

Climate Policy of the European Union: What to Expect from the Paris Agreement?

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Abstract: *Our paper aims at evaluating the provisions of the EU climate change and policies to reduce greenhouse gas emissions as well as articulating the EU's position with regard to sustainable development. In particular, we analyse the provisions and the outcomes stemming from the UN Convention on Climate Change (so-called "Paris Agreement") held in France, last December.*

Our results show that Paris Agreement sets a reasonable path to follow for the EU's climate policy and bridges current climate policies and climate-neutrality prior to the end of the century. We conclude that if the Paris Agreement had not been signed, there would be a clear and urgent need for the similar binding framework that would shape up the European climate strategy in the face of the new political and economic changes facing Europe. Moreover, we stress the importance of the provisions emerging from the Paris Agreement for the existing EU Member States as well as for the countries aspiring to become EU members.

Keywords: *energy policy, sustainable development, emissions, renewables, Paris Agreement, European Union*

Background

European Union's (EU) CO₂ emission and climate policies are undergoing fundamental changes driven by environmental and energy security concerns that cause energy generation and demand to face a challenge of decarbonisation (Grosjean et al., 2016). Significant decarbonisation goes hand in hand with recent technological developments that put a strong emphasis on the electrification of the transport and heat demand sectors through the introduction of new technologies, such as electric vehicles (EV) and electric heat pumps (EHP).

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Postolache (2012) points out that EU is attempting to adjust its environmental policies with the current impending trends in order to keep up in the global governance and maintain its leading position in the world's international relations.

According to the EU's renewable energy plan up to date, renewable energy can be generated from a wide assortment of sources comprising of solar, tidal, aeolian, geothermal, and biomass. The targets for renewable energy sources are tricky but they must be met since the EU has previously committed to them (Bryngelsson et al., 2016; or Böhringer et al., 2016).

The European Union's energy policies are guided by three main objectives: secure energy supplies that ensure reliable provision energy, creating a competitive environment for energy providers with the purpose of safeguarding affordable energy prices, and a sustainable energy consumption through lowering the greenhouse gas emission, pollution and fossil fuel dependence (Böhringer et al., 2016). To achieve these objectives, the European Union has decided to allow free flow of energy across the national borders of the European Union countries. The free flow of energy is expected to minimize the monopoly of national energy providers thus mitigating on the issue of high prices (European Commission, 2016a). Consequently, new power lines and pipelines continue to be deployed in the region to create a resilient and integrated energy market. This is contradictory to the 1990s market design of the energy industry because energy transfer from one state to the other imposed higher rates of rates in a short period of time.

Various EU Member States have also created schemes which help to spur the adoption of renewable energy. For example, the Dutch government offers subsidies to businesses which are willing to invest in production capacity of sustainable energy. All the EU members have also shown full support for the targets of 2020 and are dedicated to decarbonize the electricity sector of EU by 2050.

Our paper evaluates the EU climate policies dealing with emissions and the introduction of renewable energy sources and analyses the provisions and outcomes of the United Nations Framework Convention on Climate Change (UNFCCC) held in Paris on the 12th of December 2015 (so-called "Paris Agreement"). We ponder over the reasons for the Paris Agreement and the pre-conditions for its preparation. Moreover, we discuss the Agreement in details, describe its main points and analyse its possible outcomes. The paper concludes with some general remarks and policy implications, as well as with strengthening the argument about the timely introduction and the importance of the Paris Agreement for all participating parties, in general, and for the European Union, in particular.

