, the dependence on natural gas imports from Russia increased; This has led to an increase in the EU's energy supply security risk. In particular, the political problems between Russia and Ukraine in 2006, 2009 and 2014, which turned into an energy crisis, brought the EU's energy supply security risk to alarming levels.

The most important and first global response in the fight against global climate change has been with the United Nations Framework Convention on Climate Change (UNFCCC), which was accepted at the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992. The UNFCCC, whose ultimate purpose is defined as "stopping greenhouse gas accumulations in the atmosphere at a level that will prevent dangerous anthropogenic impacts on the climate system", aims to ensure that greenhouse gas emissions are reduced to all Parties, considering the common but different responsibilities of countries, their national and regional development priorities, goals and special conditions. It has undertaken joint responsibilities on issues such as stopping climate change and mitigating its effects (UN, 1992).

With the Paris Climate Agreement, the Parties agreed on a long-term goal of ensuring that the increase in global average temperature does not exceed 2 °C (limited to no more than 1.5 °C) relative to pre-Industrial Revolution levels. In the preparation process of the agreement, the EU, based on the “Council of Europe, 2030 Climate and Energy Policy Framework and the European Commission, “Plan for Combating Global Climate Change After 2020”, submitted the Intended Nationally Determined Contributions Statement to the UNFCCC Secretariat in March 2015. INDCS has set a target to reduce emissions by at least 40% by 2030 and accelerated its implementation to achieve this target. The said 40% target of the EU, which is determined based on global forecasts, is also in line with the medium-term target of the Paris Agreement (UNFCCC, 2015).

This thesis aims to search for the role of climate change in the EU's energy policies. In this scope, key developments and future plans in the EU energy transformation will be

discussed chronologically. In addition, the positive impact of the EU's role in the international climate effort on the Union will be revealed. Two main research questions which will be tried to be answered. The first one is: “How have EU’s energy policies been transformed from its establishment until the time period when the climate change issue had become significant in the global agenda?” In order to support the main question, the following questions will be asked: “What kind of action plans have been implemented in order to achieve this transformation and which targets are planned for the future?” and “Has the EU reduced carbon emission?” The second main research question is: “What role does the EU take as a global climate leader for climate change advocacy?”

In this thesis, I will try to answer those questions related to the link between climate change and European energy policy by examining in detail the many studies (scientific research articles, books, etc...) that have been made on these subjects so far. In other words, this research method will be based on collecting documents from related texts, classifying data, comparing, understanding, explaining, interpreting and evaluating. In order to achieve these goals, the literature retrieved from official EU reports and documents, academic journals by using university databases, online books and journals, think tank reports, and online newspapers have been critically evaluated. Also, analytical information is obtained from national and international institutions such as Eurostat, International Energy Agency (IEA), U.S. Energy Information Administration (EIA), International Renewable Energy Agency (IRENA), BP Statistical Review of World Energy Report, and Renewable Energy Policy Network for 21st century (REN21).

Several authors have studied the EU’s environmental policies regarding climate change. When looking at the academic studies on the European Union, it is seen that there were few studies on energy in Europe until the 1990s. These studies were mostly focused on oil, especially depending on the developments experienced with the 1956, 1974 and 1979 oil crisis. However, the situation has changed since the 1990s, especially with the inclusion of the energy issue in the Agreement with the Single European Act of 1987 and many studies have been published in the 2000s (Dursun, 2011).

The literature review has been done in two categories. In the first group, articles on the impact of climate change on the EU's energy policies were analysed. In this part, several authors take place. Damro et al. (2008) mentions the EU's fundamental role in climate change politics. In their article, Böhringer et al. (2009) assess the economic effects of EU climate policy based upon quantitative simulations with a numerable general equilibrium model of international trade and energy use in the fight of climate change. Da Graça Carvalho (2012) mentions the EU's achievable targets like the 20-20-20 target, which mainly aims to reduce GHG. The author focuses on European energy and climate change policy, energy efficiency and renewable energy plans. Skjærseth (2014) explains how the EU has adopted an ambitious set of policies to meet the 2020 targets in the context of climate and energy concerns. Selin and VanDeveer (2015) present data on environmental policy and ecological impacts inside and outside the EU, and summarize the main arguments for environmental policy in European integration and sustainable development. In the book edited by Delbeke and Vis (2015) EU's general climate policies, what it has been doing in the last 30 years about policymaking in the environment and climate change is basically mentioned. Strielkowski et al. (2016) focus on the importance of the Paris agreement in terms of its benefits for the EU's climate policy. Peña and Rodríguez (2019) also argue the reliability and compatibility of the EU's 20-20-20 targets.

As the second group of the research, studies on the international role and leadership of the EU in the fight against climate change have been examined. Vogler and Stephan (2007) mention global environmental governance of the EU that follows an ideal of collective action and actively advances its own regional integration model. Oberthür and Kelly (2008) reviews how the EU has taken place in global environmental governance as an international leader in their article. Schmidt (2008) researches that although the Kyoto Protocol required the EU to reduce its carbon emissions by 8% from 1990 levels by 2012, the EU was not prepared to leave it that way. In the decade since then, it has consciously established itself as a world leader in facing the dangers of climate change, even to the point of adopting a unilateral successor regime that goes beyond the Kyoto commitments. In the article of Delreux (2012), the author reviews the different roles the EU plays in

international environmental negotiations, the EU's impact on global environmental politics, and the future challenges the EU will face as it tries to demonstrate international leadership. Parker et al. (2017) examine the UN climate summits from 2008 to 2015, the EU's leadership role as a result of the 2015 COP21 climate summit in Paris, its attempts to achieve the goal of climate change leadership and how much of a leader the EU is actually considered by potential followers.

This study consists of six chapters. In the second chapter, the EU's energy policies are explained in two periods, 1950-1973 and 1973-1986, before the climate change issues became important. In the third chapter, this time EU energy policies between 1986 - 2000 and 2000 – present, after the climate change issue would gain importance will be emphasized. In the fourth chapter, the effect of climate change on the EU's energy policies will be expressed. In the fifth chapter, the future of the EU like the 2030 and 2050 targets will be mentioned. And as the sixth chapter concludes, findings and results will be discussed.

2. ENERGY POLICIES OF THE EU, 1950-1986

The EU's energy policies are reviewed in two periods, 1950-1973 and 1973-1986 in the following section.

2.1 The Period between 1950 and 1973

2.1.1 European Coal and Steel Community (ECSC)

After the Second World War, the idea of Germany's ability to regain its dominance in steel left European neighbors who wanted to rebuild their economies to worry that they would be without the steel they would need. To avoid German domination over the steel industry the European Coal and Steel Community (ECSC) was suggested by French Foreign Minister Robert Schuman (Alter, 2006). However, when the ECSC was proposed, there was fear that Germany could abuse its dominant position in the market and prevent other European states from rebuilding their industries and economies.

Jean Monnet, Commissioner of the French Plan Commission, wrote the ECSC agreement keeping in mind the problem of insufficient supply, but with the idea that the ECSC could ultimately enter supranational sectoral planning. However, during the Paris Treaty discussions, it appeared that countries desired resources they could use to rebuild their national industries. For this reason, French producers campaigned for easy access to German coal (Alter, 2006). As a result of all these developments, the "Treaty establishing the European Coal and Steel Community" was signed in 1951, with the aim of collectively controlling the two basic commodities for both war and rebuilding, thus creating a common political interest and promoting cooperation (Langsdorf, 2011).

2.1.2 European Atomic Energy Community (Euratom)

According to Jean Monnet, for the formation of a European political existence, the potential spillover effect of nuclear energy would have been a significant instrument. Sharing opportunities and technology under a united authority could lead to peace and

increase integration among member states, while eliminating the possibility of using them against each other (Graziatti, 2018). On the other hand, a report prepared by Paul Henri Spaak stated that the establishment of Euratom was necessary in order to make the necessary investments in the energy field, emphasizing that there is an urgent need for a limited action plan on energy resources, as energy resources are becoming increasingly scarce and expensive (Spaak Report, 1956). Thus, the European Atomic Energy Community (Euratom) was established in 1957 with the Treaty of Rome, which was signed by the six founding countries in order to develop and use nuclear energy for peaceful purposes, to provide the necessary conditions for the establishment and development of the nuclear energy industry (Akdemir, 2012).

2.1.3 European Economic Community (EEC)

The European Economic Community, established by the Treaty of Rome of 1957 to create a large market for the economies of its member states to increase trade and wealth. The EEC was aimed to be a common market with the free movement of people, services, goods and capital (Graziatti, 2018). In this common market, each member state also would have had its own interests (Sverdrup, 2002). As a result of these facts, it was clear that economics was assigned as the primary area for integration which means politics was left to the next level (Graziatti, 2018).

2.2. The Period between 1973 and 1986

2.2.1 Oil Crisis Periods

The need for huge amounts of energy in the post-war restructuring of Europeforced state administrators in Europe to focus on urgent common policies in the field of energy and develop a cooperation action plan in this regard (Dursun, 2011). Some events in the international arena such as the Egypt-Israel War in 1956, the intervention of England and France in the Suez Canal, and the Arab Six-Day War in 1967, also caused Western Europe to become more sensitive to the energy issue (Dursun, 2011).

The idea of using oil supply as a weapon in the international conflict against Israel and its allies was decided by the Arab oil ministers meeting in Kuwait on 17 October 1973, following the Yom Kippur War. OPEC's Arab members supported by the Soviet Union declared oil exports to Europe and America to force the Western countries to put pressure on Israel. This case forced a sharp rise in the price of crude oil, which led to a global energy crisis. (Campbell, 2005).

This was Europe's first oil crisis, affecting its economies in two ways: separately exacerbated inflationary trends, and it caused a massive economic crisis by exploiting some of the wealth of oil-importing countries. The first sign was a recession that abruptly stopped the growth of the three decades following World War II (Haugland et al., 1998).

3. ENERGY POLICIES AFTER CLIMATE CHANGE

3.1 Energy Policies (1986-2000)

3.1.1 Single European Act of 1987

The Single European Act (SEA), which came into force in 1987 and was adapted by all member states, made the most comprehensive change in the founding agreements (SEA, 1986). SEA was the first major attempt by the Member States to strengthen the provisions of the Treaty of Rome (1957). The main objective of the SEA was to set a deadline for the creation of a whole single market by 1992. It created deeper integration by facilitating the enactment of laws, strengthening the EU Parliament and laying the foundation for a European foreign policy. Also, it laid the interim basis for formulating the common European policies for foreign, justice and home affairs that would emerge in the Treaty of Maastricht in 1992 (James, 2015).

SEA is also one of the most significant milestones in EU's common energy policy history. Until 1985, EC failed to implement the resolutions adopted by the Council, instead, the targets appeared in the papers as part of the theory of creating a common energy policy. The member states usually prevented the EC from taking action on energy because of differences in national interests and priorities.

Another important point emphasized in SEA was about the environment. Protecting the environment has also been among the priorities while creating the common energy policy. SEA gave great importance to choosing the methods that would pollute the environment the least during the production and use of energy at the European Community level. This regulation was an essential pillar until the direct energy-related regulations were made in the coming years (Dursun, 2011).

3.1.2 Maastricht Treaty of 1993

The Maastricht Treaty or the Treaty on European Union entered into force in 1993, after the Single European Act was signed in 1992. It contained important provisions for the

European Community in many respects. With the Maastricht Treaty, the Treaty on the European Economic Community became the Treaty Establishing the European Community (EEC Treaty).

In the EEC Treaty, it was emphasized that sustainable energy was necessary for economic growth and development. The EEC Treaty specifically mentioned the measures to be taken and the activities to be carried out by the EC towards establishing a policy on sustainable energy use (EC, 1992). Another important issue brought about by the EEC Treaty on energy is that it is stipulated in the first paragraph of Article 129b of the Agreement that the Community will contribute to the establishment and development of Trans-European networks (TEN) in the transport, telecommunications and energy infrastructure sectors (EC, 1992).

3.1.3 The Kyoto Protocol of 1997

Since the 1980s, global climate change has been the most discussed issue in international negotiations. Most countries in the world admitted the United Nations Framework Convention on Climate Change (UNFCCC), which required them to act together to control greenhouse gases (GHG) emissions without considering of their development level at the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, commonly known as the Earth Summit. However, the UNFCCC lacked a substantial proposal to achieve this goal. (Shimada, 2004).

Recognizing the need to strengthen the international commitment, the UNFCCC Parties met at the first Conference of the Parties (COP) in Berlin in 1995 and agreed upon the Berlin Mandate, which obliged the Parties to launch negotiations and come to an agreement on the legal text concerning the specified emission reduction goals for developed countries by COP 3 in 1997. In the COP 3 meeting, the Parties agreed on the Kyoto Protocol as a measure for international efforts to combat global climate change, which contains targets to reduce greenhouse gas emissions for Annex I countries during the protocol's first obligation period from 2008 to 2012 (Shimada, 2004).

The Kyoto Protocol, which came into force on February 16, 2005, mandated 39 developed countries to achieve an average of 5.2 percent reduction in greenhouse gas emissions by 2012 compared to 1990 levels. The emission reductions obliged by the protocol are not the same for every country. For instance, while the EU, which accounts for about 21 percent of present global emissions, should reduce its emissions by 8 percent, Russia, which accounts for 17 percent of global emissions, is allowed to emit as much in 2012 as it did in 1990 (Page, 2007).

3.1.4 The European Energy Charter Treaty (ECT)

The European Energy Charter Treaty (ECT) was a multilateral and unique agreement whose content is energy. It was signed in The Hague in 1994 and has been ratified by 38 countries and the EU. The main objectives expected to be achieved by the Charter are to increase supply security, maximize energy generation, conversion, transportation, distribution and use efficiency, and minimize environmental problems. The first action to achieve these goals was the transfer of capital and technology to the countries of the former Soviet Union because after the end of the Cold War and the collapse of the Soviet Republic, Western and Eastern European countries needed greater cooperation. The energy-deficient Western European states boasted of strong economies and searched to access new energy sources. The former Soviet republics, on the other hand, were rich in energy but needed new investments to build their economies again and cope with political-economic distribution (Energy Charter Secretariat, 2016; Iacob and Cirlig, 2016).

In this context, in April 1998, the Energy Charter Treaty and a Protocol on Energy Efficiency entered into force. With the end of the Cold War period, energy has created one of the most remarkable sectors in the convergence process between the East and the West, with mutual interests of both sides. While the energy-dependent European countries saw their interests in providing safe oil and gas supply from the producer Commonwealth of Independent States countries, Russia and the successor countries of

the USSR needed investments that would increase their energy production potential that Western large companies could provide. As a result of the negotiations carried out in this context, 50 countries and the EU signed the Energy Charter in Lisbon on 17 December 1994. This agreement has realized international codification for the signatory countries in the fields of energy trade, energy investments of companies, transit issues, conflict resolution and cooperation on energy adequacy. The EU Energy Charter is the first agreement that brings together the countries established after the collapse of the USSR, the Central and Eastern European countries that were previously managed with a planned economy, and the OECD countries (excluding the USA, Canada, Mexico and New Zealand) (Energy Charter Secretariat, 2016).

The objectives of the Energy Charter Agreement are as follows:

- Increasing energy supply security.
- Maximizing efficiency in energy generation, conversion, transportation, storage, distribution, transmission and use.
- Strengthening energy security and minimizing environmental problems.
- Promotion and protection of investments, liberalization of energy trade.
- Access to international and national capital markets.

In 2015, there was much speculation about the ECT's role and evolution. The adoption of the International Energy Charter in May 2015 is among the most relevant developments. The International Energy Convention aimed to strengthen energy cooperation by highlighting the energy challenges of the 21st century, like clean technology and capacity building, diversifying energy sources and routes, the need to promote access to modern energy services or reducing energy poverty. The International Energy Charter, which is among the basic principles of international cooperation in the energy sector, includes facilitating the expansion of the geographical scope of the Energy Charter Treaty and Process and supporting the early participation of observer countries in ECT (Iacob and Cirlig, 2016).

3.1.5 Millennium Development Goals (MDGs) of 2000

In 2000, the Millennium Development Goals were adopted to fight poverty and improve the living standards of people in developing countries. These targets have produced encouraging results.

As the world's largest Official Development Assistance (ODA) donor, the European Union and its Member States have brought about a remarkable change in the lives of millions of people. The EU has adhered to the Millennium Development Goals since their adoption in 2000 and has gradually adapted its development policy to help achieve these goals by 2015 (European Commission, 2015).

