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FROM KYOTO TO PARIS: THE EUROPEAN UNION'S CONTRIBUTION TO A NEW WORLD CLIMATE ORDER

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ABSTRACT: The European Union (EU)'s climate policy is closely linked to its commitments under the international regime of the United Nations (UN). The Union was a party to the Kyoto Protocol; it contributed to its ratification and largely surpassed its mitigation obligations during the first commitment period (2008-2012). It is currently one of the few developed parties with voluntary mitigation obligations for the second Kyoto commitment period (2013-2020), whose scope and contents draw critically on the EU 2020 climate-energy package. While implementing this binding framework, the EU is giving legal contents to the 2030 climate-energy package as a major contribution to the new international climate regime under the Paris Agreement, in whose design and adoption the Union also played a key role. Recent policies and other proposals now in prospect are intended to transform the EU into a competitive and sustainable economy by 2050. The new measures also signal the way for further collective action beyond 2025 under the Paris Agreement.

RESUM: L'acció de la Unió Europea (UE) contra el canvi climàtic està vinculada estretament als compromisos que s'han assumit en el marc internacional de les Nacions Unides (NU). La UE fou part contractant del Protocol de Kyoto, contribuí a la seva ratificació i superà àmpliament les obligacions de mitigació que va assumir per al primer període obligatori (2008-2012). En aquests moments, la UE és un dels pocs grups de països desenvolupats que ha assumit compromisos voluntaris de mitigació per al segon període de Kyoto (2013-2020), l'abast i els continguts del qual s'inspiren precisament en

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el paquet 2020 sobre clima i energia de la mateixa UE. Al mateix temps que implementa aquest marc normatiu, la UE dota de contingut jurídic el paquet 2030 sobre clima i energia, que constitueix la principal contribució al nou règim climàtic internacional de l'Acord de París, en el disseny i l'adopció del qual la UE va tenir també un paper clau. Mesures recents i altres propostes en perspectiva ara intenten transformar la UE en una economia competitiva i sostenible per al 2050. Al mateix temps, aquestes accions noves obren camí cap a una acció col·lectiva futura, més enllà de 2025, d'acord amb l'Acord de París.

RESUMEN: La acción de la Unión Europea (UE) contra el cambio climático está estrechamente vinculada a los compromisos asumidos en el marco internacional de las Naciones Unidas (NU). La UE fue parte contratante del Protocolo de Kioto, contribuyó a su ratificación y ampliamente superó las obligaciones de mitigación que asumió para el primer período obligatorio (2008-2012). En estos momentos, la UE es uno de los pocos grupos de países desarrollados que ha asumido compromisos voluntarios de mitigación para el segundo período de Kioto (2013-2020), cuyo alcance y contenidos se inspiran precisamente en el paquete 2020 sobre clima y energía de la propia UE. Al tiempo que implementa este marco normativo, la UE está dotando de contenido jurídico al paquete 2030 sobre clima y energía, que constituye su principal contribución al nuevo régimen climático internacional del Acuerdo de París, en cuyo diseño y adopción la UE jugó también un papel clave. Medidas recientes y otras propuestas en perspectiva intentan ahora transformar a la UE en una economía competitiva y sostenible para 2050. Al mismo tiempo, estas nuevas acciones abren el camino hacia una futura acción colectiva, más allá de 2025, de conformidad con el Acuerdo de París.

KEYWORDS: climate change — European Union — mitigation — Kyoto Protocol — Paris Agreement.

PARAULES CLAU: canvi climàtic — Unió Europea — mitigació — Protocol de Kyoto — Acord de París.

PALABRAS CLAVE: cambio climático — Unión Europea — mitigación — Protocolo de Kioto — Acuerdo de París.

I. INTRODUCTION

Climate patterns are continuing to change and the devastating effects of these trends are already being felt around the world: land and sea temperatures are rising, polar ice caps are shrinking, global sea levels are rising and extreme weather events —such as heavy rain, heat waves and droughts— are becoming more frequent and intense in many regions[1]. Europe is no exception. Climate change is affecting all regions on the continent, albeit the impact is not uniform[2].

It is well-known and scientifically demonstrated that the increase in global temperatures since the mid-20th century is chiefly due to greenhouse gas (GHG) emissions from human activity, particularly the combustion of fossils fuels (oil, coal, gas), agriculture and other changes in land use[3]. The magnitude of future climate change and its effects will therefore depend on the effective emission reduction efforts ("mitigation"), undertaken by the international community in the coming decades. Yet, even with substantial reductions in GHG emissions, the climate will continue to change globally and the impact of this change will be felt around the planet. It is therefore also necessary to take action to introduce adaptation strategies and measures[4].

The United Nations (UN) is the most important multilateral framework to address the challenge of climate change at a global level. The first relevant instrument passed by the

[1] See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC), *Assessing and Managing the Risks of Climate Change. Impacts, Adaptation and Vulnerability*, 2014. Retrieved on 19 January 2018, at http://www.ipcc.ch/report/ar5/wg2/docs/WGIIAR5_SPM_Top_Level_Findings.pdf.

[2] EUROPEAN ENVIRONMENTAL AGENCY (EEA), "Climate Change, Impacts and Vulnerability in Europe 2016. An Indicator-based Report", EEA Technical Report 1/2017, Publications Office of the European Union, Luxembourg, 2016, pp. 12-13.

[3] HOUGHTON, J.T., JENKINS, G.J. and EPHRAUMS, J.J. (eds), *Climate Change. The IPCC Scientific Assessment*, Cambridge University Press, Cambridge, 1990, pp. xi-xxxix.

[4] In both human and natural systems, adaptation is defined as "a process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities". See IPCC, *Climate Change 2001: Impacts, Adaptation and Vulnerability. Third Assessment Report*, Cambridge University Press, Cambridge, 2001, p. 981.