Theoretical framework

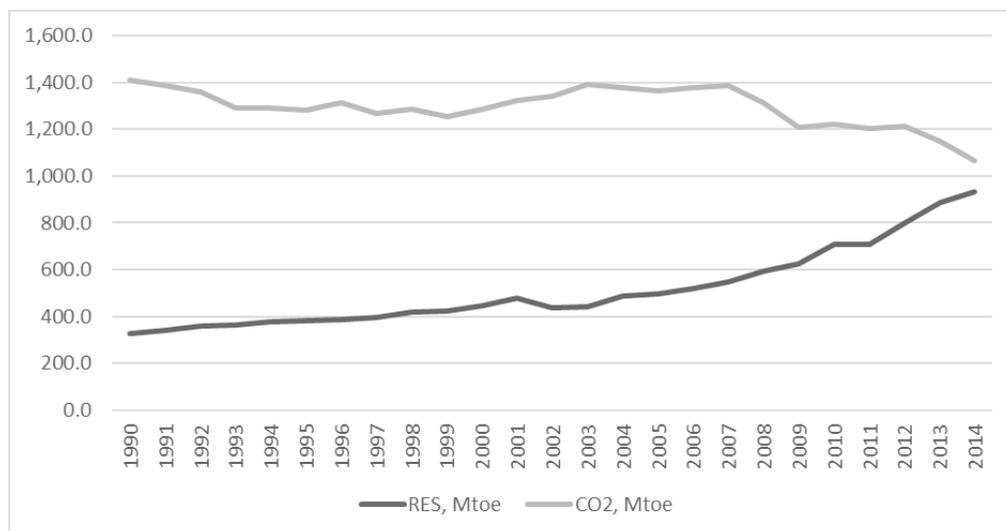
The European Union has always been the supporter of sustainable growth and development and, since its beginnings, it has embedded this strategy into its main provisions and pathways for its further existence and functioning. With regard to these commitments, the European Commission (EC) put forward a legally binding target for renewable energy sources, aiming to cover 20% of the total energy consumption in the

countries of the European Union (EU) by 2020. In the UK, the Climate Change Act has gone even further and set a legally binding target of 50% reduction in greenhouse gases emission by 2030, extended to a further ambitious target of 80% reduction by 2050 (Fisher and Geden, 2015). The Paris Agreement, reached in December 2015, set up even more demanding goals for the UK (Committee on Climate Change, 2016). In order to achieve this, the European Union nations have committed to reaching their own national renewable targets ranging from 10% in Malta to 49% in Sweden (Calliess and Hey, 2013). Additionally, they have further required that 10% of transportation fuel to be produced from renewable power by the year 2020. All European nations have adopted national renewable power describing the measures they intend to take in order to meet their renewable targets objectives. This strategy entails sectoral targets for heating, transport and cooling; planned policy measures; the various mix of renewable innovations they expect to employ and the planned use of cooperation mechanism. The European Union similarly underpins public interventions like support systems which remain essential in accelerating the renewable energy reforms. To circumvent distorting the business and energy rates, support schemes of renewables are meticulously outlined and time limited.

Moreover, it becomes apparent that EU supports the increasing use of renewable energy sources (RES) in various power sectors, for instance in the public electricity and heat production (see Chart 1).

From the information provided in Chart 1, one can observe how the share of RES is increasing while, at the same time, the CO₂ emissions are plunging at remarkable rates. Renewable energy reservoirs are a power source that represents an alternative to fossil combustible. Trace fuels were formed very many years ago and are abundant worldwide but are, in comparison with the renewables, subjected to depletion. The electricity mix has continued to be dominated by fossil fuel use; more than a half of the gross power generation is from fossil fuel but this has been a typical feature for many European countries over the last century. Currently, the share of fossil fuel has decreased by 20% since 1990 and this can largely be attributed to renewable energy sources. A sustainable market design is characterized by an approach that can achieve long-term goals and as to accommodate medium term and short term changes. In addition, it needs to guarantee a decent supply of power and has to ensure the effective usage of resources and offer simultaneous investment incentives and innovation. Generations from renewable energy sources are commonly located and dispersed in remote regions which are far away from large consumption centres such as grand EU cities.

Nevertheless, in spite of the large-scale introduction of renewables and the shift towards the sustainable climate policies, there are persistent problems that need to be addressed. The Paris Agreement was initiated in order to find solutions to the impending climate policies and challenges that are faced by the world's key players, such as United States, Russian Federation, and China, and the European Union alike.