MDGs had targets in 8 different areas which were eradication extreme poverty and hunger, achieving universal primary education, promoting gender equality and empower women, reducing child mortality, improving maternal health, combating HIV/AIDS, malaria and other diseases, ensuring environmental sustainability and developing a global partnership for development (Manning, 2009).

However, there has not been an equal progress in the Millennium Development Goals all over the world. The Millennium Development Goals, including the Sustainable Development Goals (SDGs), also form the basis of the 2030 Agenda for Sustainable Development and help meet new challenges (European Commission, 2015).

While the global targets for access to improved water resources and reducing the number of people living in slums were met before the deadline, the same success was not achieved in stopping the loss of environmental resources and biodiversity. The MDG drinking water goal coverage was completed five years ahead of schedule in 2010. EU aid has provided over 74 million people with access to safe drinking water and more than 27 million people with access to sanitation since 2004 (European Commission, 2015).

But there is still a long way to go: 748 million people – most of them poor and marginalized – still do not have access to an improved source of drinking water; almost half of these are in sub-Saharan Africa. On sanitation, improved sanitation coverage increased from 49% in 1990 to 64% in 2012. But nearly 2.5 billion people, more than a third of the world's population, still do not have access to sanitation facilities.

Environmental sustainability forms the basis of the post-2015 development agenda, especially considering the acute environmental problems facing the world, such as climate change, natural disasters, food and water insecurity. Therefore, more effort is needed (Manning, 2009).

To protect ecosystems and combat desertification, the EU helps partner countries promote the sustainable management of natural resources, particularly land, forests, coastal areas and fisheries. In 2007, the EU set the Global Climate Change Alliance (GCCA), committing €316.5 million to strengthen international cooperation on climate change. The EU presently supports 51 programs in 38 countries (European Commission, 2015).

3.1.6 Lisbon Treaty of 2007

The Commission and the European Parliament participated in the meetings in the form of intergovernmental conferences to make changes in the Agreements Establishing the European Union and the European Community among the member states. The Lisbon Treaty was signed by the heads of state and governments of the member states in Lisbon on 13 December 2007 to enable the EU to overcome the difficulties that exist in today's world and to provide the EU with the opportunity to solve problems effectively and efficiently with modern institutions. It was envisaged that the agreement will enter into force after all member states have ratified it according to their national regulations. The agreement's effective date is 1 January 2009, a date before the European Parliament elections.

Energy became a common responsibility in the Lisbon Treaty and set the ground for a common energy policy. The Treaty has set many purposes like energy efficiency, security of supply, the promotion of renewable energy sources and a single functioning internal energy market. It also created a stronger legal framework and legal basis for the Union to act on energy policy (article 194 TFEU). Hence, the importance of the Lisbon Treaty stems from the fact that it is the agreement that initiated the energy transition in Europe. The Treaty of Lisbon gives Europe and EU citizens' new powers for their activities in various policy areas such as scientific research, energy and climate change. These policies are an essential part of the Europe 2020 initiative, aimed at smart, sustainable and inclusive growth to prepare the EU economy for the future (da Graça Carvalho, 2012). However, the environmental arguments of the Treaty are not directly clear. The Treaty of Lisbon clearly preserves much of the current situation in its environmental prediction (Lee, 2008).

Moreover, the Treaty, with a new definition indicated in Article 3, expanded the scope of the concept of sustainable development, which was determined as the main target of EU policymaking with the Amsterdam Treaty (Council of the European Union, 2008). Additionally, Article 3 specifies that the Union "contributes to the peace, security and sustainable development of the world" in its relations with the wider world (Council of the European Union, 2008). Therefore, seeking sustainable development becomes a significant policy target in the external relations of the EU (Benson and Jordan, 2010).

Within the framework of all these developments, the Lisbon Treaty strengthen the Union's legitimacy and effectiveness on climate change and the leading role that Europe currently plays on the world stage in the fight against climate change at the international level and it has significant potential to influence the future development of environmental regulation. (da Graça Carvalho, 2012; Lee, 2008).

3.1.7) EU Energy Framework Programmes

The Commission, the European Council, the European Parliament and the Council of Ministers are the fundamental actors in EU energy policy. Also, different interest groups are working on affecting policy making. The Commission is the most significant player in setting the EU energy policy agenda. While it has almost exclusive rights to initiate policy, the Council of Europe is crucial in determining the whole policy direction.

The Commission has supported research and technological development in renewable energy and energy efficiency technologies since the 1970s and continues to prioritize short- and long-term research today. In November 1998, the Council adopted the EU's energy policy with a resolution on measures related to a multi-year framework program for action plans in the energy sector (1998-2002) and a budget of 170 million euros.

In this context, the Smart Energy Program has established programs such as ALTENER II, SAVE, Sustainable Urban Energy (SURE) and Synergy (SYNERGY). Through the programs, the development, strengthening and stabilization of energy policies are encouraged both in EU countries and in foreign countries where energy is supplied, thus aiming to transport energy to the EU more reliably and uninterruptedly. Thanks to these programs, it aims to promote the use of all renewable energy sources, especially wind and water sources, and to increase energy efficiency. Supporting the formation and effective implementation of energy policies in developing countries and taking steps towards ensuring energy sustainability are other objectives.

Like many other titles, energy policies are formed and developed within the framework and the EU acquis. The energy policy shaped within this framework; It aims to contribute to the protection of the environment by focusing on ensuring energy supply security, contributing to the competitiveness level of the Union, and focusing on the sustainability of development, within the framework of ensuring that the energy needs of citizens can be met uninterruptedly and in an economically reasonable manner.

3.1.7.1 ALTENER I and II Programmes (1993-2001)

Following the recommendations on renewable energy sources, the Commission published Alterner Programmes, multi-year framework programs aiming at financing a series of studies, training, information meetings and other appropriate measures in the Community's objectives and action plans in the field of renewable energy sources. Two ALTENER programs foresee the production and use of alternative energy sources apart from classical energy sources. The first is the ALTENER I program, which aims to limit carbon dioxide emissions by increasing the use of renewable energy sources in the 1993-1997 period with a budget of 40 million euros. Within the scope of the first program, 108 projects were financed (646/2000/EC). One of the most important contributions of the ALTENER program is to raise awareness of the role of renewable energy sources in the Community. In addition to the network approach, which is the basis of many activities, especially biomass measurements, information activities carried out within the program's scope contributed significantly to this development (European Commission, 1997).

After the expiration of ALTENER I, the second program is ALTENER II which was implemented for three years in the 1998-2002 period that encouraged public and private sector investments in the production and use of renewable energy resources within the Community, especially foreseeing the creation of the administrative, legal and socio-economic conditions necessary for the application of the Community action plan. The The ALTENER II Program also contributed greatly to the Community Strategy and Action Plan, which was drafted by the White Paper "Energy for the Future: Renewable Energy Sources".contributed greatly to the Community Strategy and Action Plan, which was drafted by the White Paper "Energy for the Future: Renewable Energy Sources". (European Commission, 1998). The ALTENER programs oblige member states to contribute to limiting carbon dioxide emissions, considering the Community's stated objectives in their energy policies.

3.1.7.2 SAVE Programmes (1991-2006)

The European Council adopted the first SAVE Programme in October 1991 (91/565/EEC) for five years and the SAVE II was accepted by the Council in December 1996 for a period of 1996-2000. (96/737/EC). Especially, SAVE II focused on strengthening Member States' energy efficiency activities to achieve a reduction in the European Union's final energy consumption (from around 60 million toe to 70 million toe by 2000) and to help meet the Community's commitment to reduce CO2 emissions (European Commission, 2014). The SAVE Programmes mainly focus on Union's non-technological activities on energy efficiency. Within the framework of the Programme, the Union ensures the effective use of energy through political measures, information and local and regional energy management. The programme encourages prudence in energy consumption in industry, transport, commerce and the domestic sector (Aytüre, 2013). The EU Commission included the SAVE Programmes in the Smart Energy for Europe 2003-2006 Program in 2002. It was predicted that 70 million Euros would be spent until 2006on the areas covered by the SAVE Program (European Commission, 2014; Aytüre, 2013).

3.1.7.3 SYNERGY Programme

SYNERGY, which is an international energy cooperation program was created in 1980 as one of the Community's provisions for the1970s' international energy crises and the energy needs of developing countries. It targeted to enhance cooperation between EU and non-EU developing countries in the energy sector, by promoting aimed energy programming, providing technical assistance, training and analysis of energy markets, and promoting industrial cooperation (consisting of the transfer of European energy technologies and knowledge). In fact, it is an expanded form of previous energy-related cooperation projects with the "EC Program for International Energy Cooperation", which has developed into the SYNERGY program today.

In this sense, Central and Eastern Europe, Asian countries, the Mediterranean region, the independent republics of the former Soviet Union and developing countries in Latin America are included in the programme. The SYNERGY programme continued from 1980 to 1996 and many projects were implemented at the national level (European Commission, 2014).

3.1.7.4. CARNOT Programme

In December 1998, the Council approved the 4-year Carnot program, which includes technological actions for the efficient and clean use of solid fuels between 1998 and 2000. Carnot aims to use clean and efficient technologies in industrial power generation centers using solid fuels. The main aim is to limit emissions, including CO2 emissions, to develop optimum technologies (Best Available Technologies, BAT) and use them in practice at affordable costs. In addition, considering the Energy Framework Program in the determining program objectives, it is to follow the Community energy policy by providing a balance between the security of energy supply, competition and environmental protection.

Following the Council Decision of 14 December 1998 on the multi-annual program of technical actions (1998-2002), the purpose is to use clean and efficient technologies in solid fuel plants to limit emissions. It encourages the development of advanced clean solid fuel technologies to achieve the Best Available Technologies (BAT). In addition, the primary objectives of the Energy Framework Program, which aims to monitor energy policies in a balanced way, such as security of supply, competitiveness and environmental protection, should be taken into account (Darmer and Kuyper, 2000; European Commission, 1999).

3.1.7.5 ETAP Programme

The program aims to support collaboration in the analysis of energy issues and trends at Community level between the Community, Member States, third countries, candidate

countries, international organizations and other interested parties. In order that all decision makers have access to the same benchmarking for economic studies and analyzes, energy forecasts and market dynamics, regular monitoring of market developments and energy trends for policy decisions can be done in terms of shared analysis (European Commission, 1999).

3.1.7.6 SURE Programme

The SURE Program aims to develop the safety of nuclear facilities and secure transportation of radioactive materials within the EU and in the countries involved in the TACIS program through increased cooperation on the ground of security measures and industrial cooperation, as indicated in the Council Decision of 1998.

3.1.7.7. TACIS Programme

EU's TACIS (Technical Aid to the Commonwealth and Independent States-TACIS) program adopted by the Council Regulation, after the collapse of the Soviet Union, with the purpose of strengthening the democracies, ensuring the rule of law in these countries and realizing the transition to a market economy of the states in Eastern Europe and Central Asia (EC, 2000).

The program, which covers the Russian Federation, Ukraine, Azerbaijan, Belarus, Moldova, Georgia, Armenia, Kazakhstan, Kyrgyzstan, Turkmenistan, Mongolia, Uzbekistan, Tajikistan, is carried out in accordance with the partnership and cooperation agreements between the EU and these countries. It aims to carry out administrative and legal reforms, develop infrastructure investments related to transportation, communication and pipelines, better protect the environment and better manage natural resources, and technical cooperation on issues such as nuclear energy. (Dursun, 2011; EC, 2000).

Following this regulation covering the period 2000 to 2006, the EU adopted Regulation 1683/2006 to continue cooperation with these countries as a requirement of the New Neighborhood Policy after 2006. By adding Egypt, Morocco, Algeria, Jordan, Lebanon, Syria and Israel to the countries cooperating with this Regulation, the cooperation has spread to a wider area (EC, 2006).

3.1.8. Green Papers

Green Papers are documents published by the European Commission on different policy areas to encourage discussion on given topics at the union level. In this part, six of the Green Papers on energy issues published between 1994 and 2013, which are significant instruments to initiate legal developments that provide a basis for further strategies and reports related to European energy security will be mentioned. As it is indicated in the Green Paper document (European Commission, 1994), it is the most appropriate method to prepare a Green paper on energy policy in the European Community in order to launch the policy debates, as all interested parties are allowed to contribute to the discussion.

In the first Green paper published in 1994 it is expressed critically that "*whatever the energy resources of each Member State and whatever their respective energy balance, the Community as a whole has to respond to the challenges of industrial competitiveness, security of supply and environmental protection. The energy policy of the Community has to answer these challenges and optimize the diversity of national and regional energy portfolios for the overall benefit of the Community"* (European Commission, 1994; 5). This Green Paper focused on the importance of security of supply and the policies proposed to maintain and increase it. By 2020, the EU was expected to both gradually raise its energy consumption and increase its energy dependence from 50% to 70%. The European Commission described the security of supply as the safeguard of vital energy needs in the future, which must be managed by "sharing internal energy resources and strategic reserves under acceptable economic conditions and utilizing diversified and stable external resources" (European Commission 1994).

The 1996 Green Paper entitled “Energy for the Future: Renewable Sources of Energy” prioritized reducing energy dependence and acknowledging ecological concerns, promoting renewable energy, and increasing energy competitiveness and employment. Its fundamental goal was to promote a Community strategy for renewable energy sources and it cautioned about the failure to increase the sharing of renewable sources and the economic, social and ecological results. Both the 1994 and 1996 Green Papers pointed out the high energy dependence of the EU, which raised the importance on energy security (European Commission, 1996).

The Green Paper of 2000 aims to establish a European energy supply security strategy. It stated that the EU's dependence on foreign energy in energy is at a high level, and this dependence will rise to 70% in 2020 if measures are not taken (European Commission, 2000). This Green Paper emphasized that difficult subjects like creating a domestic market for electricity and natural gas, tackling climate change, and empowering of relations with third countries need to be considered while creating a strategy for EU energy supply security. According to the Green Paper, such a strategy should aim, in the long run, to provide consumers can buy electricity and natural gas at reasonable prices on an uninterrupted basis from a well-functioning electricity and gas market. Also, the Commission proposes three main methods to reduce dependency: increasing internal resources, promoting competition and protecting and diversifying external resources (European Commission, 2000).

The fourth Green Paper of six main papers published on energy efficiency in 2005. In fact, this Green Paper chronologically constituted the basis for these, as work done before the directives adopted under the title of energy efficiency in 2005 and 2006 on the realization of energy efficiency jointly by both the Council and the European Parliament. Importantly, this green paper is considered a cornerstone in ensuring efficiency in EU energy policy today (European Commission, 2005).

As the debate on the future of the European Constitution continued, national leaders of certain EU member states emphasized the need for a more unified, more coordinated

approach to European energy policy (Dursun, 2011). The European Commission published the Green Paper on the European Strategy for Sustainable, Competitive and Secure Energy, also called the European Energy Strategy. This report highlighted the need for a real energy policy in Europe, and the importance that Europe should act with "one voice" in the energy policy to be implemented against the outside, as in the European-Russian energy dialogue (European Commission, 2006).

On March 23-24, 2006, following the publication of the 2005 green paper, at the Council of Ministers meeting on the European Energy Strategy held in Brussels, the Council did not welcome the Commission's recommendations. In fact, the Council emphasized that the Commission's primary task on the energy issue is not to impose obligations on them, but to support the coordination between member states. The European Commission started a six-month negotiation period on the European Energy Strategy, ending on September 24, 2006. After the discussions, the Commission published an Energy Policy Statement for Europe in 2007. Under the leadership of Germany, which became the term president at the end of 2006, the need for a common European voice in the field of EU energy and climate policy was stated and it was emphasized that the work on the European Constitution, which is a part of these studies, should be continued (Dursun, 2011). In the 2006 Green Paper it is emphasized that the main targets of the EU are sustainability, competitiveness, and the security of energy supply in the field of energy policy. In order to achieve this balance, the Green Paper has identified six priority areas: establishing a fully competitive internal energy market, ensuring the security of supply in this market, ensuring energy diversity, acting for climate change, and establishing energy R&D and foreign energy policy (European Commission, 2006).

The sixth Green Paper, published in 2013 was on the “2030 framework for climate and energy policies”. While the document is mainly based on the European targets for 2020, it also aims to draw a new framework for energy policy from 2020 to 2030. Instead of declaring new goals, it focuses on significant issues like how to develop security of supply, how to set new goals, the competitiveness of the European economy, how to provide consistency of policy tools, and how to cope with difficulties such as the

continued economic crisis and decreased budgets to invest in member states (European Commission, 2013).