UN was the Framework Convention on Climate Change (UNFCCC)[5]. Adopted by UN countries (the "Parties"), at the Earth Summit in Rio de Janeiro, the UNFCCC sets a long-term objective of stabilizing "atmospheric greenhouse gas concentrations at a level that would prevent dangerous anthropogenic interference with the climate system" (Article 2 of the UNFCCC). It also lays down some legal principles determining the responsibilities of both developed and developing countries. One of the most salient of these principles is that of common but differentiated responsibility and respective capabilities (Article 3.1. of the UNFCCC).

The principles set out in the UNFCCC were partly implemented by the Kyoto Protocol, the first additional instrument to the Convention[6]. Like the UNFCCC, the Kyoto Protocol took the form of a treaty, establishing for the first time a binding mitigation target to be achieved by a number of developed countries during an initial period (2008-2012). Although it marked an important step in the global fight against climate change, the Kyoto Protocol soon proved insufficient, mainly because of its limited geographic coverage, among other reasons. After lengthy negotiations and tough deals, the international community meeting in Paris in December 2015 adopted a new and for the first time quasi-universal, legally binding global climate treaty, known as the "Paris Agreement", which will replace the Kyoto Protocol in 2021[7].

The European Union's climate policy has been closely linked to the development of the international regime under the UN. In particular, as of 1992 when the UNFCCC was adopted, the EU has been actively involved in the climate negotiations. The EU's activism and its contribution to international deals —particularly the Kyoto Protocol and the Paris Agreement— has been crucial. It played a key role in adoption and ratification of the Kyoto Protocol, while voluntarily assuming mitigation targets that went beyond those of other developed countries. The EU also made a critical contribution to the design of the

[5] Adopted in 1992, it entered into force on 21 March 1994. UNITED NATIONS (UN), *United Nations Framework Convention on Climate Change.* Retrieved on 19 January 2018, at http://unfccc.int/files/essential_background/convention/background/application/pdf/convention_text_with_annexes_english_for_posting.pdf.

[6] Adopted on 11 December 1997, it entered into force on 16 February 2005. UN, *Kyoto Protocol to United Nations Framework Convention on Climate Change*. Retrieved on 19 January 2018, at http://unfccc.int/resource/docs/convkp/kpeng.pdf.

[7] UN, *The Paris Agreement.* Retrieved on 19 January 2018, at http://unfccc.int/paris_agreement/items/9485.php.

Paris Agreement, calling for the new instrument to be universal and legally binding, while anticipating its mitigation commitments for the post-Kyoto era.

This paper analyses the EU's position and its commitments under the international climate regime, while assessing its contribution to a more sustainable global economy. It highlights first how the EU surpassed its initial obligations under the Kyoto Protocol, and is currently one of the few developed parties with voluntary mitigation targets to 2020. The paper analyses then the scope of the Paris Agreement, underscoring the EU's role in its adoption and further implementation. The principal finding of the paper is that the EU has indeed been a leading actor in international climate negotiations since 1992 and that this activism and engagement initially drove the EU's own climate policy. However, over the last 20 years there has been a gradual reversal in this influence and it is now the EU's climate policy that inspires the policies of other countries, as well as the international climate order.

II. THE KYOTO PROTOCOL: EU LEADS EMISSION CUTS

The Kyoto Protocol launched the process of gradual decarbonisation of the global economy. Though important as a first binding step, since its adoption, it has proven insufficient, due to its limited geographic coverage. International negotiations during the mid-2000s, aimed at adopting a new and more ambitious instrument led in 2011, as an ultimate transitional step, to the extension of the Kyoto regime for a second period (2013-2020). By December 2008, in an attempt to push forward UN negotiations, the EU presented a legal package with specific commitments on climate and energy for this second period. This anticipatory action and the voluntary obligations currently being implemented have strengthened the EU's leadership and credibility in the global fight against climate change.

1. The first Kyoto commitment period (2008-2012): gradual but insufficient decarbonisation of the world economy

At the Third Conference of Parties (COP-3) held in Kyoto in December 1997, 37 developed countries —identified as Annex B Parties to the Protocol—[8] collectively

[8] Annex B forms part of the Kyoto Protocol, while Annex I is an Annex to the UNFCCC. Both texts include a list of developed countries and economies in transition that have binding emission reduction targets.

pledged to reduce their total GHG emissions during an initial commitment period (2008-2012) by 5.2 % compared to 1990 levels. During the negotiations, the EU urged the international community to assume more ambitious mitigation targets. In the end, however, no such agreement was reached, due to profound discrepancies among participating countries. Nonetheless, the then 15 Member States of the EU jointly volunteered to exceed this multilateral commitment and jointly undertook, as the EU, to reduce emissions by 8%[9].

Under the Kyoto Protocol, mitigation targets are set out in countries' emission quotas, known as "Assigned Amount Units" (AAUs). As one of the most economically efficient ways of meeting mitigation targets, the Kyoto Protocol provides for International Emissions Trading (Article 17 of the Protocol) encouraging Annex B countries to trade their AAUs directly. The Kyoto Protocol also incorporates two other market-based instruments, called "flexibility mechanisms". One of these, the Clean Development Mechanism (CDM), allows Annex B countries to offset their emissions by contributing to emission reductions in developing countries through GHG-mitigation and clean-technology transfer projects (Article 12 of the Protocol). The carbon credits generated by these projects are called "Certified Emission Reductions" (CERs) and can be used by Annex B countries to meet their Kyoto obligations, in addition to their AAUs. The other flexibility mechanism is "Joint Implementation" (JI). This enables Annex B parties to offset their emissions by investing in projects that contribute to reducing emissions in other Annex B countries. Such reductions are recognized as "Emission Reduction Units" (ERUs), which are converted from the AAUs of the host country, thus redistributing the mitigation efforts among them (Article 6 of the Protocol)[10].

COP-7 in Marrakech in 2001 adopted an important package of additional rules for implementation of the Kyoto Protocol. The EU actively promoted adoption, in order to

[9] HARRIS, P., "Europe and the Politics and Foreign Policy of Global Climate Change", in HARRIS, P. (ed.), *Europe and Global Climate Change*, Edward Elgar, Cheltenham, 2007, pp.12-16.