Chart 1: Public electricity and heat production in the EU-28 (1990-2014)

Source: European Commission (2016b)

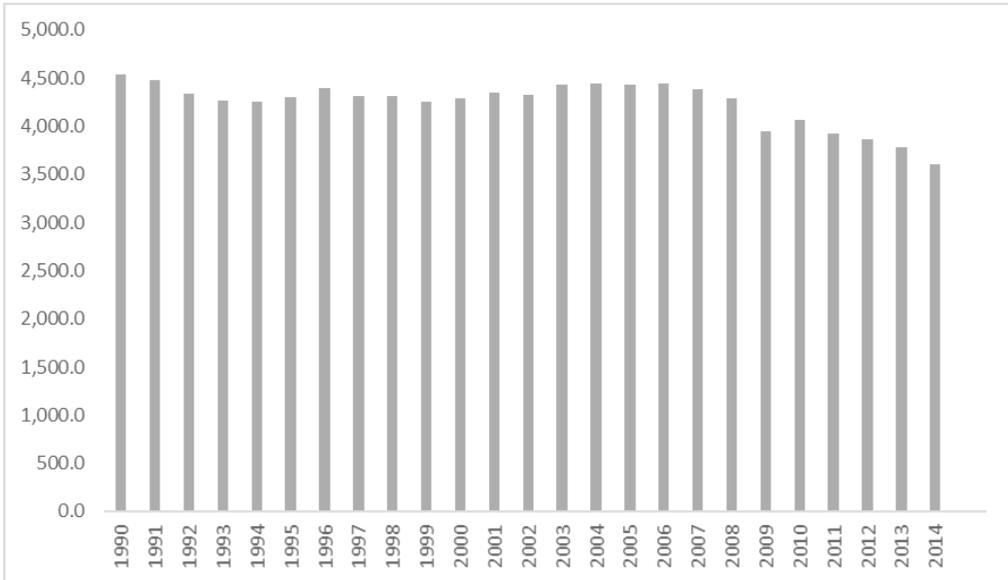
Paris Agreement conference: main provisions

The Paris Agreement is a climate conference organized by the United Nations Framework Convention on Climate Change (UNFCCC) which was held in Paris, France on December 2015 and included delegations and representatives from 195 countries. The conference (further referred to as “Paris Agreement” was a long-awaited endeavour speeded up by the recent developments in the world marked by the plunging oil and coal prices that resulted from the upheaval in the world’s politics and caused many industries do turn away from the sustainable energy (Wang and Li, 2015).

The Agreement was a timely and long-awaited climate deal that was preconceived and pre-negotiated long before it shaped up into a formal deal involving global players from all around the world. It represented an important consensus and a recognition of the danger brought about by the climate changes and the related issues. Furthermore, it proved it is, indeed, possible to mobilise the key players to sit around the table and to strike a deal that has global consequences. With regard to the above, the Paris Agreement proved to be a milestone event that means a lot both for the policy-makers and for the climate activists.

Moreover, the Paris Agreement also tackles one of the most alarming issues of the industrial development of the last decades - the issue of emissions. Although decreasing, they remain at high levels even in EU-28 countries (see Chart 2).

Chart 2: CO2 emissions in EU-28



Source: European Commission (2016b)

Paris Agreement was a historical event owing to the large number of countries that adopted the first-ever universal, legally binding global climate deal. The purpose of this convention was to establish a global action plan that will guide the world on pursuing plans and development projects that would avoid dangerous climate change through limiting global temperature rise to 2° Celsius (European Commission, 2016a). According to scientists, a temperature rise of 2 degrees Celsius forms the upper limit of the acceptable temperature rise that can limit the adverse effects of climate change (Steinacher et al., 2013). This is based on a consensus that global warming should be limited to 1.5 degrees Celsius above pre-industrial temperatures that will ensure the survival of low lying islands and coastal areas. This agreement involved member states of the UNFCCC which sets a general framework that encourages intergovernmental effort devoted to solving the challenges brought about by climate change. The agreement came about after the realization that climate is a shared resource which is currently struggling with the effects of industrial emissions of carbon dioxide and other greenhouse gases caught up with the stakeholders and policy-makers (Hustedt and Seyfried, 2016). This convention offers membership to any country globally under which a member states' government is expected to:

- Investigate, collect, analyse and share information concerning greenhouse gas emissions, national policies and best practices in the specific member state.

- Establish national strategies that focus on handling greenhouse gas emissions and adapt to the expected impacts of these gases, including the provision of financial and technological support to developing nations.
- Cooperate and assist in the preparation for adaptation to the impacts of climate change (UNFCCC, 2014).