In addition, member states have different energy options, renewable energy capacities, industrial infrastructure, living standards, etc., the Green Paper recognizes the fact that member states have different capacities to act in order to achieve European general energy goals. Nevertheless, instead of answering these questions, it initiates a consultation process for a 2030 energy and climate policy strategy. However, instead of answering these questions, it initiates a consultation process for an energy-climate policy strategy by 2030 (European Commission, 2013).

4. ENERGY POLICY ELEMENTS OF THE EU

4.1 European Union Energy Policy

European Union energy policies have three main objectives:
-To contribute to the competitiveness of the community,
-Ensuring energy supply security,
-To contribute to the protection of the environment based on sustainable development.

The European Union aims to balance these three objectives while forming its energy policies. EU legislation includes regulations that liberalize energy markets to create competitive, safe and sustainable energy markets, increase quality, and offer consumers more options and cheaper prices.

Combating climate change for a sustainable energy policy is an important component of the EU's energy policy. In this context, the Commission, with the approval of the Council of Europe, has set three important targets for the energy field, which are expected to be realized by 2020:

-Increasing energy efficiency by 20%,

-Increasing the share of renewable energy sources in the energy supply to 20% and the rate of biofuel used in the transportation sector to at least 10%,

-20% reduction in greenhouse gas emissions.

On the other hand, at the EU Council meeting held on 23-24 October 2014, the EU's "2030 framework for climate and energy policies" was officially accepted. Pursuant to

the said package, it is envisaged that the EU's greenhouse gas emissions will be reduced by 40% by 2030 compared to 1990 levels, the share of renewable energy in total energy consumption will be increased to 27% and energy efficiency will be increased by a minimum of 27% (European Commission, 2014).

Besides, the European Commission appointed a Vice-President in charge of the Energy Union on 1 November 2014 in the first place, within the scope of transforming the Union's energy policy into a new “European Energy Union” through reform and reorganization, and on 25 February 2015 the “Forward-Looking Climate” It has published the document (COM(2015) 80 final) “Framework Strategy for a Resilient Energy Union with Policy Change” (European Commission, 2015).

In the document is known as the Energy Union Framework Strategy, five complementary and closely related priorities (dimensions) designed to increase energy security, sustainability and competitiveness are listed as follows:

1. Ensuring energy supply security
2. Creation of a fully integrated common European energy market
3. Increasing energy efficiency to contribute to reducing energy demand
4. Decarbonization of the economy
5. Research, innovation and competitiveness

In the European Energy Union Framework Strategy, there are actions under 15 headings to realize the above objectives. In the Roadmap for the Energy Union attached to the Strategy, a timetable for implementing the actions within the scope of the strategy is included. The EU envisages close monitoring of the implementation of the said strategy and action plan and demonstrates a strong political will and determination to establish a "common energy policy". The main targets for the post-2020 year have been determined, respectively; to give priority to energy efficiency, provide global leadership in the field

of renewable energy and treat consumers fairly (Official Journal of the European Union, 2018).

The framework covers issues related to renewable energy, energy efficiency, electricity supply security, electricity market design and the management of the Energy Union. The new legislation under the package is as follows:

Renewable energy:

Renewable energy sources (wind, solar, hydroelectric, ocean, geothermal, biomass and biofuels) are alternatives to fossil fuels that help reduce greenhouse gas emissions, diversify energy supply and reduce reliance on unreliable and volatile fossil fuel market

especially oil and gas. EU legislation on the promotion of renewable energy has developed significantly over the past 15 years. In 2018, EU leaders set:

-The targets for 2030 have been revised and a binding target has been set to increase the share of renewable energy in total energy consumption to 32% by 2023, including a review article.

-It involves regulations on the design and stability of renewable energy support mechanisms.

-Issues related to reducing and streamlining administrative procedures are regulated.

-A clear and stable regulatory framework is established in self-consumption.

-It aims to increase the use of renewable energy for the transportation and heating/cooling sectors.

-It aims to use sustainable bioenergy.

Energy efficiency:

-The targets for 2030 have been revised and the target of increasing energy efficiency by a minimum of 32.5% has been set.

-By expanding the annual energy saving obligation beyond 2020, it is envisaged to increase the attractiveness of private investments and support the emergence of new market players.

-It is planned to strengthen the rules on individual metering and billing of thermal energy, especially for the benefit of consumers living in multi-stage buildings with collective heating systems.

-More useful information about energy consumption will be provided, and thus, the consumer will make heating bills easier to understand and control.

-Member States will need to build transparent and publicly available national rules for allocating the costs of heating, cooling and hot water consumption.

Management of the Energy Union:

-It implements a transparent, simple, secure governance system that promotes long-term certainty and predictability for investors and enables the EU and Member States to work together towards achieving their 2030 targets and the EU's international commitments under the Paris Agreement.
-It calls upon each Member State to prepare a national energy and climate plan for the period 2021-2030, covering the five dimensions of the Energy Union and considering the long-term perspective.
-It provides a system that decreases the administrative responsibility and increases transparency for Member States, the Commission and other EU Institutions by adjusting the frequency and timing of the reports on the five dimensions of the Energy Union and the reporting obligations of the Paris Agreement.

After those statements, the current energy situation in the EU by resources will be indicated. Most of the data was retrieved from Eurostat (2021).

4.2. Primary energy production

After the change in the Union over the years, it is seen that renewable energy has surpassed nuclear energy in primary energy production in 2018. The two types of energy mentioned account for more than half of the production. In terms of energy resources, the distribution of primary energy production in 2018 was realized as indicated in Figure 4.2.1.

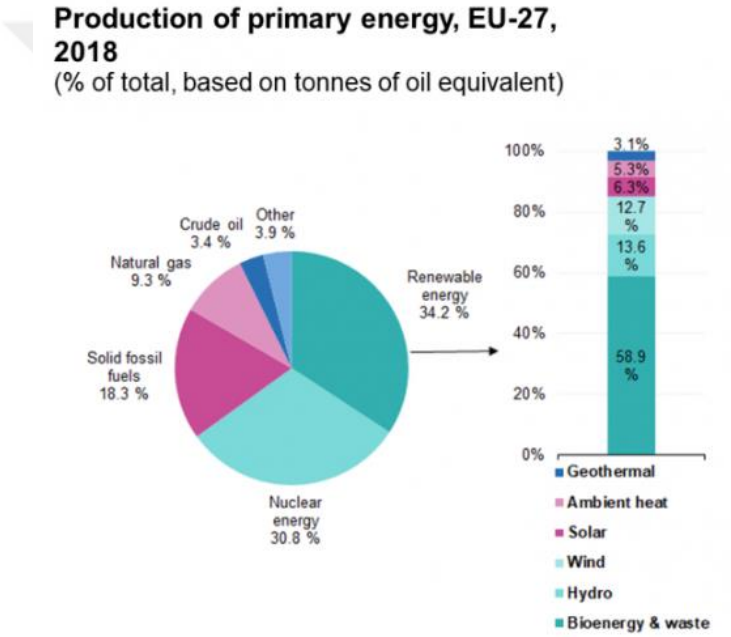


Figure 4.2.1: Production of primary energy, EU-27

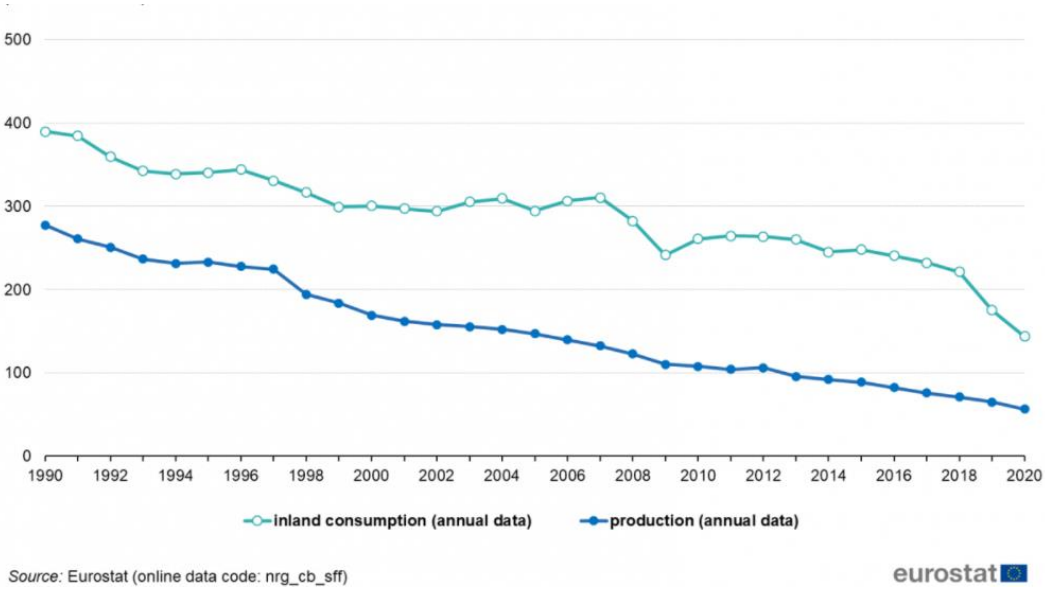
Source: Eurostat, 2020

4.2.1 Coal

As shown in Figure 4.1.2, domestic hard coal consumption in the EU declined persistently during the 1990s from 1999 and for about ten years, annual hard coal consumption has stabilized at around 300 million tonnes. After the first sharp decrease in 2008 and 2009, hard coal consumption stabilized around a new plateau of 250 million tonnes from 2010. Finally, another sharp decline in coal consumption began in 2019. EU coal consumption in 2020 is estimated at 144 million tonnes, 35% less than two years ago. Hard coal

production in the EU has declined almost steadily since 1990, and this long-term decline has been more drastic than consumption. EU production in 2020 was 56 million tonnes, 80% less than 277 million tonnes in 1990. In 2020, 39% of domestic consumption could be met by production in the EU. This rate was 71% in 1990 (Eurostat, 2020).

Figure 4.2.1.1: Inland consumption and production of hard coal, EU, 1990-2020 (million tones)

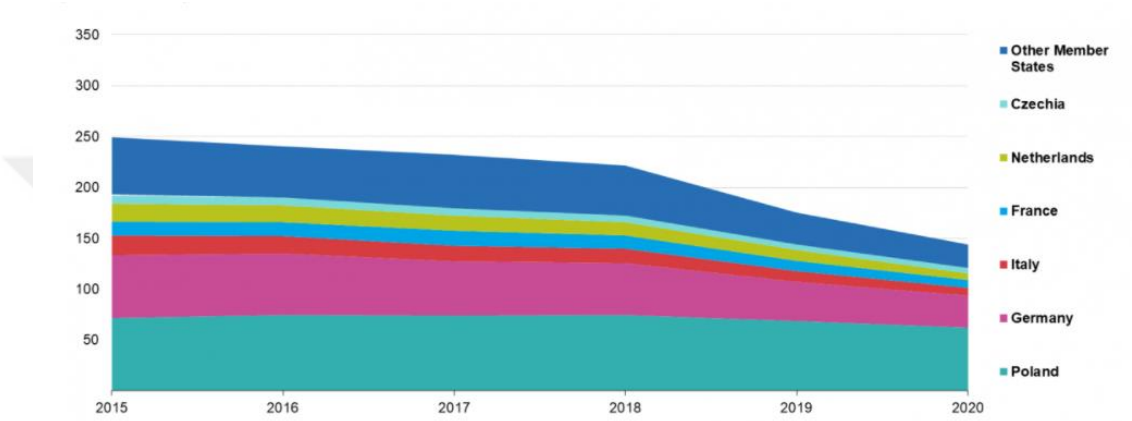


Source: Eurostat, 2021

Figure 4.1.3 shows EU hard coal consumption by Member State from 2015 to 2020. While 13 Member States of the EU were producing hard coal in 1990, only two of them continue to produce in 2020 that are Poland and the Czech Republic. Poland produced 54.4 million tons of hard coal (96% of total EU production) and the Czech Republic 2.1 million tons (4%). Compared to 2012, the last peak of hard coal production in the EU (106 million tons), in 2020 Poland reduced its production by 31% and the Czech Republic by 81%. All other former hard coal producers stopped the production. Poland (43%) and Germany (22%) together accounted for around two-thirds of total EU hard coal

consumption in 2020, followed by Italy, France, the Netherlands and the Czech Republic (between 3% and 6% each) (Eurostat, 2020).

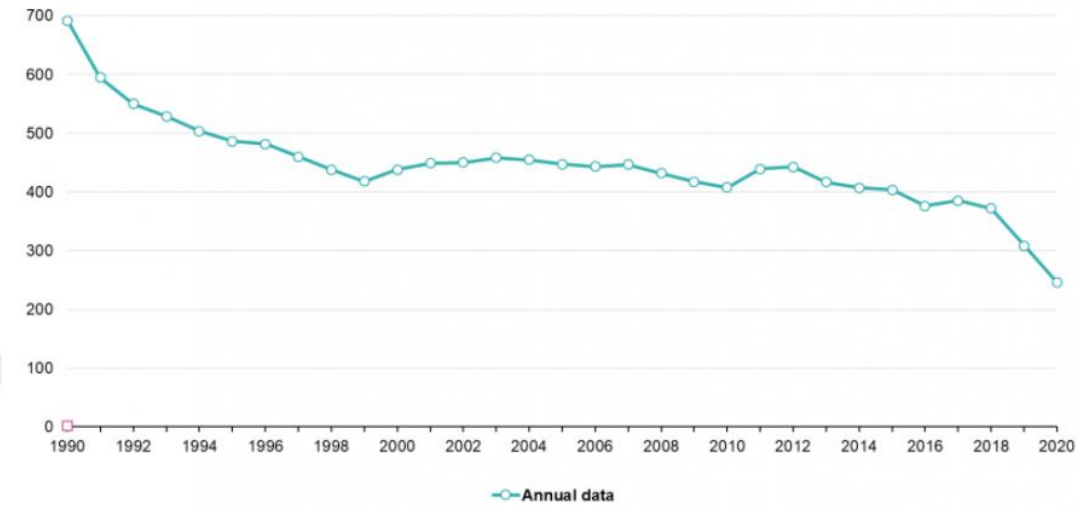
Figure 4.2.1.2. : Inland consumption of hard coal by Member State, EU, 2015-2020 (million tones)



Source: Eurostat, 2021

Brown coal consumption in the EU is forecasted at 246 million tonnes in 2020, 33% less in 2018. Figure 4.1.4. shows the trend since 1990. Consumption fell sharply in the 1990s, fluctuating between 2000 and 2015 in the range of 400 to 450 million tons per year. Brown coal consumption started to decline in 2016, and this decline has accelerated since 2019.

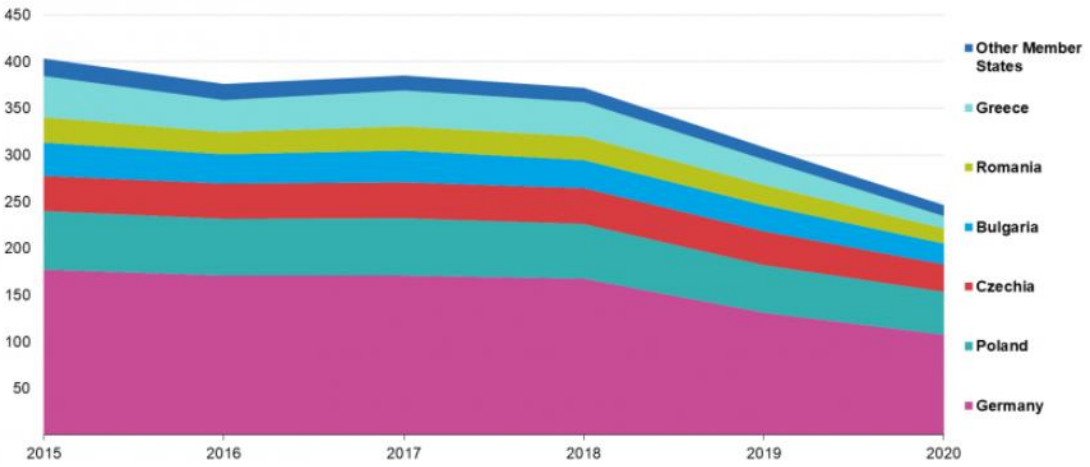
Figure 4.2.1.3. : Inland consumption of brown coal, EU, 1990-2020 (million tones)



Source: Eurostat, 2021

Germany accounted for 44% of total EU brown coal consumption in 2019, followed by Poland (19%), Czechia (12%), Bulgaria (9%), and Romania and Greece (6%). Figure 4 shows EU brown coal consumption by Member State from 2015 to 2020.