[10] PALLEMAERTS, M. and WILLIAMS, R., "Climate Change: the International and European Policy Framework", in PEETERS, M. and DEKETELAERE (eds.), *EU Climate Change Policy*, Edward Elgar, Cheltenham, 2006, pp. 37-41.

encourage ratification of the Protocol[11]. Among the measures finally agreed, new multilateral funds were established to help developing countries adopt climate policies[12].

The Kyoto Protocol was due to come into force once it had been ratified by at least 55 Annex B countries, responsible for at least 55% of the CO_2 emissions of all Annex B countries in 1990. Following the United States (US)'s withdrawal from the Kyoto Protocol, the EU positioned itself at the head of the ratification process. Following the EU's intervention to support Russian accession to the World Trade Organization as well as its environmental protection system, the Russian Federation ratified the Protocol, enabling it to come into force on 18 February 2005[13]. By then, the EU had already incorporated the Kyoto Protocol into its legal order[14].

As early as 1998, following its commitment under the Kyoto Protocol, the EU internally established specific individual targets for each of the 15 Member States to meet the overall 8% reduction, in a move known as "burden sharing". The Kyoto targets and Burden-Sharing Agreement were approved by the Council of the EU in 2002 and became binding law[15]. Between 2004 and 2013, 13 new Member States joined the EU. Apart from Malta and Cyprus, all new members also committed to individual GHG reduction targets under the Kyoto Protocol.

In order to meet their international commitments, the EU and its Member States have adopted a range of mitigation measures. The most important of these is undoubtedly the Emissions Trading Scheme (ETS). This mechanism was introduced by the EU under Directive 2003/87/EC in October 2003[16], i.e. almost a year and a half before the Kyoto Protocol came into force. Indeed, the ETS is the first and most important international GHG emission trading scheme to be adopted in direct compliance with the Kyoto

[11] OBERTHÜR, S. and KELLY, C.R., "EU Leadership in International Climate Policy: Achievements and Challenges", *The International Spectator*, vol. 43, nº 3, 2008, p. 36.

[12] SVRAJE, D. and SCHIPPER, L., "The Marrakech Accords to the Kyoto Protocol: Analysis and Future Prospects", *Global Environmental Change*, nº 26, 2007, pp. 149-153.

[13] DOUMA, W.TH., "The European Union, Russia and the Kyoto Protocol", in PEETERS, M. and DEKETELAERE, K. (eds.), *EU Climate Change…, cit.*, pp. 51-66

[14] Council Decision 2002/358/EC of 25 April 2002 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfilment of commitments thereunder. OJ L130 of 15 May 2002.

[15] HARRIS, P., "Sharing the Burdens of Global Climate Change: International Equity and Justice in European Policy", in HARRIS, P. (ed.), *Europe and Global …, cit.*, pp. 365-369.

[16] OJ L275/32 of 25 October 2003.

Protocol. By means of the ETS, the EU set itself the goal of achieving a 3.3% decrease in GHG emissions out of the overall 8% it had signed up to for the first Kyoto commitment period. In force since 2005, the mechanism has seen three stages of implementation. The first, experimental, stage took place between 2005 and 2007. During this period, the main objective was not to reduce emissions, but rather to set in motion the complex infrastructure required for its decentralized implementation (emission data, registries, monitoring procedures, etc.). This stage proved to be particularly significant in guaranteeing a functional, effective trade in emissions during the second —most important— phase of operation, which coincided with the first Kyoto commitment period (2008-2012). At the start of this second stage, three non-EU countries, Norway, Iceland and Liechtenstein, joined the ETS. In the last year (2012), the aviation sector was brought into the mechanism, with the result that it now covers around 50% of the EU's total CO_2 emissions and 40% of its overall GHG emissions[17].

Another relevant aspect of the international scope of the ETS, which reflects the influence of Kyoto, is the possibility of transferring emission reduction obligations outside European territory. To enable this, Directive 2004/101/EC, the Linking Directive',[18] associates the ETS with the complementary flexibility tools of the Kyoto Protocol, the CDM and JI. Purchase of credits under the two mechanisms leads respectively to the obtaining of CERs and ERUs, which are then recognized and recompensed as reduction achievements within the ETS[19].

The ETS is now in its third implementation phase and continues to be one of the key instruments of the EU's mitigation actions. It has also become the main driver of trading in carbon units under the Kyoto Protocol. Indeed, trade in carbon units is dominated by AAU transfers within EU ETS countries. The principal destinations of CER and ERU swaps are other EU Member States, although trading is company-driven, in contrast to the state-driven system envisaged by the Kyoto Protocol. EU countries have therefore

[17] EUROPEAN COMMISSION, *EU ETS Handbook*, European Union, 2015, pp.4-19. Retrieved on 19 January 2018, at https://ec.europa.eu/clima/sites/clima/files/docs/ets_handbook_en.pdf.

[18] OJ L338/18 of 13 November 2004.

[19] MASSAI, L., *The Kyoto Protocol in the EU. European Community and Member States under the International and European Law*, T.M.C. Asser Press, the Hague, 2011, pp. 107-133.

become the principal players in Kyoto unit trading, as the leading traders and purchasers, mainly as a result of the EU ETS and EU legislation[20].

The first commitment period ended on 31 December 2012. According to official data published in April 2014, the EU-15 amply surpassed its 8% reduction commitment; the actual decrease, achieved through domestic reduction measures alone, came to 11.8% [21]. Other Annex B countries also exceeded their commitments, reducing emissions by 24% overall. This positive overachievement can be explained by increased renewable energy sources, expansion of the service sector, declining GHG intensity in industry and outsourcing of goods production, among other factors[22].