The Paris Agreement is due to take full effect in 2020. With regard to mitigation of carbon emissions, governments that consented on this convention agreed to ensure that the global average temperature remains below 2 degrees Celsius above pre-industrial levels (Andresen et al., 2016). They also had a collective desire of ensuring that global emissions peak as soon as possible with the recognition that developing nations may require a longer period to achieve this goal. However, following the end of the period each developing nation agreed upon, they were expected to ensure rapid reductions in carbon emissions through the adoption of the best available scientific approach (European Commission, 2016a). This consensus was followed by the submission of comprehensive climate action plans which provided reports about the method to be adopted in achieving these objectives (Hustedt and Seyfried, 2016).

Main outcomes of the climate policies of the future

In an effort to create transparency in the enforcement of strategies established by member nations and to enable global stocktaking, the member parties agreed that they would converge after every five years so as to set more ambitious goals which are guided by scientific contributions. Member parties were also expected to report to each other and their public systems on the efforts they have put into ensuring they achieve their goals. Finally, members were also expected to track their progress through the creation of robust transparency and accountability systems which will aid in achieving the long term goal. With respect to adaptation to climate change, member parties agreed to ensure that they strengthen their individual communities and citizens' abilities and duties in dealing with the effects of climate change on their lives and those of others. In addition, signatories were expected to provide continued and enhanced international support for the adaptation to developing countries (UNFCCC, 2014).

Loss and damage was also an element that the convention focused on. Within this bracket, signatories were required to recognize the need to avert, minimize and address loss and damage resulting from the negative impacts of climate change observed all across the globe. Member states also needed to recognize that there was a need to provide some form of cooperation between nations and better their understanding, action and support within varied sectors that may help in dealing with the effects of climate change such as early warning systems, emergency preparedness and risk insurance programs. The UNFCCC had also established that cities, regions, subnational authorities, civil societies, the private sector and local authorities each had a role to play in tackling climate change issues whereby each member was expected to increase their efforts and support actions to decrease emissions. Member states also had to build resilience and decrease vulnerability brought about by the changing climate patterns. It was therefore necessary to uphold

and promote regional as well as international cooperation to ensure that climate change issues are effectively and efficiently dealt with. Signatories of the Paris Agreement were expected to show support for the efforts being made to control the drivers of climate change. Developed countries such as the United States, China, and the EU were expected to provide continued support for climate action aimed at reducing emissions and building resilience to the adverse effects of climate change witnessed in developing nations. Other nations were provided with the option of providing continued support for the fight against global warming on a purely voluntary basis. Developed nations were also expected to achieve their goal of raising USD 100 billion each year up to 2020 which extends to 2025 after which other more ambitious goals will be settled (UNFCCC, 2014).

The Paris Agreement therefore established a historical mark as being the largest step in the development and maturity of the U.N. climate change regime which was first organized in 1992 along with the adoption of a framework convention (Cléménçon, 2016). This led to the UNFCCC acquiring a long-term objective, general principle, common and differentiated commitments and the establishment of a basic governance structure (Center for Climate and Energy Solutions, 2015). Ever since its establishment, there has been an evolution of the convention thus taking different paths with the course of time. In 1997, a similar convention, Kyoto Protocol, was held. This convention adopted a rather different strategy which involved utilizing a top-down, highly differentiated approach that intended on enforcing agreed upon goals for developed nations without any new commitments directed towards developing nations. Owing to the failure of the United States to join this protocol as well as the decision by some countries not to set targets that were beyond 2012, there is a less than 15 percent coverage of global emissions by this protocol (Andresen et al., 2016).

Other attempts of dealing with climate change were also made by the Copenhagen Accord and the Cancun Agreements in 2009 and 2010 respectively. These conventions adopted a parallel bottom-up framework whereby countries were required to take pledges for 2020. However, unlike the Paris Agreement which took on a legal approach, these conventions adopted political approaches. Despite these two conventions having wider participation with specific mitigation pledges by developing countries being present for the first time in history, they were not enough to meet the objectives of the Copenhagen and Cancun Conventions of preventing the average global warming temperature from reaching 2 degrees Celsius above preindustrial levels (Center for Climate and Energy Solutions, 2015). The negotiations that led to the Paris Agreement first began at the Durban Platform for Enhanced Action which took place in 2011. This convention led to the suggestion for a legal instrument or uniformly agreed upon outcome which would apply to all signatories from 2020 without any additional guidelines provided. This was followed by COP 19 which was held in Warsaw where members were expected to provide their intended nationally determined contributions (INDCs) prior to the hosting of the Paris Conference which indicated the importance of the bottom-up approach in the emerging Paris Agreement in which more than 180 countries which produced over 90 percent of the global emissions had submitted their INDCs (Center for Climate and Energy Solutions, 2015).