Figure 4.2.1.4. : Inland consumption of brown coal by Member States, EU, 2015-2020 (million tones)



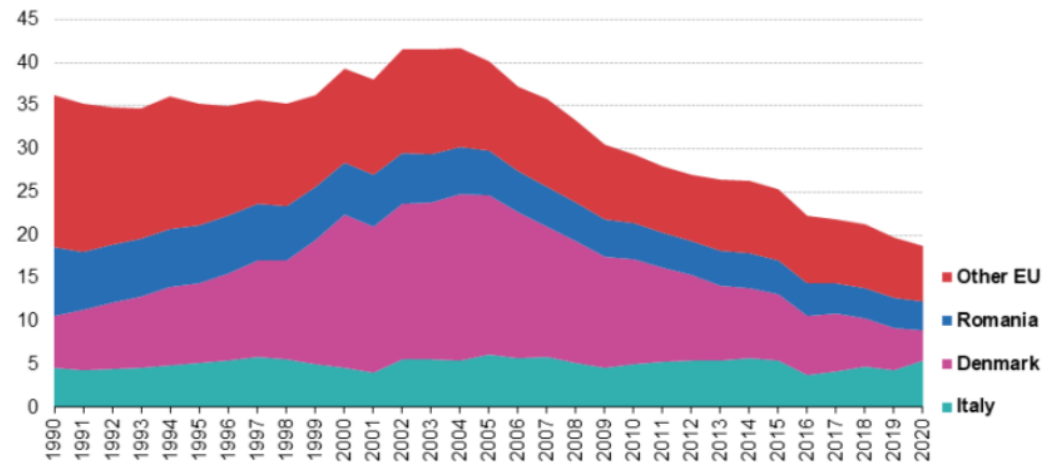
Source: Eurostat, 2021

4.2.2. Oil

For decades, crude oil and petroleum products have accounted for the largest share of gross domestic energy consumption in the EU. Despite declining production and fluctuating consumption over the years, crude oil and its by-products still play an important role. Recently, many EU policies are starting to affect this large part of the energy market, which in 2020 has been greatly shaken by the sudden impact of the restrictions associated with the COVID pandemic.

Crude oil production in the European Union (EU) continued to decline in 2020 and bottomed out at 18.7 million tons (Mt). The reason for this record drop in production was the decrease in demand caused by the COVID crises and the temporary filling of landfills in some places. Crude oil production was the most in 2004 with 41.7 Mt. The main EU oil producers in 2020 were Italy (5.4 Mt), Denmark (3.5 Mt) and Romania (3.3 Mt).

Figure 4.2.2.1. : Indigenous production of crude oil, EU, 1990-2020 (million tones)



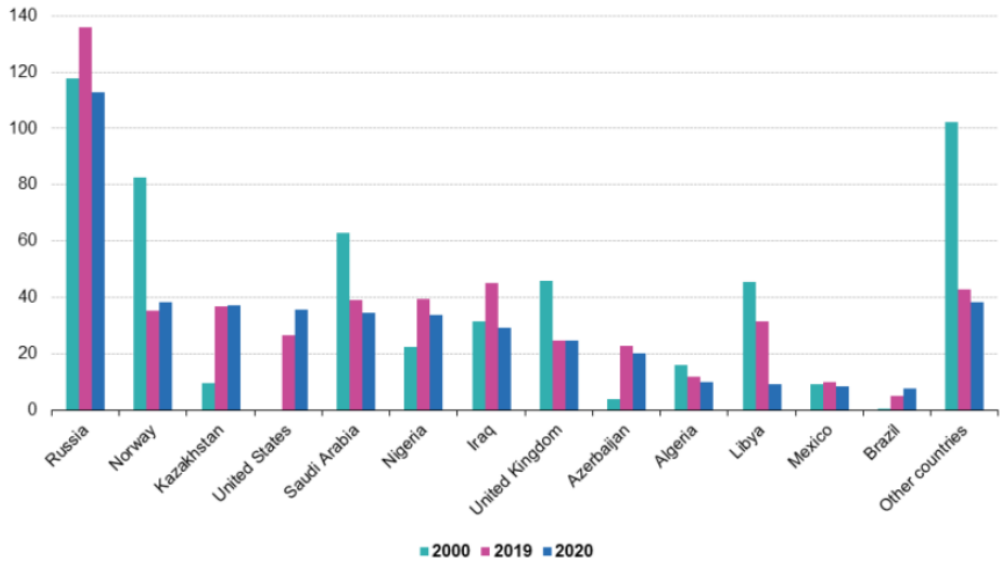
Source: Eurostat, 2021

In one of the main European producers of crude oil outside the EU, in Norway, the year with the highest production was 2001 at 157.6 Mt. Norwegian production fluctuated in the following years, reaching a record low (70.0 Mt) in 2019 and then raised again to 84.4 (Mt) in 2020. EU candidate countries Turkey, Serbia and Albania, have some crude oil production, but on a rather small scale (around 4.8 Mt total in 2020). Also, Ukraine which produced 1.7 Mt of crude oil in 2020 have notably played a role as one of the Energy Community contracting parties.

Total crude oil imports to the EU in 2020 were 440.3 million tonnes. This amount is the lowest value since 1990 and the steepest annual decline ever recorded (-13.2% from 2019). Most of the imports came from Russia (113.0 million tonnes), Norway (38.2 million tonnes), Kazakhstan (37.3 million tonnes), the USA (35.5 million tonnes) and Saudi Arabia (34.6 million tonnes) . The origins of crude oil imported into the EU have changed within years. Imports from Russia continued to decline since it reached its last peak in 2005 (184.7 million tonnes). Imports from Norway decreased by more than half

during 2000-2010 and then stabilized. They grew by 8.4% in 2020 and Norway ranked second in the list of EU suppliers. Kazakhstan, which has gained stable ground in recent years, reached 37.3 million tonnes in 2020. Crude imports from the United States were historically almost insignificant but have increased sharply in recent years, finally increasing by 33.6% in 2020 to a record high and making this country the EU's fourth supplier for the first time. Imports from Saudi Arabia fell by 11.1%, placing this origin in fifth place and from Nigeria fell 14.4 percent. Finally, imports from Iraq, which had increased in recent years, fell sharply (-35.7%) in 2020. The figure shows the importer countries to the EU.

Figure 4.2.2.2 : Crude oil imports by country of origin, EU, 2000, 2019 and 2020 (million tones)

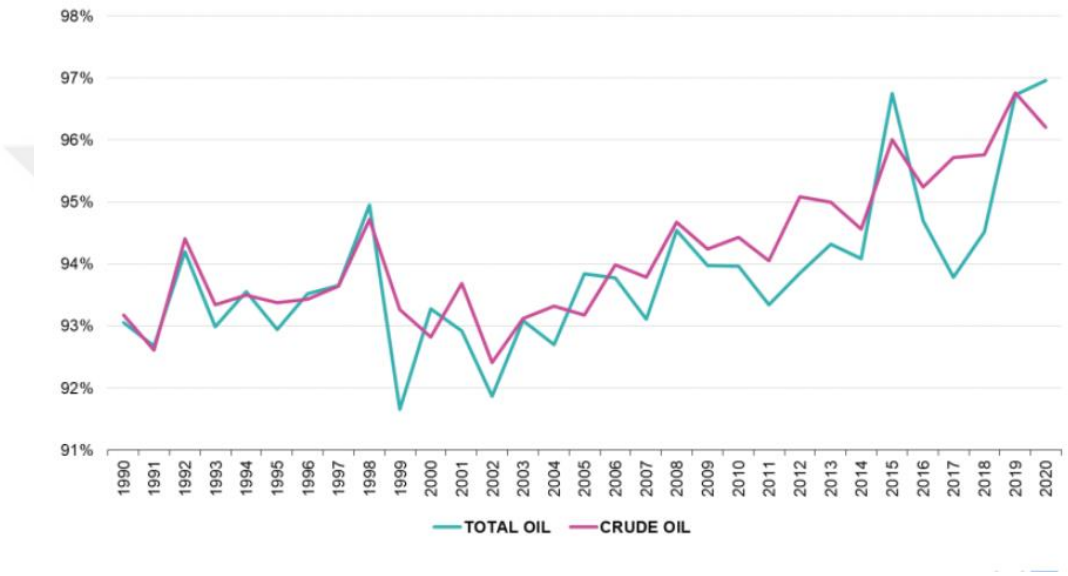


Source: Eurostat, 2021

Import dependency in oil is calculated as the ratio of net imports (imports minus exports) to the gross usable energy of crude oil and petroleum products. Import dependency for the entire family of crude oil and petroleum products reached an all-time high in 2020, when the EU relied on net imports for 96.96% of energy availability. Dependence on foreign oil has increased from low rates seen in previous decades and low rates (91.66%)

seen in 1999. Dependency in 2020 was the combined result of decreases in imports (-11.58%), exports (-10.27%) and available gross energy (-12.61%).

Figure 4.2.2.3. : Import dependency, crude oil and total oil, 1990-2020 (million tones)



Source: Eurostat, 2021

Looking at final consumption of petroleum and petroleum products for energy and non-energy purposes in EU Member States in 2020, fell 8.9% to 384.0 (Mtoe) in one year, the lowest level ever recorded in 31 years. It shows the effects of COVID restrictions starting in the first months of 2020 for most EU member states. Consumption had dropped from a 2001 peak (499 Mtoe) to a low point in 2014 (409 Mtoe) but had started to rise again before the pandemic restrictions. In 2020, the interruption of pandemic-related restrictive measures had a different impact on consumption in Member States, mainly Luxembourg (21.4%), Malta (-15.7%) and Greece, Spain, Sweden, Slovenia and Italy (all between -14% to -15%). Member States' energy and non-energy consumption patterns for oil and petroleum products are different in terms of their size and structure of their economies. In 2020, Germany remained to lead with a share of 22.5% of total EU final consumption,

followed by France (15.6%), Italy (9.8%) and Spain (9.7%). The table presents all member states in detail.

Table 4.2.2.1. : Consumption of oil and petroleum products, 2020 (million tones of oil equivalent)

	2020	Change from 2019	2020 share
Germany	86.54	-5.48%	22.53%
France	59.79	-12.15%	15.57%
Italy	37.77	-14.10%	9.83%
Spain	37.19	-14.72%	9.68%
Poland	27.82	-4.46%	7.25%
Netherlands	22.96	-0.84%	5.98%
Belgium	17.70	-7.62%	4.61%
Austria	10.17	-9.26%	2.65%
Romania	9.01	-2.43%	2.35%
Czechia	8.44	-8.72%	2.20%
Sweden	7.56	-14.65%	1.97%
Greece	7.49	-14.82%	1.95%
Portugal	7.44	-11.37%	1.94%
Finland	7.02	0.44%	1.83%
Hungary	6.97	-6.87%	1.81%
Ireland	5.66	-8.28%	1.47%
Denmark	5.04	-7.16%	1.31%
Bulgaria	3.74	-3.43%	0.97%
Slovakia	3.36	0.37%	0.88%
Croatia	2.59	-10.50%	0.67%
Lithuania	2.39	-1.88%	0.62%
Slovenia	1.99	-14.64%	0.52%
Luxembourg	1.85	-21.38%	0.48%
Latvia	1.36	-1.27%	0.35%
Estonia	1.02	-2.01%	0.26%
Cyprus	0.92	-9.21%	0.24%
Malta	0.27	-15.70%	0.07%

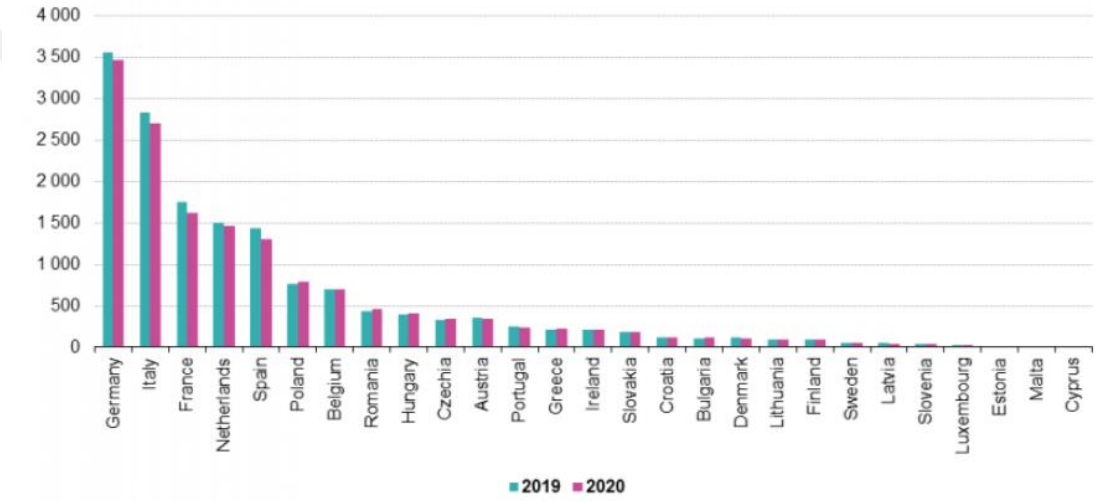
4.2.3. Natural Gas

Discovered in the 1950s, it took twenty years for natural gas to gain an important position in the market. Once considered a by-product of petroleum, natural gas has now become a versatile energy source. Reasons for Europe to choose natural gas; carbon dioxide limitations, some member states' abandonment of nuclear energy use, high emissions from coal power plants, and obstacles to the rapid development of renewable resources (European Commission, 2006).

According to the latest data indicated by Eurostat, gross domestic natural gas consumption in the EU in 2020 decreased by 2.7% compared to 2019 and reached 15,

235 thousand terajoules. Euro area countries' consumption increased by 8.1% to 12,786 thousand terajoules. The largest increases in consumption were recorded in Sweden (11.1%), Greece (9.8%) and Lithuania (9.4%), with the largest decreases in Latvia (-17.1%), Spain (-9.7%) and seen in Estonia. (-8.5%). The figure shows gross domestic consumption by countries.

Figure 4.2.3.1. : Gross inland consumption of natural gas, by country, 2019-2020 (thousand terajoules (GCV))



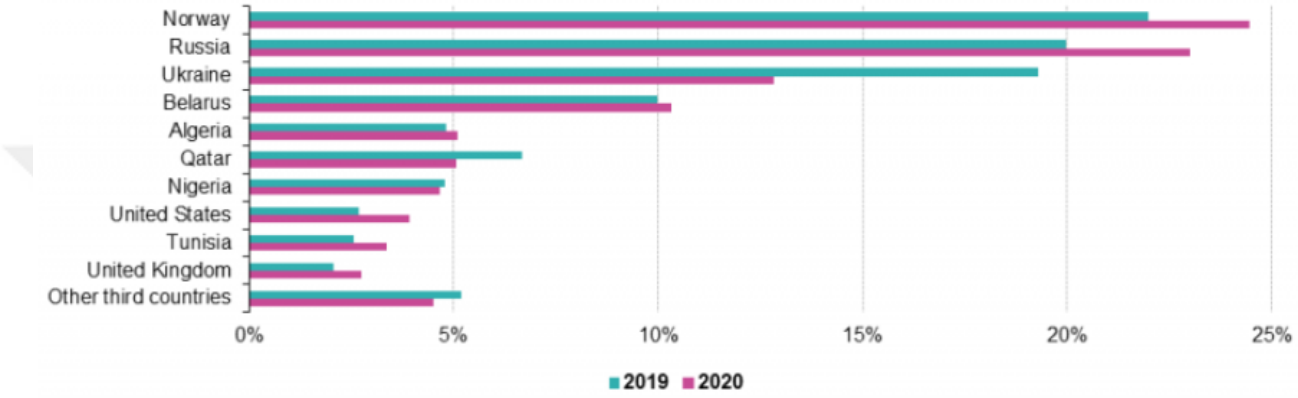
Source: Eurostat

EU natural gas production continued its downward trend, reaching 1,899 thousand terajoules in 2020, down 22.1% compared to 2019. For the euro area, a decline of 17.4% was recorded and production amounted to 1,232 thousand terajoules. The Netherlands, the EU's main natural gas producer, recorded a -28.3% decline in production. With 799,000 terajoules of natural gas production in 2020, the Netherlands was the largest natural gas producer in the EU, followed by Romania with 349,000 terajoules of primary production and Germany with 171,000 terajoules of primary production.