Despite its importance as the first international legal instrument to address climate change and its positive outcomes in terms of mitigation, the Kyoto Protocol proved insufficient to halt the increase in global GHG emissions. There are many reasons for its limitations. Although the Protocol was defined as "legally binding" because of the written obligation to comply with emission targets, in practice enforcement was actually hamstrung by a lack of credible sanctions[23]. Another shortcoming was its geographic coverage, encompassing as it did just 37 developed countries, representing scarcely 30% of global emissions. Indeed, due to a strict interpretation of the principle of common but differentiated responsibilities, together with the right to development, only a small number of developed countries of UNFCCC Annex I committed themselves to reduction targets, while emerging economies and developing countries were exempted from any specific commitment on mitigation. As time passed, this climate obligation scheme proved inefficient in achieving environmental targets. The situation was aggravated by

[20] MOREL, R. and SHISHLOV, I., "Ex-post Evaluation of the Kyoto Protocol: Four Key Lessons for the 2015 Paris Agreement", *Climate Report*, nº 44, 2014, p.18; EEA, "Trends and Projections in Europe 2013. Tracking Progress towards Europe's Climate and Energy Targets until 2020", EEA Report 10/2013, Publications Office of the European Union, Luxembourg, 2013, pp. 20-40.

[21] EEA, "Progress towards 2008-2012 Kyoto Targets in Europe", EEA Technical Report 18/2014, Publications Office of the European Union, Luxembourg, 2014, p.17.

[22] MOREL and SHISHLOV, "Ex-post Evaluation…", *cit.*,pp. 5-8.

[23] The Marrakesh Accords only established the suspension of unit trading and reduced AAU distribution for the second commitment period; however, these provisions were never adopted under the Kyoto Protocol. See MOREL, R., SHISHLOV, I. and BELLASEN, V., "Four Key Lessons from the Kyoto Protocol for a New Agreement in Paris", *CDC Climate Research Climate Brief*, nº 35, 2014, p. 6.

the fact that some developing countries became large emitters while gaining greater weight in the global trade and economy[24].

COP-13 in Bali in 2007 agreed on a roadmap for negotiating a new climate treaty to replace the Kyoto Protocol after 2012. Under the itinerary drawn up, it was envisaged that COP-15 —to be staged in Copenhagen in 2009— would be the last milestone, at which the international community would adopt a new agreement. Finally, however, no such consensus was achieved either at Copenhagen or at COP-16 in Cancun in 2010. It was not until COP-17, in Durban in late-2011, that a second Kyoto Protocol commitment period was decided (2013-2020), with the expectation that the new international climate agreement would be adopted at COP-21 in Paris in 2015.

By 2008, a year before the Copenhagen summit, the EU had already adopted a comprehensive package of climate and energy measures to be implemented in the period 2013-2020. The new rules represented the EU's proposal to promote a more sustainable European and world economic model in the transition to a new global climate order.

2. The second commitment period (2013-2020): the EU brings forward the 2020 package as a set of binding laws

Meeting in Brussels in December 2008, EU Heads of State agreed on a set of three targets proposed by the European Commission at the beginning of that year[25]. These included:

-A reduction in GHG emissions of at least 20% compared to 1990 levels.

- 20% of the EU's final energy consumption to come from renewables.

-20% savings in the EU's final energy consumption.

Within this new framework, actions related to climate change were for the first time strategically tied to actions aimed at encouraging EU energy self-sufficiency and efficiency. To implement these targets, the EU adopted a set of policies between 2009 and 2012, which currently make up the legally binding "2020 climate and energy package". This legal framework consists primarily of four pillars: the reviewed ETS

[24] GILES, R., "La Contribución de la Unión Europea al Desarrollo del Régimen Internacional en materia de Cambio Climático: el Paquete Europeo de Clima y Energía en el Contexto de la Acción Internacional", *Cuadernos Europeos de Deusto,* nº 57, 2017, pp. 205-206.

[25] EUROPEAN COMMISSION, "20 20 by 2020: Europe's Climate Change Opportunity", COM (2008) 30 final of 23 January 2008.

Directive, a new Effort-Sharing Decision, the Renewable Energy Directive and a Directive on Carbon Capture and Storage[26].

The ETS continues to be one of the key tools for meeting the 2020 GHG mitigation target. However, its design and operation have undergone substantial changes in this current stage of enforcement. One key alteration has been the creation of a single EU-wide emission target from 2013 onwards, which has definitively replaced the former national caps, making the ETS more harmonized and centralized. Specifically, through the ETS, the EU aims to achieve a 21% reduction on 2005 levels in included sectors[27].

Fulfilment of the 20% mitigation target unilaterally assumed by the EU is also linked to the Effort-Sharing Decision, which replaced the Burden-Sharing Agreement. This Decision currently lays down specific national reduction targets in sectors not covered by the ETS (non-air transport, agriculture, smaller industrial facilities, waste and housing) through a formula that takes account of the respective wealth of Member States, measured as Gross Domestic Product per capita. Under this criterion, commitments vary from a 20% reduction in Luxembourg and Denmark to a 20% increase authorized to Bulgaria. This selective distribution, dependent on Member States' relative wealth, demonstrates how the international principle of common but differentiated responsibility has been assumed at a European level. In these non-ETS sectors, the EU plans to reduce emissions by 10% on 2005 levels by the Burden-Sharing Decision, since this was the first year in which separate ETS and non-ETS emission data became available[28].

However, the EU climate change mitigation policy includes targets for reducing GHG emissions progressively to 2050. In March 2010, also with a view to establishing strategic leadership, the EU adopted the document "Europe 2020. A Strategy for Smart, Sustainable and Inclusive Growth"[29], which stresses that the fight against climate change

[26] Detailed information on the legal elements of this package is available at https://ec.europa.eu/cliam/policies/strategies/2020_en. Retrieved on 19 January 2018.

[27] See ALBEROLA, E. *et al.,*"European Union: an Emissions Trading Case Study", CDC Climate Research, EDF, IETA, 2015. Retrieved on 19 January 2018, at http://www.ieta.org/resources/Resources/Case_Studies_Worlds_Carbon_Markets/euets_case_study_may2015.pdf

[28] See OBERTHÜR, S. and PALLEMAERTS, M., "The EU's Internal and External Climate Policies: an Historical Overview", in OBERTHÜR, S. and PALLEMAERTS, M. (eds.), *The New Climate Policies of the European Union. Internal Legislation and Climate Diplomacy* , Vubpress Brussels University Press, Bruselas, 2010, pp. 27-63.