In addition to the INDCs submitted to the UNFCCC prior to the commencement of the convention, additional outcomes were achieved during the Paris Agreement. A large number of national governments offered new financial pledges resulting in 19 billion USD having been pledged aimed at assisting developing countries. This was followed by a pledge by the U.S.A. to double its support for adaptation efforts in order to reach 800 million USD per year. Vietnam also portrayed a sign that developing nations are offering support to the program by pledging to offer 1 million USD to the Green Climate Fund (GCF). There were also pledges from subnational governments. In addition to pledges, there were also new joint initiatives which were launched such as the International Solar Alliance which consisted of 120 nations spearheaded by India and France. This initiative was started with the aim of promoting the establishment of solar energy facilities in developing countries. Another joint initiative was Mission Innovation which consisted of over developed and developing nations which pledged to increase investments in clean energy research and development over a period of five years. Non-state actors such as cities, states and regions, company and investors such as Bill Gates were also recognized as having participated in the convention whereby they launched initiatives such as Breakthrough Energy Coalition whose main goal is to generate capital from the private sector that will drive clean energy deployment (Center for Climate and Energy Solutions, 2015).

Currently, developing countries are actively scoping out financial, technological and technical support to enable them to implement Nationally Determined Contributions (NDCs) whereby there exists well embedded national climate strategies and poverty reduction plans. Where no clear path is in view, measures are being taken to ensure that the necessary inputs are acquired along the journey (Dupar and Bickersteth, 2016).

Conclusions

Overall, it can be clearly seen that the Paris Agreement forms a gateway that links the current climate policies and climate-neutrality prior to the end of the century. The Agreement sets up a comprehensive path to follow for the countries that committed to its provisions and offers a sustainable strategy for the development of each economy in question.

Paris Agreement is an important milestone for all signing members but it is not less important for the European Union with its long-term commitments to the sustainable growth, climate protection policies and reducing emissions. The growing share of renewable energy sources, the incline to move towards the electrified transport and heating in the nearest decades call for the new binding international agreements for which Paris Agreement provides a clear agenda and provisions by setting up objectives and goals that are to be followed.

As opposed to the 1990s market design, the EU's goals are the reduction of carbon emissions, increased generation of renewable energy and efficient use of the renewable energy sources. EU renewables policy to date recognizes that climate change poses

a significant risk for an extensive range of natural and human systems. Consequently, regulations to reduce emissions are critical if we are to avoid the costly damages associated with climate change. Market-based regulations can efficiently reduce greenhouse gas emissions by creating a financial incentive for greenhouse gas emitters to emit less.

The EU has established market-based rules program to curb the emission of greenhouse gases. Market-based environmental controls work by designing an incentive to reduce harmful production that emits greenhouse gases or to reduce discharges. Under this framework, each regulated cooperation chooses independently how to most cost-efficiently achieve the needed pollution abatement. Notably, some firms can reduce pollution in a more cost-effective manner than other companies, and this can mainly be attributed to the age of the equipment they use among many other factors.

This enables them to reduce their pollution more to remunerate for those facing higher costs doing less. Consequently, the overall environmental objective will be achieved at a low cost. A policy is termed market-based if it provides a financial incentive and if it is aimed to elicit a distinct behaviour from those who are responsible for pollution. Some regulation options are only applicable as economy-wide solutions where greater efficiencies can be achieved whereas others are more particularly targeted to distinct sectors or market segments. There are several market-based policy options which include taxes and subsidies, cap and trade program, baseline and credit programs, renewable electricity standards, phasing out lead gasoline and feebates. These policies force the unions to lessen the greenhouse gases they release slowly driving businesses to embrace reliable energy.

Last but not the least, it has to be noted that the outcomes of the Paris Agreement and the commitment the European Union has obtained set up a very important example for the countries that seek EU membership in the nearest future, e.g. Moldova or Ukraine. Climate protection, emission reduction, and the shift to the renewables all constitute very important provisions that need to be tackled in the face of the new challenges of the 21st century.

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