Regarding the origin of imports, Norway was the source of 24.5% of the natural gas entering the EU (excluding intra-EU trade and inflows from Switzerland), followed by Russia (23.0%), Ukraine (12.8%) and Belarus (10.3%) followed. However, since most of

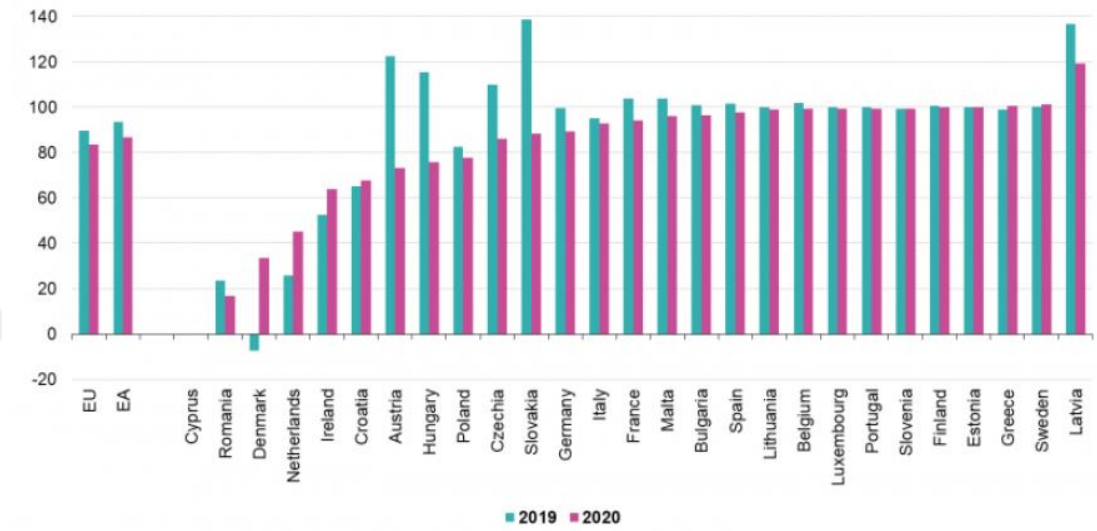
the gas entering the EU from Ukraine and Belarus initially comes from Russia, the dependence on gas imports from this country is practically greater than on screw Norwegian gas. In the figure below, there are import rates by non-EU countries.

Figure 4.2.3.2. : Percentage of extra-EU imports (entries) of natural gas by country of origin, 2019-2020



Also, dependence on natural gas in the EU declined from 89.5% in 2019 to 83.5% in 2020. Natural gas dependency in 15 Member States was over 90% in 2020, compared to 19 Member States in 2019.

Figure 4.2.3.3. : Natural gas import dependency, by country, 2018-2019 (%)



Sorce: Eurostat

4.2.4. Nuclear Energy

Despite the debate on waste and safety, nuclear energy is the most important non-carbon generating source in Europe. For this reason, it is very important for the future role of this resource to be discussed in an objective, transparent and very informative manner about all the costs, advantages and disadvantages of nuclear energy (European Commission, 2006).

The proliferation of nuclear power facilities depends on the efforts of states determined to prove that nuclear power is safe. Considering the decision of some Community members to liquidate their nuclear power plants, it can be predicted that the contribution of nuclear energy will not increase in the short term, and that more resources will need to be allocated for the construction of thermal power plants instead of the deactivated nuclear power plants in the medium term (European Commission, 2006).

Electricity generation is the main use of nuclear heat. Gross electricity generation from nuclear power plants in the EU in 2020 reached 683,512 GWh, representing a decrease of 25.2% compared to 2006. In the period 1990-2020, two different trends can be distinguished. From 1990 to 2004, the total amount of electricity produced at nuclear facilities in the EU increased by 26.9% in 2004 to a peak of 928,438 GWh, due to the increase in the number of reactors in operation. Between 2004 and 2006, total nuclear electricity generation in the EU stabilized before falling by 25.2% between 2006 and 2020, mainly due to a sharp drop in nuclear production in Germany of around 61.5%.

Unlike to the general trend in the EU, six countries increased their nuclear electricity generation between 2006 and 2020: Romania (+103.6%), Hungary (+19.3%), Netherlands (+17, 8) %), Czechia (+15.3%), Slovenia (+14.5%) and Finland (+1.7%) . During the same period, other countries (including the main generators) reduced their nuclear electricity generation. Lithuania permanently closed its nuclear facilities in 2009. Germany (-61.5%) recorded the biggest declines, followed by Sweden (-26.5%), Belgium (-26.2%), France (-21.4%), Bulgaria (-14.7%), Slovakia (-14.3%) and Spain. (-3.00%).

4.2.5. Renewable Energy

Environmental problems due to fossil fuels, increasing foreign dependency and high import costs have increased the importance of new and renewable energy sources for the EU. There is significant potential for the development of these resources within the Union. For these reasons, the EU is helping to develop low-carbon technologies and new and renewable forms of energy and is becoming a world leader in demand management. In this scope, becoming the world's first climate neutral continent by 2050 is the goal of the European Green Deal (COM(2019) 640 final), a very ambitious package of measures to ensure that European citizens and businesses benefit from a sustainable green transition.

Using renewable energy has many potential benefits, including reduced greenhouse gas emissions, diversification of energy sources, and reduced reliance on fossil fuel markets (especially oil and gas). Increasing employment in the EU through job creation in new 'green' technologies also depends on the growth of renewable energy sources.

Today, the European Union is one of the prominent actors in the development of renewable energy sources. BP estimates that the EU accounts for almost 42% of global renewable energy consumption, the USA 23%, China 9% and Japan only 4%.107 Renewable energy in the EU The share of energy sources in energy consumption is approximately 14% (BP, 2021).

The EU succeeded 22.1% of its gross final energy consumption in 2020 from renewable sources, nearly 2 percentage points above its target. Moreover, this target is distributed among EU member states with national action plans aimed at charting a path for the development of renewable energy in each of the member states. The share of renewables in gross final energy consumption was 22.1% in the EU in 2020, compared with 9.6% in 2004.

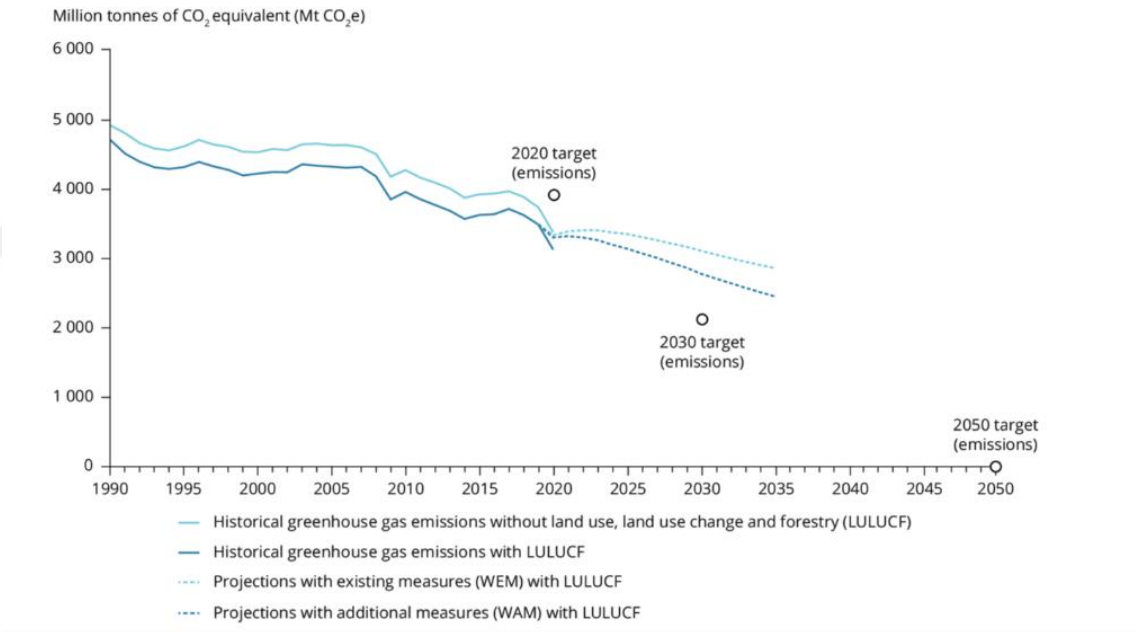
Sweden had by far the highest share among EU Member States in 2020 its more than half of energy (60%) from renewable sources in gross final energy consumption, surpassing Finland (44%) and Latvia (42%). At the other end of the scale, the lowest renewable energy rates were Malta (11%), followed by Luxembourg (12%) and Belgium (13%).

4.3. Greenhouse gas emissions reduction in the EU

The EU has made good progress in reducing greenhouse gas (GHG) emissions, thanks to many factors such as the implementation of EU and national policies and measures, increased use of renewable energy, the transition from coal to gas, improvements in energy efficiency and structural changes in the EU economies. GHG emissions in the EU-27 have fallen sharply in recent years, reaching 24% below 1990 levels and an estimated

31% in 2020. These achievements include emissions from international aviation and exclude contributions to land use, land use change and forestry (LULUCF).

Figure 4.1.12.: Historical trends and future projections of greenhouse gas emissions



Source: European Environment Agency, 2021

The reduction in emissions was 10% in 2020 compared to the previous year, making it the second consecutive year with the largest annual reduction observed in the last ten years. The significant 4% reduction achieved in 2019 was strongly supported by policy measures such as replacing coal with gas and renewable energy sources for electricity generation. Conditions in 2020 were very different from those in 2019, and the decline in emissions caused by reduced energy consumption from economic activities and transport was largely linked to the effects of measures to combat the Covid-19 pandemic. It is currently unclear to what extent climate change mitigation measures also contributed to the decline in 2020.

In terms of climate change mitigation targets for 2030, total EU GHG emissions are expected to continue to decline to achieve a net emission reduction of 41%. The EU's goal

of achieving climate neutrality by 2050 will require a realistic and flexible emissions trajectory in the future. Agreement and subsequent implementation of EU policy recommendations on ambitious EU targets for 2030 and 2050 (compared to 1990 and including removals) are therefore essential to continue reducing the emissions trend while recovering from the pandemic.

4.2 Climate Change in the EU

Climate Change Adaptation Strategy which sets out "a framework and mechanisms to add a new dimension to the EU's response to the current and future impacts of climate change" was published by the European Commission in 2013. This is one of the first initiatives at the European level to enable general guidelines for integration (Remling, 2018).

The EU has the potential to spread ideas on adaptation to geographically remote locations, not only as an agenda setter for member states but also as an important hub for development and climate assistance worldwide. However, despite the increase in national and global cohesion discourses, no systematic discursive analysis has been carried out at the EU level (Remling, 2018).

4.2.1 Paris Agreement

The Paris Climate Agreement which was adopted by the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) in 2015 and entered into force in 4 November 2016, has been signed by 197 countries. It is the first completely global climate change agreement, and although the obligations made in 2015 are not sufficient to the parties to achieve this goal on their own, it aims to keep the world's greenhouse gas (GHG) emissions at a level that would prevent dangerous climate change effects (Liu et al., 2020).

As it is indicated in the Paris Climate Agreement report prepared by the United Nations in 2015, including its objective, strengthening the global response to combat climate change, within the context of sustainable development and work for poverty eradication, including by:

(a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;

(b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and

(c) Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

The countries presented their national plans to the UNFCCC that explained which GHG or related goals they planned to succeed before and during the Paris conference (Liu et al., 2020). In order to achieve that long-term temperature goal, Parties target to reach global peaking of GHG emissions as quickly as possible, recognizing that peaking will take longer for developing country Parties, and to take on rapid reductions after that in compliance with the best available science, for the aim of succeeding a balance between anthropogenic emissions by sources and removals in the second half of this century, depending on equity, and as part of sustainable development and efforts to poverty eradication (UN, 2015).

According to the Articles explained in the report, Each Party shall prepare, communicate and maintain consecutive Nationally Determined Contributions (NDCs) which it is determined to achieve. Parties shall follow domestic mitigation measures, to achieve the objectives of the contributions. Also, Each Party's NDCs contribution will present progress beyond the Party's then current NDC and reflect its highest possible aim, reflecting its common but differentiated responsibilities and its own capabilities, considering different national conditions. Developed country Parties should continue to

maintain leadership by assuming economy-wide absolute emissions reduction targets. Developing country Parties should keep going to increase their mitigation efforts and be encouraged in time to progress to economy-wide emission reduction or limitation targets regarding different national conditions. Support will be provided to developing country Parties for implementing these targets recognizing that increased support for developing country Parties will admit to greater determination in their actions (UN, 2015).

4.2.2. European Union Leadership in Global Climate Policies

The first attempt to establish a theoretical framework for analyzing the EU as an international actor is based on the pioneering work of Sjöstedt, who recognized the EC as "a real actor in the international arena". Sjöstedt defined acting as “what is served and what is presented in the problem area depends on its ability” (Sjöstedt, 1998). Based on the study, Bretherton and Vogler (2006) focused on 3 features, arguing that the conditions of the EU as an actor emerged from an ongoing process rather than a given and established feature and resulted from the interaction of a complex set of internal and external factors. These three key attributes are opportunity, availability, and talent. The first feature, opportunity, reflects the external structural context that created the environment, and the environment referred to here is one in which the EU may or may not operate as an international actor. The second element, presence, means that the EU's presence in these opportunities is not only limited to the international arena but also the ability to exert influence abroad. The third concept, abilities, is determined by internal conditions. Presence, in general terms, refers to the delegation of powers and political instruments in the EU's foreign policy. The EU is supported by a certain degree of local legitimacy and a shared understanding of the EU's ability to transform opportunities into valuable conditions for its international existence (Pavese and Torney, 2015).

The approaches enabled the EU to systematically assess its leadership on climate change against a comprehensive set of criteria. The distinction between the different aspects of exemplary leadership (credibility, policy learning and diffusion, market and regulatory power) and diplomatic leadership (coherence/unity, adaptation to international context)

in tackling climate change is based on identifying key international trends. This distinction has enabled the achievements and challenges of the EU's climate change leadership to be identified (Oberthür and Dupon, 2021). The EU's leadership in this regard has mobilized its capacity in the first place globally in recent years. Secondly, by making significant achievements in adapting to external conditions, the EU has strongly developed its local climate policy since the 2000s, with the latest European Green Deal and its response to the Covid-19 crisis, and has successfully closed the credibility gap (Oberthür and Dupon, 2021). This domestic policy framework, which reduces greenhouse gas emissions, has spread beyond the EU, promoting key instruments such as emissions trading, and reform arrangements for the EU's agency in the multilateral UN process in the 2000s have made the EU a more diverse, efficient and effective negotiator. In addition, foreign services for enhanced climate diplomacy are increasingly involved and coordinated across the EU (Oberthür and Dupon, 2021).

The EU has adopted its international approach significantly to the developing dynamics. It includes the new "leader" strategy in response to rising powers and has resulted in multipolarity, including better targeting of climate support. In response to increasing polycentricity, it has required a stronger engagement with numerous international and transnational fora and initiatives beyond the UN process and in bilateral contexts. In particular, the EU has adopted its international approach in response to certain problems (inefficiencies in international negotiations; EU's failure in Copenhagen) (Oberthür and Dupon, 2021).

The first challenge going forward for the EU's climate leadership is to maintain and further expand the achievements outlined above. Coordination of climate diplomacy across foreign and climate policy, arrangements for the EU's pursuit of multilateral climate negotiations, and beyond these, advancing effective "polycentric" participation requires sustained effort and regular reflection. Effective “leadership” requires regular reviews of positions, opportunities and needs for coalition and bridge building and well thought out support. Most importantly, as envisioned in the European Green Deal, the EU must further develop its local climate policy to advance its regulatory and market

potentials and increase its own low emissions capabilities for maximum international impact (Torney and Davis Cross, 2017).

The further development of the EU's leadership capabilities thus poses another major interrelated challenge to further the analysis of the strategic characteristics of EU environmental foreign policy. The geopolitical transformation of climate policy forces the EU to embed climate "leadership" into a broader "grand climate strategy". Transforming the EU's strategic approach that emerged in the 2010s into a full-fledged common grand climate strategy requires a systematic, integrative and continuous evaluation of the climate strategy at the highest political level, including the interaction between policy areas and forums by example and diplomatic leadership. Given the unique character of the EU, such an integrated and comprehensive approach requires coordination between EU institutions and member states. Relevant elements such as the European Green Consensus include, for example, the integration of climate targets across policy areas. However, due to the obstacles of the Commission, the necessary coordination cannot be achieved across the EU (Volintiru, 2020).