[29] EUROPEAN COMMISSION, "Europe 2020. A Strategy for Smart, Sustainable and Inclusive Growth", COM (2010) 2020 final of 3 March 2010.

is the key element for achieving sustainable development inside and outside the EU. More specifically, the new strategy seeks "to establish a vision of structural and technological changes required to move to a low-carbon, resource-efficient and climate-resilient economy by 2050"[30].

One year later, in line with this strategy, the European Commission proposed a roadmap to help turn the EU into a competitive low-carbon economy by 2050[31]. The program of action set out in the document aims to meet the target previously established by the European Council in February 2011 of reducing EU emissions by 80 to 95% by 2050 (as compared to 1990). These percentages are expected to contribute to the overall objective of keeping global temperature increases within 2 ºC, according to estimates by the IPCC and in line with the consensus reached at the Copenhagen and Cancun summits[32].

Likewise, with its sights set on 2050, the current Seventh Environment Action Programme (EAP) "Living well, within the limits of our planet" sets out a future vision of the EU as a low-carbon society, a green, circular economy, with resilient ecosystems, as the basis for public wellbeing.[33] As a key policy for achieving this 2050 vision, the 7th EAP explicitly mentions that action to mitigate and adapt to climate change will increase the resilience of the EU's economy and society, while stimulating innovation and protecting the EU's natural resources (Priority Objective 2 of the EAP).

The Europe 2020 Strategy, the Roadmap for 2050 and the 7th EAP match the goals and actions of the current 2020 climate energy package. Its ongoing implementation is setting the EU well on track to achieve its 2020 targets. Thus, according to one of the latest reports from the EEA, the EU is expected to easily meet the 20% GHG emission reduction target. Indeed, by 2014, GHG emissions were already 23% lower than 1990 levels[34]. The report also shows that the EU is on track to achieve the other two 2020 objectives on renewables (which accounted for 16% of gross final energy consumption in 2014), and

[30] *Ibid.,* p. 16.

[31] EUROPEAN COMMISSION, "A Roadmap for Moving to a Competitive Low Carbon Economy in 2050", COM (2011) 112 final of 8 March 2011.

[32] *Ibid.,* p. 3.

[33] Decision 1386/2013/EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action Programme to 2020 "Living Well, within the Limits of our Planet". OJ L 354 of 28 December 2013.

[34] EEA, *Trends and Projections in Europe 2016. Tracking Progress towards Europe's Climate and Energy Targets*, EEA, Copenhagen, 2016, pp. 28-41.

energy efficiency (with primary energy consumption 12% below 2005 levels in 2014). However, compliance rates vary between Member States. In all, a total of 17 Member States are expected to deliver on their national targets in all three areas, while only Malta is undergoing difficulties in meeting its targets in all three[35].

The 2020 climate-energy package was the first comprehensive legal framework unilaterally and voluntarily adopted by the EU for the post-2012 period. Its fulfilment currently constitutes the EU's contribution to the second Kyoto commitment period, which was finally agreed in Durban in December 2011. Technical details and country commitments were subsequently finalized in Doha in late 2012[36]. Formally, the agreement on the second period was adopted as an amendment to the Kyoto Protocol[37] and it has still to be ratified before coming into force[38]. The geographic scope and expected environmental impact of this second commitment period are very limited, since fewer countries have committed to emission reductions than in the first period, representing less than 15% of current global emissions[39]. Specifically, these countries have committed to reducing their emissions by 18% during this period, as compared with 1990 levels. As discussed above, the EU has committed to reducing its GHG emissions by 20% during this period.

However, perhaps more important than the advance implementation and more ambitious mitigation target is the fact the EU's implementation of its 2020 climate and energy package served as a blueprint for the design of the second Kyoto commitment period, which might therefore be said to reflect the international projection of the EU's internal

[35] *Ibid.*, pp. 17-27.

[36] SALEH, P. and SELBONG, C., "Is the Durban Platform of 2011 a Break-Through in Global Climate Change Negotiations?", *International Affairs and Global Strategy,* nº 44, 2016, pp.48-52.

[37] UN, *Doha Amendment to the Kyoto Protocol*. Retrieved on 19 January 2018, at http://unfccc.int/files/kyoto_protocol/application/pdf/kp_doha_amendment_english.pdf.

[38] A total of 144 instruments of acceptance are required for the entry into force of the amendment. By 12 January 2018, 108 countries had ratified the Doha Amendment. Retrieved on 19 January 2018, at http://unfccc.int/kyoto_protocol/doha_amendment/items/7362.php.

[39] Besides the EU, the countries with mitigation commitments for 2013-2020 are Australia, Liechtenstein, Monaco, Norway, Switzerland and Ukraine. Russia, Japan and New Zealand failed to renew their participation in this second period. The US and China announced that they would not assume binding mitigation targets until 2020, and Canada withdrew from the Kyoto Protocol. See STAVINS, R. and JI, Z. (lead authors), "International Cooperation: Agreements & Instruments", in EDENHOFER, O. *et al.*, *Climate Change 2014. Mitigation of Climate Change. Contribution of Working Group III to the Fith Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, Cambridge, 2014, p. 1025.

policy[40]. The provisions for this second Kyoto period and the EU climate-energy package are thus interlinked, representing both the framework of international commitments and the EU's internal commitment on climate change.

Indeed, the majority of countries with commitments under the second Kyoto Protocol period are European States. Fulfilment of the Kyoto Protocol mitigation objectives will therefore largely depend on the achievement of the EU's climate targets. This makes the EU a major regional benchmark in climate policy on which to build further international action.

The Paris Agreement moves away from the Kyoto model of climate obligation distribution. Nonetheless, the lessons learned and the EU's contribution has been of key importance in designing this new global climate framework.

III. THE PARIS AGREEMENT: THE EU'S ROLE IN THE DESIGN OF NEW CLIMATE OBLIGATIONS AND FURTHER COLLECTIVE ACTION

COP-21 adopted the Paris Agreement as the new global climate order to be implemented in January 2021. Except for Nicaragua and Syria, it was signed by all Parties to the UNFCCC.[41] The ultimate goal of this new binding regime is to stabilize global temperature rises are under 2º C, while aiming to limit the increase to 1.5º C above pre-industrial levels. The cornerstone of the agreement is the requirement on all countries to submit Nationally Determined Contributions (NDCs). Under the new regime, the NDCs represent the contribution of each country —developed or developing— to the collective effort against climate change. They will be implemented gradually over time. However, as the key tool of the agreement, the NDCs already represent a real move away from the UNFCCC and the Kyoto Protocol, which did not envisage mitigation efforts for developing countries.

[40] COUNCIL OF THE EUROPEAN UNION, "Conclusions on the Preparation for the 18th Session of the COP-18 to the UNFCCC and the 8th Session of the Meeting of the Parties to the Kyoto Protocol (CMP 8)", 25 October 2012. Retrieved on 19 January 2018, at http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/envir/133227.pdf.

[41] The US signed up under the Obama Administration. However in June 2017, President Trump announced the withdrawal of the country from the agreement. About the potential effects of this exit, see ZHANG, Y-X., CHAO, Q-C., ZHENG, Q-H Y HUANG, L., "The Withdrawal of the US from the Paris Agreement and its Impact on Global Climate Governance", *Advances in Climate Change Research*, vol. 8, nº 4, 2017, pp. 213-219.

The EU was the first group of 28 countries to submit its NDC to the UNFCCC Secretariat on 6 March 2015. The EU's contribution to ensuring a universal binding post-Kyoto agreement and its implementation are set out in a new climate-energy 2030 framework adopted in October 2014, i.e. one year before the Paris Conference. New measures have recently been adopted that strengthen this policy framework for the EU to achieve its long-term goal of becoming a low-carbon economy by 2050. The new package also signals the pathway for a further increase in multilateral efforts under the post-2020 regime of the Paris Agreement.

1. From a binary system to a more flexible differentiation: NDCs as the centrepiece of the global climate agreement

In the run-up to the Paris climate negotiations, the EU called for all Parties to take on legally binding mitigation commitments, with the national *ex ante* quantification of emission reductions that the commitment involved. This request was accepted by COP-19 in Warsaw in 2013. Specifically, the Conference "invites all Parties to initiate or intensify domestic preparations for their intended nationally determined contributions" and requires Parties to provide their national proposals well in advance of COP-21[42].

As the Paris negotiations moved into their final year, another central issue was the legal form that the new climate multilateral instrument should take. As finally adopted, the Paris Agreement is a treaty in accordance with the Vienna Convention, although not every provision of the agreement creates a legal obligation. In particular, with regard to NDCs, the EU sought a formulation that would require all countries to *implement* rather than *achieve* their NDCs, i.e. imposing an obligation of conduct rather than result. The European proposal also suggested a global review every five years to ensure dynamism in the collective action[43]. These procedural obligations relating to NDCs were eventually included in the Paris Agreement. In this sense, it requires each Party individually to "prepare, communicate and maintain successive NDCs that it intends to achieve" (Article 4.2 of Agreement), "communicate a successive NDC every five years, which will represent a progression beyond the Party's current NDC" (Article 4.3 and 4.9 of

[42] See HÖHNE, N., FEKETE, H., ELLERMAN, CH. and FREITAS, S., "Differentiated Mitigation Commitments in a New Climate Agreement", *Least Development Countries (LDC) Briefing,* 2014, p.2. Retrieved on 19 January 2018, at https://ldcclimate.files.wordpress.com/2014/05/brief_difcom.pdf.

[43] EUROPEAN COMMISSION, "The Paris Protocol. A Blueprint for Tackling Global Climate Change beyond 2020", COM (2015) 81 of 25 February 2015, pp. 6-8.

Agreement), and "regularly provide a national greenhouse gas inventory and the information necessary to track progress in implementing and achieving its NDC" (Article 13.7 of Agreement).

Thus, in this core element, the new international climate regime incorporated the EU's initiatives, which were also supported by other countries[44].

Another key aspect of the Paris Agreement is the flexibility afforded to the Parties with regard to implementation. Although the NDCs are the centrepiece of the agreement, they are not formally part of the treaty. Indeed, the Paris Agreement offers no detailed guidance on NDCs, and the Parties therefore have a great degree of flexibility in designing their own NDCs. They do have an obligation to communicate and maintain their NDCs and to pursue domestic mitigation measures, with the aim of meeting the targets of this contribution. NDCs are therefore based on self-differentiation, whilst respecting national sovereignty. This is probably the key to their successful acceptance, reflected in the fact that 188 NDCs were communicated to the UNFCCC Secretariat in the run-up to COP-21 or just after it. This figure represents far more countries than those committed under the second Kyoto commitment period and together they account for over 80% of global emissions[45].

Another innovation on the previous regime is that, while most of the obligations apply to all Parties, the degree of differentiation varies according to the aspects and topics covered by the agreement. With regard to mitigation, for example, the central obligation, as mentioned, is to communicate and maintain successive NDCs, but the obligation to increase efforts over time is conditional upon the support provided by developed countries (Articles 3 and 4.5 of Agreement). Likewise, the agreement establishes a collective goal of reaching global peaking of GHG emissions as soon as possible and to undertake rapid reductions so as to achieve net zero emissions in the second half of this century. However, it goes on to recognize that peaking "will take longer for developing country Parties".

[44] See the analysis of OBERTHÜR, S. and GROEN, L., "Explaining Global Achievement in International Negotiations: the EU and the Paris Agreement on Climate Change", *Journal of Public Policy*, vol. 24, nº7, 2017, pp. 1-20.

[45] MALJEAN-DUBOIS, S., "The Paris Agreement: a New Step in the Gradual Evolution of Differential Treatment in the Climate Regime?", *Review of European Community & International Environmental Law*, vol. 25, nº 2, 2016, p. 155.

Moreover, the emissions trajectory will be determined "on the basis of equity" (Article 4.1 of Agreement)[46].

The changed approach to differentiation can also be seen in other relevant aspects of the agreement, such as adaptation, finance and transparency (Articles 7, 9 and 13 of Agreement).