The EU has always been one of the leading actors in the efforts in this fight, with the climate change negotiations starting as a global struggle carried out within the framework of the UN after the 1990s. It ranks third after China and the USA in contributing to global greenhouse gas emissions. The EU is one of the most willing actors to participate in the global fight against climate change. This willingness continues to be appreciated by the global public (international organizations, states, etc.) involved in the fight against climate change. The leadership of the EU in the context of global climate policies started with the steps taken in the process that took place with the approval of the KP. In those years, the EU gained its leadership in the global climate struggle by fighting and succeeding in order to ensure that the KP could enter into force and become functional (Talu, 2019). Since the 1990s, the EU has taken part in the international arena with its leadership role in global climate governance and has made ambitious international commitments. In the eyes of UNFCCC and KP, the EU, as the only regional organization member, is recognized as a unique international climate actor (Pavese and Torney, 2015).

Historically, the EU has played a leading role in shaping climate negotiations and, in addition to the Commission, the European External Action Service are the main driver for climate diplomacy and related climate foreign policy. A number of conclusions and reflection papers have been adopted on this issue, while at the same time making high-level political commitments, Federica Mogherini, the former High Representative of the European Union for Foreign Relations and Security Policy and Vice-President of the European Commission, has made climate change a priority in her statements and activities (Li, 2016).

European climate diplomacy studies of the European External Action Service (EEAS) are advantageous in having a wider base compared to the single country approach. External climate policy decision-making processes have been drafted since 1994 in complex institutional structures under the Environment Council, with an 'International Working Group on Climate Change on Environmental Issues' consisting of several expert groups as the key focus of authority. Since 2004, "chief negotiators", individuals from any member state or the Commission responsible for negotiating on behalf of the EU, issue leaders and expert groups have been preparing the EU's negotiating positions in cooperation. Final decisions on the Union's global climate negotiations and mandate are taken unanimously in the Environment Council. Decisions taken in recent years have also required the approval of the Council of Europe (Schunz, 2015).

Several factors explain why the EU is globally at the forefront of combating climate change. First, there is strong public concern about climate change (Schreurs, 2016). In the 2015 Eurobarometer survey, 91% of respondents answered climate change as a very serious problem. Second, there are concerns about long-term energy security. Fossil fuel resources in Europe are limited and the EU is one of the world's largest energy importers. It imported more than 53% of the energy it consumed in 2013. This is one of the most important factors that led to the establishment of the Energy Union in 2015, an initiative to improve energy policy coordination among the EU Member States focusing on five policy areas. The five focus areas are the security of supply, integrated domestic energy,

energy efficiency, climate change and research and innovation in low carbon technologies. In the international arena, the EU is doing its part in tackling climate change, and at the same time, it tries to persuade and encourage other actors in tackling climate change. Regarding climate change, the EU sees itself as a leader and is widely accepted as a leader on climate change. The most important event in the EU's being seen as a leader in global climate change is the withdrawal of the USA from the KP in 2001. While there were developments regarding climate change on international platforms in the 1990s, one of the most important issues for the EU was the signing of binding international agreements (Schreurs, 2016).

Today, G-20 countries are responsible for about 80% of greenhouse gas emissions and the EU has commercial relations with G-20 countries. Within the framework of the G-20 commitments, the EU takes initiatives at the global level to minimize the use of fossil fuels, end the incentives for fossil fuels, and strengthen financing for sustainable development. In this sense, the EU argues that coordination should be ensured between the states that cause the highest and least greenhouse gas emissions. The EU also stated that mechanisms should be planned and created within the framework of sharing experience and opportunities with China, which is not among the G-20 countries and contributes to the largest emission emissions in the world, and Africa, which is one of the regions most affected by climate change and environmental problems. The mentioned EU initiatives and climate change issues show that the EU wants to be active at the global level (European Commission, 2019).

5. THE FUTURE PLANNING

5.1 2020 Strategy

One of the EU's most important climate change tools is the Strategy Documents. Strategy Papers contribute to the establishment of the EU's future priorities. The documents are of great importance in the policy-making process with the infrastructure created during the preparation of the directives. The first Strategy Document prepared by the EU is the 2020 Strategy. The first EU Commission Strategy Document, in which the plans for the 2020 Strategies were made, was dated 10.01.2007. At the EU Heads of State and Government Summit held in 2007, it was underlined that the necessary steps should be taken for the EU to create an integrated and detailed energy and climate policy (Geden and Fischer, 2014).

In the Summit, EU Leaders adopted climate change and energy plans to reduce greenhouse gas emissions by a minimum of 20%, achieve a 20% reduction in renewable energy use and primary source energy consumption, and increase energy efficiency by 20% by 2020. This plan, which came into force in 2009, has guided the EU in determining the EU's goals for 2020 and establishing roadmaps to be followed in reaching these targets. These targets are also called 20-20-20 targets (Geden and Fischer, 2014; European Commission, 2010).

The energy targets determined in the national context for 2020 differ according to the current energy potentials of the member countries. For example, while the renewable energy target is 10% for Malta, this rate is 49% for Sweden, which has a developed energy sector focused on bioenergy and hydraulic energy. Looking at the emission reduction targets, it is expected that the 20% target set for the entire EU will be completed and an increase in renewable energy use of 12% is expected in 2010 (Enerdata, 2014).

The two most important concepts of the 20-20-20 Strategy are Mitigation and Adaptation. Mitigation means limiting or reducing greenhouse gas emissions. The second important

concept, adaptation, means increasing societies' resistance to climate change effects and minimizing negative effects. In this context, it was emphasized that developed countries should reduce their greenhouse gas emissions by 15% and 30% until 2020, by keeping the temperature on Earth below 2 degrees compared to the pre-Industrial Revolution. It has been stated that if the relevant targets and reduction rates are not realized, it will cause negative consequences such as agriculture, fisheries and drought (European Parliament, 2007).

The EU takes firm and determined steps to transition to a low-carbon economy in its fight against climate change, and its efforts in this area date back to the 1990s, when it set itself the goal of keeping carbon dioxide emissions at the level of the 1990s until 2000, and achieved this target. In order to reduce greenhouse gas emissions from time to time, a number of political measures have been put into effect within the European Climate Change Program, most of which were prepared in the 2000s, and at the same time, member countries have implemented their own national actions European Commission, 2015).

The EU continues to fight climate change by creating comprehensive policies within itself and cooperating with its international partners. It has created another plan to reduce its emissions by at least 55% by 2030. Problems such as climate change and environmental pollution are threats on a large scale in the context of Europe and the world. It has been understood that the EU needs a new plan that can transform into a contemporary, resource-efficient and competitive economy in order to overcome the obstacles and overcome difficulties and minimize them. Is an important package of measures that includes priorities, including investing in research and innovation, and preserving Europe's nature, and these priorities form the basis of the Covenant. Today, the EU has guaranteed to reduce carbon dioxide emissions by a minimum of 40% while developing employment for all its citizens and maintaining its economic growth, and there are three main objectives related to this. The first of these goals is to make energy efficiency the priority, and the second, the aim of being a global leader in renewable energy, and the last and third purpose; the protection of consumers (Talu, 2019).

Has the 2020 strategy been successful? EEA estimates that, the EU-27's greenhouse gas emissions in 2020 were 31% lower than in 1990 (only when gross emissions are taken into account). This means that the 20% reduction target has been significantly exceeded. However, preliminary data shows only 21 Member States achieved their national targets in 2020. Bulgaria, Cyprus, Finland, Germany, Ireland and Malta will have to use flexibilities such as purchasing emission permits from other EU countries to accord their legal targets.

Preliminary estimates from the EEA show the EU reaching a 21.3% share of renewable energy in energy consumption in 2020. According to the EEA analysis, overall positive progress is mainly driven by increased use of renewable energy for electricity, heating and cooling. The use of renewable energy in transport is growing more slowly, but preliminary data shows that the EU has narrowly reached its target of 10% renewable energy use in the sector.

A 20% reduction in energy use in the coming years seemed unlikely, but widespread quarantines from COVID-19 in 2020 look to have pushed EU primary and final energy consumption 5% and 3% below target levels, respectively. Further reductions in energy consumption will be necessary to progress on the path to long-term goals (European Environment Agency, 2021).

5.2 2030 strategy

The European Trends and Forecasts 2021 report explains how current trends and developments can contribute to meeting the current 2030 targets at the European and Member State level. In 2021, the EU set a more ambitious target for 2030, a net reduction of 55% in national greenhouse gas emissions compared to 1990. This target has been presented as an updated nationally determined contribution to the UNFCCC (Council of the European Union, 2020) and is enshrined in European Climate Law (EU, 2021). It replaces the binding EU target submitted to the UNFCCC as the first nationally

determined EU contribution to reducing at least 40% of greenhouse gas emissions by 2030 compared to 1990 (European Commission, 2014, 2015).

The Current 2030 targets for GHG emissions, renewable energy and energy efficiency at the EU level are: A target for a net reduction of 55% of EU-27 national GHG emissions (compared to 1990 levels). A binding emissions ceiling is set for sectors covered by the EU ETS (EU, 2018a) and binding minimum annual GHG emission reduction targets for the EU Member States from 2021 to 2030 for sectors not covered by the EU ETS (EU, 2018e) but no clear target yet not aligned with the 55% level. In addition, the LULUCF Regulation (EU, 2018d) states that "EU Member States must guarantee that greenhouse gas emissions from land use, land use change or forestry are offset by at least equivalent CO2 emission reduction over the 2021 period to 2030" (EC, 2018b). Also, a binding goal to raise the share of energy produced from renewable sources in the EU-27 to at least 32% of gross final energy consumption by 2030, including a provision allowing a review in the increase by 2023 set by RED (EU) a target. , 2018b). Target of at least 32.5% improvement in energy efficiency at the EU level by 2030 (compared to the Commission's 2007 energy reference scenario), a review article on the increase by 2023 set in the Energy Efficiency Directive (EED) (EU, 2018c).

5.3 The European Green Deal and Climate-neutral Vision by 2050

Ursula von der Leyen, President of the European Commission, announced the European Green Deal on 11 December 2019 and revealed the European Union's goal of being a climate-neutral continent by 2050. With the European Green Deal, it is understood that the European Union will realize the industrial transformation with a new growth strategy until 2050 and all the policies it will develop will be implemented in the axis of climate change. Von Der Leyen, in her statement, stated that with the new order to be implemented, environmentally harmful and carbon-based growth will be replaced by energy and material efficient growth models based on a circular economy. In this context,

within the framework of a new growth strategy, the European Union has started to implement new policy changes to become a resource efficient and competitive economy with the vision of becoming a Climate-Neutral Continent by 2050 (European Commission, 2020).

When the policy headings planned to be implemented within the scope of the European Green Consensus are examined, it is understood that the relevant policy arrangements are envisaged to be carried out on the axis of climate change. In general terms, these policy changes are listed as follows (European Commission, 2020):

Biodiversity: Ensuring biodiversity for a healthier natural ecosystem
Farm to Fork: A healthier and more sustainable EU food system
Sustainable Agriculture: Making EU agriculture socially, economically and environmentally sustainable
Clean Energy: Limiting the use of coal in industry and production to fully decarbonize the energy system focusing on renewable energy sources in a way that is sustainable
Sustainable Industry: Ensuring more sustainable, more environmentally friendly production cycles
Construction and Renovation: Constructing cleaner, environmentally friendly and renovating existing buildings within the framework of new policies
Sustainable Transport: More sustainable transportation systems for both transportation and industry development of transportation systems
Pollution Prevention: Ending environmental pollution quickly and effectively
Climate Action Plan: Making the European Union a climate-neutral continent by 2050

When all these policy changes are taken into account, it is clearly seen that all the policies and actions of the European Union will now be carried out on the axis of climate change and sustainability. Changes and transformations to be realized within the policy areas

determined in general terms will affect not only the European Union countries, but also all countries that have bilateral relations with these countries economically, socially and politically (European Commission, 2020; Leonard et al., 2021).

After the announcement of the European Green Deal in December 2019, new strategies and action plans were announced within the scope of the rapid transition to the new order in many different areas on the European Union side, and it is aimed to create a holistic and inclusive roadmap with the participation of different stakeholders by carrying out consultation processes for these changes (European Commission, 2020).

Besides, the Climate-Neutral Vision drawn by the EU by 2050 can be a guide not only for the EU countries but also for the climate policies of many countries in terms of being instrumental in the development of many research and innovation programs and new market designs. With this view, the EU has initiated a new modernization and transformation in its economic policies to implement an economic model that will not harm the planet'sto implement an economic model that will not harm the planet's climate, together with the 2050 Climate-Neutral Vision. The claim here is to become the world's first major economy, with the EU planning to become Climate-Neutral by 2050, which obviously aims to reinforce the EU's leading position in the fight against climate change at a global level (Talu, 2019).

6. CONCLUSION

From the perspective of global politics and economy, it cannot be argued that energy is a factor that determines the relations between countries. The energy resources of these countries and the control of these resources are significant in the international system and their importance continues to increase today. Coal, an important energy source of the 19th century, and the economic transformations experienced due to this source reorganized the rules of international politics. In the 20th century, the existing energy resources of the countries and the safe access to these resources emerged as a separate security problem.

The increasing need for energy, providing access to alternative energy sources, the method and rate of energy production have changed the international system's balance, while also causing new conflicts and collaborations. The increasing global energy demand in parallel with the increasing population rate is used by some of the great powers in the system not only as an economic but also as a political tool. Energy exporting countries can put pressure on other countries and impose embargoes.

The fact that the treaties establishing the European Union are based on energy resources proves how important energy is for the Union. Since the European Union is a structure with a high energy dependency, it is one of the important actors in the system with issues such as existing energy resources, the extraction and use of these resources, and the problem of energy supply security. The increasing energy need, and foreign dependency of the EU emerge as a security problem. Therefore, it is necessary to understand the diversity and strategic importance of the EU's energy resources. Looking at the consumption rate of energy resources, natural gas and oil are the most used resources. However, due to the environmental damage of these fossil fuels, the EU aims at sustainable development by increasing the use of renewable energy sources.

The integration initiative, which started in the field of energy and economy among Western European countries in Europe, continues today to create an Energy Union under

the roof of the EU. In this process, energy was primarily evaluated from its economic aspect in terms of the creation of a common market and a common customs tariff, but since 1973, with the effect of the energy crises with the supplier countries, the security aspect has become a prominent issue. The increase in the EU's energy imports, dependence on supplier countries with the acceptance of new member states, and the increase in uncertainties in terms of supplier countries has brought energy supply security to the center of the EU's efforts to establish a common energy policy.

Due to environmental concerns and the measures taken to combat climate change, natural gas consumption in the EU has increased rapidly since 1980, and Russia has become the EU's largest natural gas supplier. However, this position of Russia has started to threaten the energy supply security of the EU over time. The disintegration of the Soviet Union in 1991 and the Russian-Ukrainian energy crises since 2006 increased the energy supply security risk of EU countries that supply Russian natural gas through Ukraine. Thus, natural gas supply security and increasing import dependency on Russia have become one of the most important determinants in developing the EU's energy policies. Reducing natural gas import dependency on Russia, supplying natural gas from alternative supplier countries, and diversifying existing energy transmission routes have come to the fore among the decisions taken in the strategy documents that shaped the EU's energy policies in the 2000s.

In the light of all these facts, I would like to conclude my thesis as follows:

In this thesis, I tried to find answers to the two main questions. The first one was “How have EU’s energy policies been transformed from its establishment until the time period when the climate change issue had become significant in the global agenda?” In order to support this question, I asked: “What kind of action plans have been implemented in order to achieve this transformation and which targets are planned for the future?” and “Has the EU reduced carbon emission?” My findings regarding this question are as follows:

EU energy policy is based on three basic principles. The first of these is the creation of a competitive, transparent and integrated domestic market in the electricity and natural gas sectors. Competition, transparency and market integration; In coordination with public service policies, it leads to R&D studies, productivity increase, providing users with the right to choose, increasing service quality, pricing in favor of individuals instead of companies, and better use of energy resources. The second principle; protecting the environment and combating global climate change and investing in clean energy technologies for this purpose. Finally, the principle of ensuring energy supply security has been adopted. In this context, increasing energy savings and efficiency and developing a common energy foreign policy are among the objectives of the Union.

In the field of energy, the period of the twenty-first century until the present, the EU has taken important steps toward leaving the energy policies determined by the individual initiative of the countries within its body and turning it into a “EU common energy policy”. The fluctuations in the market prices of fossil fuels, which are still dependent on and even with an increasing level of foreign dependency, the change in international energy markets and geopolitical factors, fuel the EU's desire to reduce its foreign dependence in the energy sector from an economic perspective.

Within the scope of EU energy policies, it is aimed to increase the share of natural gas use, to strengthen the domestic market by opening the natural gas and electricity sectors to competition, and to increase nuclear energy security. In addition, it is in the form of increasing the share of renewable energy resources to the highest possible level, directing investments to energy technologies that do not pollute the environment, protecting the environment, and intensely struggling with global climate change, ensuring energy supply security, and increasing both savings and efficiency in energy. In all these areas, it aims to establish and implement a common energy policy by coordinating the Union member states.

Due to the importance that the EU gives to the environment, it tries to contribute to keeping global warming below 2 ºC by reducing the use of fossil fuels and therefore

carbon emissions. In this context, it acts within the framework of the Kyoto Protocol, the Paris Agreement and a similar legal framework.

The EU has spent a lot of time on the structural frameworks, action plans, policy papers on the energy topic and the medium to long term targets that have been set as described throughout the thesis. As a result of the implementation of the changes in the policies implemented within the EU, the approaches towards international suppliers and basins from which resources are provided, as well as the tendencies towards the preference of renewable energy, although the energy production and consumption amount of the Union do not change much, significant differences are observed in the distribution. As can be seen from the data in the relevant sections, it has radically reduced the use of solid fuels, the dominant energy source, in 1990. A partial decrease follows this decrease in gas and petroleum products. While it can be argued that nuclear energy has been produced steadily in the last 25 years, the most promising figures are the almost tripling increase in renewable energy production.

On the other hand, although the Union successfully meets the targets for reducing greenhouse gas emissions, it seems very difficult to meet the targets set for 2030 and 2050 within the Union. Although the 2020 targets have been met due to the COVID-19 measures, the EU member states have difficulties achieving these targets, as the cost of achieving the desired targets is high. In this respect, it is very difficult to argue that the energy policy of the Union is sustainable in the short and medium term. In the long run, it seems possible that the targets can be achieved, provided that large-scale structural changes are made and macro-level differences in both production and consumption dimensions are realized. The Union must act more determinedly and with the spirit of the Union than ever before, in order to ensure the energy supply security in a way that prioritizes the welfare levels of the citizens of the member states and to put into practice the theory it has produced in the name of combating climate change.

The second main research question was: “What role does the EU take as a global climate leader for climate change advocacy?” As a result of my research on this question, I found these outputs:

When the USA left the KP in 2001, the EU took over the leadership in the field of international climate change and since then it has started to lead the global climate change struggle. After the 1990s, the EU started to act as an example to other states and organizations in terms of emission reductions by making ambitious commitments. However, after the 2000s, in the context of further industrialization of countries, the EU started to fight climate change alone at the global level, since the USA, China and India did not contribute to the common emission reduction targets and, on the contrary, had greenhouse gas-increasing activities.

Acting in the context of exemplary leadership, the EU has shaped the climate change negotiations and shaped the behaviors and actions of the actors with its persuasion ability, without disturbing other actors. One of the most important examples is the EU's persuading Russia to join the KP. After Russia and the EU acted jointly in the field of climate change, today the China-EU partnership is important in international climate change. Although Beijing was not very willing to work on climate change at first, it took an active part in the negotiations with the EU during and after the 2015 Paris Agreement negotiations. The partnership of the EU and China on climate change is of great importance for achieving emission reduction targets and providing a comprehensive political framework for the whole world.

There is no agreement yet on the issue of responsibility sharing in the international arena and between countries, and there is no agreement yet. While the EU has determined its objectives within the scope of UNFCCC and KP, it has realized that the two texts are insufficient. The EU has started new searches for this inadequacy. As a result of these

searches, the Paris Agreement was signed. It is seen that the Paris Agreement is currently valid, and the EU has shaped its climate change policies according to this agreement. The problems experienced in international negotiations, the escalation of the parties and the inability to reach an agreement did not discourage the EU in terms of emission reduction, and the EU continued its way by creating its own strategies. Having global values and norms, the EU wants to achieve these goals globally with the participation of other countries and calls on states. The EU plays a role as an effective leader in international climate policy, as it does not want to be limited to its own geography but wants to wage global war on climate change.

However, researchers also focus on difficulties that the EU faces with climate leadership. Oberthür and Kelly (2008) state that while many factors support international leadership goals on climate change, the EU encounters some challenges. Some of these are the impacts of the EU's enlargement, better coordination of the EU's environmental diplomacy, further development of EU policies to effectively promote climate change, particularly in developing countries and implementation of domestic policies and more improvement.

Another point emphasized by Damro et al. (2008), at first view, the unique feature of the EU may seem to create ungovernable barriers to any important role in future climate change policy. The EU may face several local obstacles because of complicated institutional arrangements that consolidate sovereignty among the Member States. Additionally, attending many international negotiations may be somewhat troubled, and the common legal authority system would confuse third parties.

According to Remling, lack of authorization and competency in decision-making, strong competition, and giving higher priority to other policy areas create challenges for the Union. In other words, the subjection of policy actions to economic objectives is not specific to cohesion policy but is symptomatic of larger neoliberal trends in environmental governance (Remling, 2018). He also argues that proposals to constitutively transfer EU operations by adjustment policy will confront significant

resilience. But there is the powerful statement on climate change's devastating effects on the EU and the proposed weak reformative measures that arguably do little to design the region, and a mismatch between the defined goals to act on adaptation (Remling, 2018).

After the explanations of my findings to my research question, I would like to finalize this part as: The European Union has both opportunities and challenges in achieving carbon emission amounts for the purpose, considering the devastating effects of climate change. Despite all this, although the Union today consists of member states with different energy sources, economic and social structures, it is one of the authorities that carries out serious environmental studies, produces projects and enacts legislation. The fact that it ranks second in world energy consumption reveals how important the measures to be taken within the scope of the Union are in the fight against climate change. Aside from how possible it is to reach its carbon neutral target by 2050, the steps it will take in this regard will set an example for many countries in the world.

It is estimated that the EU's energy consumption will continue to increase in the coming years. For this reason, it is a point that needs to be carefully examined how it will follow in reaching its 2050 goals. However, technology is developing rapidly. Even within a year, great changes and developments occur worldwide. Therefore, it is likely that technological developments will contribute greatly to the EU's realization of its climate-neutral policies.

In the end, I would like to express my suggestions for future studies. One of them is that researchers should investigate whether energy policies are fragile within the scope of the EU's carbon emission reduction targets. The reason why I am presenting this proposal is that the measures taken within the scope of COVID-19, which is the factor in the EU's realization of its 2020 targets, reduce energy use, thus reducing the use of fossil fuels and increasing the rate of renewable energy use. So, such world-affected events will be needed to achieve the 2050 carbon-neutral target, or the EU energy policies will be sufficient to achieve this target!

Another suggestion is to follow the partnerships that the EU will establish in the near future. The Union's furthering its relations with China is very important for developing renewable energy and energy efficiency technologies. Therefore, to what extent the EU will carry out this partnership and with which countries it will develop relations within this scope is another issue that needs to be followed.

BIBLIOGRAPHY

Alter, K. J. and Steinberg, D. (1997). The Theory and Reality of the European Coal and Steel Community, Forthcoming in S. Meunier and K. McNamara eds *European Integration and Institutional Change in Historical Perspective*. Oxford: Oxford University Press.

Akdemir, E., (2012). Avrupa Bütünleşmesinin Tarihçesi, Akçay, B. and Göçmen, İ. (Ed.), Avrupa Birliği Tarihçe, Teoriler, Kurumlar ve Politikalar*, Seçkin Yayınları*, Ankara, s. 37-63.

Aguirre, M. and Ibikunle, G. (2014), Determinants of Renewable Energy Growth: A Global Sample Analysis, *Energy Policy* 69, pp. 374-384.

Aytüre, S. (2013). Avrupa Birliği'nin Enerji Politikasında Son Gelişmeler ve Türkiye'ye Yansımaları, *Nevşehir Hacı Bektaş Veli University Journal of Social Sciences,* 3(2013), pp. 35-51.

Bayraç, N. and Çildir, M. (2017), 'AB Yenilenebilir Enerji Politikalarinin Ekonomik Büyüme Üzerindeki Etkisi', *International Journal of Management Economics and Business*, 13 (ICMEB17), pp. 202-211.

Bauen, A. (2006), 'Future energy sources and systems-Acting on climate change and energy security', *Journal of Power Sources.* 157(2), pp. 893-901.

Beck, S et. al. 2009, "Climate Policy Integration, Coherence, and Governance in Germany", *Partnership for European Environmental Research (PEER).* 1, p. 16-20

Bekkhus, N. B., and Dehin, R. (2007). Renewable Energy Sources in the European Union: Present Situation And Future Developments. *Studia Diplomatica*. *60*(2), pp.213–227. http://www.jstor.org/stable/44839185

Benson, D., and Jordan, A. (2010). European Union environmental policy after the Lisbon Treaty: plus ça change, plus c'est la même chose? *Environmental Politics*, 19(3)., pp.468-474.

Bretherton, C., & Vogler, J. (2006). The European Union as a Global Actor, 2nd edition. London: Routledge.

Böhringer, C., Hoffmann, T., Lange, A., Löschel, A., Moslener, U. (2009). EU climate policy up to 2020: An economic impact assessment. *Energy Economics*. 31, p. 295.

BP (2021). British Petroleum statistical review of world energy. British Petroleum. Available at: https://www.bp.com/content/dam/bp/business

sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review 2021-full-report.pdf

Campbell, C. J. and Laherrère, J. H. (1998). The End of Chip Oil, Scientific American.

Campbell, C. J. (2005). Oil Crisis, *Multi-Science Publishing Company Ltd*., UK.

Candan, A. (2004). Avrupa Birliği'nin Enerji Politikası, *İktisadi Kalkınma Vakfı*.

Capros P., Mantzos L., Parousos L., Tasios N., Klaassen G., & Van Ierland T. (2010), 'Analysis of the EU policy package on climate change and renewables', *Energy Policy*. 39(3), pp. 1476-1485.

Chalvatzis, K.J. and Ioannidis, A. (2017). Energy supply security in the EU: Benchmarking diversity dependence of primary energy, *Applied Energy*, Vol.207, pp.465-476.

Correlje, A. & Linde, C. van der. 2006, 'Energy Supply Security and Geopolitics: A European Perspective', *Energy Policy*, vol. 34, no. 5, pp. 532-543.

Council of the European Union., (2008). Consolidated versions of the Treaty on European Union and the Treaty on the functioning of the European Union. Brussels: Council of the European Union.

Commission of the European Communities 1997: *"Climate Change -The EU Approach for Kyoto"*, COM(97) 481 final. Brussels, 01.10.1997

Council of the European Union. (2020), Submission to the UNFCCC on behalf of the European Union and its Member States on the update of the nationally determined contribution of the European Union and its Member States (14222/1/20 Rev 1).

Council Decision 93/500/EC (1993) OJ L 235/41.

Council Decision (98/352/EC) (OJ L 159, 3.6.1998, pp. 53–57.

Council Directive 93/76/EEC of 13 September 1993, (OJ L 237, 22/09/1993 pp. 28-30.

Council Decision 91/565/EEC (OJ L 307, 8.11.1991, pp.34.

Council Decision 96/737/EC (OJ L 335, 24.12.1996, pp. 50–53.

Decision No 647/2000/EC (OJ L 79, 30.03.2000, pp. 6-9.

Council Decision (1999/21/Euratom) (OJ L 7, 13.1.1999, pp. 16-19.

Council Decision (1999/23/EC) (OJ L 7, 13.1.1999, pp. 23–27.

Official Journal of the European Communities. (2000). CARNOT kyotCall for proposals for actions related to the promotion of the clean and efficient use of solid fuels Council Decision (1999/24/EC) (OJ L 7, 13.1.1999, pp. 28–30 Retrieved from https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2000:019:0009:0010:EN:PDF

Council Decision (1999/21/Euratom) (OJ L 7, 13.1.1999, pp. 16-19).

Council Regulation (EC, Euratom) No 99/2000 of 29 December 1999, concerning the provision of assistance to the partner states in Eastern Europe and Central Asia, OJ L 12 ,18.1.2000.

Council Decision (2001/353/EC) (OJ L 125, 05.05.2001, pp. 24-26.

da Graça Carvalho, M. (2012). EU Energy and Climate Change Strategy, *Energy*. 40(1), pp. 19-22.

Damro, C Hardie, I. and MacKenzie, D. (2008). The EU and Climate Change Policy: Law, Politics and Prominence at Different Levels, *Journal of Contemporary European Research*. 4(3), pp. 179-192.

Darmer, M. and Kuyper, L. (2000). Industry and the European Union: Analysing Policies for Business, *Edward Elgar Publishing Limited*.

Delreux, T. (2012), The EU as an actor in global environmental politics, in Jordan, A. and Adelle, C. (ed.) *Environmental Policy in the EU* (3rd edn.), London: Routledge, pp. 287-302.

Delbeke, J. and Vis, P. (2016). EU Climate Policy Explained, New York, Routlege.

Decision No 646/2000/EC of the European Parliament and of the Council of 28 February 2000 adopting a multiannual programme for the promotion of renewable energy sources in the Community (Altener) (1998 to 2002) http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000D0646:EN:HTML

Department for Energy and Climate Change (DECC) 2008, *"Climate Change Act"*, November 26 2008, London

Dursun, S. (2011). Avrupa Birliği'nin Enerji Politikasi ve Türkiye, *Ankara Üniversitesi Yayınlari*, 303.

Enerdata. (2014). Costs and Benefits to EU Member States of 2030 Climate and Energy Targets,

Energy Charter Secretariat. (2016). The International Energy Charter Consolidated Energy Charter Treaty. Retrieved from: https://www.energycharter.org/fileadmin/DocumentsMedia/Legal/ECTC-en.pdf

European Commission. (1992). *Treaty of Maastricht on European Union*. Official Journal C 191/1, July 29. Available at http://www.ecb.int/ecb/legal/pdf/maastricht_en.pdf

European Commission. COM(1994). 659. For a European Union Energy Policy. p. 5. http://aei.pitt.edu/1185/1/energy_gp_COM_94_659.pdf

European Commission COM(1996) 576. Energy for the Future. Renewable Sources of Energy Green Paper for a Community Strategy. Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:51996DC0576&rid=2

Energy Charter Secretariat. (2016). The International Energy Charter Consolidated Energy Charter Treaty. Retrieved from: https://www.energycharter.org/fileadmin/DocumentsMedia/Legal/ECTC-en.pdf

European Commission COM(2000). 769. Towards a European strategy for the security of energy supply [COM(2000) 769 final. Retrieved from https://eur-lex.europa.eu/legal content/EN/TXT/PDF/?uri=CELEX:52000DC0769&from=EN

European Commission COM(2005). 265. Energy Efficiency- or Doing More With Less. Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52005DC0265&from=EN

European Commission COM(2006). 105. Green Paper on a European Strategy for Sustainable, Competitive, and Secure Energy. Retrieved from https://europa.eu/documents/comm/green_papers/pdf/com2006_105_en.pdf

European Commission, (2007). Energy Corridors: European Union and Neighbouring Countries, *Project Report, Directorate-General for Research*, Directorate Energy.

European Commission. (2010). Analysis of options to move beyond 20% greenhouse gas emission reductions and assessing the risk of carbon leakage, COM(2010) 265 final.

European Commission COM (2013) 169. Green Paper. A 2030 Framework for Climate and Energy Policies. Available at: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2013:0169:FIN:en:PDF

European Commission. (2014). Multiannual programme for the promotion of energy efficiency in the European Union (SAVE II), 1996-2000, Available at:

https://cordis.europa.eu/programme/id/ENG-SAVE-2European Commission COM (2019) 640.