In sum, the Paris Agreement contains several binding procedural obligations for all Parties, such as communication and updating of NDCs —the core tool— but substantive obligations on mitigation, adaptation and finance are formulated as recommendations and are left to the sovereign discretion of the Parties. Thus, most obligations apply to all Parties, but they are complied with in the context of common but differentiated responsibilities and respective capabilities, in light of different national circumstances[47].

The Paris Agreement therefore introduces large doses of flexibility into climate obligations and this is perhaps the chief reason for its broad acceptance. By October 2016 it had already been ratified by 148 out of the 195 signatories and thus came into force on 4 November 2016, pursuant to Article 21, paragraph 1, although it will not effectively supplant the Kyoto Protocol until 1 January 2021[48]. This rapid and widespread ratification contrasts with the Doha Amendment to the Kyoto Protocol which has yet to receive enough ratifications to enter into force.

The new global deal also marks a decisive step forward in the gradual elimination of country categories, since its quasi-universal application marks a shift away from the UNFCCC and Kyoto Protocol's binary differentiation between developed and developing countries. However, the 2020 emission levels resulting from current national pledges are far from being sufficient to keep the average temperature increase below 2 ºC by the end of the century[49]. All Parties will therefore have to increase progressively the ambitiousness of their NDCs in consistency with the ambitious targets of the Paris Agreement for the post-2020 era.

[46] HÓHNE *et al.*, "Differentiated Mitigation…", *cit.*, p. 2.

[47] See VOIGHT, C. and FERREIRA, "Differentiation in the Paris Agreement", *Climate Law*, vol. 6, nºs 1-2, 2016, pp. 58-74.

[48] See status of ratification. Retrieved on 19 January 2019, at http://unfccc.int/paris_agreement/items/9444.php.

[49] MALJEAN-DUBOIS, "The Paris Agreement …", *cit.*, p. 155.

In July 2016, the EU proposed a new package of measures which reinforces its initial NDC submitted in March 2015. The European initiative aims to accelerate the transition to a more sustainable economy, while leading collective action to further cycles of commitments under the new climate agreement.

2. The 2030 package as the EU's NDC and beyond

In October 2014, the European Council agreed on a new 2030 climate-energy framework, in line with the triple target approach of 2020[50]. Specifically, the new package targets a GHG reduction of at least 40% compared to 1990 levels, an increase in renewable energy use of at least 27% and a rise in energy saving of at least 27%. This currently constitutes the EU's NDC and represents its major contribution to the new international climate agreement.

The 2030 package and, in particular, the 40% GHG reduction target, is in line with the interim targets of 25% in 2020, 40% in 2030 and 60% in 2040 established under the roadmap to a competitive low carbon economy by 2050. As provided by the roadmap, these gradual targets should enable the EU to achieve GHG emission reductions of between 80 and 95% by 2050 as compared to 1990 levels. However, because the EU did not adjust its 2020 target for the second Kyoto commitment period, the 20% mitigation target of the current 2020 package is below the interim 25% figure contained in the roadmap. Consequently, steeper reductions will be needed to reach the goal of an 80–95% decrease. Some experts suggest that the ultimate aim of 95% GHG reductions by 2050 will require a higher than 40% target for 2030[51].

Recent EEA reports have confirmed that additional efforts will indeed be required to meet the EU's long-term goal of reducing GHG emissions by 80 to 95% by 2050. Indeed, progress towards the 2030 targets is less evident than it is for the current 2020 targets. The reduction of 26–29% in EU GHG emissions forecast for 2030, clearly fails to meet the 40% target set for that year. Similarly, meeting the target of 27% renewable energy would require additional efforts and the energy efficiency target for 2030 would also

[50] EUROPEAN COUNCIL, "Conclusions on 2030 Climate and Energy Policy Framework", EUCO 169/14, 23-24 October 2014.

[51] MEYER-OHLENDORF, N., DUWE, M., UMPFENBACH, K. and McFARLAND, K., "The Next Climate and Energy Package-EU Climate Policies after 2020", *Ecologic Institute Study*, 2014. Retrieved on 19 January 2018, at https://www.ecologic.eu/sites/files/publication/2014/eu_climate_energy_package_study_2014.pdf.

require stringent implementation of energy saving measures and changes in consumer behaviour[52].

However, even if the 2030 targets were to be met, efforts would have to be further stepped up to meet the EU's 2050 decarbonisation targets. For this reason and in order to improve the actual extent of the EU's NDC, new policies and implementation measures have been agreed over the last three years. They provide additional information and reinforce the EU's commitment to the crucial transformation required to achieve profound long-term emission reductions to 2050. Numerous policies along these lines were proposed by the European Commission throughout 2015 and 2016. Among others, the main measures include a reform of the EU ETS to include a more stringent cap reduction after 2020; a new annual effort distribution between Member States for emission cuts in sectors not covered by the EU ETS for the period 2021-2030; inclusion of the land use, land-use change and forestry (LULUCF) sector into overall domestic reduction targets for 2030; a European strategy to cut emissions from the transport sector; a new Renewable Energy Directive, a review of Directives on Energy Efficiency, Energy Performance of Buildings, Energy Labelling and Eco-design and Regulations on CO_2 and cars/vans[53].

All these policies are expected to be legally adopted between 2017 and 2020. They aim not only to help meet the EU's commitments under the Paris Agreement, but also to accelerate the Union's transition towards a low-carbon economy. Indeed, the new measures could be said to underpin the EU's NDC while placing it in the context of a review cycle that extends beyond the five-year period envisaged in the Paris Agreement.

Nonetheless, the potential efficacy of the NDC depends on looking beyond GHG emissions as the only indicator and focus of policy. Adaptation and finance are also key elements in achieving the global target of limiting temperature increases to 2 ºC and ensuring fair distribution. However, the EU's NDC is chiefly based on emissions mitigation and does not include specific commitments on adaptation or finance[54].

[52] EEA, "Climate Change. Impacts and Vulnerability…", *cit.,* pp. 12-13, 20-21.