European Commission. (2014). International Energy Cooperation Programme, 1980 Available at: https://cordis.europa.eu/programme/id/IC-SYNERGY-0

European Commission. (2014). Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions. A policy framework for climate and energy in the period from 2020 to 2030. COM(2014) 15 final. Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014DC0015&from=EN

European Commission. (2015). Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee, The Committee Of The Regions And The European Investment Bank A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy. COM(2015) 80 final. Retrieved from: https://eur-lex.europa.eu/resource.html?uri=cellar:1bd46c90-bdd4-11e4-bbe1-01aa75ed71a1.0001.03/DOC_1&format=PDF

European Commission. (2015). European Climate Change Program. Retrieved from: https://ec.europa.eu/clima/eu-action/european-climate-change-programme_en

European Commission. (2015). Millennium Development Goals (MDGs) – What has the EU achieved?. Retrieved from: file:///C:/Users/User/Downloads/Millennium_Development_Goals__MDGs____What_has_the_EU_achieved_.pdf

The European Green Deal. (2019). Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions.
Available at: https://ec.europa.eu/info/sites/default/files/european-green-deal-communication_en.pdf

European Environment Agency. (2011). Climate Change Mitigation,
Available at: http://www.eea.europa.eu/themes/climate

European Environment Agency. (2021). Accompanying the report Trends and projections in Europe 2021, Technical background document. Retrieved from: https://www.eea.europa.eu/publications/trends-and-projections-in-europe-2021/technical-background-document/view

European Parliament. (2007). European Parliament resolution on climate change [P6_TA(2007)0038]. Retrieved from: https://www.europarl.europa.eu/doceo/document/TA-6-2007-0038_EN.pdf

European Union. (2018a). Directive (EU) 2018/410 of the European Parliament and of the Council of 14 March 2018 amending Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments, and Decision (EU) 2015/1814 (OJ L 76, 19.3.2018, pp. 3-27.

European Union. (2018b). Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (OJ L 328, 21.12.2018, pp. 82-209.

European Union. (2018c). Directive (EU) 2018/2002 of the European Parliament and of the Council of 11 December 2018 amending Directive 2012/27/EU on energy efficiency (OJ L 328, 21.12.2018, pp. 210-230.

European Union. (2018d). Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework, and amending Regulation (EU) No 525/2013 and Decision No 529/2013/EU (OJ L 156, 19.6.2018, pp. 1-25.

European Union. (2018e). Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013 (OJ L 156, 19.6.2018, pp. 26-42.

Eyre, N 2001, "Carbon reduction in the real world: How the UK will surpass its Kyoto obligations". *Climate Policy*. 1, pp. 309-326.

Geden, O. and Fischer S. (2014). Moving Targets Negotiations on the EU's Energy and Climate Policy Objectives for the Post-2020 Period and Implications for the German Energy Transition, *SWP Research Paper German Institute for International and Security Affairs*, pp. 1-30.

Gleditsch, N. P. (2012). Whither the weather? Climate change and conflict, *Journal of Peace Research*. 49 (1), p. 7.

Graziatti, L.V. (2018). The Treaty of Rome EEC and EURATOM 1957, *ABC Research Alert*. 5(3), pp. 20-24.

Gupta, J., and Grubb, M. (2000). *Climate change and European leadership: a sustainable role for Europe.* Dordrecht: Kluwer Academic Publishers.

Hamilton, J.D. (2010). Historical Oil Shocks, *Handbook of Major Events in Economic History.* pp. 2-53.

Harris, P. G. (2007), Europe and Global Climate Change: Politics, Foreign Policy, and Regional Cooperation, Edward Elgar Publishers, pp. 50-77; 223, 224.

Haugland, T., Bergesen, H. and Roland, K. (1998). Energy Structures and Environmental Futures in Europe, Oxford University Press.

Helgesen, S (2011,) The EU- a climate change driver? A study of EU's climate change ambitions, Lund University, pp. 1-24

Herrero, B. (2015). The European Union's External Policy On Climate Change Adaptation: From Conditionality-Driven Action To Sustainable Development, *Revista Catalana de Dret Ambiental,* 4(2), pp. 1-24.
Doi: 10.17345/1581

Heyvaert, V. (2011). Governing Climate Change: Towards a New Paradigm for Risk Regulation, The Modern Law Review. 74(6), pp. 817-844.

Iacob, I. G. and Cirlig, R. E. (2016). The Energy Charter Treaty and settlement of disputes – current challenges, *Juridical Tribune*. 6(1), p. 72.

IPCC 1995, Second Assessment Report: Climate Change 1995, Available at: http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#1,

Intergovernmental Panel on Climate Change (IPCC). (2007). Climate Change 2007. Fourth Assessment Report: Synthesis Report. Geneva: IPCC.
www.ipcc.ch

International Energy Charter (2018), The European Energy Charter, *Available at* https://energycharter.org/process/european-energycharter-1991/,

James, W. (2015). Single European Act, *CIVITAS Institute for the Study of Sivil Society.*

Jensen, C S 2007, "Neo-Functionalism", in M. Cini (ed.) *European Union Politics* (2nd edn.), New York: Oxford University Press, pp. 85-92.

Jordan, A. (2005). Environmental Policy in the European Union, Eartscan, USA.

Karluk, R. (2002), *Avrupa Birliği ve Türkiye*, Beta, İstanbul.

Kilian, B. and Elgström, O. (2010).Still a green leader? The European Union's role in international climate negotiations, Cooperation and Conflict, 45(3). pp. 255-273.

Lee, M. (2008). The Environmental Implications of the Lisbon Treaty, *Environmental Law Review*, Vol.10, pp. 131-138.

Leonard, M., Pisani-Ferry, J., Shapiro, J., Tagliapietra, S. and Wolf, G. (2021). The geopolitics of the European Green Deal, Policy Contribution, 04 (21), Bruegel, pp. 1-23. Retrieved from file:///C:/Users/User/Downloads/PC-04-GrenDeal-2021-1.pdf

Leimbach, B. and Müller, F. (2008). European Energy Policy: Balancing national interests and the need for policy change: The current European energy dialogue, *Climate and Energy Papers.* 1, pp. 5-47.

Li, L. (2016). Soft Power for Solar Power: Germany's New Climate for Foreign Policy, *Germanwatch e.V*. pp. 1-51.

Liu, W., McKibbin, W. J., Morris, A. C. and Wilcoxen, P. J. (2020). Global economic and environmental outcomes of the Paris Agreement, *Energy Economics*, 90, pp.1-18.

McCormick, J 2001, *Environmental Policy and the EU*, New York: Palgrave Macmillian, p. 281.

Manning, R. (2009). Using Indicators to Encourage Development Lessons from the Millennium Development Goals, DIIS Report, *Danish Institute for International Studies*. 1.

Moravcsik, A. (1998). The choice for Europe: Social Purpose and State Power from Messina to Maastricht, *Cornell University Press*, pp. 3-18

Natural Resources Defense Council (NRDC). (2021). Paris Climate Agreement: Everything You Need to Know. Retrieved from https://www.nrdc.org/stories/paris-climate-agreement-everything-you-need-know

Official Journal of the European Union. (2018). Regulations on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council.

Official Journal of the European Union. (2021). Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework

for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law') (OJ L 243, 9.7.2021, pp. 1–17.

Oberthür, S., Kelly, C.R., (2008). EU leadership in international climate policy: achievements and challenges. *The International Spectator*. 43(3), pp. 35-50. https://doi.org/10.1080/03932720802280594.

Oberthür, S. and Dupont, C. (2021). The European Union's international climate leadership: towards a grand climate strategy?, *Journal of European Public Policy*. 28(7), pp. 1095-1114.
DOI: 10.1080/13501763.2021.1918218

Ozturk, I. (2013). Energy Dependency and Energy Security: The Role of Energy Efficiency and Renewable Energy Sources. *The Pakistan Development Review,* Vol. *52, No.* 4, pp. 309-330.

Page, E. (2007). Equity and the Kyoto Protocol, *Political Studies Association*, vol. 27, No. 1, pp. 9-10

Parker, C. F., Karlsson, C. and Hjerpe, M. (2017). Assessing the European Union's global climate change leadership: from Copenhagen to the Paris Agreement, *Journal of European Integration*, 39(2), pp. 239-252. DOI: 10.1080/07036337.2016.1275608

Paul Henri, S. (1956). Intergovernmental Committee on European Integration, The Brussels Report on the General Common Market, pp. 1-20.

Pavese, C. B. and Torney, D. (2015). The Contribution of the European Union to Global Climate Change Governance: Explaining the Conditions for EU Actorness, *Revista Brasileria de Politica Internacional*. 55, p.126.

Peña, J. I. and Rodríguez, R. (2019). 'Are EU's Climate and Energy Package 20-20-20 targets achievable and compatible? Evidence from the impact of renewables on electricity prices', *Energy*, vol. 183, pp. 477-486.

Remling, E. (2018). Depoliticizing adaptation: a critical analysis of EU climate adaptation policy, Environmental Politics, 27(3), pp. 477-497,
doi: 10.1080/09644016.2018.1429207

Renewables 2020, *Global Status Report*. Available at:
https://www.ren21.net/wp-content/uploads/2019/05/gsr_2020_full_report_en.pdf

Sandholtz, W. and Sweet, A. S. (1998), European Integration and Supranational Governance, Oxford: *Oxford University Press*, pp. 12-18.

Schmidt, J. R. (2008). Why Europe Leads on Climate Change, *Survival*. 50(4), pp. 83-96.

Schreurs, M. A. (2016). The Paris Climate Agreement and the Three Largest Emitters: China, the United States, and the European Union, *Politics and Govarnance*. 4(3), pp. 219-223.

Schunz, S. (2015). The European Union's Climate Diplomacy, The European Union As a Diplomactic Actor, Joachim A. K. and Gjovalin M. (eds.) UK, Palgrave Macmillan.

Selin, H. and VanDeveer, S. D. (2015). Broader, Deeper and Greener: European Union Environmental Politics, Policies, and Outcomes, *Annual Review of Environment and Resources.* 40, pp. 309-335.

Shimada, K. (2004). The Legacy of the Kyoto Protocol: Its Role as the Rulebook for an International Climate Framework, *Institute for Global Environmental Strategies*. 5(1), p. 3.

Siddi, M. (2015). The Eu-Russia Gas Relationship New Projects, New Disputes?, *FIIA Briefing Paper*. 183, pp. 2-9.

Single European Act, 1986, *Official Journal L 169*, 29 June 1987**,** p. 130

Sjöstedt, G. (1998). The EU Negotiates Climate Change. *Cooperation and Conflict*. 33(3), pp. 227–256.

Skjærseth, J. B. (2014). Linking EU Climate and Energy Policies: Policy-making, implementation and reform, *Springer*, pp.1-16

Sverdrup, U. (2002). An Institutional Perspective on Treaty Reform: Contextualizing The Amsterdam And Nice Treaties, *Journal of European Public Policy*. 9(1), pp. 120-140.

Solorio, I. (2011). Bridging the gap between environmental policy integration and the EU's energy policy: mapping out the 'green europeanisation' of energy governance, *Journal of Contemporary European Research*. 7(3), pp. 396–415.
Available at: https://www.jcer.net/index.php/jcer/article/view/284/293

Stern, J. (2018). Natural Gas in Europe - The Importance of Russia, *Oxford Institute for Energy Studies*, Retrieved from http://www.centrex.at/en/files/study_stern_e.pdf

Strielkowski, W., Lisin, E., and Gryshova, I. (2016). Climate Policy of the European Union: What to Expect from the Paris Agreement?, *Romanian Journal of European Affairs.* 16(4), pp. 68-77.

Talu, N. (2019). Avrupa Birliği İklim Politikaları, İklim Değişikliği Alanında Ortak Çabaların Desteklenmesi Projesi (iklimİN). Retrieved from: https://www.iklimin.org/wp-content/uploads/egitimler/seri_03.pdf

Tews, K. (2015). Europeanization of Energy and Climate Policy: The Struggle Between Competing Ideas o Coordinating Energy Transitions, *Journal of Environment and Development*. 24(3). pp.267-291.

Torney, D. and Davis Cross, M. K. (2017). Environmental and Climate Diplomacy: Building Coalitions Through Persuasion. European Union External Environmental Policy: Rules, Regulation And Governance Beyond Borders, Camilla A., Katja B. and Diarmuid T. (eds.), UK, Palgrave Macmillan, pp.39-59.

UNDP/WEC, 2000, World Energy Assessment 2000—Energy and the Challenge of Sustainability, United Nations and World Energy Council.

United Nations, (2015). Paris Agreement, pp. 1-4.
https://unfccc.int/sites/default/files/english_paris_agreement.pdf

UNFCCC (1992), Rio Conventions Available at: www.unfccc.in

UNFCCC, 1992, *United Nations Framework Convention on Climate Change*, Article 1.2. Retrieved from https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf

UNFCCC, 1998, *Kyoto Protocol*, (Art. 10), pp.9, Retrieved from https://unfccc.int/resource/docs/convkp/kpeng.pdf

United Nations, (2015). Paris Agreement, pp. 1-4.

https://unfccc.int/sites/default/files/english_paris_agreement.pdf

Van der Meulen, E. F. (2009). Gas Supply and EU-Russia Relations. *Europe-Asia Studies*, vol. 61, no. 5. pp. 833-856
http://www.jstor.org/stable/27752304

Vogler, J. and Stephan, H.R. (2007). The European Union in global environmental governance: Leadership in the making?, *International Environmental Agreements: Politics, Law and Economics*, 7(4), pp. 389–413.

Volintiru, C. (2020). EU's Soft Power in Green Diplomacy: Scaling-up Consensus from Subnational and National Initiatives, *Institute of European Democrats*, pp. 1-11.

Yavuz, E. A. (2004) “Avrupa Birliği’nin Enerji Politikası ve Türkiye’nin Uyumu”, (in) AB’nin Enerji Politikası ve Türkiye, Ed. Yavuz Ege ve diğerleri, *UPAV Yayınları*, Ankara, s.7.

Yorkan, A. (2009). Avrupa Birliği’nin Enerji Politikasi ve Türkiye’ye Etkileri, *Bilgi Strateji*, 1(1), pp. 24-39.

Zapletalova, V. and Komínkova, M. (2020). Who is fighting against the EU ’s energy and climate policy in the European Parliament? The contribution of the Visegrad Group, *Energy Policy*, 139, pp. 1, 2.

Wettestad, J. (2000). The complicated development of EU climate policy in Gupta, Climate Change and European Leadership: A Sustainable Role for Europe? *Dordrecht, Kluwer Academic Publishers*, p. 27

CURRICULUM VITAE

Personal Information

Name : VİLDAN DEMİRKIRAN

Education

2018 – Cont.: Postgraduate with dissertation, Energy and Sustainable Development, Faculty of Engineering, Kadir Has University,

2008 – 2013: Undergraduate, International Relations and European Union, Faculty of Business, İzmir University of Economics

Work Experience

• KADİR HAS UNIVERSITY (February 2020 – October 2020)
Project Assistant

• PROSECURE SECURITY CONSULTING SERVICES (10/2018 – 05/2019)
Background Verification Specialist

• METIS RELOCATION (11/01/2016 – 18/04/2016)
Project Assistant

Project & Organizations

• **Moderator**- Kadir Has University - CESD Energy Talks, 2019

• **Chairperson Of Organizing Commity**- 3rd Graduate Student Conference On Energy and Sustainable Development, 2020

Certificates

2018: Embryonix Entrepreneurship Sertificate given by Izmir University of Economics

2011-2013: The Energy Management and Policies Certificate, Izmir University of Economics

2011-2013: Certificate in Spanish (A1A2) and participation certificate in Spanish B1 (DESEM- Continuous Education Center Dokuz Eylül University, confirmed by Rectorship)

Volunteer Works/Internship

2015-Present: Member of Young Leaders in Energy Program which is initiative of Bosphorus Energy

05/2015–Present: Youth Camp Leader at The Ministry of Youth and Sports

09/2014–12/2014: Intern

TUİÇ (Turkey International Relations Works), Latin America Research Center, Istanbul (Turkey)

14/06/2014–03/09/2014: Interpreter
IKSEV (Izmir Foundation for Culture Arts and Education), Izmir (Turkey)

02/07/2012–29/08/2012: Translator
Intern at Anadolu Agency , Foreign News Department, Ankara (Turkey)

International Projects

15-23 May 2017: Erasmus+ training course on "Training of Facilitators" organized by Spanish National Agency, Malaga, Spain.

4-10 May, 2017: Training Course as part of Erasmus+ named "Heroes of the Nature in Ida" implemented by Global Environment Organisation-GEO; Edremit, Turkey.

5-9 September 2016: Economic Forum of Young Leaders; Nowy Sącz, Poland.

September-December 2015: Participant in three-phase training course in Marseille, France on behalf of "Community Volunteers Foundation (TOG)" called "Voting's Not Enough"

9-20 November 2014: Erasmus+ Youth Exchange Programme that is entitled "Let's

Talk With the Nature" in Craiova, Romania

26-29 May 2014: Attended a regional seminar in Bečići, Montenegro entitled "Analysis of policies in the field of environment with special emphasis on alignment with EU policies." organized by ETNAR (Energy Transport and Natural Resources) and Green Home

Computer Skills

Word Office Programs

Languages

Turkish (native), English (advanced), French (intermediate) Spanish (intermediate).