[53] EUROPEAN COMMISSION, "Implementing the Paris Agreement. Progress of the EU towards the at least -40% Target". COM (2016) 707 final of 8 November 2016, pp.8-10. Detailed analysis about each and every of these measures can be read in EUROPEAN PARLIAMENT RESEARCH SERVICE, "Implementing the Paris Agreement-EU and Global Climate Action", 2017. Retrieved on 19 January 2018, at http://www.europarl.europa.eu/EPRS/TD_COP23_implementation_EU_action.pdf.

[54] See DRÖGE, S., SPENCER, TH., DEPREZ, A., GALLAGHER, L., GRADZIUK, A., MARCU, A. and OBERTHÜR, S., "The EU's New Climate Target: Contribution to a Successful Deal in Paris", *PISM Policy Paper,* vol.29, nº 131, 2015, pp. 8-9.

Therefore, in terms of adaptation in particular, the EU has clearly moved away from the Paris Agreement and the international response in this regard. Indeed, Article 7.1 of the Agreement provides that capacity-building and financial assistance be translated into tangible policies by linking the global long-term goal for adaptation to the NDCs. Nearly 90% of the NDCs submitted by UNFCCC Parties include the adaptation activities they are willing to take. The Paris Agreement therefore takes a significant step forward in strengthening adaptation as a key pillar of global climate policy, placing it on an equal footing with mitigation[55].

Yet, even though the EU chose not to detail its adaptation policies in its NDC, its commitment to promoting climate adaptation is beyond doubt; adaptation is an integral part of EU policy and planning, as highlighted by the Adaptation Strategy adopted in 2013. On the basis of this document, national, regional and local adaptation plans are being adopted and are increasingly gaining ground in Europe. To address the opportunities created by the Paris Agreement, the EU now intends to revise its Adaptation Strategy in 2017 to identify new measures to enhance its adaptation response[56].

On the matter of climate finance, the Paris Agreement introduces no innovations, merely formalising the proposals made at COP-15 in Copenhagen. At the conference, developed countries committed to a goal of jointly mobilizing 100 billion $ in climate finance per year for developing countries by 2020[57]. This goal has been preserved in the Paris Agreement, but it has been extended to 2025, thus postponing negotiation on this sensitive issue. Instead, the agreement establishes mandatory biennial reporting to monitor progress in funding mobilization[58].

The EU and its Member States currently remain committed to contributing their fair share to the developed countries' goal of jointly making 100 billion $ per year available by 2020. Indeed, the EU —together with its Member States— is currently the largest donor of climate finance to developing countries. In the context of the current Multiannual

[55] See ADAPTATION FUND, *The Adaptation Fund and the Paris Agreement,* 2016. Retrieved on 19 January 2018, at https://www.adaptation-fund.org/wp-content/uploads/2016/11/Adaptation-Fund-and-Paris-Agreement.pdf.

[56] EUROPEAN COMMISSION, " Implementing the Paris Agreement…", *cit.*, pp. 11-12.

[57] UN, *Copenhagen Accord,* 2009, p.3. Retrieved on 19 January 2018, at http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf.

[58] See YAMINEVA, Y., "Climate Finance in the Paris Outcome: Why Do Today What You Can Put Off till Tomorrow?", *Review of European Community & International Environmental Law,* vol. 25, nº 2, 2016, pp. 174-185.

Financial Framework 2014-2020, the EU has undertaken to ensure that 20% of its overall budget is directed to climate-related policies. In the context of international cooperation, this will mean that climate finance for developing countries will more than double, to as much as 14 billion EUR, further proof of the EU's determination to deliver its fair share of the 100 billion $ under the international regime[59].

IV. CONCLUSION

The EU has been actively participating in climate negotiations within the UN since the mid-1990s. It decisively promoted adoption and ratification of the Kyoto Protocol as the first multilateral instrument aimed at mitigating climate change. Despite its importance as a first international step, the Kyoto Protocol's direct impact on global emissions remains modest. Nonetheless, Annex B Parties exceeded their commitments for the first period by 24%, chiefly by incentivizing domestic emissions reductions and working to decarbonize their energy mix.

Among Annex B Parties, the EU is the largest example of climate policy, promoting not only emissions reductions through domestic efforts and the use of the Kyoto flexibility mechanisms, but also the transformation of the energy system towards a more sustainable economy. It amply exceeded the 8% emission reduction that the EU-15 committed to in Kyoto in 1997 and has become the global driver in GHG emissions trading and the main purchaser of CERs and ERUs.

The results of the current second Kyoto commitment period (2013-2020) have proved to be very limited, with only a small number of countries —accounting for less than 15% of global emissions—committing to a collective GHG reduction target of 18%, as compared to 1990 levels. In contrast, as a participating party, the EU has committed to a 20% reduction. However, this specific mitigation target is only a reflection of a broader climate-energy strategy adopted by the EU in 2008 for this second Kyoto period. The EU's 2020 legal package served as a blueprint for designing international obligations in this second commitment phase.

[59] EUROPEAN COMMISSION, " Implementing the Paris Agreement…", *cit.*, pp. 7-8.

Unlike the Kyoto Protocol, the Paris Agreement has a quasi-universal coverage, applying to both developed and developing countries. Notwithstanding, it allows for flexible differentiation between countries in several aspects of implementation.

Within this new world climate order, one of the most central and defining elements is the NDC. The EU was the first developed economic bloc to submit its NDC, some months before the Paris conference. Focusing chiefly on mitigation, the EU's NDC is embedded in its 2030 climate-energy package adopted in October 2014. This new framework reflects the EU's priorities for the international climate regime after 2020. Over the last three years, the EU has been promoting new legal measures that give legal content to its 2030 package while adding more policy detail to its NDC. At the same time, the EU is currently reviewing its domestic policy process, with the aim of contributing to a regular five-year cycle as well. Along these lines, recent policy initiatives and other proposals in prospect now intend to extend EU climate policy beyond 2030 in accordance with the roadmap adopted in 2011 for a competitive, low-carbon economy by 2050. The new measures are expected not only to strengthen the EU climate-energy 2030 framework significantly towards this long-term trajectory, but also to open the way for further collective action under the Paris Agreement, thus leading the way in effective enforcement of the new global climate order.

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